



Product Catalogue 2008 - V1.3

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What's New ?

MARS is pleased to introduce its newest WIDE BAND products:

High Gain Antennas

- **30 dBi gain** Panel Antenna covering 4.9-5.875 GHz band (MA-WA55-30)
- **26 dBi gain** Panel Antenna covering **4.9-6.1 GHz** band (MA-WA55-27)
- **25 dBi gain Dual Polarized** Panel Antenna covering 4.9-5.875 GHz band (MA-WA56-DP25N)
- **10 dBi gain** Omni-Directional antenna covering 4.9-5.875 GHz band (MA-WO55-10)
- **9 dBi gain** Omni-Directional antenna covering 2.3-2.7 GHz band (MA-WO25-9)

Ultra compact size Subscriber Antenna (glass mount opt.):

- 3.9"x3.9" (10X10 cm) 2.4-2.7GHz band coverage with gain of 9 dBi
- 5.9"X5.9" (15X15cm) 3.4-3.7GHz band coverage with gain of 12dBi



(MA-WA25-9)
(MA-WA35-3X)

Compact size Sector Antennas

- Ultra compact (15-31inch / 38-80cm) Sector antennas covering 2.3-2.7GHz band with gain up to 17dBi (page 51-56)
- New Broadband Sector antennas covering **4.9-6.1GHz** band with gain up to 17dBi (page 74-76)



WiMAX Mobile Antennas:

- WiMAX Car Blade Omni-Directional Antenna 2.3-2.6 GHz band coverage (MA-WO25-CT)
- WiMAX Car Blade Omni-Directional Antenna 3.4-3.8 GHz band coverage (MA-WO36-CT)
- WiMAX Car Blade Omni-Directional Antenna 4.9-5.875 GHz band coverage (MA-WO55-CT)



For further information visit www.mars-antennas.com or call MARS at +972-3-5599661

About Mars Antennas

Mars Antennas is a leading antennas design and manufacturing player in the Broadband Wireless Panel Antennas market. Our dual and single polarized subscriber and sector antennas cover frequency ranges of 700 MHz, 915 MHz, 2.4 GHz, 3.5 GHz, 4.9 GHz and 5.8 GHz.

A wide range of 3.3 – 3.9 GHz antennas is perfectly suiting the rapidly growing WiMax markets.

Mars also has a strong line of In Building antennas for cellular and WI-FI coverage.

Broadband Access Antennas (WLL,WLAN,WiMAX,802.11)

Subscriber Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
MA-WA74-LX	700 MHz Lower Band Subscriber Antenna	698 - 746 MHz	8.5 dBi (min.)	Linear Vertical or Horizontal	305x305x25 mm	13
MA-WA79-UX	700 MHz Upper Band Subscriber Antenna	746 - 806 MHz	8.5 dBi (min.)	Linear Vertical or Horizontal	305x305x30 mm	14
MA-IS91-T2	915 MHz Subscriber Antenna	902 - 928 MHz	10 dBi (min.)	Linear Vertical or Horizontal	305x305x25 mm	15
MA-IS91-T2C	915 MHz Subscriber Antenna for CANOPY MOTOROLA	902 - 928 MHz	10 dBi (min.)	Linear Vertical or Horizontal	305x305x25 mm	16
MA-IS91-T3	915 MHz Small Size Subscriber Antenna	902 - 928 MHz	8 dBi (min.)	Linear Vertical or Horizontal	230x214x31 mm	17
MA-IS91-R1*	915 MHz Small Size Subscriber Antenna	902 - 928 MHz	10 dBi (typ.)	RHCP	305x305x30 mm	18
MA-WA14-1X	1425-1525 MHz Directional Antenna	1425-1525 MHz	13.5 dBi (min.)	Linear Vertical	305x305x30 mm	19
MA-WA18-1X	1.8 GHz Directional Antenna	1.71-1.88 GHz	14 dBi (min.)	Linear Vertical	305x305x30 mm	20
MA-WA19-4X	1.9 GHz Directional Antenna	1.85-1.99 GHz	15 dBi (min.)	Linear Vertical	305x305x30 mm	21
MA-WA20-1X	UMTS Subscriber Antenna	1.9-2.17 GHz	14 dBi (min.)	Linear Horizontal or Vertical	305x305x30 mm	22
MA-WA24-2X	Subscriber Antenna, High Gain	2.4 - 2.7 GHz	18 dBi (min.)	Linear Vertical	305x305x15 mm	23
MA-WA24-2XBRFC	Integrated Antenna & Enclosure Solution	2.4 - 2.7 GHz	18 dBi (min.)	Linear Horizontal or Vertical	305x305x15 mm	24
MA-WA24-3X	Small Size Subscriber Antenna	2.4 - 2.7 GHz	11 dBi (min.)	Linear Vertical	150x150x26 mm	25
MA-WA25-9*	Small Size Subscriber Antenna	2.4-2.7 GHz	9 dBi (min.)	Linear Vertical	100x100x30 mm	26
MA-WA35-2X-D	Subscriber Antenna for WiMAX Applications	3.3 - 3.8 GHz	18 dBi (min.)	Linear Vertical	305x305x15 mm (Diamond Shape)	27
MA-WA35-1X	Subscriber Antenna	3.4 - 3.7 GHz	18 dBi (min.)	Linear Vertical	260x260x30 mm	28

* New Product

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<u>MA-WA35-2X</u>	Subscriber Antenna	3.4 - 3.7 GHz	18 dBi (min.)	Linear	305x305x15 mm	<u>29</u>
<u>MA-WA35-3X</u>	Small Size Subscriber Antenna	3.4 - 3.7 GHz	12 dBi (typ.)	Linear Vertical	150x150x26 mm	<u>30</u>
<u>MA-WA36-15</u>	3.5 GHz Subscriber Antenna	3.3-3.8 GHz	15 dBi	Linear	230x215x30 mm	<u>31</u>
<u>MA-WA36-19*</u>	3.5 GHz Subscriber Antenna	3.3-3.8 GHz	19 dBi	Linear	305x305x15 mm	<u>32</u>
<u>MA-WA49-1X</u>	4.9 GHz Subscriber Antenna	4.9 - 5.4 GHz	21 dBi (min.)	Linear Vertical	305x305x15 mm (Diamond Shape)	<u>33</u>
<u>MA-WA55-27*</u>	5 GHz Broadband Subscriber Antenna	4.9-6.1 GHz	26 dBi (typ.)	Linear Vertical or Horizontal	370x370x30 mm	<u>34</u>
<u>MA-WA58-1X</u>	Broadband Subscriber Antenna	5.15 – 5.875 GHz	23 dBi (min.)	Linear Vertical	305x305x15 mm (Diamond Shape)	<u>35</u>
<u>MA-WA57-3HG</u>	Small Size Subscriber Antenna, High Gain	5.15 – 5.875 GHz	18 dBi (min.)	Linear	150x150x26 mm	<u>36</u>
<u>MA-WA57-3X</u>	Small Size Subscriber Antenna	5.15-5.875 GHz	16 dBi (min.)	Linear Vertical or Horizontal	150x150x26 mm	<u>37</u>
<u>MA-WA58-1XBRFR</u>	Integrated Antenna & Enclosure Solution	5.15 – 5.875 GHz	23 dBi (typ.)	Linear Vertical	305x305x15 mm (Diamond Shape)	<u>38</u>
<u>MA-WA56-DP25N*</u>	5 GHz Dual Polarized Antenna	4.9-5.875 GHz	V-Pol:24.5 ±1 H-Pol:23.5 ±1	Linear Vertical & Horizontal	370x370x40 mm	<u>39</u>
<u>MA-WA56-DP25NBRF*</u>	5 GHz Dual Polarized Antenna & Enclosure Solution	4.9-5.875 GHz	V-Pol:24.5 ±1 H-Pol:23.5 ±1	Linear Vertical & Horizontal	370x370x40 mm	<u>40</u>
<u>MA-WA55-30*</u>	High Gain Subscriber Antenna	4.9-5.875 GHz	30 dBi (typ.)	Linear Vertical	600x600x30 mm	<u>41</u>

* New Product

Base Station & Omni Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<u>MA-WC90-5X</u>	Base Station Antenna,60°	902 – 928 MHz	14.5 dBi (min.)	Vertical	1200x330x105 mm	42
<u>MA-WC91-5H</u>	Horizontally Polarized Sector Antenna, 60°	902 – 928 MHz	14 dBi (min.)	Horizontal	1200x330x105 mm	43
<u>MA-WD90-6X</u>	Base Station Antenna,90°	902 – 928 MHz	13 dBi (min.)	Vertical	1200x330x105 mm	44
<u>MA-WD91-6H</u>	Horizontally Polarized Sector Antenna, 90°	902 – 928 MHz	12 dBi (min.)	Linear, Horizontal	1200x330x105 mm	45
<u>MA-WE90-7X</u>	Base Station Antenna,120°	902 – 928 MHz	11.5 dBi (min.)	Vertical	1200x330x105 mm	46
<u>MA-WE91-7H</u>	Horizontally Polarized Sector Antenna, 120°	902 – 928 MHz	11 dBi (min.)	Linear, Horizontal	1200x330x105 mm	47
<u>MA-WC19-5X</u>	Base Station Antenna,60°	1.85-2.05 GHz	15 dBi (min.)	Vertical	812x122x58	48
<u>MA-WE91-2D</u>	Dual Polarized Base Station Antenna, 120°	902-928 MHz	11.5 dBi (min.), Both Polarizations	Linear, Vertical & Horizontal Simultaneous	1207x327x217 mm	49
<u>MA-WO91-8X</u>	Omni-Directional Antenna	902 – 928 MHz	8 dBi	Linear Vertical	1350x64 (Dia.)mm	50
<u>MA-WC24-14*</u>	Base Station Antenna, 60°	2.3 - 2.7 GHz	14 dBi	Linear, Vertical	380 x150 x 80 mm	51
<u>MA-WD24-13*</u>	Base Station Antenna, 90°	2.3 - 2.7 GHz	13 dBi	Linear, Vertical	380 x 75 x 80 mm	52
<u>MA-WE24-11*</u>	Base Station Antenna, 120°	2.3– 2.7 GHz	11.5 dBi	Linear, Vertical	380 x 75 x 80 mm	53
<u>MA-WC24-17*</u>	Base Station Antenna, 60°	2.3– 2.7 GHz	17 dBi	Linear, Vertical	800 x120 x 65 mm	54
<u>MA-WD24-15*</u>	Base Station Antenna, 90°	2.3– 2.7 GHz	15.5 dBi	Linear, Vertical	800 x 120 x 65 mm	55
<u>MA-WE24-14*</u>	Base Station Antenna, 120°	2.3– 2.7 GHz	14 dBi	Linear, Vertical	800x120x 65 mm	56

* New Product

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
MA-WC24-6H	Horizontally Polarized Sector Antenna, 60°	2.4 – 2.5 GHz	17 dBi (min.)	Horizontal	810x120x60 mm	57
MA-WD24-6H	Horizontally Polarized Sector Antenna, 90°	2.4 – 2.5 GHz	15 dBi (min.)	Linear Horizontal	810x120x60 mm	58
MA-WO24-8X	Omni-Directional Antenna	2.4 – 2.5 GHz	7.5 dBi (min.)	Linear Vertical	510x32 Dia mm	59
MA-WO25-9*	Omni-Directional Antenna	2.3– 2.7 GHz	9 dBi	Linear Vertical	640x76 Dia mm	60
MA-WC36-17	Base Station Antenna, 60°	3.3-3.8 GHz	17 dBi	Linear Vertical	554x76x53 mm	61
MA-WD36-16	Base Station Antenna, 90°	3.3-3.8 GHz	16 dBi	Linear Vertical	554x76x53 mm	62
MA-WE36-15	Base Station Antenna, 120°	3.3-3.8 GHz	15 dBi	Linear Vertical	554x76x53 mm	63
MA-WC36-5X1	Sector Antenna for WiMAX Applications, 60°	3.3 - 3.9 GHz	17 dBi (typ.)	Linear Vertical	810x115x49 mm	64
MA-WD36-6X	Sector Antenna for WiMAX Applications 90°	3.3 - 3.9 GHz	16 dBi (typ.)	Linear Vertical	810x115x49 mm	65
MA-WD36-6X3	Sector Antenna for WiMAX Applications 90°	3.3 - 3.9 GHz	15 dBi (typ.)	Linear Vertical	810x121x67 mm	66
MA-WD35-14H	Horizontally Polarized Sector Antenna, 90°	3.4-3.6 GHz	14 dBi	Horizontal	554x76x55 mm	67
MA-WE36-7X	Sector Antenna for WiMAX Application 120°	3.3-3.9 GHz	15 dBi (typ.)	Linear Vertical	810X115X49 mm	68
MA-WO35-1X	3.5 GHz Omni-Directional Base Station Antenna	3.4 – 3.6 GHz	8 dBi (typ.)	Linear Vertical	500 x 32 mm	69
MA-WO36-10*	3.5 GHz Omni-Directional Base Station Antenna	3.4-3.8 GHz	9.5 dBi	Linear Vertical	470 x 66 mm	70
MA-WC49-5X	Public Safety Band Sector Antenna, 60°	4.94-4.99 GHz	17 dBi (typ.)	Linear Vertical	500x80x80 mm	71
MA-WD49-6X	Public Safety Band Sector Antenna, 90°	4.94-4.99 GHz	16 dBi (typ.)	Linear Vertical	500x80x80 mm	72

* New Product

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
<u>MA-WE49-7X</u>	Public Safety Band Sector Antenna, 120°	4.94-4.99 GHz	15 dBi (typ.)	Linear Vertical	500x80x80 mm	73
<u>MA-WC55-17*</u>	Base Station Antenna, 60°	4.9 – 6.1 GHz	17 dBi (typ.)	Linear Vertical	554x76x53 mm	74
<u>MA-WD55-16*</u>	Base Station Antenna, 90°	4.9 – 6.1 GHz	16 dBi (typ.)	Linear Vertical	554x76x53 mm	75
<u>MA-WE55-15*</u>	Base Station Antenna, 120°	4.9 -6.1 GHz	15 dBi (typ.)	Linear Vertical	554x76x53 mm	76
<u>MA-WO49-7X</u>	4.9 GHz Omni-Directional Base Station Antenna	4.94-4.99 GHz	7.5 dBi	Linear Vertical	420x32 (Dia.) mm	77
<u>MA-WO55-10*</u>	Omni-Directional Antenna	4.9 – 5.875 GHz	10 dBi	Linear Vertical	420x32 Dia. mm	78
<u>MA-WC50-5H</u>	Horizontally Polarized Sector Antenna, 60°	5.15 - 5.875 GHz	17 dBi (typ.)	Linear, Horizontal	520x120x55 mm	79
<u>MA-WD50-6H</u>	Horizontally Polarized Sector Antenna, 90°	5.15 - 5.875 GHz	15.5 dBi (typ.)	Linear, Horizontal	500x170x116 mm	80
<u>MA-WC58-5EL</u>	Base Station Antenna, 60°	5.725-5.875 GHz	16 dBi	Linear Vertical	554x76x53 mm	81
<u>MA-WE58-7EL</u>	Base Station Antenna, 120°	5.725– 5.875 GHz	14 dBi (min.)	Linear Vertical	554x76x53 mm	82
<u>MA-WG10-6H</u>	10.5 GHz Sector Antenna	10.15-10.65 GHz	15 dBi	Linear Vertical	339x195x40 mm	83

* **New Product**

In-Building, Cellular Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
MA-CQ26-1X	380 MHz -6 GHz Multi Band Omni	380-460 608-614 1395-1432 806-960 1710-2170 2400-2700 3400-3700 4900-6000	1 (2*) dBi 1 (2*) dBi 5 dBi 4 dBi 6 dBi 6 dBi 6 dBi 6 dBi	Linear Vertical	Base Dia. - 275 Height – 200 mm	84
MA-CQ27-1X*	380 MHz -6 GHz Multi Band Omni	380-806 806-960 1395-1432 1710-2170 2300-2500 3300-3700 4900-6000	1 (2*) dBi 4 dBi 5 dBi 5 dBi 6 dBi 6 dBi 6 dBi	Linear Vertical	Base Dia. - 275 Height – 200 mm	85
MA-CM36-15	Multi Band Omni Antenna	806-960 1710-2170 2400-2700	2 dBi 3-4 dBi 5 dBi	Linear Vertical	Base Dia. - 205 Height - 89 mm	86
MA-CR26-2X	Multi Band Omni Antenna	806-960 1710-2170 2400-2700 3400-3700 4900-6000	2 dBi 3-4 dBi 5 dBi 5 dBi 5-6 dBi	Linear Vertical	Base Dia. - 205 Height - 89 mm	87
MA-CL67-14	Multi Band Panel Antenna	806-960 1710-2170 2400-2700	8.5 dBi 7.5-10 dBi 5-6.5 dBi	Linear Vertical	230x215x30 mm	88
MA-CN14-11	Multi Band 140°	806-960 1710-2170	5 dBi	Linear Vertical	175x35x125 mm	89
MA-CJ80-14	GSM Dual Band Panel Antenna	806-960 1.71-2.17	8 dBi	Linear Vertical	285x180x67 mm	90
MA-CH11-16	GSM/AMPS/IDEN In-Building Antenna	810-960 MHz	3 dBi	Linear Vertical	180x180x25 mm	91
MA-CB22-13 MA-CB22-23 MA-CB22-33	Squint Band Extra Thin Antenna	824-894 MHz	15 dBi 14.5 dBi 13 dBi	Linear Vertical	808x708x30 mm	92
MA-CB50-20	Dual Beam CDMA/TDMA/AMP S Antenna	824-894 MHz	5 dBi	Linear Vertical	400x185x55 mm	93
MA-CC60-20	Dual Beam GSM Antenna	870-960 MHz	5 dBi	Linear Vertical	400x185x55 mm	94
MA-CD09-2X	Cellular Yagi Antenna	1.71-1.88 GHz	9 dBi	Linear Vertical	500x85 mm	95

* New Product

Bi-Directional Amplifiers

Part Number	Description	Up Link/ Down Link	Frequency Band	Gain	Dimensions (LxWxD)	Page
<u>MR-HSBDA60-X</u>	CDMA High Selective Repeater	Down Link (base to mobile)	864-894 MHz	63 dB (min.)	260X250X100 mm	96
		Up Link (mobile to base)	824-849 MHz	60 dB (min.)		
<u>MR-BDA60-X</u>	Bi-Directional Amplifier	Down Link (base to mobile)	864-894 MHz	55 dB (min.)	253x125x43 mm	97
		Up Link (mobile to base)	824-849 MHz	60 dB (min.)		
<u>MR-BGSM60-X</u>	GSM Bi-Directional Amplifier	Down Link (base to mobile)	947-960 MHz	55 dB (min.)	253x125 x43 mm	98
		Up Link (mobile to base)	902-915 MHz	60 dB (min.)		
<u>MR-BIDEN60-X</u>	SMA/IDEN Bi-Directional Amplifier	Down Link (base to mobile)	851-866 MHz	55 dB (min.)	253x125 x43 mm	99
		Up Link (mobile to base)	806-821 MHz	60 dB (min.)		
<u>MR-PBCT55-X</u>	CMDA/TDMA Personal Bi-Directional Amplifier	Down Link (base to mobile)	869-894 MHz	55 dB (min.)	120X70X35 mm	100
		Up Link (mobile to base)	824-849 MHz	55 dB (min.)		
<u>MR-PBGS55-X</u>	GSM Personal Bi-Directional Amplifier	Down Link (base to mobile)	947-960 MHz	55 dB (min.)	120X70X35 mm	101
		Up Link (mobile to base)	902-915 MHz	55 dB (min.)		
<u>MR-PBSMR55-X</u>	SMR/IDEN Personal Bi-Directional Amplifier	Down Link (base to mobile)	851-866 MHz	55 dB (min.)	120X70X35 mm	102
		Up Link (mobile to base)	806-821 MHz	55 dB (min.)		
<u>MR-BDA60-X1W</u>	Bi-Directional Amplifier 1 Watt	Down Link (base to mobile)	869-879 MHz	60 dB (min.)	243x160 x57 mm	103
		Up Link (mobile to base)	824-834 MHz	60 dB (min.)		
<u>MR-BGSM60-X1W</u>	GSM Bi-Directional Amplifier 1 Watt	Down Link (base to mobile)	947-960 MHz	60 dB (min.)	243x160 x57 mm	104
		Up Link (mobile to base)	902-915 MHz	60 dB (min.)		
<u>MR-BIDEN60-X1W</u>	SMR/IDEN Bi-Directional Amplifier 1 Watt	Down Link (base to mobile)	851-866 MHz	60 dB (min.)	243x160 x57 mm	105
		Up Link (mobile to base)	806-821 MHz	60 dB (min.)		

