



**ANTENNAS & RF SYSTEMS LTD.**



***Multi Polarized  
Antennas***





Mars Antennas offers a wide range of MIMO **Multi Polarized** (2X2 - 5X5) CPE and Base Station Antennas.

This wide range selection allows you to choose between polarizations and gains.

## About Multi Polarization Antennas

Multi Polarization Antennas are antennas that can operate in vertical, horizontal and  $\pm 45^\circ$  polarizations.

Multi polarized antennas often used in 802.11n and in the latest 802.11ac to enable multi-thread communication.

This enables the device to transmit data on one polarization and receive data on the other simultaneously.

MARS Antennas Multi Polarization Antennas are also used for LTE, Wi-Fi, LAN MMDS, WLL, MIMO, WiMAX and also for P2P and P2MP.

## MARS Antennas Adjustable Mounts

Each antenna can be equipped with an azimuth and elevation adjustable heavy duty, die cast aluminum mount, suitable for pole or wall mounting and allows positioning of antenna in  $45^\circ$  slant polarization

The mount KIT comes with all the required hardware inside.

## About MARS

### General

MARS Antennas & RF Systems is a world class leading antennas design and manufacturer, RF solutions provider and R&D Company based in Israel, with a proved capacity to design and provide cost effective products with exceptional performance characteristics.

### History

MARS Antennas was established in 1994 and located in its owned facility in Tel-Aviv area.

### Capacity

MARS offers a wide range of Broadband Wireless Panel Antennas market in which our both single and dual polarized subscriber and sector antennas cover frequency ranges of 700MHz, 915MHz, 2.4GHz, 3.5GHz, 4.9-6.5GHz, 7-8GHz, 10.15-11GHz.

Mars offers a wide range of antennas for the rapidly growing LTE and WiMax fixed and mobile applications markets.

MARS also has a strong line of In-Building antennas that allows cost effective solution for Cellular and Wi-Fi applications. In addition MARS offers a wide range of antennas for ISM & Special Applications, Embedded Antennas, Wi-Fi Repeaters, In-Building Cellular Repeaters – High Selective and FCC approved.

MARS's main expertise is in developing and manufacturing of printed circuit boards antennas, called flat or Flat Panel Arrays.

MARS is ISO 9001, ISO 14001 and RoHS certified R&D and manufacturing company.

MARS has in-house internal anechoic chamber allowing for assurance of the highest level of developed products and assuring the highest level of quality control.

## Enclosures for CPE & Base Station Antennas

| No. | Part Number                           | Enclosure Size (Inch.)             | Part Description                                     |
|-----|---------------------------------------|------------------------------------|--|
| 1   | <a href="#">MK-ES20 &amp; MK-ES21</a> | 7 x 6.9 (9.5 with RJ45) x 2.6      | Small<br>7.9x7.9 / 12x12 / 14.5x14.5 Inch antennas   |
| 2   | <a href="#">MK-EL30 &amp; MK-EL31</a> | 11.3 x 11.3 (13.6 with RJ45) x 2.6 | Large<br>12x12 / 14.5x14.5 / 23.5x23.5 Inch antennas |



