



# MX12FHG865-01

## NWAV™ X-Pol 12-Port Antenna

**X-Pol 12-Port 8 ft, 65° Form In Tighter Higher Gain, with Smart Bias Ts, 698-2690 MHz:**

**4 ports 698-894 MHz, 8 ports 1695-2690 MHz**

- 12-Port antenna offering the same functionality as 2 Hex Port antennas in a single unit
- Industry-leading high gain for MB and LB for extended coverage
- Full mid band arrays for maximum gain
- Fully integrated (iRETs) with independent RET control for low band and mid band
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Suitable for 3G, 4G, and 5G interface technologies
- Integrated Smart Bias-Ts reduce leasing costs
- Optimized form factor for reduced wind loading
- Ultra low insertion loss antenna technology with reduced antenna weight



| Electrical specification (minimum/maximum)                | Ports 1, 2, 3, 4 |            | Ports 5, 6, 7, 8, 9, 10, 11, 12 |            |            |            |            |
|---|------------------|------------|---------------------------------|------------|------------|------------|------------|
|   | 698-798          | 824-894    | 1695-1880                       | 1850-1990  | 1920-2180  | 2300-2360  | 2496-2690  |
| Frequency bands, MHz                                      | 698-798          | 824-894    | 1695-1880                       | 1850-1990  | 1920-2180  | 2300-2360  | 2496-2690  |
| Polarization  | ± 45°            |            | ± 45°                           |            |            |            |            |
| Maximum gain over all tilts, dBi                          | 17.2             | 17.4       | 19.4                            | 19.5       | 20.0       | 20.1       | 20.2       |
| Average gain over all tilts, dBi                          | 16.8 ± 0.4       | 17.0 ± 0.4 | 19.2 ± 0.2                      | 19.2 ± 0.3 | 19.5 ± 0.5 | 19.6 ± 0.5 | 19.5 ± 0.7 |
| Horizontal beamwidth (HBW), degrees <sup>1</sup>          | 67               | 63         | 71                              | 66         | 62         | 60         | 62         |
| Front-to-back ratio, co-polar power @180°± 30°, dB        | >25.0            | >25.0      | >32.0                           | >31.0      | >32.0      | >33.0      | >33.0      |
| X-Pol discrimination (CPR) at boresight, dB               | >20.0            | >18.0      | >18                             | >18        | >18        | >18        | >18        |
| Vertical beamwidth (VBW), degrees <sup>1</sup>            | 9.0              | 8.3        | 5.0                             | 4.6        | 4.3        | 4.0        | 3.7        |
| Electrical downtilt (EDT) range, degrees                  | 0-10             |            | 0-7                             |            |            |            |            |
| First upper side lobe (USLS) suppression, dB <sup>1</sup> | ≤-15.0           | ≤-15.0     | ≤-16.0                          | ≤-16.0     | ≤-16.0     | ≤-16.0     | ≤-16.0     |
| Cross-polar isolation, port-to-port, dB <sup>1</sup>      | 25               | 25         | 25                              | 25         | 25         | 25         | 25         |
| Max VSWR / return loss, dB                                | 1.5:1 / -14.0    |            | 1.5:1 / -14.0                   |            |            |            |            |
| Max passive intermodulation (PIM), 2x20W carrier, dBc     | -153             |            | -153                            |            |            |            |            |
| Max input power per any port, watts                       | 300              |            | 250                             |            |            |            |            |
| Total composite power all ports, watts                    |                  |            | 1500                            |            |            |            |            |