Part Number	Description	Up Link/ Down Link	Frequency Band	Gain	Dimensions (LxWxD)	Page
MR-HGSM50-X	GSM1800 Bi-Directional Amplifier	Down Link (base to mobile) Up Link (mobile to base)	1805-1880 MHz 1710-1785 MHz	45 dB (min.) 45 dB (min.)	310x150x57 mm	106
MR-HSBGSM60	GSM High Selective Repeater	Down Link (base to mobile) Up Link (mobile to base)	935 – 960 MHz 890 – 915 MHz	63 dB (min.) 60 dB (min.)	260x250x65 mm	107
MR-BSMR60-A1W	SMR/IDEN Automatic Control Repeater 1 Watt	Down Link (base to mobile) Up Link (mobile to base)	851-866 MHz 806-821 MHz	60 dB (min.) 60 dB (min.)	243x163x57 mm	108
MR-BSMR80-XA	SMR/IDEN High Gain Automatic Control Repeater 1 Watt	Down Link (base to mobile) Up Link (mobile to base)	851-866 MHz 806-821 MHz	80 dB (min.) 80 dB (min.)	260x250x65 mm	109
MR-AM1800-X	Power Amplifiers – Cellular Bands	----	PCS1800 GSM1800 1800-1900 MHz	30±1 dB	60x50x20 mm (Without Heat Sink)	110
MR-AM1900-X		----	PCS1900 GSM1900 1900-2000 MHz			

RF Products

Part Number	Description	Up Link/ Down Link	Frequency Band	Gain	Dimensions (LxWxD)	page
MR-DARF-XX	Dual Active Reject Filter	---	825-835 MHz	3 dB (min) to 7 dB (max)	19" Box	111
MR-PD02-X	2 Way Splitter	---	800-2500 MHz	0.7dB/1.5 dB typ. / max.	120x95x30 mm	112
MR-PD03-X	3 Way Splitter	---	800-2000 MHz	1.3 dB	140x95x30 mm	113
MR-PD04-X	4 Way Splitter	---	800-2200 MHz	1.5 dB	120x110x30 mm	114
MR-PD04-X1*	4 Way Splitter	---	2.3-2.6 GHz	1.5 dB	197x136x82 mm	115

* New Product

ISM & Special Applications Antennas

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
MA-IS15-M4	153.7 MHz Base Station Antenna	153.7±2 MHz	2 dBi (typ.)	Omni Directional	600x833 mm	116
MA-IS43-B1	433 MHz Base Station Antenna	433.92±2 MHz	4.5 (min.)	Linear Vertical	400x176x195 mm	117
MA-IS43-B2	433 MHz Base Station Panel Antenna	433±2 MHz	4 dBi (min.)	Linear Vertical	225x215x29 mm	118

Mobile Antennas

MA-IS43-C1	Car Mounted Antenna	433.92±2 MHz	~5 dBi (min.)	Linear Vertical	78.6x39x4.2 mm	119
MA-IS72-AS	Car Mounted Antenna	710-746 MHz	0 dBi (min.)	Linear Vertical	78.6x39x4.2 mm	120
MA-CH11-W1	Broadband Cellular Window Mounted Antenna	824-960 MHz	0 dBi (min.)	Linear Vertical	78.6x39x4.2 mm	121
MA-CB11-C3	CDPD Car Mounted Antenna	824-849 MHz 869-894 MHz	0 dBi (min.)	Linear Vertical	145x16x4.5 mm	122
MA-IS91-XX	915 MHz Car Mounted Antenna	902-928 MHz	4 dBi (min.)	Linear Vertical	150x150x26 mm	123
MA-IS91-C1	915 MHz Car Mounted Antenna	902-928 MHz	0 dBi	Linear Vertical	78x39x4 mm	124
MA-VM23-3X	Car Mounted Antenna	2.3-2.39 GHz	3 dBi	Linear	40x45x15 mm	125
MA-CH25-W1*	Cellular Car Window Mounted Antenna	2.3-2.69 GHz	0 dBi	Linear Vertical	78.6x39x4.2 mm	126
MA-VM24-3X*	Car Mounted Antenna	2.4-2.5 GHz	3-5 dBi	Linear	40x45x15 mm	127
MA-WO25-CT*	WiMAX Car Mounted Antenna	2.4-2.6 GHz	4 dBi	Linear	100x50x80 mm	128
MA-VM26-3X*	WiMAX Car Mounted Antenna	2.5-2.7 GHz	3 dBi	Linear	40x45x15 mm	129
MA-VM35-4X*	WiMAX Car Mounted Antenna	3.4-3.8 GHz	4 dBi	Linear	40x45 x15 mm	130
MA-WO36-CT*	WiMAX Car Mounted Antenna	3.4-3.8 GHz	4 dBi	Linear	100x50x80 mm	131
MA-WO55-CT*	WiMAX Car Mounted Antenna	4.9-5.875 GHz	4 dBi	Linear	100x50x80 mm	132

* New Product

Part Number	Description	Frequency band	Gain	Polarization	Dimensions (LxWxD)	Page
MA-CH36-W1	Glass Car Antenna	3.4-3.8 GHz	0 dBi	Linear Vertical	78.6x39x4.2 mm	133
MA-WO35-B-X	Blade Antenna for Mobile Applications	3.4-3.6 GHz	2 dBi	Linear Vertical	115x220x100 mm	134
MA-WO45-B-X	Blade Antenna for Mobile Applications	4.4-4.6 GHz	2 dBi	Linear Vertical	115x220x100 mm	135
MA-WO49-B-X	Blade Antenna for Mobile Applications	4.94-4.99 GHz	2 dBi	Linear Vertical	115x220x100 mm	136

GPS Antennas

MA-EG15-XX*	GPS AVL Active Antenna	1575±1.24 MHz	27 dBi	Circular, RHCP	40x45x15 mm	137
MA-GP15-2M	Active GPS Antenna	1575.42±2 MHz	5 dBi (min.)	Right Hand Circular	94x110 mm	138

Embedded Antennas

MA-IS91-BR	915 MHz Embedded Antenna	902 - 928 MHz	1 dBi	Linear Vertical	130x16x4.5 mm	139
Embedded Antennas	Specifications Vary (In accordance with customer requirements)					140

Antenna mounts

Part Number	Description	Page
MNT-1A*	Elevation Adjustable Mount for Subscriber & Short Sectors	141
MNT-5A*	Tilt Mount for Sector Antennas	
MNT-2	Az/EI Adjustable Mount for Subscriber Antennas	142
MNT-22*	Heavy Duty, Az/EI Adjustable Mount for Subscriber Antennas	
MNT-4X	Az/EI Adjustable Mount for Small Size Antennas	143

* New Product

**700 MHz Lower Band Subscriber Antenna
MA-WA74-LX**

MARS 700 MHz - Lower Band Antenna provides solutions for new services such as mobile broadband, mobile video and WiMAX applications.



Additional Features:

- excellent performance
- aesthetic and unobtrusive
- thin radome and easy mounting

Specifications:

<i>Electrical</i>	
Frequency range	698-746 MHz
GAIN, min.	8.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Horizontal or Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	-30 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 30 mm (12" x12" x 1.2")
Weight	1.3 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-WA74-LX-PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA74-LX-MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

**700 MHz Upper Band Subscriber Antenna
MA-WA79-UX**

MARS 700 MHz - Upper Band Antenna provides solutions for new services such as mobile broadband, mobile video and WiMAX, as well as Public Safety applications.

Additional Features:

- excellent performance
- aesthetic and unobtrusive
- thin radome and easy mounting



Specifications:

<i>Electrical</i>	
Frequency range	746-806 MHz
GAIN, min.	8.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Horizontal or Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	-30 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 30 mm (12" x 12" x 1.2")
Weight	1.3 kg
Connector	N-Type
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-WA79-UX-PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA79-UX-MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

915 MHz Subscriber Antenna

MA-IS91-T2

MARS 915 MHz Antenna is designed for Point-to-Multipoint systems using the ISM 915 MHz band.

Additional features:

- high efficiency
- superb co-siting performance due to high crosspol rejection
- unobtrusive, blends easily with the environment
- optionally available with Pole Mount or MNT-2 (pole/wall, azimuth and elevation adjustable mount)



Specifications:

<i>Electrical</i>	
Frequency range	902 - 928 MHz
GAIN, min.	10.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-2 Option)
3 dB Beam-Width, H-Plane, typ.	55°
3 dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	-20 dB
Cross Polarization, min.	-17 dB
Front to Back Ratio, min.	-27 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 30 mm (12"x 12"x 1.2")
Weight	1.3 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-IS91-T2 PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-IS91-T2 MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

**915 MHz Subscriber Antenna for MOTOROLA - Canopy™
MA-IS91-T2C**

MARS 915 MHz Antenna approved by
MOTOROLA for CANOPY 915 MHz Systems



Specifications:

<i>Electrical</i>	
Frequency range	902 - 928 MHz
GAIN, min.	10.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	55°
3 dB Beam-Width, E-Plane, typ.	60°
Side Lobes, min.	-20 dB
Cross Polarization, min.	-17 dB
Front to Back Ratio, min.	-27 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 25 mm (12" x 12" x 1")
Weight	1.3 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Azimuth/Elevation Adjustable Mount MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Subscriber Antenna
MA-IS91-T3**

MARS 915 MHz small size panel antenna provides for coverage of the ISM 915 band under FCC part 15.

Additional Features:

- high gain/size ratio
- small and unobtrusive
- new aesthetic and durable radome
- suitable for indoor and outdoor applications



Specifications:

<i>Electrical</i>	
Frequency range	902 - 928 MHz
GAIN, min.	8 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-2 Option)
3 dB Beam-Width, H-Plane, typ.	70°
3 dB Beam-Width, E-Plane, typ.	65°
Cross Polarization, min.	-17 dB
Front to Back Ratio, min.	-16 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	230 x 214 x 31 mm (9.1"x 8.4"x 1.2")
Weight	520 gr.
Connector	N-Type, Female (at the back plane)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-IS91-T3 PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-IS91-T3 MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

915 MHz RFID Reader Antenna

MA-IS91-R1

MARS 915 MHz Antenna is designed for Point-to-Multipoint systems using the ISM 915 MHz band.

Additional features:

- high efficiency
- superb co-siting performance due to low SSL and high F/B rejection
- unobtrusive, blends easily with the environment
- optionally available with Pole Mount or MNT-2 (pole/wall, azimuth and elevation adjustable mount)



Specifications:

<i>Electrical</i>	
Frequency range	902 - 928 MHz
GAIN, typ.	10 dBi
VSWR, max.	1.5 : 1
Polarization	RHCP
3 dB Beam-Width, Horizontal, typ.	75°
3 dB Beam-Width, Vertical, typ.	55°
Front to Back Ratio, typ.	-20 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 30 mm (12" x 12" x 1.2")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-IS91-R1 PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-IS91-R1 MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

1425-1525 MHz Broadband Directional Antenna

MA-WA14-1X

MARS 1425-1525 MHz Antenna provides a cost effective and reliable solution for Fixed Wireless Data & Telephony Services and any other application in this band.

This panel antenna replaces Yagis previously used for the same purpose.

Additional Features:

- durable construction and light weight
- optionally available with Pole Mount or MNT-2 (pole/wall, azimuth and elevation adjustable mount)
- DC Grounded



Specifications:

<i>Electrical</i>	
Frequency range	1425-1525 MHz
GAIN, min.	13.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	31°
3 dB Beam-Width, E-Plane, typ.	31°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-20 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 30 mm (12" x12" x 1.2")
Weight	1.2 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial
Service Life	>10 years

Ordering Options:

MA-WA14-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA14-1X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

1.8 GHz Directional Antenna

MA-WA18-1X

MARS 1.8 GHz Antenna is a flat panel that provides directional coverage of the GSM 1800 band. This panel antenna replaces Yagis previously used for same purpose.

Additional Features:

- effective co-siting performance
- excellent size/gain ratio
- weatherized and robust
- suitable for heavy duty outdoor applications



Specifications:

<i>Electrical</i>	
Frequency range	1.71-1.88GHz
GAIN, min.	14 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	30°
3 dB Beam-Width, E-Plane, typ.	30°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 30 mm (12" x12" x 1.2")
Weight	1.3 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-34
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-WA18-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA18-1X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

1.9 GHz Subscriber Antenna

MA-WA19-4X

MARS 1.9 GHz Antenna is designed for coverage of the 1.9 PCS band.

Additional Features:

- effective co-siting performance
- excellent size/gain ratio
- weatherized and robust
- suitable for heavy duty outdoor applications
- optionally available with Pole Mount or MNT-2 (pole/wall, azimuth and elevation adjustable mount)



Specifications:

<i>Electrical</i>	
Frequency range	1.85-1.99 GHz
GAIN, min.	15 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	24°
3 dB Beam-Width, E-Plane, typ.	24°
Side Lobes, min.	-9 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-18 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 30 mm (12" x12" x 1.2")
Weight	1.3 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-WA19-4X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA19-4X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

UMTS Subscriber Antenna

MA-WA20-1X

MARS UMTS Antenna is a wide band antenna that provides an effective solution for Yagi replacements or repeaters.

Additional Features:

- aesthetic, small and unobtrusive profile blends easily with any environment
- DC grounded for lightning protection to meet local electrical building codes
- optionally available with Pole Mount or MNT-2 (pole/wall, azimuth and elevation adjustable mount)



Specifications:

<i>Electrical</i>	
Frequency range	1.90-2.17 GHz
GAIN, min.	14 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Horizontal or Vertical
3 dB Beam-Width, H-Plane, typ.	24°
3 dB Beam-Width, E-Plane, typ.	24°
Side Lobes, min.	-9 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-18 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (12" x12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-WA20-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA20-1X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

2.4-2.7 GHz High Gain Subscriber Antenna MA-WA24-2X

MARS 2.4 GHz Antenna is a wide band antenna designed for Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- exceptionally efficient performance
- high gain/size ratio
- aesthetic design
- weatherized and durable



Specifications:

<i>Electrical</i>	
Frequency range	2.4 - 2.7 GHz
GAIN, min.	18dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-2 Option)
3 dB Beam-Width, H-Plane, typ.	21°
3 dB Beam-Width, E-Plane, typ.	20°
Side Lobes, min.	-16 dB
Cross Polarization, min.	-26 dB
Front to Back Ratio, min.	-26 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (12" x12" x 0.6")
Weight	1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1,TS2,TS3	

Ordering Options:

MA-WA24-2X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA24-2X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

2.4-2.7 GHz Subscriber Antenna & Enclosure

MA-WA24-2XBRFC

MARS 2.4 GHz Antenna & Enclosure Solution comprises of:

- Waterproof 2.4-2.7 GHz Broadband Antenna
- Weatherproof Enclosure with provisions for Az/EI Mounting device
- Azimuth/Elevation Adjustable Mount MNT-2

This solution enables WISP/Integrator to design his own low cost, weatherized subscriber unit, saving high costs of special antenna-radio integration.



Specifications:

<i>Electrical</i>	
Frequency range	2.4-2.7 GHz
GAIN, min.	18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-2 Option)
3 dB Beam-Width, H-Plane, typ.	21°
3 dB Beam-Width, E-Plane, typ.	20°
Side Lobes, min.	-16 dB
Cross Polarization, min.	-26 dB
Front to Back Ratio, min.	-26 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (12" x12" x 1.2")
Weight	1.3 kg (with Enclosure)
Connector	Pig Tail with MCX, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm Radial
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1, TS2, TS3	

Specifications subject to change without notice

2.4 – 2.7 GHz Small Size Subscriber Antenna

MA-WA24-3X

MARS 2.4 GHz Antenna is a wide band antenna designed for Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- exceptionally efficient performance
- high gain/size ratio
- aesthetic design
- weatherized and durable



Specifications:

<i>Electrical</i>	
Frequency range	2.4 – 2.7 GHz
GAIN, min.	11 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	40°
3 dB Beam-Width, E-Plane, typ.	40°
Side Lobes, min.	-17 dB
Cross Polarization, min.	-21 dB
Front to Back Ratio, min.	-16 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	150 x 150 x 26 mm (5.9" x 5.9" x 1")
Weight	140 gr.
Connector	SMA, Female (At the Bottom of the Antenna) N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1	

Ordering Options:

MA-WA24-3X	Antenna with SMA Female Connector suited for MNT-4
MA-WA24-3XNTF	Antenna with N-Type, Female Connector Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

2.4-2.7 GHz Small Size Subscriber

MA-WA25-9

MARS 2.4 GHz Antenna is a wide band antenna designed for Wi-Fi, LAN, MMDS, WLL and WiMAX applications.

Additional Features:

- exceptionally efficient performance
- high gain/size ratio
- aesthetic design
- weatherized and durable
- compact size



Specifications:

<i>Electrical</i>	
Frequency range	2.4 - 2.7 GHz
GAIN, min.	9 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	55°
3 dB Beam-Width, E-Plane, typ.	50°
Side Lobes, min.	-15 dB
Cross Polarization, min.	-12 dB
Front to Back Ratio, min.	-15 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	100 x 100 x 30 mm (3.9"x3.9"x1.2")
Weight	110 gr.
Connector	SMA Right Angle, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-4W
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**3.3-3.8 GHz Subscriber Antenna for WiMAX Applications
MA-WA35-2X-D**

MARS High Gain Diamond shaped Antenna, covering from 3.3 GHz to 3.8 GHz, is specially designed for WiMAX applications.

Additional Features:

- diamond shape for very low side lobes level
- meets and exceeds ETSI TS2 standards
- ruggedized for harsh outdoor condition
- customized back plane and different connector configurations
- aesthetic and unobtrusive profile



Specifications:

<i>Electrical</i>	
Frequency range	3.3-3.8 GHz
GAIN, min.	18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical (Horizontal with MNT-2 Option)
3 dB Beam-Width, H-Plane, typ.	18°
3 dB Beam-Width, E-Plane, typ.	14°
Side Lobes, min.	-17 dB
Cross Polarization, min.	-17 dB
Front to Back Ratio, min.	-30 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (12"x 12"x 0.6")
Weight	840 gr.
Connector	N-Type, Female / Coaxial Cable RD 316 with MCX Connector (Length 8")
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1, TS2	

Ordering Options:

MA-WA35-2XD PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA35-2XD MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

3.5 GHz Subscriber Antenna

MA-WA35-1X

MARS 3.5 GHz Antenna suited for the licensed 3.5 GHz band is designed for WiMAX applications.

Additional Features:

- aesthetic and unobtrusive profile
- suitable for both indoor and outdoor applications
- can be customized with customer defined back plane and different connector configurations



Specifications:

<i>Electrical</i>	
Frequency range	3.4-3.7 GHz
GAIN, min.	18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	19°
3 dB Beam-Width, E-Plane, typ.	19°
Side Lobes, min.	-18 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-35 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	261 x 261 x 30 mm (10.3" x10.3" x1.2")
Weight	1 kg
Connector	N-Type, Female (Other Connector types available on request)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1, TS2, TS3	

Ordering Options:

MA-WA35-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA35-1X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

3.5 GHz Subscriber Antenna

MA-WA35-2X

MARS 3.5 GHz Antenna suited for the licensed 3.5 GHz band is specially designed for WiMAX applications.

Additional Features:

- aesthetic and unobtrusive profile
- suitable for both indoor and outdoor applications
- can be customized with customer defined back plane and different connector configurations



Specifications:

<i>Electrical</i>	
Frequency range	3.4-3.7 GHz
GAIN, min.	18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	20°
3 dB Beam-Width, E-Plane, typ.	20.5°
Side Lobes, min.	-18 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-40 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (12" x12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female/ SMA/MCX (Other Connector types available on request)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1, TS2	

Ordering Options:

MA-WA35-2X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA35-2X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

3.4-3.7 GHz Small Size Subscriber Antenna

MA-WA35-3X

MARS Small Size Antenna covering the licensed band of 3.5 GHz is designed for WiFi, WLL and WiMAX applications.