## 5 GHz multi polarized CPE & Base Station Antennas

| No.   | Part Number              | Gain   | Frequency band                | Enclosure Size | Dimensions (Inch.) |
|---|--------------------------|--|-------------------------------|----------------|--------------------|
| <b>5X5 and 4X4 Polarization Antenna - CPE</b> |                          |  |                               |                |                    |
| 1   | <b>MA-WA2455-QPMIMO</b>  | <b>16dBi @ 5.15 - 5.875 GHz<br/>12dBi @ 2.3 - 2.7 GHz</b>      | 5.15-5.875 GHz & 2.3-2.7 GHz  | Large          | 12 X 12 X 1.2      |
| 2   | <b>MA-WA55-4QP13</b>     | <b>4x13dBi</b>   | 4.9-6.1 GHz                   | Small          | 7.9 X 7.9 X 1.25   |
| 3   | <b>MA-WA57-QP4MIMO19</b> | <b>4x19dBi @ 5.15 - 6.425 GHz<br/>4x18dBi @ 4.9 - 5.15 GHz</b> | 4.9-5.15 GHz & 5.15-6.425 GHz | Large          | 14.6 X 14.6 X 1.5  |
| 4   | <b>MA-WA56-MIMO5-14</b>  | <b>5x13.5dBi</b>   | 5.1-5.9 GHz                   | Large          | 12 X 12 X 1.2      |
| 5   | <b>MA-WA55-QP4MIMO</b>   | <b>4x16dBi</b>   | 5.15-5.9 GHz                  | Large          | 12 X 12 X 1.2      |
| <b>TRIPLE Polarization - CPE</b>              |                          |  |                               |                |                    |
| 6   | <b>MA-WA55-TPMIMO</b>    | <b>19dBi (Ver. Pol.)<br/>17.5dBi (Dual Slant)</b>              | 5.125-6.1 GHz                 | Large          | 12 X 12 X 1.2      |
| <b>Triple Polarization - Base Station</b>     |                          |  |                               |                |                    |
|   | <b>MA-WC2458-3H</b>      | <b>3x7.5dBi</b>  | 2.4-2.5 GHz & 5.15-5.875 GHz  | ---            | 7.9 X 7.9 X 1.25   |
|   | <b>MA-WE2458-3H</b>      | <b>3x5dBi</b>  | 2.3-2.7 GHz & 4.9-6.1 GHz     | ---            | 7.9 X 7.9 X 1.25   |
|   | <b>MA-WD56-DSV16</b>     | <b>3x16dBi</b>   | 4.9-6.1 GHz                   | Large          | 14.5 X 14.5 X 1.6  |
| <b>DUAL Polarization - CPE</b>                |                          |  |                               |                |                    |
| 7   | <b>MA-WA48-DP23</b>      | <b>23dBi</b>   | 4.4-5.1 GHz                   | Small / Large  | 14.5 X 14.5 X 1.6  |
| 7   | <b>MA-WA56-DP13</b>      | <b>V-Pol: 13.5dBi<br/>H-Pol: 14.5dBi</b>                       | 4.9-6.1 GHz                   | Small          | 4.41 X 4.41 X 1.32 |
| 8   | <b>MA-WA56-DP19</b>      | <b>19±1dBi</b>   | 4.9-6.1 GHz                   | Small          | 7.9 X 7.9 X 1.25   |
| 9   | <b>MA-WA56-DP23</b>      | <b>23±1dBi</b>   | 4.9-6.1 GHz                   | Small / Large  | 12 X 12 X 1.2      |
| 10  | <b>MA-WA56-DP25N</b>     | <b>V-Pol: 24.5±1dBi<br/>H-Pol: 23.5±1dBi</b>                   | 4.9-5.875GHz                  | Small / Large  | 14.5 X 14.5 X 1.6  |
| 11  | <b>MA-WA56-DP28N</b>     | <b>V-Pol: 29±0.5dBi<br/>H-Pol: 28.5±0.5dBi</b>                 | 4.9-6.425 GHz                 | Large          | 23.5 X 23.5 X 0.86 |
| 12  | <b>MA-WA62-DP30</b>      | <b>29±1dBi</b>   | 5.3-6.5 GHz                   | Large          | 23.5 X 23.5 X 0.86 |
| 13  | <b>MA-WA62-DP24</b>      | <b>24dBi</b>   | 5.4-6.42 GHz                  | Small / Large  | 12 X 12 X 1.2      |
| 14  | <b>MA-WA62-DP19</b>      | <b>19±1dBi</b>   | 5.7-6.425 GHz                 | Small          | 7.9 X 7.9 X 1.25   |

| No.                                     | Part Number         | Gain                                       | Frequency band | Enclosure Size | Dimensions (Inch.) |
|---|---------------------|--|----------------|----------------|--------------------|
| <b>DUAL Polarization - Base Station</b> |                     |  |                |                |                    |
| 26                                      | <b>MA-WC55-DS17</b> | <b>17dBi</b> (typ.)                        | 4.9-6.1 GHz    | Large          | 14.5 X 14.5 X 1.6  |
| 27                                      | <b>MA-WD55-DS16</b> | <b>16dBi</b> (typ.)                        | 4.9-6.1 GHz    | Large          | 14.5 X 14.5 X 1.6  |
| 28                                      | <b>MA-WC56-DP17</b> | <b>H-Pol: 17dBi</b><br><b>V-Pol: 18dBi</b> | 4.9-6.1 GHz    | Large          | 14.5 X 14.5 X 1.6  |
| 29                                      | <b>MA-WD56-DP16</b> | <b>16dBi</b>                               | 4.9-6.1 GHz    | Large          | 14.5 X 14.5 X 1.6  |
| 30                                      | <b>MA-WD56-DP13</b> | <b>13dBi</b>                               | 5.15-5.875 GHz | ---            | 7.9 X 7.9 X 1.25   |
| 31                                      | <b>MA-WE56-DP12</b> | <b>12dBi</b>                               | 5.15-5.875 GHz | ---            | 7.9 X 7.9 X 1.25   |
| 32                                      | <b>MA-WE56-DP15</b> | <b>14.5dBi</b>                             | 5.15-5.875 GHz | Large          | 14.5 X 14.5 X 1.6  |
| 33                                      | <b>MA-WC62-DP17</b> | <b>17dBi</b>                               | 5.7-6.425 GHz  | Large          | 14.5 X 14.5 X 1.6  |
| 34                                      | <b>MA-WD62-DP16</b> | <b>16dBi</b>                               | 5.7-6.425 GHz  | Large          | 14.5 X 14.5 X 1.6  |
| 35                                      | <b>MA-WD62-DS16</b> | <b>15.5dBi</b>                             | 5.7-6.425 GHz  | Large          | 14.5 X 14.5 X 1.6  |