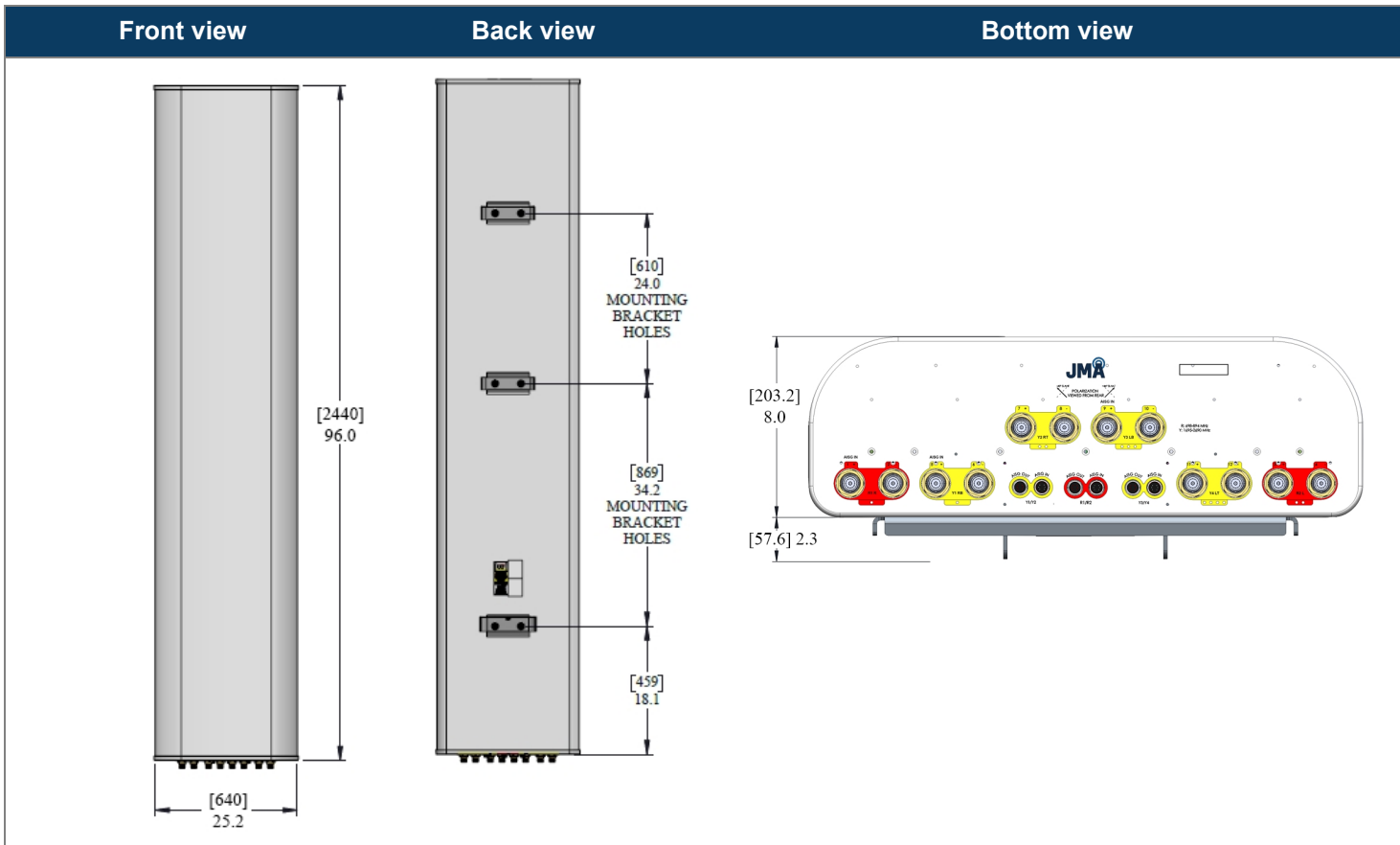
<sup>1</sup> Typical value over frequency and tilt



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## NWAV™ X-Pol 12-Port Antenna

| Mechanical specifications                               |                                     |
|---|-------------------------------------|
| Dimensions height/width/depth, inches (mm)              | 96/ 25.2/ 8 (2440/ 640/ 203)        |
| Shipping dimensions length/width/height, inches (mm)    | 100.6/ 29.0/ 14.5(2555/ 737/ 368)   |
| No. of RF input ports, connector type, and location     | 12 x 4.3-10 female, bottom          |
| RF connector torque                                     | 96 lbf-in (10.85 N·m or 8 lbf-ft)   |
| Net antenna weight, lb (kg)                             | 97 (43.99)                          |
| Shipping weight, lb (kg)                                | 153 (69.39)                         |
| Antenna mounting and downtilt kit included with antenna | 91900318, 91900319 (middle bracket) |
| Net weight of the mounting and downtilt kit, lb (kg)    | 26 (11.82)                          |
| Range of mechanical up/down tilt                        | -2° to 12°                          |
| Rated wind survival speed, mph (km/h)                   | 150 (241)                           |
| Frontal and lateral wind loading @ 150 km/h, lbf (N)    | 220 (978), 70 (311)                 |
| EPA projected area @150 km/h (EPA) frontal              | 10.0                                |