Additional Features:

- high gain/size ratio
- small and unobtrusive profile
- suitable for both indoor and outdoor applications



Specifications:

<i>Electrical</i>	
Frequency range	3.4 - 3.7 GHz
GAIN, min.	12 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	40°
3 dB Beam-Width, E-Plane, typ.	40°
Side Lobes, min.	-11 dB
Cross Polarization, min.	-16 dB
Front to Back Ratio, min.	-20 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	150 x 150 x 26 mm (5.9"x 5.9"x 1")
Weight	140 gr.
Connector	SMA, Female (At the Bottom of the Antenna)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT- 4
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1	

Specifications subject to change without notice

3.3-3.8 GHz Subscriber Antenna

MA-WA36-15

MARS 3.5 GHz Antenna suited for the licensed 3.5 GHz band is specially designed for WiMAX applications.

Additional Features:

- aesthetic and unobtrusive profile
- suitable for both indoor and outdoor applications
- can be customized with customer defined back plane and different connector configurations



Specifications:

<i>Electrical</i>	
Frequency range	3.3 – 3.8 GHz
GAIN, min.	15 dBi
VSWR, max.	1.5 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	30°
3 dB Beam-Width, E-Plane, typ.	24°
Cross Polarization, max	ETSI EN 302 085 v1.2.3 TS2 Range 1
Front to Back Ratio, max.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Side Lobes, min.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	230 x 215 x 30 mm (9.1"x8.4"x1.2")
Weight	0.5 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	Plastic UV Protected
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 v1.2.3 TS2 Range 1	

Specifications subject to change without notice

3.3-3.8 GHz Subscriber Antenna

MA-WA36-19

MARS 3.5 GHz Antenna suited for the licensed 3.5 GHz band is specially designed for WiMAX applications.

Additional Features:

- aesthetic and unobtrusive profile
- suitable for both indoor and outdoor applications
- can be customized with customer defined back plane and different connector configurations



Specifications:

<i>Electrical</i>	
Frequency range	3.3 – 3.8 GHz
GAIN, min.	3.3-3.7 @ 19 dBi 3.7-3.8 @ 18 dBi
VSWR, max.	1.5 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	16°
3 dB Beam-Width, E-Plane, typ.	16°
Cross Polarization, max	ETSI EN 302 085 v1.2.3 TS2 Range 1
Front to Back Ratio, max.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Side Lobes, min.	ETSI EN 302 085 v1.2.3 TS2 Range 1
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (12" x 12" x 0.6")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	Plastic UV Protected
Mount	MNT-22
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 v1.2.3 TS2 Range 1	

Specifications subject to change without notice

4.9 – 5.4 GHz Subscriber Antenna

MA-WA49-1X

MARS 4.9 - 5.4 GHz Antenna provides a cost effective solution for large scale WLL, UNII and Public Safety applications.

Additional Features:

- minimum gain of 21 dBi over the entire frequency range
- light weight and durable construction
- UV protected radome allowing for harsh weather installations
- DC grounded for lightning protection to meet local electrical building codes



Specifications:

<i>Electrical</i>	
Frequency range	4.9 – 5.4 GHz
GAIN, min.	21 dBi
VSWR, max.	1.9 : 1
Polarization	Linear, Horizontal or Vertical
3 dB Beam-Width, H-Plane, typ.	10.5°
3 dB Beam-Width, E-Plane, typ.	10.5°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-35 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (12"x 12"x 0.6")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-WA49-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA49-1X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

4.9 - 6.1 GHz Subscriber Antenna

MA-WA55-27

MARS Broadband Antenna designed to provide high gain coverage of the UNII frequency band.

Additional Features:

- efficient and stable performance
- aesthetic and unobtrusive
- thin UV protected radome allowing for harsh weather installations
- easy mounting allowing for Az/EI adjustment



Specifications:

<i>Electrical</i>	
Frequency range	4.9 - 6.1 GHz
GAIN,typ	26 dBi
VSWR, max.	4.9 - 5.875 @ 1.7 : 1 5.875 - 6.1 @ 2 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	7.5°
3 dB Beam-Width, E-Plane, typ.	7.5°
Side Lobes, min.	ETSI TS3, TS4, TS5
Cross Polarization, min.	ETSI TS3, TS4, TS5
Front to Back Ratio, min.	ETSI TS3, TS4, TS5
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	370 x 370 x 30 mm (14.6"x14.6"x1.2")
Weight	3 kg
Connector	N-Type Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4,EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11
Service Life	>10 years

Specifications subject to change without notice

5 GHz Broadband Subscriber Antenna

MA-WA58-1X

MARS 5 GHz Broadband High Gain Antenna covers the full 5 GHz spectrum- from lower to higher UNII band-including its unlicensed part.

Additional Features:

- exceptionally high gain of 23 dBi over the entire frequency band
- diamond shape provides for highest range of ETSI standards, up to TS5
- light weight and durable construction
- DC grounded for lightning protection to meet local electrical building codes
- antenna has a customized version with an optional enclosure for the customer's OEM radio/CPE



Specifications:

<i>Electrical</i>	
Frequency range	5.15-5.875 GHz
GAIN, min.	23 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	10.5°
3 dB Beam-Width, E-Plane, typ.	10.5°
Side Lobes, min.	-23 dB
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-40 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (12"x 12"x 0.6")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1, TS2, TS3, TS4, TS5	

Ordering Options:

MA-WA58-1X PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-WA58-1X MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)
MA-WA58-1X BRF	Antenna Suited for Enclosure

Specifications subject to change without notice

5 GHz Small Size Subscriber Antenna, High Gain MA-WA57-3HG

MARS Small Size High Gain Antenna covers the full 5 GHz spectrum band including its unlicensed part.

Additional Features:

- exceptionally high gain/size ratio
- small and unobtrusive profile
- suitable for both indoor and outdoor applications



Specifications:

<i>Electrical</i>	
Frequency range	4.9-5.875 GHz
GAIN, min.	5.15 - 5.875 @ 18 dBi 4.9 - 5.15 @ 16 dBi
VSWR, max.	5.15 - 5.875 @ 1.5 : 1 4.9 - 5.15 @ 1.8 : 1
Polarization	Linear, Vertical (Horizontal with MNT-2 Option)
3 dB Beam-Width, H-Plane, typ.	21°
3 dB Beam-Width, E-Plane, typ.	19°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-30 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	150 x 150 x 26 mm (5.9"x 5.9"x 1")
Weight	240 gr.
Connector	N-Type, Female/ SMA Female (See Ordering Options)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1, TS2	

Ordering Options:

MA-WA57-3HG	Antenna with N-Type, Female Connector Suited for MNT-2 (optional wall/pole adjustable mount)
MA-WA57-3HGS	Antenna with SMA Female Connector suited for MNT-2

Specifications subject to change without notice

**5 GHz Small Size Subscriber Antenna
MA-WA57-3X**

MARS Small Size Antenna covers the full 5 GHz spectrum including its unlicensed part.

Additional Features:

- exceptionally high gain/size ratio
- small and unobtrusive profile
- suitable for both indoor and outdoor applications



Specifications:

<i>Electrical</i>	
Frequency range	5.15-5.875 GHz
GAIN, min.	16 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	25°
3 dB Beam-Width, E-Plane, typ.	25°
Side Lobes, min.	-7dB
Cross Polarization, min.	-15dB
Front to Back Ratio, min.	-30dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	150 x 150 x 26 mm (5.9"x 5.9"x 1")
Weight	240 gr.
Connector	SMA, Female (At the Bottom of the Antenna)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-4
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

5 GHz Broadband Antenna & Enclosure

MA-WA58-1XBRFR

MARS 5GHz Antenna & Enclosure Solution comprises of:

- Waterproof 5 GHz Broadband Antenna
- Weatherproof Enclosure with provisions for Az/EI Mounting device
- Azimuth/Elevation Adjustable Mount MNT-2

This solution enables WISP/Integrator to design his own low cost, weatherized subscriber unit, saving high costs of special antenna-radio integration.



Specifications:

<i>Electrical</i>	
Frequency range	5.15-5.875 GHz
GAIN, min.	23 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	10.5°
3 dB Beam-Width, E-Plane, typ.	10.5°
Side Lobes, min.	-23 dB
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-40 dB
Input power, max	30 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	305 x 305 x 15 mm (Diamond Shape, 12" x12" x 0.6")
Weight	840 gr. (1.3 kg with Enclosure)
Connector	MMCX with RD316 Coaxial Cable/N-Type, Female/UFL (Other connector types available on request)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – TS1, TS2, TS3, TS4, TS5	

Specifications subject to change without notice

4.9-5.875 GHz Dual Polarized Antenna

MA-WA56-DP25N

MARS 5 GHz Dual Polarized Antenna designed to provide terminated coverage for the 5 GHz frequency band.

Additional Features:

- efficient and stable performance
- high gain/size ratio
- light weight and durable construction
- UV protected radome made of polycarbonate allowing for harsh weather installations
- easy mounting allowing for Az/EI adjustment



Specifications:

<i>Electrical</i>	
Frequency range	4.9 - 5.875 GHz
GAIN	V-Pol: 24.5 ± 1 dBi H-Pol: 23.5± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	7°- 9°
3 dB Beam-Width, E-Plane, typ.	7°- 9°
Side Lobes, min.	ETSI TS3, TS4, TS5
Cross Polarization, min.	- 16 dB
Front to Back Ratio, min.	ETSI TS3, TS4, TS5
Input power, max	5 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x14.5" x1.6")
Connector	2 x N-Type, Female
Weight	2.1 kg
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	MNT-22
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4,EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11
Service Life	>10 years

Specifications subject to change without notice

4.9-5.875 GHz Dual Polarized Antenna & Enclosure (26X26 cm)

MA-WA56-DP25NBRF

MARS 5 GHz Dual Polarized Antenna MARS 5GHz Antenna & Enclosure Solution comprises of:

- Waterproof 5 GHz Dual Polarized Antenna
- Weatherproof Enclosure (26X26 cm) with provisions for Az/El Mounting device
- Azimuth/Elevation Adjustable Mount MNT-22

This solution enables WISP/Integrator to design his own low cost, weatherized subscriber unit, saving high costs of special antenna-radio integration.



Specifications:

<i>Electrical</i>	
Frequency range	4.9 - 5.875 GHz
GAIN	V-Pol: 24.5 ± 1 dBi H-Pol: 23.5± 1 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical & Horizontal
3 dB Beam-Width, H-Plane, typ.	7°- 9°
3 dB Beam-Width, E-Plane, typ.	7°- 9°
Side Lobes, min.	ETSI TS3, TS4, TS5
Cross Polarization, min.	- 16 dB
Front to Back Ratio, min.	ETSI TS3, TS4, TS5
Input power, max	5 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	370 x 370 x 40 mm (14.5" x14.5" x1.6")
Enclosure Int. Dimensions	260x 260 x 45 mm (10.2"x10.2"x1.8")
Connector	2 x N-Type, Female
Weight	2.6 kg (with Enclosure)
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mounting	MNT-22
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4,EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11
Service Life	>10 years

Ordering Options:

MA-WA56-DP25SBRF	Antenna with SMA Female Connector and Enclosure suited for MNT-22
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Specifications subject to change without notice

4.9 - 5.875 GHz High Gain Subscriber Antenna

MA-WA55-30

MARS Broadband High Gain Antenna covers the full 5GHz spectrum- from lower to higher UNII band – including its unlicensed part.

Additional Features:

- exceptionally high gain of 30 dB over the 5.15-5.875 GHz frequency band
- UV protected radome allowing for harsh weather installations
- highest range of ETSI standards – TS3, TS4, TS5
- easy mounting allowing for Az/EI adjustment



Specifications:

<i>Electrical</i>	
Frequency range	4.9 - 5.875 GHz
GAIN. typ.	4.9-5.15 @ 29 dBi 5.15-5.875 @ 30 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical or Horizontal
3 dB Beam-Width, H-Plane, typ.	5°
3 dB Beam-Width, E-Plane, typ.	5°
Side Lobes, min.	ETSI TS3, TS4, TS5
Cross Polarization, min.	ETSI TS3, TS4, TS5
Front to Back Ratio, min.	ETSI TS3, TS4, TS5
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	600 x 600 x 30 mm (23.5"x 23.5"x1.2")
Weight	5 kg
Connector	N-Type Female
Back Plane	Aluminum ; protected through chemical passivation
Radome	UV Protected Plastic
Mount	O P V/82
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (Survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4,EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Base Station Antenna, 60°
MA-WC90-5X**

MARS 915 MHz Base Station Antenna provides a robust and efficient solution for the Point-to-Multipoint systems based on the ISM 915 MHz band.

Additional Features:

- 60° azimuthal coverage
- suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree with the optional MNT-25 mount



Specifications:

<i>Electrical</i>	
Frequency range	902 - 928 MHz
GAIN, min.	14.5 dBi
VSWR, max.	1.7 : 1
Polarization	Vertical
3 dB Beam-Width, Horizontal Plane, typ.	60°
3 dB Beam-Width, Elevation Plane, typ.	15°
Side Lobes, min.	-14 dB
Cross Polarization, min.	-23 dB
Front to Back Ratio, min.	-23 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x13" x 4.1")
Weight	4.5 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-25 (Optionally tilt mount)
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Horizontally Polarized Sector Antenna, 60°
MA-WC91-5H**

MARS 60° Horizontally Polarized Sector Antenna provides a robust and efficient solution for Point-to-Multi-Point applications using 915 MHz band, in spectrally crowded areas in this band.

Antenna Features:

- stable and reliable performance for high interference environments
- features horizontal polarization with 14 dBi of gain
- light-weight and durable construction
- suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree with the optional MNT-25 mount



Specifications:

<i>Electrical</i>	
Frequency range	902 – 928 MHz
GAIN, min.	14 dBi
VSWR, max.	1.7 : 1
Polarization	Horizontal
3 dB Beam-Width, Horizontal Plane, typ.	60°
3 dB Beam-Width, Elevation Plane, typ.	15°
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x13" x 4.1")
Weight	4 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-25
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 70°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Base Station Antenna, 90°
MA-WD90-6X**

MARS 915 MHz Base Station Antenna provides a robust and efficient solution for the Point-to-Multipoint systems based on the ISM 915 MHz band.

Additional Features:

- 90° azimuthal coverage
- suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree with the optional MNT-25 mount



Specifications:

<i>Electrical</i>	
Frequency range	902 - 928 MHz
GAIN, min.	13 dBi
VSWR, max.	1.7 : 1
Polarization	Vertical
3 dB Beam-Width, Horizontal Plane, typ.	90°
3 dB Beam-Width, Elevation Plane, typ.	15°
Side Lobes, min.	-11 dB
Cross Polarization, min.	-13 dB
Front to Back Ratio, min.	-23 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x13" x 4.1")
Weight	4.5 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-25
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Horizontally Polarized Sector Antenna, 90°
MA-WD91-6H**

MARS 90° Horizontally Polarized Sector Antenna provides a robust and efficient solution for Point-to-Multi-Point applications using 915 MHz band, in spectrally crowded areas in this band.

Antenna Features:

- stable and reliable performance for high interference environments
- features horizontal polarization with 12 dBi of gain
- light-weight and durable construction
- suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree with the optional MNT-25 mount



Specifications:

<i>Electrical</i>	
Frequency range	902 – 928 MHz
GAIN, min.	12 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, Horizontal Plane, typ.	90°
3 dB Beam-Width, Elevation Plane, typ.	15°
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x13" x 4.1")
Weight	4 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-25
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 70°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Base Station Antenna, 120°
MA-WE90-7X**

MARS 915 MHz Base Station Antenna provides a robust and efficient solution for the Point-to-Multipoint systems based on the ISM 915 MHz band.

Additional Features:

- 120° azimuthal coverage
- suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree with the optional MNT-25 mount



Specifications:

<i>Electrical</i>	
Frequency range	902 - 928 MHz
GAIN, min.	11.5 dBi
VSWR, max.	1.7 : 1
Polarization	Vertical
3 dB Beam-Width, Horizontal Plane, typ.	120°
3 dB Beam-Width, Elevation Plane, typ.	15°
Side Lobes, min.	-11 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-18 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x13" x 4.1")
Weight	4.5 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-25
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Horizontally Polarized Sector Antenna, 120°
MA-WE91-7H**

MARS 120° Horizontally Polarized Sector Antenna provides a robust and efficient solution for Point-to-Multi-Point applications using 915 MHz band, in spectrally crowded areas in this band.

Antenna Features:

- stable and reliable performance for high interference environments
- features horizontal polarization with 11 dBi of gain
- light-weight and durable construction
- suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree with the optional MNT-25 mount



Specifications:

<i>Electrical</i>	
Frequency range	902 – 928 MHz
GAIN, min.	11 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, Horizontal Plane, typ.	120°
3 dB Beam-Width, Elevation Plane, typ.	15°
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	1200 x 330 x 105 mm (47.2" x13" x 4.1")
Weight	4.5 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-25
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 70°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**1.85–2.05 GHz Sector Antenna, 60°
MA-WC19-5X**

MARS 60° Sector Antenna is light-weight yet has a robust and durable construction. UV protected radome makes the antenna suitable for harsh environment installations.



Typical Applications:

- Point-to-Multi-Point Systems
- WLL applications
- MMDS
- ISM applications

Specifications:

<i>Electrical</i>	
Frequency range	1.85-2.05 GHz
GAIN, min.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Vertical
3 dB Beam-Width, Horizontal Plane, typ.	60°
3 dB Beam-Width, Elevation Plane, typ.	10°
Side Lobes, min.	-11 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-20 dB
Input power, max	5 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	812 x 122 x 58 mm (32" x4.8" x 2.3")
Weight	1.2 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Base Station Antenna, Dual Polarized, 120°
MA-WE91-2D**

MARS 915 MHz Base Station Antenna features:

- high gain sectorial antenna with 120° coverage
- dual polarized (V & H)
- allows for polarization selection at the time of installation.
- UV protected radome and corrosion-resistant mount allow for outdoor installations in harsh weather conditions



Specifications:

<i>Electrical</i>	
Frequency range	902-928 MHz
GAIN, min.	11.5 dBi, Both Polarizations
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical and Horizontal (Simultaneous)
3 dB Beam-Width, Horizontal, typ.	120°
3 dB Beam-Width, Elevation, typ.	11°
Side Lobes, typ.	-12 dB
Cross Polarization, min.	-15 dB
Front to Back Ratio, min.	-15 dB
Input power, max	100 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	1207 x 327 x 217 mm (47.5" x12.9" x 8.5")
Weight	17 kg
Connector	2 x N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-25
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	10mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

902 – 928 MHz Omni-Directional Antenna

MA-WO91-8X

MARS ISM Omni - Directional Antenna is a ruggedized model suitable for outdoor installations on end of tower / spike poles. UV protected radome allowing for harsh environment installations. Antenna features stable and efficient performance with 8 dBi of gain.



Specifications:

<i>Electrical</i>	
Frequency range	902 – 928 GHz
GAIN, min.	8 dBi
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omnidirectional
3 dB Beam-Width, E-Plane, typ.	14°
Input power, max	10 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxDiameter)	1350 x 64 mm (53"x2.5")
Weight	900 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	2.5" Pole Mount Attachment
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

2.3-2.7 GHz Base Station Antenna, 60°

MA-WC24-14

MARS 60° Base Station Antenna with 14 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- quick and easy installation
- small, aesthetic and unobtrusive radome
- easily adapted to any RF connector
- easy mounting allows to obtain required downtilt degree

Applications:

- Point-to-Multi-Point Systems
- for WLL applications
- MMDS
- ISM applications



Specifications:

<i>Electrical</i>	
Frequency range	2.3 - 2.7 GHz
GAIN, min.	14 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	14°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-22 dB
Front to Back Ratio, min.	-22 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	380 x 150 x 80 mm (15"x 5.9"x 3.1"-including side wings)
Weight	0.5 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

2.3-2.7 GHz Base Station Antenna, 90°

MA-WD24-13

MARS 90° Base Station Antenna has a lightweight and durable construction.