## 2.5 GHz & 3.5 GHz multi polarized CPE & Base Station Antennas

| No.                                       | Part Number             | Gain  | Frequency band                  | Enclosure Size | Dimensions (Inch.)    |
|---|-------------------------|---|---------------------------------|----------------|-----------------------|
| <b>QUAD Polarization - CPE</b>            |                         |   |                                 |                |                       |
| 9   | <b>MA-WA2455-QPMIMO</b> | <b>16dBi @ 5.15 - 5.875 GHz</b><br><b>12dBi @ 2.3 - 2.7 GHz</b> | 5.15-5.875 GHz &<br>2.3-2.7 GHz | Large          | 12 X 12 X 1.2         |
| <b>TRIPLE Polarization - CPE</b>          |                         |   |                                 |                |                       |
| 10  | <b>MA-WA24-TPMIMO</b>   | <b>15±1dBi</b> (Ver. Pol.)<br><b>12±1dBi</b> (Dual Slant)       | 2.3-2.7 GHz                     | Large          | 12 X 12 X 1.2         |
| <b>Triple Polarization - Base Station</b> |                         |   |                                 |                |                       |
|   | <b>MA-WC2458-3H</b>     | <b>3x7.5dBi</b>   | 2.4-2.5 GHz &<br>5.15-5.875 GHz | ---            | 7.9 X 7.9 X 1.25      |
|   | <b>MA-WE2458-3H</b>     | <b>3x5dBi</b>   | 2.3-2.7 GHz &<br>4.9-6.1 GHz    | ---            | 7.9 X 7.9 X 1.25      |
|   | <b>MA-WD56-DSV16</b>    | <b>3x16dBi</b>  | 4.9-6.1 GHz                     | Large          | 14.5 X 14.5 X 1.6     |
| <b>DUAL Polarization - CPE</b>            |                         |   |                                 |                |                       |
|   | <b>MA-WA22-DP8</b>      | <b>8dBi</b>   | 1.7-2.7 GHz                     | ---            | 4.4 x 4.4 x 1.3       |
|   | <b>MA-WA18-DP12</b>     | <b>14dBi</b> (typ.)   | 1.75-1.85 GHz                   | Large          | 12 X 12 X 1.2         |
|   | <b>MA-WA18-DP18</b>     | <b>17dBi</b> (typ.)   | 1.75-1.85 GHz                   | Large          | 14.5 X 14.5 X 1.6     |
|   | <b>MA-WA25-DP9</b>      | <b>8±1dBi</b>   | 2.3-2.7 GHz                     | ---            | 4.4 x 4.4 x 1.3       |
|   | <b>MA-WA25-DP14</b>     | <b>14dBi</b>  | 2.3-2.7 GHz                     | Small          | 7.9 X 7.9 X 1.25      |
|   | <b>MA-WA25-DP17</b>     | <b>17.5dBi</b>  | 2.3-2.7 GHz                     | Small / Large  | 12 X 12 X 1.2         |
|   | <b>MA-WA25-DP19</b>     | <b>19dBi</b>  | 2.3-2.7 GHz                     | Small / Large  | 14.5 X 14.5 X 1.6     |
|   | <b>MA-WA25-DP23</b>     | <b>23±1dBi</b>  | 3.3-4.01 GHz                    | Large          | 23.5 X 23.5 X<br>0.86 |
|   | <b>MA-WA36-DP9</b>      | <b>8±1dBi</b>   | 3.3-4.01 GHz                    | ---            | 4.4 x 4.4 x 1.3       |
|   | <b>MA-WA36-DP14</b>     | <b>14dBi</b>  | 3.3-4.01 GHz                    | Small          | 7.9 X 7.9 X 1.25      |
|   | <b>MA-WA36-DP19</b>     | <b>19dBi</b>  | 3.3-4.01 GHz                    | Small / Large  | 12 X 12 X 1.2         |
|   | <b>MA-WA36-DP21</b>     | <b>22dBi</b>  | 3.3-3.8 GHz                     | Small / Large  | 14.5 X 14.5 X 1.6     |
|   | <b>MA-WA36-DP25</b>     | <b>25dBi</b>  | 3.3-3.8 GHz                     | Large          | 23.5 X 23.5 X<br>0.86 |