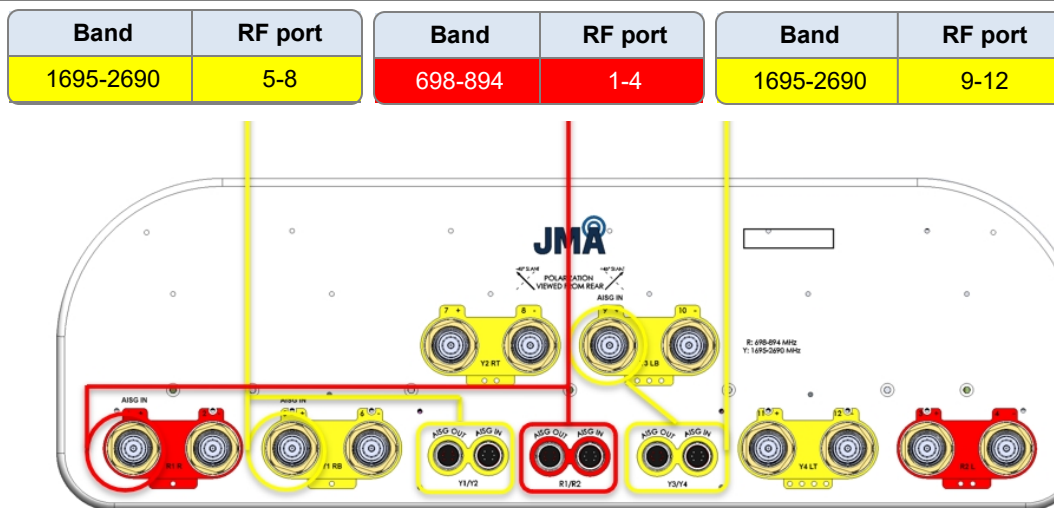
| Ordering information                    |  |
|---|--|
| Antenna model                           | Description  |
| MX12FHG865-01                           | 8F X- Pol 12 PORT FIT 65° 0-10°/ 0-7° RET, 4.3-10 & SBT        |
| Optional accessories                    |  |
| <a href="#">AISG cables</a>             | M/F cables for AISG connections                                |
| <a href="#">PCU-1000 RET controller</a> | Stand-alone controller for RET control and configurations      |
| <a href="#">91900314-03</a>             | Dual Mount Bracket (see 91900314 bracket document for details) |

### Remote electrical tilt (RET 1000) information

|   |  |
|---|--|
| RET location  | Integrated into antenna                                      |
| RET interface connector type                              | 8-pin AISG connector per IEC 60130-9 or RF port bias-t       |
| RET connector torque                                      | Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)    |
| RET interface connector quantity                          | 3 pairs of AISG male/female connectors and 3 RF port Bias Ts |
| RET interface connector location                          | Bottom of the antenna  |
| Total no. of internal RETs 698-894 MHz                    | 1  |
| Total no. of internal RETs 1695-2690 MHz                  | 2  |
| RET input operating voltage, vdc                          | 10-30  |
| RET max power consumption, idle state, W                  | ≤ 2.0  |
| RET max power consumption, normal operating conditions, W | ≤ 13.0   |
| RET communication protocol                                | AISG 2.0 / 3GPP  |

### RET and RF connector topology

Each RET device can be controlled either via the designated external AISG connector or RF smart bias-t port as shown below:



### Array topology

6 sets of radiating arrays

- R1: 698-894 MHz
- R2: 698-894 MHz
- Y1: 1695-2690 MHz
- Y2: 1695-2690 MHz
- Y3: 1695-2690 MHz
- Y4: 1695-2690 MHz

| Band      | RF port |
|-----------|---------|
| 1695-2690 | 5-12    |
| 698-894   | 1-4     |