Additional Features:

- Compact Size
- Quick and easy installation
- Adjustable Tilt (with optional mount MNT-1)

Applications:

- Point -to -Multi - Point Applications
- WLL Applications
- MMDS
- ISM Applications



Specifications:

<i>Electrical</i>	
Frequency range	2.3 - 2.7 GHz
GAIN, min.	13 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	15°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-22 dB
Front to Back Ratio, min.	-30 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	380 x 75 x 80 mm (15"x3"x3.1")
Weight	0.5 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

2.3-2.7 GHz Base Station Antenna, 120°

MA-WE24-11

MARS 120° Base Station Antenna has a lightweight and durable construction.

Additional Features:

- Compact Size
- Quick and easy installation
- Adjustable Tilt (with optional mount MNT-1)

Applications:

- Point -to -Multi - Point Applications
- WLL Applications
- MMDS
- ISM Applications



Specifications:

<i>Electrical</i>	
Frequency range	2.3 - 2.7 GHz
GAIN, typ.	11.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	15°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-22 dB
Front to Back Ratio, min.	-17 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	380 x 75 x 80 mm (15"x3"x3.1")
Weight	0.5 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

2.3-2.7 GHz Base Station Antenna, 60°

MA-WC24-17

MARS 60° Base Station Antenna with 17 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- quick and easy installation
- small, aesthetic and unobtrusive radome
- easily adapted to any RF connector
- easy mounting allows to obtain required downtilt degree

Applicable Applications:

- Point-to-Multi-Point Systems
- for WLL applications
- MMDS
- ISM applications



Specifications:

<i>Electrical</i>	
Frequency range	2.3 – 2.7 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	800 x 120 x 65 mm (31.5"x4.7"x2.6")
Weight	1.2 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 301 525 v1.1.1	

Specifications subject to change without notice

2.3-2.7 GHz Base Station Antenna, 90°

MA-WD24-15

MARS 90° Base Station Antenna with 15.5 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- quick and easy installation
- small, aesthetic and unobtrusive radome
- easily adapted to any RF connector
- easy mounting allows to obtain required downtilt degree

Applicable Applications:

- Point-to-Multi-Point Systems
- for WLL applications
- MMDS
- ISM applications



Specifications:

<i>Electrical</i>	
Frequency range	2.3 – 2.7 GHz
GAIN, typ.	15.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	800 x 120 x 65 mm (31.5"x4.7"x2.6")
Weight	1.2 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 301 525 v1.1.1	

Specifications subject to change without notice

2.3-2.7 GHz Base Station Antenna, 120°

MA-WE24-14

MARS 120° Base Station Antenna with 14.5 dBi of gain is light-weight yet has a robust and durable construction.

Antenna Features:

- quick and easy installation
- small, aesthetic and unobtrusive radome
- easily adapted to any RF connector
- easy mounting allows to obtain required downtilt degree

Applicable Applications:

- Point-to-Multi-Point Systems
- for WLL applications
- MMDS
- ISM applications



Specifications:

<i>Electrical</i>	
Frequency range	2.3 – 2.7 GHz
GAIN, typ.	14.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-24 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	800 x 120 x 65 mm (31.5"x4.7"x2.6")
Weight	1.2 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 301 525 v1.1.1	

Specifications subject to change without notice

**2.4-2.5 GHz Horizontally Polarized Sector Antenna, 60°
MA-WC24-6H**

MARS 60° Horizontally Polarized Sector Antenna provides a cost effective solution for WLL, MMDS and Point-to-Multi-Point applications, in spectrally crowded areas.

Antenna Features:

- high discrimination of V-pol signals
- it features horizontal polarization with 17 dBi of gain
- antenna is light-weight and has durable construction
- UV protected radome suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree



Specifications:

<i>Electrical</i>	
Frequency range	2.4 – 2.5 GHz
GAIN, min.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	-17 dB
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-27 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	810 x 120 x 60 mm (32" x 4.7" x 2.3")
Weight	1.1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 301 525 V1.1.1 – CS	

Specifications subject to change without notice

**2.4-2.5 GHz Horizontally Polarized Sector Antenna, 90°
MA-WD24-6H**

MARS 90° Horizontally Polarized Sector Antenna provides a cost effective solution for WLL, MMDS and Point-to-Multi-Point applications, in spectrally crowded areas in this band.

Antenna Features:

- high discrimination of V-pol signals
- it features horizontal polarization with min. 15 dBi of gain
- antenna is light-weight and has durable construction
- UV protected radome suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree



Specifications:

<i>Electrical</i>	
Frequency range	2.4 – 2.5 GHz
GAIN, min.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, Horizontal Plane, typ.	90°
3 dB Beam-Width, Elevation Plane, typ.	8°
Side Lobes, min.	-17 dB
Cross Polarization, min.	-22 dB
Front to Back Ratio, min.	-22 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	810 x 120 x 60 mm (32" x4.7" x 2.3")
Weight	1.1 kg
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**2.4 GHz Omni-Directional Base Station Antenna
MA-WO24-8X**

MARS 2.4 GHz Base Station Antenna provides a cost effective solution for large scale WLL, WLAN, ISM and Point-to-Multi Point applications. UV protected radome allowing for harsh environment installations. Antenna features stable and efficient performance with 7.5 dBi of gain.



Specifications:

<i>Electrical</i>	
Frequency range	2.4-2.5 GHz
GAIN, min.	7.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	18°
Input power, max	50 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	510 x 32 mm (25" x 1.3")
Weight	225 gr.
Connector	N-Type, Female
Radome	UV Protected Plastic
Mount	1.5" – 2.5" Pole Mount (End) Attachment
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**2.3 -2.7 GHz Omni – Directional Base Station Antenna
MA-WO25-9**

MARS 2.4 GHz Base Station Antenna provides a cost effective solution for large scale WLL, WLAN, ISM and Point-to-Multi Point applications. UV protected radome allowing for harsh environment installations. Antenna features stable and efficient performance with 9 dBi of gain.



Specifications:

<i>Electrical</i>	
Frequency range	2.3 - 2.7 GHz
GAIN, typ.	9 dBi
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	10°
Input power, max	50 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxDia.)	640 x 76mm (25" x 3")
Weight	350 gr.
Connector	N-Type, Female
Radome	UV Protected Plastic
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**3.3-3.8 GHz Sector Antenna for WiMAX Applications, 60°
MA-WC36-17**

MARS 60° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- specially designed for WiMAX applications
- quick and easy installation
- easy mounting allows to obtain required downtilt
- suitable for harsh environment installations
- DC grounded

Applications:

- WiMAX – licensed band applications
- Point-to-Multi Point Applications
- WLL applications



Specifications:

<i>Electrical</i>	
Frequency range	3.3-3.8 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	554 x 76 x 53 mm (21.8" x3" x 2.1")
Weight	1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-1
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**3.3-3.8 GHz Sector Antenna for WiMAX Applications, 90°
MA-WD36-16**

MARS 90° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- specially designed for WiMAX applications
- quick and easy installation
- easy mounting allows to obtain required downtilt
- suitable for harsh environment installations
- DC grounded

Applications:

- WiMAX – licensed band applications
- Point-to-Multi Point Applications
- WLL applications



Specifications:

<i>Electrical</i>	
Frequency range	3.3-3.8 GHz
GAIN, typ.	16 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	554 x 76 x 53 mm (21.8" x3" x 2.1")
Weight	1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-1
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**3.3-3.8 GHz Sector Antenna for WiMAX Applications,120°
MA-WE36-15**

MARS 120° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- specially designed for WiMAX applications
- quick and easy installation
- easy mounting allows to obtain required downtilt
- suitable for harsh environment installations
- DC grounded

Applications:

- WiMAX – licensed band applications
- Point-to-Multi Point Applications
- WLL applications



Specifications:

<i>Electrical</i>	
Frequency range	3.3-3.8 GHz
GAIN, typ.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3-CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3-CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3-CS1
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	554 x 76 x 53 mm (21.8" x3" x 2.1")
Weight	1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-1
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**3.5 GHz Sector Antenna for WiMAX Applications, 60°
MA-WC36-5X1**

MARS 60° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- specially designed for WiMAX applications
- quick and easy installation
- easy mounting allows to obtain required downtilt
- suitable for harsh environment installations
- DC grounded

Applications:

- WiMAX – licensed band applications
- Point-to-Multi Point Applications
- WLL applications



Specifications:

<i>Electrical</i>	
Frequency range	3.3-3.9 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-25 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	805 x 115 x 49 mm (31.7" x 4.5" x 1.9")
Weight	1.2 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

3.5 GHz Sector Antenna for WiMAX Applications, 90° MA-WD36-6X

MARS 90° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- specially designed for WiMAX applications
- quick and easy installation
- easy mounting allows to obtain required downtilt
- suitable for harsh environment installations
- DC grounded

Applications:

- WiMAX – licensed band applications
- Point-to-Multi Point Applications
- WLL applications



Specifications:

<i>Electrical</i>	
Frequency range	3.3-3.9 GHz
GAIN, typ.	16 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-25 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	805 x 115 x 67 mm (31.7" x4.5" x 2.5")
Weight	1.1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**3.5 GHz Sector Antenna for WiMAX Applications, 90°
MA-WD36-6X3**

MARS 90° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- specially designed for WiMAX applications
- ETSI - CS3 compliant
- quick and easy installation
- easy mounting allows to obtain required downtilt
- suitable for harsh environment installations
- DC grounded

Applications:

- WiMAX – licensed band applications
- Point-to-Multi Point Applications
- WLL applications



Specifications:

Electrical	
Frequency range	3.3-3.9 GHz
GAIN, ,min.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1-CS3
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1-CS3
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1-CS3
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
Mechanical	
Dimensions (HxWxD)	811 x 225 x 67 mm (31.9" x8.9" x 2.5")
Weight	2.3 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-25
Environmental	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
Standard Compliance	
ETSI EN 302 085 V1.2.3 – CS1, CS2, CS3	

Specifications subject to change without notice

**3.4 – 3.6 GHz Horizontally Polarized Sector Antenna, 90°
MA-WD35-14H**

MARS Horizontally Polarized Sector Antenna provides a cost effective solution for WLL, WiMAX and Point-to-Multi-Point applications, in spectrally crowded areas in this band.

Antenna Features:

- efficient and reliable performance
- it features horizontal polarization with 14 dBi of gain
- antenna is light-weight and has durable construction
- UV protected radome suitable for harsh environment installations
- DC grounded
- easy mounting allows to obtain required downtilt degree



Specifications:

<i>Electrical</i>	
Frequency range	3.4 – 3.6 GHz
GAIN, min.	14 dBi
VSWR, max.	1.5 : 1
Polarization	Horizontal
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	9°
Side Lobes, min.	-14 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-18 dB
Input power, max	5 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	554 x 76 x 55 mm (21.8"×3"×2.2")
Weight	620 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-1
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**3.5 GHz Sector Antenna for WiMAX Applications, 120°
MA-WE36-7X**

MARS 120° Base Station Antenna is light-weight yet has a robust and durable construction.

Additional Features:

- specially designed for WiMAX applications
- quick and easy installation
- easy mounting allows to obtain required downtilt
- suitable for harsh environment installations
- DC grounded

Applications:

- WiMAX – licensed band applications
- Point-to-Multi Point Applications
- WLL applications



Specifications:

<i>Electrical</i>	
Frequency range	3.3-3.9 GHz
GAIN, typ.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-17 dB
Front to Back Ratio, min.	-22 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	805 x 115 x 67 mm (31.7" x4.5" x 2.5")
Weight	1.1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-5
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**3.5 GHz Omni-Directional Base Station Antenna
MA-WO35-1X**

MARS 3.5 GHz Base Station Antenna provides a cost effective solution for large scale WLL, WLAN, ISM, WiMAX, Point-to-Multi Point Systems and MESH Networks licensed applications. UV protected radome allowing for harsh environment installations. Antenna features stable performance with 8 dBi of gain.



Specifications:

<i>Electrical</i>	
Frequency range	3.4-3.6 GHz
GAIN, min.	8 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	11°
Input power, max	50 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	510 x 32 mm (25" x 1.3")
Weight	225 gr.
Connector	N-Type, Female
Radome	UV Protected Plastic
Mount	1.5" – 2.5" Pole Mount (End) Attachment (included)
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**3.4 3.8 GHz Omni Directional Base Station Antenna
MA-WO36-10**

MARS 3.5 GHz Base Station Antenna provides a cost effective solution for large scale WLL, WLAN, ISM, WiMAX, Point-to-Multi Point Systems and MESH Networks licensed applications. UV protected radome allowing for harsh environment installations. Antenna features stable performance with 9.5 dBi of gain.



Specifications:

<i>Electrical</i>	
Frequency range	3.4- 3.8 GHz
GAIN, typ.	9.5 dBi
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	10°
Input power, max	50 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxDia.)	470 x 66 mm (18.5" x 2. 5")
Weight	350 gr.
Connector	N-Type, Female
Radome	UV Protected , Plastic
Mount	2.5" PM (End) Attachment
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**Public Safety Band Sector Antenna, 60°
MA-WC49-5X**

MARS 60°Sector Antenna provides an effective solution for Sectorized Public Safety Band Applications.

Additional Features:

- stable performance with 17 dBi gain
- small size allowing for easy blending with any environment
- pole mount allowing for quick and easy installation and tilting adjustment
- UV protected radome
- suitable for harsh environment installations



Specifications:

<i>Electrical</i>	
Frequency range	4.94 – 4.99 GHz
GAIN, min.	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-25 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	500 x 80 x 80 mm (19.7" x3.1" x 3.1")
Weight	1.1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-1
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**Public Safety Band Sector Antenna, 90°
MA-WD49-6X**

MARS 90° Sector Antenna provides an effective solution for Sectorized Public Safety Band Applications.

Additional Features:

- stable performance with 16 dBi gain
- small size allowing for easy blending with any environment
- tilt mount allows for quick and easy installation
- UV protected radome
- suitable for harsh environment installations



Specifications:

<i>Electrical</i>	
Frequency range	4.94 – 4.99 GHz
GAIN, min.	16 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-25 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	500 x 80 x 80 mm (19.7" x3.1" x 3.1")
Weight	1.1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-1
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**Public Safety Band Sector Antenna, 120°
MA-WE49-7X**

MARS 120°Sector Antenna provides an effective solution for Sectorized Public Safety Band Applications.

Additional Features:

- stable performance with 15 dBi of gain
- small size allowing for easy blending with any environment
- tilt mount allows for quick and easy installation
- suitable for harsh environment installations



Specifications:

<i>Electrical</i>	
Frequency range	4.94 – 4.99 GHz
GAIN, typ.	15 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-12 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-25 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	500 x 80 x 80 mm (19.7" x3.1" x 3.1")
Weight	1.1 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-1
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**5 GHz Base Station Antenna, 60°
MA-WC55-17**

MARS 60° Broadband Sector Antenna provides a cost effective solution for large scale of WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to- Multi-Point applications.

Additional Features:

- efficient and stable performance with 17 dBi of gain
- small size allowing for easy blending with any environment
- tilt mount allowing for quick and easy installation
- UV protected radome suitable for harsh environment installations



Specifications:

<i>Electrical</i>	
Frequency range	4.9 – 6.1 GHz
GAIN, typ.	17 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	573 x 95 x 53 mm (22.6"x3.7"x2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-22
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**5 GHz Base Station Antenna, 90°
MA-WD55-16**

MARS 90° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, Public Safety, Municipal MESH Networks and Point-to-Multi-Point applications.

Additional Features:

- stable performance with 16 dBi of gain
- small size allowing for easy blending with any environment
- tilt mount allowing for quick and easy installation
- UV protected radome suitable for harsh environment installations



Specifications:

<i>Electrical</i>	
Frequency range	4.9 – 6.1 GHz
GAIN, typ.	16 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	573 x 95 x 53 mm (22.6"x3.7"x2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected, Plastic
Mount	MNT-22
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**5 GHz Base Station Antenna, 120°
MA-WE55-15**

MARS 120° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, and Point-to-Multi-Point applications.

Additional Features:

- stable performance with 15 dBi of gain
- small size allowing for easy blending with any environment
- pole mount allowing for quick and easy installation and tilting adjustment
- UV protected radome suitable for harsh environment installations



Specifications:

<i>Electrical</i>	
Frequency range	4.9 – 6.1 GHz
GAIN, typ.	15 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	120°
3 dB Beam-Width, E-Plane, typ.	8°
Side Lobes, min.	ETSI EN 302 085 V1.2.3 – CS1
Cross Polarization, min.	ETSI EN 302 085 V1.2.3 – CS1
Front to Back Ratio, min.	ETSI EN 302 085 V1.2.3 – CS1
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	573 x 95 x 53 mm (22.6"x3.7"x2.1")
Weight	700 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-22
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

**4.9 GHz Omni – Directional Public Safety Band Antenna
MA-WO49-7X**

Broadband 4.9 GHz Omnidirectional Antenna provides a cost effective solution for Public Safety Applications. UV protected radome allowing for harsh environment installations. Antenna features stable performance with 7.5 dBi of gain.



Specifications:

<i>Electrical</i>	
Frequency range	4.94 – 4.99 GHz
GAIN, min.	7.5 dBi
VSWR, max.	1.7: 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	12°
Input power, max	50 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	420 x 32 mm (16.5” x 1.3”)
Weight	225 gr.
Connector	N-Type, Female
Radome	UV Protected Plastic
Mount	2.5” Pole Mount Attachment (included)
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

4.9 -5.875 GHz Omni – Directional Base Station Antenna

MA-WO55-10

MARS 5.8 GHz Base Station Antenna provides a cost effective solution for large scale WLL, WLAN, ISM and Point-to-Multi Point applications. UV protected radome allowing for harsh environment installations. Antenna features stable performance with exceptional 10 dBi of gain.

Applications:

- MESH Networks
- Point-to-Point Applications



Specifications:

<i>Electrical</i>	
Frequency range	4.9-5.875 GHz
GAIN, typ.	10 dBi
VSWR, max.	4.9-5.15 GHz @2: 1 5.15-5.875 GHz @1.8:1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni - Directional
3 dB Beam-Width, E-Plane, typ.	10°
Input power, max	50 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxDia.)	330 x 46 mm (16.5" x 1.3")
Weight	230 gr.
Connector	N-Type, Female
Radome	UV Protected Plastic
Mount	2.5" PM (End) Attachment
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**5 GHz Horizontally Polarized Sector Antenna, 60°
MA-WC50-5H**

MARS 60° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, and Point-to-Multi-Point applications in spectrally crowded areas in this band.

Antenna Features:

- stable and reliable performance
- features horizontal polarization with min. 17 dBi of gain
- antenna is light-weight and has a durable construction
- suitable for harsh environment installations
- DC grounded
- easy and quick installation with corrosion-resistant mount



Specifications:

<i>Electrical</i>	
Frequency range	5.15 - 5.875 GHz
GAIN	17 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, H-Plane, typ.	60°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-18 dB
Front to Back Ratio, min.	-20 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	520 x 120 x 55 mm (20.5"x4.7"x2.2")
Weight	1.2 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Lightning Protection	DC Grounded
Radome	UV Protected Plastic
Mount	MNT-1
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

**5 GHz Horizontally Polarized Sector Antenna, 90°
MA-WD50-6H**

MARS 90° Broadband Sector Antenna provides a cost effective solution for large scale WLL, WLAN, H-LAN, ISM, UNII, and Point-to-Multi-Point applications in spectrally crowded areas in this band.

Antenna Features:

- stable and reliable performance
- features horizontal polarization with min. 15.5 dBi of gain
- antenna is light-weight and has a durable construction
- suitable for harsh environment installations
- DC grounded
- easy and quick installation with corrosion-resistant mount



Specifications:

<i>Electrical</i>	
Frequency range	5.15 – 5.875 GHz
GAIN, typ.	15.5 dBi
VSWR, max.	1.7 : 1
Polarization	Linear, Horizontal
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	6°
Side Lobes, min.	-13 dB
Cross Polarization, min.	-20 dB
Front to Back Ratio, min.	-23 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	500 x 170 x 116 mm (19.7" x 6.7" x 4.6")
Weight	1.8 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS1	

Specifications subject to change without notice

5.8 GHz Sector Antenna, 60° (meets UK Interference Requirements (IR) 2007)
MA-WC58-5EL

MARS 60° Sector Antenna provides a cost effective solution for WLL, ISM and Point-to-Multi-Point applications.