| No.                                     | Part Number          | Gain                  | Frequency band                  | Enclosure Size | Dimensions (Inch.)    |
|---|----------------------|-----------------------|---------------------------------|----------------|-----------------------|
| <b>DUAL Polarization - Base Station</b> |                      |                       |                                 |                |                       |
| 18                                      | <b>MA-WC25-DP14</b>  | <b>14dBi</b> , 60°    | 2.3-2.7 GHz                     | Small / Large  | 14.5 X 14.5 X 1.6     |
| 19                                      | <b>MA-WD25-DP13</b>  | <b>12.5dBi</b> , 90°  | 2.3-2.7 GHz                     | Small / Large  | 14.5 X 14.5 X 1.6     |
|   | <b>MA-WD25-MIMO3</b> | <b>6x14dBi</b> , 90°  | 2.3-2.7 GHz                     | ---            | 31.5 x 23.5 x 1.5     |
| 20                                      | <b>MA-WC25-DS16</b>  | <b>2x16dBi</b> , 65°  | 2.3-2.7 GHz                     | ---            | 31.5 x 8.8 x 2.6      |
|   | <b>MA-WD25-DS15</b>  | <b>2x15dBi</b> , 90°  | 2.3-2.7 GHz                     | ---            | 31.5 x 8.8 x 2.6      |
|   | <b>MA-WC25-DS18</b>  | <b>17dBi</b> , 60°    | 2.3-2.7 GHz                     | ---            | 47.2 x 7.8 x 2.8      |
| 17                                      | <b>MA-WC2458-2H</b>  | <b>2x7.5dBi</b> , 60° | 2.4-2.5 GHz &<br>5.15-5.875 GHz | ---            | 7.9 X 7.9 X 1.25      |
| 18                                      | <b>MA-WE2458-2H</b>  | <b>5dBi</b> , 120°    | 2.4-2.5 GHz &<br>4.9-5.875 GHz  | ---            | 7.9 X 7.9 X 1.25      |
| 19                                      | <b>MA-WD36-DP14</b>  | <b>7.5dBi</b> , 90°   | 3.3-4.01 GHz                    | Small / Large  | 14.5 X 14.5 X 1.6     |
| 22                                      | <b>MA-WD36-DP14</b>  | <b>14dBi</b> (typ.)   | 3.3-3.8 GHz                     | Large          | 14.5 X 14.5 X 1.6     |
| 23                                      | <b>MA-WD35-DS15</b>  | <b>15dBi</b> (typ.)   | 3.3-3.8 GHz                     | ---            | 23.5 X 23.5 X<br>0.86 |
| 24                                      | <b>MA-WD36-MIMO3</b> | <b>6x15dBi</b> , 90°  | 3.3-3.8 GHz                     | ---            | 31.5 x 23.5 x 1.5     |
| 25                                      | <b>MA-WC35-DS17</b>  | <b>16.5dBi</b> (typ.) | 3.3-3.8 GHz                     | ---            | 23.5 X 23.5 X<br>0.86 |
| 37                                      | <b>MA-WD36-DP14N</b> | <b>14dBi</b> (typ.)   | 3.3-4.01 GHz                    | Large          | 14.5 X 14.5 X 1.6     |

**Additional multi polarized  
CPE & Base Station Antennas**

| No.                                     | Part Number          | Gain               | Frequency band | Enclosure Size | Dimensions (Inch.) |
|---|----------------------|--------------------|----------------|----------------|--------------------|
| <b>DUAL Polarization Antennas - CPE</b> |                      |                    |                |                |                    |
|   | <b>MA-WA78-DP19N</b> | <b>19 ± 1 dBi</b>  | 7-8 GHz        | ---            | 6.1 X 6.1 X 1.1    |
|   | <b>MA-WA10-DP23</b>  | <b>23 dBi</b>      | 10.15-11 GHz   | ---            | 7.9 X 7.9 X 1.25   |
| <b>DUAL Polarization - Base Station</b> |                      |                    |                |                |                    |
|   | <b>MA-WD10-DP14</b>  | <b>14 dBi, 90°</b> | 10.15-10.7 GHz | ---            | 7.9 X 7.9 X 1.25   |