Additional Features:

- efficient and stable performance with 16 dBi of gain
- small size allowing for easy blending with any environment
- pole mount allowing for quick and easy installation and tilting adjustment
- UV protected radome suitable for harsh environment installations



***UK Product Only**

Specifications:

<i>Electrical</i>																
Frequency range	5.725-5.875 GHz															
GAIN, min.	16 dBi															
VSWR, max.	1.7 : 1															
Polarization	Linear, Vertical															
3 dB Beam-Width, H-Plane, typ.	60°															
3 dB Beam-Width, E-Plane, typ.	7.5°; Elevation Mask at Horizon per "UK Interference Requirements 2007", as Follows:															
	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Co-Polar</th> <th>Angle</th> <th>Relative Gain</th> </tr> </thead> <tbody> <tr> <td>P0</td> <td>0°</td> <td>0 dB</td> </tr> <tr> <td>P1</td> <td>4°</td> <td>0 dB</td> </tr> <tr> <td>P2</td> <td>28°</td> <td>-28.8 dB</td> </tr> <tr> <td>P3</td> <td>180°</td> <td>-28.8 dB</td> </tr> </tbody> </table>	Co-Polar	Angle	Relative Gain	P0	0°	0 dB	P1	4°	0 dB	P2	28°	-28.8 dB	P3	180°	-28.8 dB
Co-Polar	Angle	Relative Gain														
P0	0°	0 dB														
P1	4°	0 dB														
P2	28°	-28.8 dB														
P3	180°	-28.8 dB														
Cross Polarization, min.	-14 dB															
Front to Back Ratio, min.	-28.8 dB															
Input power, max	5 Watt															
Input Impedance	50 Ohm															
Lightning Protection	DC Grounded															
<i>Mechanical</i>																
Dimensions (HxWxD)	554 x 76 x 53 mm (21.8" x 3" x 2.1")															
Weight	740 gr.															
Connector	N-Type, Female															
Back Plane	Aluminum; protected through chemical passivation															
Radome	UV Protected Plastic															
Mount	MNT-1															
<i>Environmental</i>																
Operating Temperature Range	- 40°C to + 65°C															
Vibration	According to IEC 60721-3-4															
Wind Load	200 km/h (survival)															
Flammability	UL94															
Water Proofing	IP-65															
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)															
Salt Fog	According to IEC 68-2-11															
Ice and Snow	25mm radial (survival)															
Service Life	>10 years															
<i>Standard Compliance</i>																
ETSI EN 302 085 V1.2.3 – CS1																
UK Radio Interface Requirement 2007 (Ver. 1.00)																
Specifications subject to change without notice																

5.8 GHz Sector Antenna, 120° (meets UK Interference Requirements (IR) 2007)
MA-WE58-7EL

MARS 120° Sector Antenna provides a cost effective solution for WLL, ISM and Point to Multi Point applications.

Additional Features:

- stable performance with 16 dBi of gain
- small size allowing for easy blending with any environment
- pole mount allowing for quick and easy installation and tilting adjustment
- UV protected radome suitable for harsh environment installations



***UK Product Only**

Specifications:

<i>Electrical</i>																
Frequency range	5.725-5.875 GHz															
GAIN, min.	14 dBi															
VSWR, max.	1.7 : 1															
Polarization	Linear, Vertical															
3 dB Beam-Width, H-Plane, typ.	120°															
3 dB Beam-Width, E-Plane, typ.	7.5°; Elevation Mask at Horizon per "UK Interference Requirements 2007", as Follows:															
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Co-Polar	Angle	Relative Gain														
P0	0°	0 dB														
P1	4°	0 dB														
P2	28°	-28.8 dB														
P3	180°	-28.8 dB														
Cross Polarization, min.	-16 dB															
Front to Back Ratio, min.	-28.8 dB															
Input power, max	5 Watt															
Input Impedance	50 Ohm															
Lightning Protection	DC Grounded															
<i>Mechanical</i>																
Dimensions (HxWxD)	554 x 76 x 53 mm (21.8" x 3" x 2.1")															
Weight	740 gr.															
Connector	N-Type, Female															
Back Plane	Aluminum protected through chemical passivation															
Radome	UV Protected Plastic															
Mount	MNT-1															
<i>Environmental</i>																
Operating Temperature Range	- 40°C to + 65°C															
Vibration	According to IEC 60721-3-4															
Wind Load	200 km/h (survival)															
Flammability	UL94															
Water Proofing	IP-65															
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)															
Salt Fog	According to IEC 68-2-11															
Ice and Snow	25mm radial (survival)															
Service Life	>10 years															
<i>Standard Compliance</i>																
ETSI EN 302 085 V1.2.3 – CS1																
UK Radio Interface Requirement 2007 (Ver. 1.00)																

Specifications subject to change without notice

10.5 GHz Sector Antenna

MA-WG10-6H

MARS 10.5 GHz Sector Antenna provides a cost effective solution for large scale WLL / BWA, Point-to- Point applications.

Antenna Features:

- stable and reliable performance
- features horizontal polarization with 15 dBi of gain
- antenna is light-weight and yet has a durable construction
- suitable for harsh environment installations
- easy and quick installation with corrosion-resistant az/el adjustable mount



Specifications:

<i>Electrical</i>	
Frequency range	10.15 – 10.65 GHz
GAIN, min.	15 dBi
Gain Variation Across Main Beam (Ripple), max.	3 dB
VSWR, max.	1.6 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	84°
3 dB Beam-Width, E-Plane, typ.	5°
Front to Back Ratio, min.	-12 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	339 x 195 x 40 mm (13.3" x7.7" x 1.6")
Weight	0.9 kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Plastic
Mount	MNT-2
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years
<i>Standard Compliance</i>	
ETSI EN 302 085 V1.2.3 – CS3	

Specifications subject to change without notice

380 MHz – 6 GHz Multi Band Omni Antenna

MA-CQ26-1X

MARS Multi Band Omni Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as ISM, WLAN, UNII, Bluetooth, Wi-Fi, WMTS and IMT-MC450.

The antenna is aesthetic and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for In-Building Installations.



Specifications:

Electrical

Standard	IMT-MC450	WMTS		SMR, AMPS, CDMA, TDMA, GSM 900	PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN	WLL	UNII, WLL, H-LAN, Wi-Fi
	50	608-614 MHz	1395-1432 MHz	806 – 960 MHz	1.71 – 2.17 GHz	2.4 – 2.7 GHz	3.4 – 3.7 GHz	4.9 – 6 GHz
Frequency range	380 – 460 MHz	608-614 MHz	1395-1432 MHz	806 – 960 MHz	1.71 – 2.17 GHz	2.4 – 2.7 GHz	3.4 – 3.7 GHz	4.9 – 6 GHz
GAIN, typ.	1 (2*)		5	4	6	6	6	6
VSWR, max.	3 : 1 (2.5 : 1*)		1.9 : 1	2 : 1	1.9 : 1	1.9 : 1	1.9 : 1	1.9 : 1
Polarization	Linear, Vertical							
Input power, max	50 Watt							
Input Impedance	50 Ohm							
Lightning Protection	DC Grounded							

Mechanical

Dimensions(HxWxD)	Base Diameter – 275 mm, Height – 200 mm
Weight	250 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Ceiling Mounting

Environmental

Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Patent Pending

*Specifications for Ground Plate of 40 cm and up, or above a metal surface, with a spacing of 35-45 mm.

Ordering Options:

MA-CQ26-1X	Antenna Indoor
MA-CQ26-1XR	Antenna Outdoor
MA-CQ26-1XT	Antenna Indoor with DC Return Option

Specifications subject to change without notice

380 MHz – 6 GHz Multi Band Omni Antenna

MA-CQ27-1X

MARS Multi Band Omni Antenna covers continuously all the bands from 380 to 960 MHz and for 2G, 2.5G and 3G cellular, as well as ISM, WLAN, UNII, Bluetooth, Wi-Fi, WMTS and IMT-MC450.

The antenna is aesthetic and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for fast deployments and “In-Building” installations.



Specifications:

Electrical

Standard	TETRA, IMT-MC450, WMTS, DVB-T	SMR, AMPS, CDMA, TDMA, GSM 900	WMTS, PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN	WLL, Broad- band access Licensed Band	Homeland Security, UNII, WLL, H-LAN, Wi-Fi
Frequency range	380 – 806 MHz	806 – 960 MHz	1.395 -1.432 1.71 – 2.17 GHz	2.3 – 2.5 GHz	3.3 – 3.7 GHz	4.9 – 6 GHz
GAIN, typ. VSWR, max.	1 (2*) 3 : 1 (2.5 : 1*)	4 2 : 1	5 1.9 : 1	6 1.9 : 1	6 1.9 : 1	6 1.9 : 1
Polarization	Linear, Vertical					
Input power, max	50 Watt					
Input Impedance	50 Ohm					
Lightning Protection	DC Grounded					

Mechanical

Dimensions(HxWxD)	Base Diameter – 275 mm, Height – 200 mm
Weight	250 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Ceiling Mounting

Environmental

Operating Temperature Range	- 20°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Patent Pending

*Specifications for Ground Plate of 40 cm and up, or above a metal surface, with a spacing of 35-45 mm.

Ordering Options:

MA-CQ27-1X	Antenna Indoor
MA-CQ27-1XR	Antenna Outdoor
MA-CQ27-1XT	Antenna Indoor with DC Return Option

Specifications subject to change without notice

Multi Band Omni Antenna

MA-CM36-15

MARS Multi Band Omni Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as ISM, WLAN and Bluetooth. The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for In-Building Installations.



Specifications:

<i>Electrical</i>	
Standard	SMR, AMPS, CDMA, TDMA, GSM 900
Frequency range	806 – 960 MHz
GAIN, typ.	2 dBi
VSWR, max.	2 : 1
Polarization	Linear, Vertical
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
	PCS, DECT, GSM 1900, UMTS
	1.71 – 2.17 GHz
	3-4 dBi
	1.5 : 1
	Bluetooth, ISM, WLAN
	2.4 – 2.7 GHz
	5 dBi
	1.8 : 1
<i>Mechanical</i>	
Dimensions (HxWxD)	Base Diameter – 205 mm, Height – 89 mm
Weight	220 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	Ceiling Mounting
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Patent Pending

MA-CM36-15	Antenna Indoor
MA-CM36-15R	Antenna Outdoor
MA-CM36-15T	Antenna Indoor with DC Return Option

Specifications subject to change without notice

Multi Band Omni Antenna

MA-CR26-2X

MARS Multi Band Omni Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as ISM, WLAN, UNII, Bluetooth and Wi-Fi.

The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.

The antenna is easy-installed and is highly recommended as an outstanding logistic solution for In-Building Installations.



Specifications:

<i>Electrical</i>					
Standard	SMR, AMPS, CDMA, TDMA, GSM 900	PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN	WLL	UNII, WLL, H-LAN, Wi-Fi
Frequency range	806 – 960 MHz	1.71 – 2.17 GHz	2.4 – 2.7 GHz	3.4 – 3.7 GHz	4.9 – 6 GHz
GAIN, typ.	2	3-4	5	5	5-6
VSWR, max.	2 : 1	1.6 : 1	1.6 : 1	2 : 1	1.8 : 1
Polarization	Linear, Vertical				
Input power, max	50 Watt				
Input Impedance	50 Ohm				
Lightning Protection	DC Grounded				
<i>Mechanical</i>					
Dimensions (HxWxD)	Base Diameter – 205 mm, Height – 89 mm				
Weight	220 gr.				
Connector	N-Type, Female				
Back Plane	Aluminum; protected through chemical passivation				
Radome	UV Protected Plastic				
Mount	Ceiling Mounting				
<i>Environmental</i>					
Operating Temperature Range	- 40°C to + 65°C				
Vibration	According to IEC 60721-3-4				
Flammability	UL94				
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)				
Service Life	>10 years				

Patent Pending

Ordering Options:

MA-CR26-2X	Antenna Indoor
MA-CR26-2XR	Antenna Outdoor
MA-CR26-2XT	Antenna Indoor with DC Return Option

Specifications subject to change without notice

Multi Band Panel Antenna

MA-CL67-14

Up-To-Date Multi Band Panel Antenna covers all the bands for 2G, 2.5G and 3G cellular, as well as ISM, WLAN and Bluetooth. The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment. The antenna can be easily used either for Indoor or Outdoor Applications and features different mounting options. Antenna is designed to include DC Return Option which is available on request.



Specifications:

<i>Electrical</i>			
Standard	SMR, AMPS, CDMA, TDMA, GSM 900	PCS, DECT, GSM 1900, UMTS	Bluetooth, ISM, WLAN
Frequency range	806 – 960 MHz	1.71 – 2.17 GHz	2.4 – 2.7 GHz
GAIN, typ.	8.5 dBi	7.5-10 dBi	5-6.5 dBi
VSWR, max.	2 : 1	1.7 : 1	1.7 : 1
3 dB Beam-Width, H-Plane, typ.	75°	60°	50°
3 dB Beam-Width, E-Plane, typ.	65°	45°	25°
Polarization	Linear, Vertical		
Input power, max	50 Watt		
Input Impedance	50 Ohm		
Lightning Protection	DC Grounded		
<i>Mechanical</i>			
Dimensions (HxWxD)	230 x 214 x 31 mm (9.1"×8.4"×1.2")		
Weight	500 gr.		
Connector	N-Type, Female		
Back Plane	Aluminum; protected through chemical passivation		
Radome	UV Protected Polycarbonate		
Mount	See Ordering Options		
<i>Environmental</i>			
Operating Temperature Range	- 40°C to + 65°C		
Vibration	According to IEC 60721-3-4		
Wind Load	200 km/h (survival)		
Flammability	UL94		
Water Proofing	IP-65		
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)		
Salt Fog	According to IEC 68-2-11		
Ice and Snow	25mm radial (survival)		
Service Life	>10 years		

Ordering Options:

Mount \ Application	Wall Mountable	Pole Mount	Az/El Adjustable Mount MNT-2
Indoor Without DC Return	MA-CL67-14	MA-CL67-14 PM	MA-CL67-14 MNT
Outdoor Without DC Return	MA-CL67-14R	MA-CL67-14R PM	MA-CL67-14R MNT
Indoor With DC Return	MA-CL67-14T	MA-CL67-14T PM	MA-CL67-14T MNT
Outdoor With DC Return	MA-CL67-14RT	MA-CL67-14RT PM	MA-CL67-14RT MNT

Specifications subject to change without notice

Multi Band 140° Antenna

MA-CN14-11

MARS Multi Band 140° Antenna covers all the bands for 2G, 2.5G and 3G cellular. The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.



Specifications:

<i>Electrical</i>		
Standard	SMR, AMPS, CDMA, TDMA, GSM 900 806 – 960 MHz	PCS, DECT, GSM 1900, UMTS 1.71 – 2.17 GHz
Frequency range		
GAIN, typ.		5 dBi
VSWR, max.		2 : 1
3 dB Beam-Width, H-Plane, typ.	130°	140 - 150°
3 dB Beam-Width, E-Plane, typ.	65°	45°
Polarization	Linear, Vertical	
Input power, max	50 Watt	
Input Impedance	50 Ohm	
Lightning Protection	DC Grounded	
<i>Mechanical</i>		
Dimensions – Base Plate (HxW)	185 x 105 mm (7.3"×4.1")	
Dimensions – Radome (HxWxD)	175 x 35 x 125 mm (6.9"×1.4"×4.9")	
Weight	260 gr.	
Connector	Pig Tail with N-Type, Female	
Back Plane	Aluminum; protected through chemical passivation	
Radome	UV Protected Plastic	
<i>Environmental</i>		
Operating Temperature Range	- 40°C to + 65°C	
Vibration	According to IEC 60721-3-4	
Flammability	UL94	
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)	
Service Life	>10 years	

Specifications subject to change without notice

GSM Dual Band Antenna

MA-CJ80-14

MARS GSM Dual Band Antenna is a GSM Picocell antenna designed for in building coverage. The antenna is aesthetic, small and has unobtrusive profile that blends easily with any environment.



Specifications:

<i>Electrical</i>		
Standard	GSM 900	GSM 1900
Frequency range	806 – 960 MHz	1.71 – 2.17 GHz
GAIN, typ.	8 dBi	
VSWR, max.	1.5 : 1	
3 dB Beam-Width, H-Plane, typ.	85°	70°
3 dB Beam-Width, E-Plane, typ.	60°	55°
Side Lobes, min.	-20 dB	
Cross Polarization, min.	-20 dB	
Polarization	Linear, Vertical	
Input power, max	50 Watt	
Input Impedance	50 Ohm	
Lightning Protection	DC Grounded	
<i>Mechanical</i>		
Dimensions – Radome (HxWxD)	285 x 180 x 67 mm (11.2"×7.1"×2.6")	
Weight	0.5 kg	
Connector	N-Type, Female	
Back Plane	Aluminum, Coated	
Radome	UV Protected Plastic	
Mount	See Ordering Options	
<i>Environmental</i>		
Operating Temperature Range	- 40°C to + 65°C	
Vibration	According to IEC 60721-3-4	
Flammability	UL94	
Water Proofing	IP-65	
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)	
Salt Fog	According to IEC 68-2-11	
Ice and Snow	25mm radial (survival)	
Service Life	>10 years	

Ordering Options:

MA-CJ80-14 PM	Antenna with integral Pole Mount includes stainless steel brackets
MA-CJ80-14 MNT	Antenna Suited for MNT-2 (optional wall/pole adjustable mount)

Specifications subject to change without notice

**3 dBi GSM / AMPS / IDEN In-Building Antenna
MA-CH11-16**

MARS 3dBi GSM/AMPS/IDEN In-Building Antenna is small and unobtrusive and blends easily with any environment. Provides a cost-effective solution for high volume and multiple in-building deployments.

Additional Features:

- integrated Wall Mount (picture hanger)
- DC grounded for lightning protection to meet local electrical building codes

Applications:

- In-Building coverage
- Indoor cell extender



Specifications:

<i>Electrical</i>	
Frequency range	810 – 960 MHz
GAIN, min.	3 dBi
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	80°
3 dB Beam-Width, E-Plane, typ.	110°
Cross Polarization, min.	-24 dB
Front to Back Ratio, min.	-35 dB
Input power, max	10 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	181 x 180 x 25 mm (71"x71"x1")
Weight	400 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Finish	White Epoxy Paint
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Service Life	>10 years

Specifications subject to change without notice

Squint Band Extra Thin Antenna

MA-CB22-13, MA-CB22-23, MA-CB22-33

MARS Squint Beam Extra Thin Antennas are High Gain Planar Arrays with various horizontal Beam squints. The Antenna is flat and thin, thus featuring a very low profile. Mounted on building walls, the antenna virtually merges with the wall, yet allowing beam pointing to cover any required direction ($\pm 45^\circ$). UV protected radome allows for harsh environment installations.



Applications:

- Unobtrusive Long Yagi Replacement
- BDA outdoor (BS) Antenna
- Sector Extension
- Narrow-High Gain sectorial coverage (22°)

Specifications:

<i>Electrical</i>			
Model	MA-CB22-13	MA-CB22-23	MA-CB22-33
Beam Squint in H-Plane	0°	22°	45°
Frequency range	824 – 894 MHz		
GAIN, min.	15 dBi	14.5 dBi	13 dBi
3 dB Beam-Width, H-Plane, typ.	22°	22°	22°
3 dB Beam-Width, E-Plane, typ.	27°	27°	31°
VSWR, max.	1.8 : 1		
Polarization	Linear, Vertical		
Input power, max	50 Watt		
Input Impedance	50 Ohm		
Lightning Protection	DC Grounded		
<i>Mechanical</i>			
Dimensions (HxWxD)	808 x 708 x 31 mm (31.8"×27.9"×1.2")		
Weight	6.7 kg		
Connector	N-Type, Female		
Back Plane	Aluminum; protected through chemical passivation		
Radome	UV Protected Polycarbonate		
Mount	Wall Mount / Connector Up or Down for Opposite Squint		
<i>Environmental</i>			
Operating Temperature Range	- 40°C to + 65°C		
Vibration	According to IEC 60721-3-4		
Wind Load	200 km/h (survival)		
Flammability	UL94		
Water Proofing	IP-65		
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)		
Salt Fog	According to IEC 68-2-11		
Ice and Snow	25mm radial (survival)		
Service Life	>10 years		

Specifications subject to change without notice

Dual Beam CDMA/TDMA/AMPS Antenna

MA-CB50-20

MARS Dual Beam CDMA/TDMA/AMPS Antenna is ideal for deployment in tunnels or long building corridors. Its small and unobtrusive profile blends easily with any environment.

Additional Features:

- Wall/Ceiling mount
- DC grounded for lightning protection to meet local electrical building codes

Applicable Applications:

- Tunnel coverage
- Indoor cell extender



Specifications:

<i>Electrical</i>	
Frequency range	824-894 MHz
GAIN, min.	5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Two Beams, Each 60°
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-12 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	400 x 185 x 55 mm (15.7"×7.3"×2.2")
Weight	400 gr.
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected Polycarbonate
Mount	Wall/ Ceiling Mounting
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

Dual Beam GSM Antenna

MA-CC60-20

MARS Dual Beam GSM Antenna is ideal for deployment in tunnels or long building corridors. It features small and unobtrusive profile that blends easily with any environment.

Additional Features:

- Wall/Ceiling mount
- DC grounded for lightning protection to meet local electrical building codes

Applicable Applications:

- Tunnel coverage
- Indoor cell extender



Specifications:

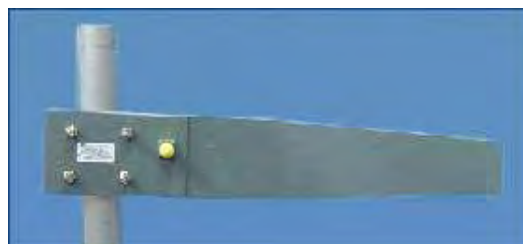
<i>Electrical</i>	
Frequency range	870-960 MHz
GAIN, min.	5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Two Beams, Each 60°
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-12 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	400 x 185 x 55 mm (15.7"×7.3"×2.2")
Weight	400 gr.
Connector	N-Type Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	Wall/ Ceiling Mounting
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

**9 dBi Cellular Yagi Antenna
MA-CD09-2X**

MARS Cellular Yagi Antennas are ruggedly constructed to withstand severe environmental conditions.

The antenna is designed to provide excellent and stable performance and is ideal for Outdoor Applications. U-Bolt mounting allows for easy installation.



Specifications:

<i>Electrical</i>	
Frequency range	1.71-1.88 GHz
GAIN, min.	9 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	40°
3 dB Beam-Width, E-Plane, typ.	40°
Side Lobes, min.	-15 dB
Front to Back Ratio, min.	-15 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (LxW)	500 x 85 mm (19.7"x3.3")
Weight	280 gr.
Connector	TNC/ N-Type, Female
Mount	PM, 1.5"
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Service Life	>10 years

Specifications subject to change without notice

**CDMA High Selective Repeater
MR-HSBDA60-X**

MARS CDMA High Selective Repeater is a high linear repeater at low power consumption. It provides high frequency selectivity at low power consumption.

Additional Features:

- Auto Setup
- Overload protection
- Oscillation protection
- High spectral purity



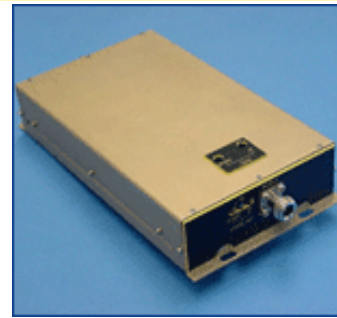
Specifications:

<i>Electrical</i>		
Frequency range	Down Link 869 – 894 MHz	Up Link 824 – 849 MHz
Gain at, min. Attenuation	63 dB	60 dB
Pass Band – Nominal, MHz	9.1	
Pass Band – Optional, MHz	(5, 10, 15)	
Pass Band Center Frequency Setting Step, KHz	25	
Pass Band Ripple	3 dB	
Selectivity:		
• At 1 MHz Offset from Pass Band Rejection	50 dB	50 dB
• Intermodulation Distortion from Out of Pass Band Signals (<i>NOTE 1</i>)	-30 dBm	-40 dBm
Composite Output Power	21 dBm	12 dBm
Noise Figure at min. Attenuation	6.5 dB	
Gain Control (Automatic), Step 1 dB (<i>NOTE 2</i>)	30 dB	
Impedance In / Out	50 Ohm	
VSWR In / Out, max.	2 : 1	
Output IP3, min.	40 dBm	34 dBm
Propagation Delay, max.	5 μ sec	
Input Power, No Damage, max.	10 dBm	
Limited Output Power	28 dBm	19 dBm
Biasing (220 VAC/DC Adapter Included)	6.7 VDC @ 3.2 A, max.	
Emission & Spurious	According to Standards	
Oscillation Protection	Yes	
<i>NOTE 1: Down Link: 2 Tones at -30 dBm With 1 MHz Spacing and 1 MHz Pass Band Offset. Up Link: 2 Tones at -40 dBm With 1 MHz Spacing and 1 MHz Pass Band Offset.</i>		
<i>NOTE 2: The Up Link Gain is Always 3 dB Lower Than Down Link Gain</i>		
<i>Mechanical</i>		
Dimensions	260 x 250 x 100 mm	
Weight	2.3 kg	
Connectors	N-Type, Female	
Mount	Wall / Ceiling Mounting	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Service Life	>10 years	

Specifications subject to change without notice

Bi – Directional Amplifier
MR-BDA60-X

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments. BDA products are designed to receive and amplify RF signals strength in both "Down Link" and "Up Link" communication paths.



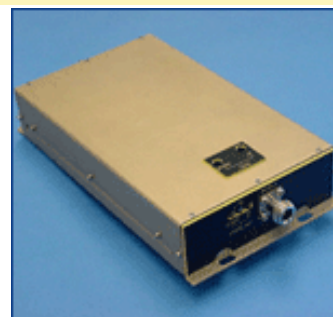
Specifications:

<i>Electrical</i>		
Frequency range	Down Link 869 – 894 MHz	Up Link 824 – 849 MHz
Operational Frequency Band, MHz (Other Available on Request)	869 – 879	824 – 834
Gain at, min. Attenuation, min.	55 dB	60 dB
Output Power @ 1 dB Compression	26 dBm	19 dBm
Output IP3, min.	40 dBm	31 dBm
Pass Band Ripple	± 1.5 dB	
Noise Figure max.	6.5 dB	
Gain Control, Manual, min.	20 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Input Power, max.	-15 dBm	
Biasing (Via RF Cable and Through Separate DC Connector)	12V / 1000 mA (Adaptor MR-PS26 should be Ordered Separately)	
<i>Mechanical</i>		
Dimensions	253 x 125 x 43 mm	
Weight	850 gr.	
Connectors	N-Type, Female	
Mount	Wall / Ceiling Mounting	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

**GSM Bi – Directional Amplifier
MR-BGSM60-X**

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments.



Specifications:

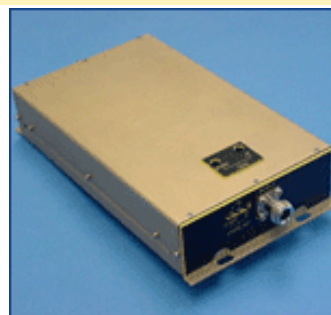
<i>Electrical</i>		
Frequency range	Down Link 935 – 960 MHz	Up Link 890 – 915 MHz
Operational Frequency Band, MHz (Other Available on Request)	947 – 960	902 – 915
Gain at min. Attenuation, min.	55 dB	60 dB
Output Power @ 1 dB Compression	26 dBm	19 dBm
Output IP3, min.	40 dBm	31 dBm
Pass Band Ripple	± 1.5 dB	
Noise Figure max.	6.5 dB	
Gain Control, Manual, min.	20 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Input Power, No Damage, max.	-15 dBm	
Biasing (Via RF Cable and Through Separate DC Connector)	12V / 1000 mA (Adaptor MR-PS26 should be Ordered Separately)	
<i>Mechanical</i>		
Dimensions	253 x 125 x 43 mm	
Weight	850 gr.	
Connectors	N-Type, Female	
Mount	Wall / Ceiling Mounting	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

SMR / IDEN Bi – Directional Amplifier

MR-BIDEN60-X

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments. BDA products are designed to receive and amplify RF signals strength in both "Down Link" and "Up Link" communication paths.



Specifications:

<i>Electrical</i>		
	Down Link	Up Link
Frequency range	851 – 866 MHz	806 – 821 MHz
Operational Frequency Band, MHz (Other Available on Request)	851 – 866	806 – 821
Gain at, min. Attenuation, min.	55 dB	60 dB
Output Power @ 1 dB Compression	26 dBm	19 dBm
Output IP3, min.	40 dBm	31 dBm
Pass Band Ripple	± 1.5 dB	
Noise Figure max.	6.5 dB	
Gain Control, Manual, min.	20 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Input Power, No Damage, max.	-15 dBm	
Biasing (Via RF Cable and Through Separate DC Connector)	12V / 1000 mA (Adaptor MR-PS26 should be Ordered Separately)	
<i>Mechanical</i>		
Dimensions	253 x 125 x 43 mm	
Weight	850 gr.	
Connectors	N-Type, Female	
Mount	Wall / Ceiling Mounting	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

CDMA / TDMA Bi – Directional Amplifier

MR-PBCT55-X

MARS Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



Specifications:

<i>Electrical</i>		
Frequency range	Down Link 869 – 894 MHz	Up Link 824 – 849 MHz
Operational Frequency Band, MHz (Other Available on Request)	869 – 879	824 – 834
Gain at, min. Attenuation	55 dB	
Pass Band Ripple	± 2 dB	
Output Power @ 1 dB Compression	13 dBm	
Noise Figure max.	7 dB	
Step Attenuator (2 dB Step)	2 to 31 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	23 dBm	
Input Power, max.	-20 dBm	
Biasing (Through Separate DC Connector)	6V / 400 mA	
(Adaptor MR-PS13 should be Ordered Separately)		
<i>Mechanical</i>		
Dimensions	120 x 70 x 35 mm	
Weight	200 gr.	
Connectors	SMA, Female	
Housing	Aluminum, Anodized, Black	
Mount	Wall / Ceiling Mounting	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Service Life	>10 years	

Specifications subject to change without notice

**GSM Bi – Directional Amplifier
MR-PBGS55-X**

MARS Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



Specifications:

<i>Electrical</i>		
Frequency range	Down Link 935 – 960 MHz	Up Link 890 – 915 MHz
Operational Frequency Band, MHz (Other Available on Request)	947 – 960	902 – 915
Gain at, min. Attenuation	55 dB	
Pass Band Ripple	± 2 dB	
Output Power @ 1 dB Compression	13 dBm	
Noise Figure max.	7 dB	
Step Attenuator (2 dB Step)	2 to 31 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	23 dBm	
Input Power, max.	-20 dBm	
Biasing (Through Separate DC Connector)	6V / 400 mA (Adaptor MR-PS13 should be Ordered Separately)	
<i>Mechanical</i>		
Dimensions	120 x 70 x 35 mm	
Weight	200 gr.	
Connectors	SMA, Female	
Housing	Aluminum, Anodized, Black	
Mount	Wall / Ceiling Mount	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Service Life	>10 years	

Specifications subject to change without notice

**SMR / IDEN Bi – Directional Amplifier
MR-PBSMR55-X**

MARS Personal BDA provides a cost effective solution for enhancing radio communication in offices and other small area spaces. Amplifier features small size and is easy to install.



Specifications:

<i>Electrical</i>		
Frequency range	Down Link 851 – 866 MHz	Up Link 806 – 821 MHz
Operational Frequency Band, MHz (Other Available on Request)	851 – 866	806 – 821
Gain at, min. Attenuation	55 dB	
Pass Band Ripple	± 2 dB	
Output Power @ 1 dB Compression	13 dBm	
Noise Figure max.	7 dB	
Step Attenuator (2 dB Step)	2 to 31 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	23 dBm	
Input Power, max.	-20 dBm	
Biasing (Through Separate DC Connector)	6V / 400 mA (Adaptor MR-PS13 should be Ordered Separately)	
<i>Mechanical</i>		
Dimensions	120 x 70 x 35 mm	
Weight	200 gr.	
Connectors	SMA, Female	
Housing	Aluminum, Anodized, Black	
Mount	Wall / Ceiling Mounting	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Service Life	>10 years	

Specifications subject to change without notice

Bi – Directional Amplifier 1 Watt

MR-BDA60-X1W

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments. BDA products are designed to receive and amplify RF signals strength in both the "Down Link" and the "Up Link" communication paths.



Specifications:

<i>Electrical</i>		
	Down Link	Up Link
Frequency range	869 – 894 MHz	824 – 849 MHz
Operational Frequency Band, MHz (Other Available on Request)	869 – 879	824 – 834
Gain at, min. Attenuation	60 dB	
Pass Band Ripple	± 1.5 dB	
Output Power @ 1 dB Compression	30 dBm	
Noise Figure max.	7 dB	
Gain Control, manual, 2 dB Step	30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	40 dBm	
Input Power, No Damage, max.	-15 dBm	
Biassing (Through Separate DC Connector)	6.7VDC / 3 A (Adaptor MR-PS30 should be Ordered Separately)	
<i>Mechanical</i>		
Dimensions	243 x 160 x 57 mm	
Weight	2 kg	
Connectors	N-Type, Female	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

GSM Bi – Directional Amplifier 1 Watt

MR-BGSM60-X1W

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments. BDA products designed to receive and amplify RF signals strength in both "Down Link" and "Up Link" communication paths.



Specifications:

<i>Electrical</i>		
Frequency range	Down Link 935 – 960 MHz	Up Link 890 – 915 MHz
Operational Frequency Band, MHz (Other Available on Request)	947 – 960	902 – 915
Gain at, min. Attenuation	60 dB	
Pass Band Ripple	± 1.5 dB	
Output Power @ 1 dB Compression	30 dBm	
Noise Figure max.	7 dB	
Gain Control, manual, 2 dB Step	30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	40 dBm	
Input Power, No Damage, max.	-15 dBm	
Biasing (Through Separate DC Connector)	6.7V / 3 A	
(Adaptor MR-PS30 should be Ordered Separately)		
<i>Mechanical</i>		
Dimensions	243 x 160 x 57 mm	
Weight	2 kg	
Connectors	N-Type, Female	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

**SMR / IDEN Bi – Directional Amplifier 1 Watt
MR-BIDEN60-X1W**

Mars BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments. BDA products are designed to receive and amplify RF signals strength in both the "Down Link" and the "Up Link" communication paths.



Specifications:

<i>Electrical</i>		
	Down Link	Up Link
Frequency range	851 – 866 MHz	806 – 821 MHz
Operational Frequency Band, MHz (Other Available on Request)	851 – 866	806 – 821
Gain at, min. Attenuation	60 dB	
Pass Band Ripple	± 1.5 dB	
Output Power @ 1 dB Compression	30 dBm	
Noise Figure max.	7 dB	
Gain Control, manual, 2 dB Step	30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	40 dBm	
Input Power, No Damage, max.	-15 dBm	
Biasing (Through Separate DC Connector)	6.7V / 3 A	
(Adaptor MR-PS30 should be Ordered Separately)		
<i>Mechanical</i>		
Dimensions	243 x 160 x 57 mm	
Weight	2 kg	
Connectors	N-Type, Female	
<i>Environmental</i>		
Operating Temperature Range	- 30°C to + 70°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

**GSM1800 Bi – Directional Amplifier
MR-HGSM50-X**

MARS BDA series of products provides a cost effective answer for enhancing radio communication in buildings, basements, parking garages and other RF shielded environments. BDA products are designed to receive and amplify RF signals strength in both the "Down Link" and the "Up Link" communication paths.



Specifications:

<i>Electrical</i>		
	Down Link 1805 – 1880 MHz	Up Link 1710 – 1785 MHz
Frequency range		
Gain at, min. Attenuation	45 dB	
Pass Band Ripple	± 3 dB	
Output Power @ 1 dB Compression	25 dBm	
Noise Figure max.	7 dB	
Digital Automatic Level Control, 1 dB Step	30 dB	
Impedance	50 Ohm	
VSWR, max.	2 : 1	
Output IP3, min.	38 dBm	
Input Power, max.	-15 dBm	
Biassing	6.5V / 1500 mA (3 Watt)	
<i>Mechanical</i>		
Dimensions	310 x 150 x 57 mm	
Weight	Less than 2 kg	
Connectors	N-Type, Female	
Mount	Panel	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

GSM High Selective Repeater

MR-HSBGSM60

GSM High Selective Repeater is a high linear repeater which provides high frequency selectivity at low power consumption.

Additional Features:

- Auto Setup
- Overload protection
- Oscillation protection
- High Spectral Purity



Specifications:

Electrical

	Down Link	Up Link
Frequency Range	935 – 960 MHz	890 – 915 MHz
Operational Frequency Band, (Other available on request)	11.4 MHz; Option - 9.1 MHz	11.4 MHz; Option - 9.1 MHz
Gain at min. attenuation, min.	63 dB	60 dB
Pass Band Center Frequency setting step	25 kHz	
Pass Band Ripple	± 1.5 dB	
Out of Band Gain, at offset from edges 400 kHz and more	Meet ETS 300 609-4/GSM 11.26 #7	
Output Power @ 1 dB Compression	30 dBm	20 dBm
Output Power, min.		
Meet Intermodulation Products:		
- ETS 300 609-4/GSM 11.26 #6	17 dBm	13 dBm
- FCC -13dBm	24 dBm	18 dBm
Output IP3, min.	40 dBm	33 dBm
Range of ALC Output Power Setting Points, (Other available by request)	8-23 dBm (up 8 set points)	-
Limited Output Power, (Other available by request)	28 dBm	19 dBm
Range of AGC, step 1 dB (Note 1)	30 dB	
Noise Figure at min. attenuation, max.	6.5 dB	
Selectivity:		
- At 1 MHz offset from Pass Band edges, min.	50 dB	50 dB
- Intermodulation Distortion from Out off Pass Band Input Signals (Note 2), max.	-30 dBm	-40 dBm
Protection from Oscillation and Overload	Automatic	
Impedance	50 Ohm	
Propagation Delay, max	5 µsec	
VSWR, max.	2 : 1	
Input Power, No Damage, max.	10 dBm	
Biasing (Option - 220 VAC/ DC Adapter included)	6.7 VDC @ 3.5 A max	

Note 1: the up link Gain is always 3 dB lower than the down link Gain

Note 2: 2 tones at –30dBm (Down Link), at -40dBm (Up Link), with 1 MHz spacing and 1 MHz and greater Pass Band Offset

Mechanical

Dimensions	260 x 250 x 65 mm
Weight	2.5 kg
Connectors	N-Type, Female
Mount	Wall / Ceiling Mount

Environmental

Operating Temperature Range	- 10°C to + 50°C
Humidity, min.	95%
Splash, Dust	Protected
Service Life	>10 years

Specifications subject to change without notice

**SMR / IDEN Automatic Control Repeater 1 Watt
MR-BSMR60-A1W**

Automatic Control Repeater is a high linear repeater at low power consumption. It provides a cost effective solution for enhancing in-building radio communication, basements, parking garages and other RF shielded environments.

Additional Features:

- Auto Setup
- Overload protection
- Oscillation protection



Specifications:

<i>Electrical</i>		
	Down Link 851 – 866 MHz	Up Link 806 – 821 MHz
Frequency range		
Operational Frequency Band, (Other available on request)	15 MHz	
Pass Band Ripple	± 1.5 dB	
Gain at min. attenuation, min.	60 dB	
Output Power @ 1 dB Compression	30 dBm	
Output Power, min.:	24 dBm	
Meet FCC Intermodulation Products -13dBm	40 dBm	
Output IP3, min.	6 dB	
Noise Figure at min. attenuation, max.	7-21 dBm (up 8 set points)	
Range of ALC output power setting points, (Other available by request)	45 dB	
Range of AGC, (Note 1)	28 dBm	
Limited Output Power, (Other available by request)	Automatic	
Protection from Oscillation and Overload	50 Ohm	
Impedance	2 : 1	
VSWR, max.	10 dBm	
Input Power, No Damage, max.	6.7 VDC @ 3.5 A max	
Biassing (Option - 220 VAC/ DC Adapter included)		
Note 1: Digital 30dB/1 dB Step, Analog 15dB		
<i>Mechanical</i>		
Dimensions	243 x 163 x 57 mm	
Weight	2 kg	
Connectors	N-Type, Female	
Mount	Wall / Ceiling Mounting	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

**SMR / IDEN High Gain Automatic Control Repeater 1 Watt
MR-BSMR80-XA**

High Gain Automatic Control Repeater is a high linear repeater at low power consumption. It provides a cost effective solution for enhancing in-building radio communication, basements, parking garages and other RF shielded environments.



Additional Features:

- Auto Setup
- Overload protection
- Oscillation protection

Specifications:

<i>Electrical</i>		
	Down Link 851 – 866 MHz	Up Link 806 – 821 MHz
Frequency range		
Operational Frequency Band, (Other available on request)	15 MHz	
Gain at min. attenuation, min.	80 dB	
Output Power @ 1 dB Compression	30 dBm	
Output Power, min.:	25 dBm	
Meet FCC Intermodulation Products -13dBm	41 dBm	
Output IP3, min.	± 1.5 dB	
Pass Band Ripple	6 dB	
Noise Figure at min. attenuation, max.	15-25 dBm (up 6 set points)	
Range of ALC output power setting points, (Other available by request)	45 dB	
Range of AGC, (Note 1)	28 dBm	
Limited Output Power, (Other available by request)	Automatic	
Protection from Oscillation and Overload	50 Ohm	
Impedance	2 : 1	
VSWR, max.	-10 dBm	
Input Power, No Damage, max.	6.7 VDC @ 3.5 A max	
Biasing (Option - 220 VAC/ DC Adapter included)		
Note 1: Digital 30dB/1 dB Step, Analog 15dB		
<i>Mechanical</i>		
Dimensions	260 x 250 x 65 mm	
Weight	2.5 kg	
Connectors	N-Type, Female	
Mount	Wall / Ceiling Mounting	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95%	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

Power Amplifiers – Cellular Bands

MR-AM1800-X, MR-AM1900-X

MARS Power Amplifiers feature 30 dBi of gain and stable performance. Amplifiers feature small size allowing for easy installation.

Can be customized to meet customer's requirements.



Specifications:

<i>Electrical</i>		
Model No.	MR-1800-X	MR-AM1900-X
Standard	PCS 1800 GSM 1800	PCS 1900 GSM 1900
Frequency range, MHz	1800 – 1900	1900 – 2000
Gain	30 ± 1 dB	
GAIN Flatness, max.	± 0.2 dB	
VSWR, max.	1.5 : 1	
Output Power @1 dB Compression Point	+ 35 dBm	+ 35 dBm
Noise Figure, max.	5 dB	5 dB
Output IP3, min.	+ 45 dBm	+ 45 dBm
Operating Voltage	28 VDC / 500 mA	
<i>Mechanical</i>		
Dimensions	60 x 50 x 20 mm (Without Heat Sink)	
RF Connectors	SMA, Female	
DC Connector	Feed Through	
<i>Environmental</i>		
Operating Temperature Range	- 10°C to + 50°C	
Humidity, min.	95% RH, IEC 60068-2-56	
Splash, Dust	Protected	
Service Life	>10 years	

Specifications subject to change without notice

**Dual Active Reject Filter
MR-DARF-XX**

MARS Dual Active Reject Filter (DARF) provides a cost effective solution for eliminating interfering signals within the cellular frequency band (over 30 dB rejection).

The full system consists of a 19" mountable rack unit that supports up to three dual reject filter modules (see picture), while each module handles one sector.



Additional Features:

- frequency agile
- operates with RX and diversity antenna

Specifications:

<i>Electrical</i>	
Frequency range	825 – 835 MHz
IF Frequency	86 MHz
Band Reject (-3 dB)	≤ 150 KHz
Band Reject (-30 dB)	≥ 50 KHz (± 5%) non Symmetrical
Null Depth, min.	40 dB
Gain	3 dB (min) to 7 dB (max)
Noise Figure, max.	6 dB
Input Intercept Points IP3	≥ -2 dBm
1 dB Compression Point	≥ -12 dBm
Overall Gain over Frequency Band	3 (+3 dB / -2 dB)
Gain Tracking over Frequency Band	≤ 3 +1 dB
Indicators (Led)	Lock Detection, DC
Tuning Step Conversion	25 KHz
DC Voltage	27 V
DC Current, max.	600 mA
<i>Mechanical</i>	
Dimensions	19" Box
RF Connectors	N-Type, Female/Male
DC Connector	Terminal Block
Mount	Free Standing
<i>Environmental</i>	
Operating Temperature Range	- 10°C to + 50°C
Storage Temperature Range	- 10°C to + 60°C
Humidity	90%
Service Life	>10 years

Specifications subject to change without notice

**2 Way Splitter
MR-PD02-X**

Can be used to split a signal from a source or combine signals from multiple sources.

Additional Features:

- bi-directional splitter/combiner
- wide frequency range
- reliable and stable performance
- small size allowing for easy installation



Specifications:

<i>Electrical</i>	
Frequency range	800 - 2500 MHz
Insertion Loss, Over 3 dB, typ. / max.	0.7 dB / 1.5 dB
Output VSWR, max.	2 : 1
Amplitude Balance, max.	0.4 dB
Phase Balance, max.	4°
Isolation	20 dB
Impedance	50 Ohm
Operating Power	33 dBm
<i>Mechanical</i>	
Dimensions (L x W x H)	120 x 95 x 30 mm (4.7"x3.7"x 1.2")
Weight	Less than 200 gr.
Number of Outputs	2
Connectors	N-Type, Female
Mounting	Planar / Wall / Ceiling Mount
<i>Environmental</i>	
Operating Temperature Range	- 10°C to + 55°C
Humidity, min.	95%
Splash, Dust	Protected
Service Life	>10 years

Specifications subject to change without notice

3 Way Splitter
MR-PD03-X

Can be used to split a signal from a source or combine signals from multiple sources.

Additional Features:

- bi-directional splitter/combiner
- wide frequency range
- reliable and stable performance
- small size allowing for easy installation



Specifications:

<i>Electrical</i>	
Frequency range	800 - 2000 MHz
Insertion Loss, Over 4.8 dB	1.3 dB
Output VSWR, max.	1.8 : 1
Amplitude Balance, max.	0.8 dB
Phase Balance, max.	8°
Isolation	18 dB
Impedance	50 Ohm
Input Power (Load VSWR <1.2)	60 Watt
<i>Mechanical</i>	
Dimensions (L x W x H)	140 x 95 x 30 (5.5"x3.7"x 1.2")
Weight	Less than 200 gr.
Number of Outputs	3
Connectors	N-Type, Female
Mounting	Planar / Wall / Ceiling Mount
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 70°C
Humidity, min.	95%
Splash, Dust	Protected
Service Life	>10 years

Specifications subject to change without notice

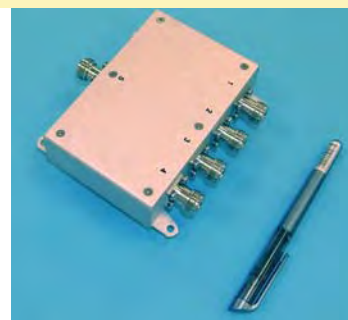
4 Way Splitter

MR-PD04-X

Can be used to split a signal from a source or combine signals from multiple sources.

Additional Features:

- bi-directional splitter/combiner
- wide frequency range
- reliable and stable performance
- easy installation



Specifications:

Electrical

Frequency range	800 - 2200 MHz
Insertion Loss, max.	1.5 dB
Output VSWR, max.	2 : 1
Amplitude Balance, max.	0.7 dB
Phase Balance, max.	7°
Isolation	17 dB
Impedance	50 Ohm
Input Power (Load VSWR <2)	60 Watt

Mechanical

Dimensions (L x W x H)	120x110x30 mm (4.7"x4.3"x1.2")
Number of Outputs	4
Connectors	N-Type, Female
Mounting	Planar / Wall / Ceiling Mount

Environmental

Operating Temperature Range	- 40°C to + 70°C
Humidity, min.	95%
Splash, Dust	Protected
Service Life	>10 years

Specifications subject to change without notice

**4 Way Splitter
MR-PD04-X1**

Professional high performance 4 Way Splitter.

Additional Features:

- bi-directional splitter
- reliable and stable performance
- easy installation



Specifications:

<i>Electrical</i>	
Operating Frequency range	2.3 - 2.6 GHz
Insertion Loss, max.	0.7 dB
Input/Output VSWR	1.5 Max
Amplitude Balance, max.	0.5 dB
Phase Unbalance, max.	7°
Isolation,min	20 dB
Impedance	50 Ohm
Power rating, load VSWR better then 1.5:1	20 Watt
<i>Mechanical</i>	
Dimensions (L x W x H)	197x136x82 [excluding mount]
Weight:	less than 1.1 kg
Number of Outputs	4
Connectors	N-Type, Female
Mounting	Mast
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 70°C
Humidity, min.	95%
Splash, Dust	Protected
Service Life	>10 years

Specifications subject to change without notice

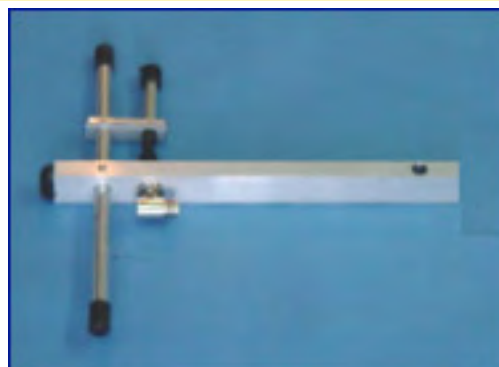
153.7 MHz Base Station Antenna

MA-IS15-M4

MARS 153.7 MHz Dipole Antenna provides a cost effective solution as a base station antenna.

Additional Features:

- wide area coverage
- ready for pole mounting
- suitable for outdoor and indoor installation
- DC grounded



Specifications:

<i>Electrical</i>	
Frequency range	153.7 ± 2 MHz
GAIN, typ.	2 dBi
VSWR, max.	1.8 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	Omni Directional
Input power, max	5 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (LxW)	600 x 833 mm (23.6"x32.8")
Weight	560 gr.
Connector	UHF, Female
Body	Aluminum
Mount	U – Bolt, 25 – 45 mm
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	N/R
Water Proofing	IP-63
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>5 years

Specifications subject to change without notice

433 MHz Base Station Antenna

MA-IS43-B1

MARS 433 MHz Antenna provides a cost effective solution for the Point-to-Multipoint Systems based on ISM 433 MHz band.

Additional Features:

- suited for new RFID technology applications
- wide coverage
- wall mount (optional Pole Mount available on request)
- suitable for both indoor or outdoor installations
- DC grounded



Specifications:

<i>Electrical</i>	
Frequency range	433.92 ± 2 MHz
GAIN, min.	4.5 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3.5 dB Beam-Width, H-Plane, typ.	180°
3 dB Beam-Width, E-Plane, typ.	75°
Cross Polarization, min.	-15 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	400 x 176 x 195 mm (15.7"x6.9"x7.7")
Weight	1.1 Kg
Connector	N-Type, Female
Back Plane	Aluminum; protected through chemical passivation
Radome	UV Protected, Plastic
Mount	Wall Mounting
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-63
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

433 MHz Base Station Panel Antenna

MA-IS43-B2

MARS 433 MHz Panel Antenna provides a cost effective solution for Point-to-Multipoint Systems based on the ISM 433 MHz.

Additional Features:

- suited for new RFID technology applications
- excellent and stable performance
- small and aesthetic profile
- UV protected antenna radome
- suitable for both indoor and outdoor installations
- DC grounded
- wall mount



Specifications:

<i>Electrical</i>	
Frequency range	433 ± 2 MHz
GAIN, min.	4 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	95°
3 dB Beam-Width, E-Plane, typ.	100°
Input power, max	25 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	225 x 215 x 29 mm (8.9"x8.5"x1.1")
Weight	840 gr.
Connector	N-Type, Female
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	Indoor Usage (Outdoor Version Available on Request)
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-65
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

MA-IS43-B2	N-Type Connector Version
MA-IS43-B21	N-Type + Cable RG58, ~25cm

Specifications subject to change without notice

433 MHz Car Mounted Antenna

MA-IS43-C1

MARS 433 MHz Antenna provides a cost effective solution for rear window car mounted antenna for ISM 433 MHz systems.

Additional Features:

- easy and fast installation
- consistent and steady performance
- small and unobtrusive profile
- available with any cable length and variety of connectors



Specifications:

<i>Electrical</i>	
Frequency range	433.92 ± 2 MHz
GAIN, min.	-5 dBi (With ~1.9 m Cable)
VSWR, max.	2.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max	1 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1"x1.5"x0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**710 – 746 MHz Car Mounted Antenna
MA-IS72-AS**

MARS Cellular Window Mounted Antenna provides a cost effective and aesthetic solution for cellular phones communication in the car.

Additional Features:

- replacement of external antenna on car window
- easy and fast installation
- consistent and steady performance
- small and unobtrusive profile



Available with any cable length and variety of connectors.

Specifications:

<i>Electrical</i>	
Frequency range	710 – 746 MHz
GAIN, min.	0 dBi (With ~2 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	100°
Input power, max	1 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1"x1.5"x0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

**Broadband Cellular Window Mounted Antenna
MA-CH11-W1**

MARS Cellular Window Mounted Antenna provides a cost effective and aesthetic solution for cellular phones communication in the car.

Additional Features:

- replacement of external antenna on car window
- easy and fast installation
- consistent and steady performance
- small and unobtrusive design



Available with any cable length and variety of connectors.

Specifications:

<i>Electrical</i>	
Frequency range	824 – 960 MHz
GAIN, min.	0 dBi (With ~2 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max	5 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1"x1.5"x0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

**CDPD Car Mounted Antenna
MA-CB11-C3**

MARS CDPD Car Mounted Antenna provides a cost effective solution for the mobile users.

Additional Features:

- under Dashboard mounting
- consistent and steady performance
- small and unobtrusive profile
- available with variable cable lengths



Specifications:

<i>Electrical</i>	
Frequency range	824 – 849 ; 869 – 894 MHz
GAIN, min.	0 dBi (With 1 m Cable)
GAIN Ripple	± 5 dB
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	75°
Input power, max	1 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	145 x 16 x 4.5 mm (5.7"x0.6"x0.2")
Weight	30 gr.
Connector	MMCX, With RG 174/U Cable
Radome / Box	Heat Shrinkable Insulating Sleeve
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

915 MHz Car Mounted Antenna

MA-IS91-XX

MARS 915 MHz Antenna provides a cost effective solution for car mounted antenna for ISM 915 MHz systems.

Additional Features:

- easy and fast installation
- consistent and steady performance
- small and unobtrusive profile



Specifications:

Electrical

Frequency range	902 – 928 MHz
GAIN, min.	4 dBi
VSWR, max.	1.8 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	100°
3 dB Beam-Width, E-Plane, typ.	85°
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded

Mechanical

Dimensions (HxWxD)	150 x 150 x 26 mm (5.9"x5.9"x1")
Weight	300 gr.
Connector	SMA, Pig Tail
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected ABS

Environmental

Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Specifications subject to change without notice

**915 MHz Car Mounted Antenna
MA-IS91-C1**

MARS 915 MHz Antenna provides a cost effective solution for rear window car mounted antenna for ISM 915 MHz systems.

Additional Features:

- easy and fast installation
- consistent and steady performance
- small and unobtrusive profile
- available with any cable length and variety of connectors



Specifications:

<i>Electrical</i>	
Frequency range	915 ± 2 MHz
GAIN, min.	0 dBi (With ~2 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max	1 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3"x1.5"x0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

2.3-2.39 GHz Car Mounted Antenna

MA-VM23-3X

MARS 2.3-2.39GHz Car Antenna provides an optimal solution for mobile WLL and Internet users in the car.

Additional Features:

- cost effective
- can be mounted on or under the dashboard
- easy and fast installation (with or without magnet)
- stable and reliable performance



Specifications:

<i>Electrical</i>	
Frequency range	2.3 -2.39 GHz
GAIN, min.	3 dBi (With Ground 11x11 cm 5 dBi)
VSWR, max.	1.7 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	110°
3 dB Beam-Width, E-Plane, typ.	110°
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	40 x 45 x 15 mm
Weight	60 gr.
Connector	SMA, Male on a 1m RG 316 Coaxial Cable
Radome	ABS
<i>Environmental</i>	
Operating Temperature Range	- 30°C to + 60°C
Storage Temperature Range	- 40°C to + 70°C
Service Life	>10 years

Ordering Options:

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Specifications subject to change without notice

**Broadband Cellular Window Mounted Antenna
MA-CH25-W1**

MARS Cellular Window Mounted Antenna provides a cost effective and aesthetic solution for cellular phones communication in the car.

Additional Features:

- replacement of external antenna on car window
- easy and fast installation
- consistent and steady performance
- small and unobtrusive design



Available with any cable length and variety of connectors.

Specifications:

<i>Electrical</i>	
Frequency range	2.3 – 2.69 GHz
GAIN, min.	0 dBi (With ~2 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max	5 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1"x1.5"x0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

2.4-2.5 GHz Car Mounted Antenna

MA-VM24-3X

MARS 2.4-2.5 GHz Car Antenna provides an optimal solution for mobile WLL and Internet users in the car.

Additional Features:

- cost effective
- can be mounted on or under the dashboard
- easy and fast installation (with or without magnet)
- stable and reliable performance



Specifications:

<i>Electrical</i>	
Frequency range	2.4 -2.5 GHz
GAIN, min.	3 dBi (With Ground 11x11 cm 5 dBi)
VSWR, max.	1.5 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	110°
3 dB Beam-Width, E-Plane, typ.	110°
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	40 x 45 x 15 mm
Weight	60 gr.
Connector	SMA, Male on a 1m RG 316 Coaxial Cable
Radome	ABS
<i>Environmental</i>	
Operating Temperature Range	- 30°C to + 60°C
Storage Temperature Range	- 40°C to + 70°C
Service Life	>10 years

Ordering Options:

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Specifications subject to change without notice

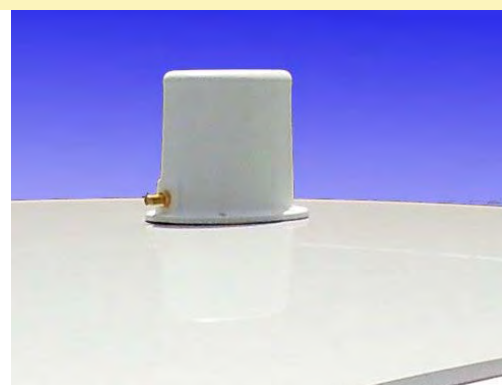
Blade Antenna for Mobile Applications

MA-WO25-CT

MARS WiMax 2.3-2.6 GHz Car Antenna provides a cost effective and aesthetic solution for WiMax applications.

Additional Features:

- external car antenna with magnetic or fixed mount
- easy and fast installation
- consistent and steady performance
- small and unobtrusive design



Specifications:

<i>Electrical</i>	
Frequency range	2.3-2.6 GHz
GAIN, min.	4 dBi
VSWR, max.	1.5:1
Polarization	Vertical
3 dB Beam-Width, H-Plane, typ.	Omni-Directional
3 dB Beam-Width, E-Plane, typ.	30°
Input Impedance	50 Ohm
Input Power	5 Watt
<i>Mechanical</i>	
Dimensions :Height	80 mm
Base (LxW)	100x50 mm
Weight	25 gr.
Connector	SMA Female
Radome	UV Protected, Plastic
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 70°C

Ordering Options:

Model No.	Application / Mount	Connector
MA-WO25-CT-B-M	Magnetic Mount	SMA, Female
MA-WO25-CT-B-F	Fixed Mount (Roof Top)	SMA, Female

Specifications subject to change without notice

2.495-2.69 GHz Car Mounted Antenna

MA-VM26-3X

MARS 2.495-2.69 GHz Car Antenna provides an optimal solution for mobile WLL and Internet users in the car.

Additional Features:

- cost effective
- can be mounted on or under the dashboard
- easy and fast installation (with or without magnet)
- stable and reliable performance



Specifications:

<i>Electrical</i>	
Frequency range	2.495 -2.69 GHz
GAIN, min.	3 dBi (With Ground 11x11 cm 5 dBi)
VSWR, max.	2 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	110°
3 dB Beam-Width, E-Plane, typ.	110°
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	40 x 45 x 15 mm
Weight	60 gr.
Connector	SMA, Male on a 1m RG 316 Coaxial Cable
Radome	ABS
<i>Environmental</i>	
Operating Temperature Range	- 30°C to + 60°C
Storage Temperature Range	- 40°C to + 70°C
Service Life	>10 years

Ordering Options:

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Specifications subject to change without notice

3.4-3.6 GHz Car Mounted Antenna

MA-VM35-4X

MARS 3.4-3.6GHz Car Antenna provides an optimal solution for mobile WiMAX, WLL and Internet users in the car.

Additional Features:

- cost effective
- can be mounted on or under the dashboard
- easy and fast installation (with or without magnet)
- stable and reliable performance



Specifications:

<i>Electrical</i>	
Frequency range	3.4 -3.6 GHz
GAIN, min.	4 dBi
VSWR, max.	1.5 : 1
Polarization	Linear
3 dB Beam-Width, H-Plane, typ.	90°
3 dB Beam-Width, E-Plane, typ.	110°
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	40 x 45 x 15 mm (1.6"x1.8"x0.6")
Weight	60 gr.
Connector	SMA, Male on a 1m RG 316 Coaxial Cable
Radome	ABS
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 30°C to + 70°C
Storage Temperature Range	- 40°C to + 70°C
Service Life	>10 years

Ordering Options:

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Specifications subject to change without notice

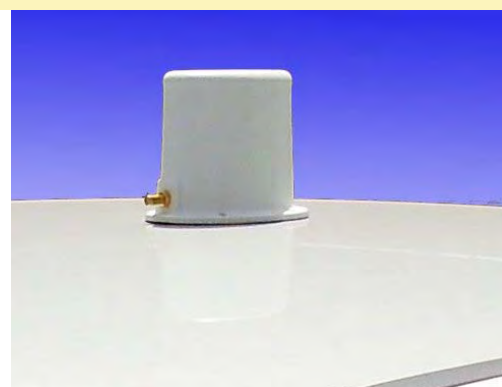
Blade Antenna for Mobile Applications

MA-WO36-CT

MARS 3.4-3.8 GHz Car Antenna provides a cost effective and aesthetic solution for WiMax applications.

Additional Features:

- external car antenna with magnetic or fixed mount
- easy and fast installation
- consistent and steady performance
- small and unobtrusive design



Specifications:

<i>Electrical</i>	
Frequency range	3.4-3.8 GHz
GAIN, min.	4 dBi
VSWR, max.	1.5:1
Polarization	Vertical
3 dB Beam-Width, H-Plane, typ.	Omni-Directional
3 dB Beam-Width, E-Plane, typ.	30°
Input Impedance	50 Ohm
Input Power	5 Watt
<i>Mechanical</i>	
Dimensions :Height	80 mm
Base (LxW)	100x50 mm
Weight	25 gr.
Connector	SMA Female
Radome	UV Protected, Plastic
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 70°C

Ordering Options:

Model No.	Application / Mount	Connector
MA-WO36-CT-B-M	Magnetic Mount	SMA, Female
MA-WO36-CT-B-F	Fixed Mount (Roof Top)	SMA, Female

Specifications subject to change without notice

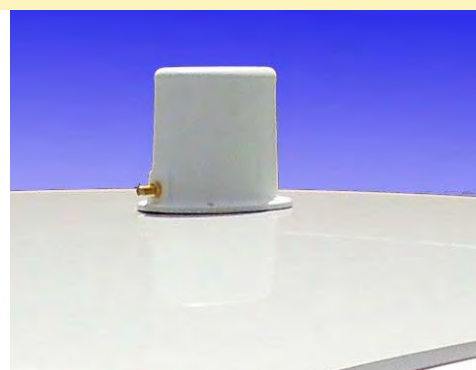
Blade Antenna for Mobile Applications

MA-WO55-CT

MARS WiMax 4.9-5.875 GHz Car Antenna provides a cost effective and aesthetic solution for WiMax communication.

Additional Features:

- external car antenna with magnetic or fixed mount
- easy and fast installation
- consistent and steady performance
- small and unobtrusive design



Specifications:

<i>Electrical</i>	
Frequency range	4.9-5.875 GHz
GAIN, min.	4 dBi
VSWR, max.	1.8:1
Polarization	Vertical
3 dB Beam-Width, H-Plane, typ.	Omni-Directional
3 dB Beam-Width, E-Plane, typ.	30°
Input Impedance	50 Ohm
Input Power	5 Watt
<i>Mechanical</i>	
Dimensions :Height	80 mm
Base (LxW)	100x50 mm
Weight	25 gr.
Connector	SMA Female
Radome	UV Protected, Plastic
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 70°C

Ordering Options:

Model No.	Application / Mount	Connector
MA-WO55-CT-B-M	Magnetic Mount	SMA, Female
MA-WO55-CT-B-F	Fixed Mount (Roof Top)	SMA, Female

Specifications subject to change without notice

**Broadband Cellular Window Mounted Antenna
MA-CH36-W1**

MARS Cellular Window Mounted Antenna provides a cost effective and aesthetic solution for cellular phones communication in the car.

Additional Features:

- replacement of external antenna on car window
- easy and fast installation
- consistent and steady performance
- small and unobtrusive design



Available with any cable length and variety of connectors.

Specifications:

<i>Electrical</i>	
Frequency range	3.4 –3.8 GHz
GAIN, min.	0 dBi (With ~1 m Cable)
VSWR, max.	2 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max	5 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	78.6 x 39 x 4.2 mm (3.1"x1.5"x0.2")
Weight	50 gr.
Connector	Pig Tail, RG 174/U Cable with SMA Straight Connector
Radome / Box	ABS, Dark Gray
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Flammability	UL94
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Service Life	>10 years

Specifications subject to change without notice

Blade Antenna for Mobile Applications

MA-WO35-B-X

MARS Blade Antenna is a ruggedized, aerodynamic antenna, for use in mobile applications such as trains, helicopters, buses or cars.

Antenna comes in two versions:

- fixed Mount (Roof top)
- magnetic Mount (Side Pigtail)



Specifications:

<i>Electrical</i>	
Frequency range	3.4 – 3.6 GHz
GAIN, typ.	2 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-20 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	115 x 220 x 100 mm (4.5"x8.7"x3.9")
Weight	420 gr.
Connector	See Ordering Information
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

Model No.	Application / Mount	Connector
MA-WO35-B-M	Magnetic Mount	N-Type, Female with ~25cm Coaxial Pigtail
MA-WO35-B-F	Fixed Mount (Roof Top)	N-Type, Female

Specifications subject to change without notice

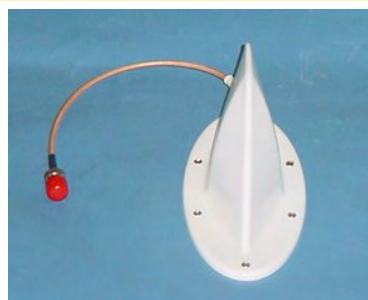
Blade Antenna for Mobile Applications

MA-WO45-B-X

MARS Blade Antenna is a ruggedized, aerodynamic antenna, for use in mobile applications such as trains, helicopters, buses or cars.

Antenna comes in two versions:

- fixed Mount (Roof top)
- magnetic Mount (Side Pigtail)



Specifications:

<i>Electrical</i>	
Frequency range	4.4 – 4.6 GHz
GAIN, typ.	2 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-20 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	115 x 220 x 100 mm (4.5"x8.7"x3.9")
Weight	420 gr.
Connector	See Ordering Information
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

Model No.	Application / Mount	Connector
MA-WO45-B-M	Magnetic Mount	N-Type, Female with ~25cm Coaxial Pigtail
MA-WO45-B-F	Fixed Mount (Roof Top)	N-Type, Female

Specifications subject to change without notice

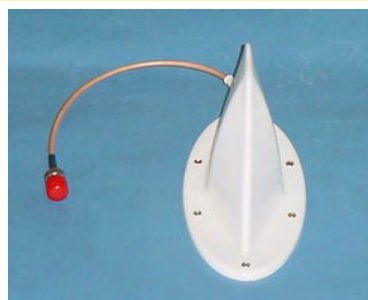
Blade Antenna for Mobile Applications

MA-WO49-B-X

MARS Blade Antenna is a ruggedized, aerodynamic antenna, for use in mobile applications such as trains, helicopters, buses or cars.

Antenna comes in two versions:

- fixed Mount (Roof top)
- magnetic Mount (Side Pigtail)



Specifications:

<i>Electrical</i>	
Frequency range	4.94 – 4.99 GHz
GAIN, typ.	2 dBi
VSWR, max.	1.5 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	60°
Front to Back Ratio, min.	-25 dB
Input power, max	50 Watt
Input Impedance	50 Ohm
Lightning Protection	DC Grounded
<i>Mechanical</i>	
Dimensions (HxWxD)	115 x 220 x 100 mm (4.5"x8.7"x3.9")
Weight	420 gr.
Connector	See Ordering Information
Back Plane	Aluminum protected through chemical passivation
Radome	UV Protected Plastic
Mount	See Ordering Options
<i>Environmental</i>	
Operating Temperature Range	- 40°C to + 65°C
Vibration	According to IEC 60721-3-4
Wind Load	200 km/h (survival)
Flammability	UL94
Water Proofing	IP-67
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)
Salt Fog	According to IEC 68-2-11
Ice and Snow	25mm radial (survival)
Service Life	>10 years

Ordering Options:

Model No.	Application / Mount	Connector
MA-WO49-B-M	Magnetic Mount	N-Type, Female with ~25cm Coaxial Pigtail
MA-WO49-B-F	Fixed Mount (Roof Top)	N-Type, Female

Specifications subject to change without notice

**GPS AVL Active Antenna
MA-EG15-XX**

MARS GPS Active Antenna is exceptionally small sized and offers extremely wide coverage at low angles.

Additional Features:

- reliable and stable performance
- dashboard or under dashboard mounting
- cable length with SMA connector option
- resists unfriendly environments
- built-in low noise amplifier



Application:

- AVL, Automatic vehicular and asset location systems
- GPS, time and location systems

Cost effective solution for high volume deployment.

Specifications:

<i>Electrical</i>	
Frequency range	1575 ± 1.24 MHz
GAIN, min.	27 dBi
Axial Ratio	3 dB
VSWR, max.	2 : 1
Polarization	Circular, RHCP
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	150°
Noise Figure (Amp)	1.6 dB
Input power, max	30 mA / 3 V
Intercept Point	+10 dBm
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	40 x 45 x 15 mm (1.6"x1.8"x0.6")
Weight	60 gr.
Connector	SMA, Female on a 1.8m RG 174 Cable
Radome	ABS
<i>Environmental</i>	
Operating Temperature Range	- 30°C to + 60°C
Storage Temperature Range	- 40°C to + 70°C
Service Life	>10 years

Ordering Options:

Mount Type	Replace X with
Magnetic	M
Glue	G
Fixed Mount	F

Specifications subject to change without notice

Active GPS Antenna
MA-GP15-2M

MARS Active GPS Antenna features stable and efficient performance with 5 dBi of gain. Antenna is small, light-weight and has an aesthetic design. Custom designs are available upon request.



Specifications:

<i>Electrical</i>	
Frequency range	1575.42 ± 2 MHz
1 dB points Bandwidth, typ.	15 MHz
GAIN, min.	5 dBi
Gain Characteristics of Antenna Element	+2.0 dBic minimum at zenith -10 dBic minimum at 0° elevation
VSWR, typ.	1.5 : 1 @ 1575.42
Polarization	Right Hand Circular
3 dB Beam-Width, H-Plane, typ.	360°
3 dB Beam-Width, E-Plane, typ.	0° to 90°
Filtering, typ.	40 dB @ ± 50 MHz
LNA Gain, typ.	25 dB
Noise Figure, typ.	< 1.4 dB
Output Impedance	50 Ohm
Power Supply through RF Cable, typ.	5 ± 0.25 VDC ; 21 mA @ 5 VDC
<i>Mechanical</i>	
Dimensions (ØxH)	94 X 110 mm (3.7"x4.3")
Weight	160 gr.
Connector	N-Type Female
Mount	Center Mount (M28 Nut)
Radome	UV Protected Polycarbonate
<i>Environmental</i>	
Operating Temperature	-40°C to +85°C
Dynamics	Vibration : ETSI EN 300-19-2-4
Humidity	ETSI EN 300-19-2-4
Immersion Test	EN 60529-IP67
UV Radiation	ASTM G-154-4
Immunity to electrostatic discharge	ETSI IEC 61000-4-2
Conducted immunity to voltage surges	ETSI IEC 61000-4-5

Specifications subject to change without notice

915 MHz Embedded Antenna

MA-IS91-BR

MARS 915 MHz Antenna provides a cost effective solution for point-to-multipoint systems based on the ISM 915 MHz band.



Specifications:

<i>Electrical</i>	
Frequency range	902 – 928 MHz
GAIN, typ.	1 dBi (With 12 cm Cable)
VSWR, max.	1.7 : 1
Polarization	Linear, Vertical
3 dB Beam-Width, H-Plane, typ.	Omni Directional
3 dB Beam-Width, E-Plane, typ.	80°
Input power, max	1 Watt
Input Impedance	50 Ohm
<i>Mechanical</i>	
Dimensions (HxWxD)	130 x 16 x 4.5 mm (5.3"x2.5")
Weight	30 gr.
Connector	SMA 90, Male, With RG 174/U Cable
Radome / Box	Heat Shrinkable Insulating Sleeve
<i>Environmental</i>	
Service Life	>10 years

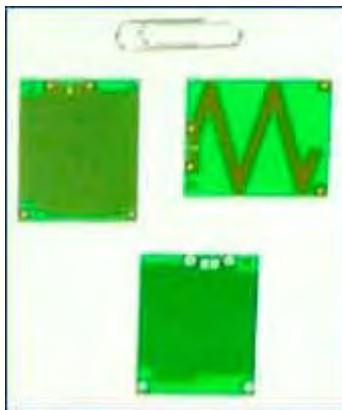
Specifications subject to change without notice

Embedded Antennas

Mars Internal / Embedded Antennas are custom made antennas, offered as OEM solutions to most products.

The antennas are offered in frequency bands from 200MHz to 5.8 GHz as solutions to both products under development and to existing products.

Mars Internal / Embedded Antennas are small, light weight and provide a creative, cost-effective and efficient solution.



Mars Internal / Embedded Antennas are tailored to customers' specification allowing for an electrically and physically precise solution to OEMs - a much better solution than off-the-shelf products that demand costly product restructuring.

Mars Internal / Embedded Antennas have a wide range of applications: Hand Held Devices, Point-of-Sale Devices, Cell-Palms, Wireless Modems (PCMCIA), W-LAN, Medical Devices, Blue-Tooth Applications, Security and Alarm Systems etc.

Specifications subject to change without notice

MNT-1A

**Elevation Adjustable Mount for
Subscriber & Short Sector Antennas**

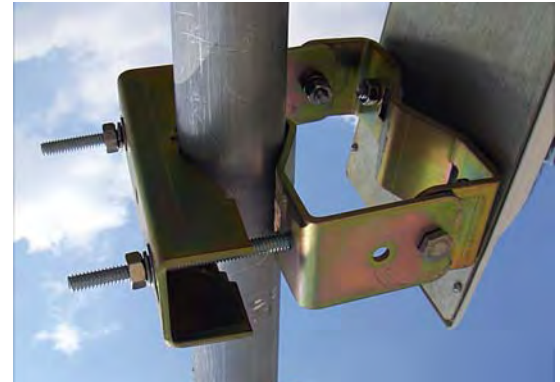


MNT-5A

Tilt Mount for Sector Antennas

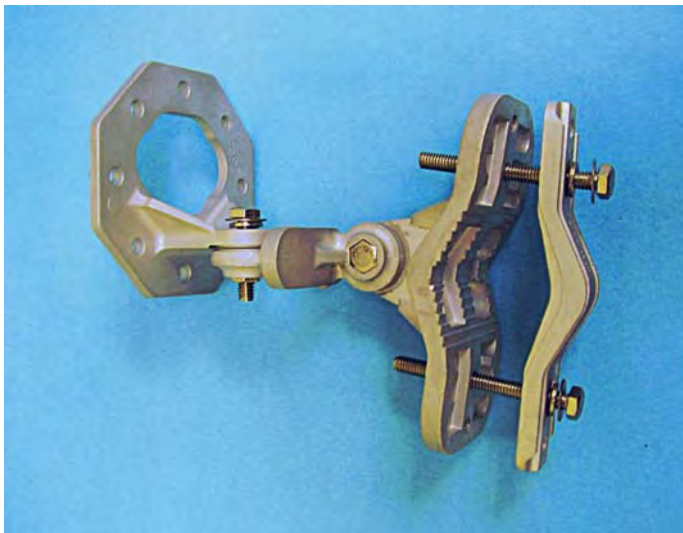
MNT-5A: For 70 + cm sectors

MNT-16: For 915 MHz sectors



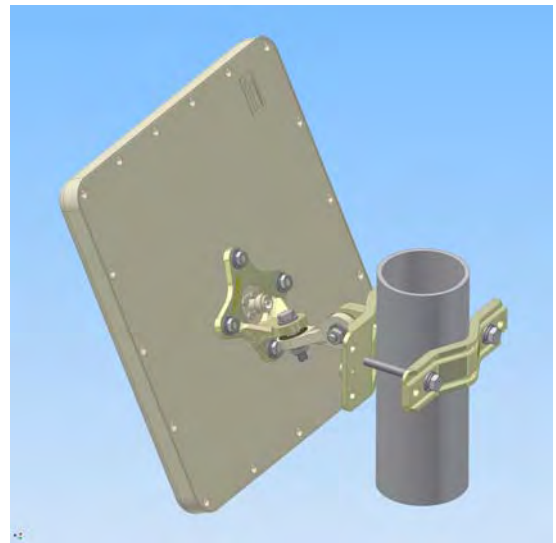
MNT-22 (new)

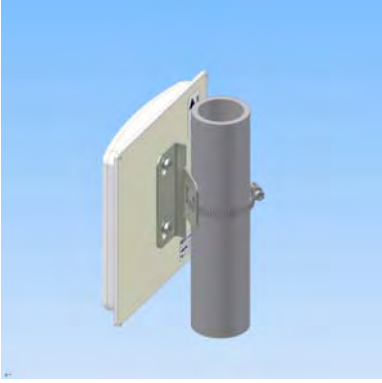
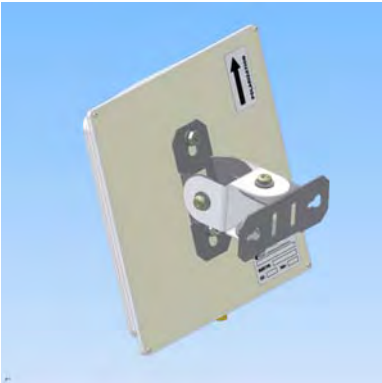
Heavy Duty, Az/ El Adjustable Mount for
Subscriber and Short Sector Antennas



MNT-2

Az/ El Adjustable Mount for Subscriber
Antennas



	<p style="text-align: center;">MNT-4P</p> 
<p style="text-align: center;">MNT-4X Az/ El Adjustable Mount for <u>Small Size Antennas</u></p> <p>* MNT-4P: For pole mounting * MNT-4W: For wall/ pole mounting * MNT-4G: For mounting on glass</p> <p>◆ Full Kit (all options) available</p>	<p style="text-align: center;">MNT-4W</p> 
	<p style="text-align: center;">MNT-4G</p> 