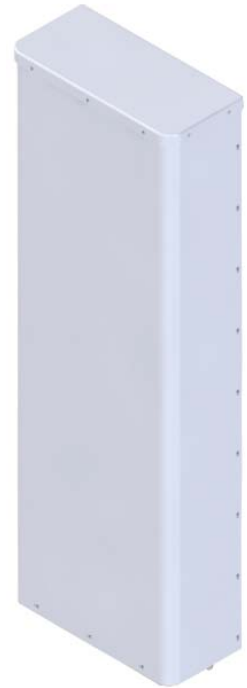


## HEX454CW0000x

TRI BAND | 6-PORT PANEL | XPOL | 45° | 1189 MM (46.8 IN)

- AWS-3 Ready
- 4x4 MIMO high band compatible
- Patented internal RET actuator adds no additional length to the antenna
- Can be ordered with a Multi-Device Dual Unit (MDDU) with two separate inputs for independent control of each band

| PRODUCT OVERVIEW | Frequency Range (MHz)   | 696-960                                    | 1695-2180                              | 1695-2180                              |
|------------------|-------------------------|--|--|--|
|                  | Array                   | <span style="color: red;">■</span> R1      | <span style="color: blue;">■</span> B1 | <span style="color: blue;">■</span> B2 |
|                  | Connector               | 1-2  | 3-4                                    | 5-6                                    |
|                  | Connector Type          | 7/16-DIN Female                            | 7/16-DIN Female                        | 7/16-DIN Female                        |
|                  | Polarization            | XPOL                                       | XPOL                                   | XPOL                                   |
|                  | Azimuth Beamwidth (avg) | 45°  | 45°                                    | 45°                                    |
|                  | Electrical Downtilt     | 0-14°                                      | 0-10°                                  | 0-10°                                  |
|                  | Dimensions              | 1189 x 397 x 187 mm (46.8 x 15.6 x 7.4 in) |  |  |



### ELECTRICAL SPECIFICATIONS Low Band

■ R1

| Frequency Range                                       | MHz       | 696-960         |                |
|---|-----------|-----------------|----------------|
| Frequency Sub-Range                                   | MHz       | 696-806         | 806-960        |
| Polarization  | ---       | ±45°            |                |
| Gain  | dBi       | 13.8            | 15.1           |
| Azimuth Beamwidth                                     | degrees   | 48.0            | 41.0           |
| Elevation Beamwidth                                   | degrees   | 22.0            | 18.2           |
| Electrical Downtilt                                   | degrees   | 0-14            |                |
| Impedance   | Ohms      | 50              |                |
| VSWR  | ---       | < 1.5:1         |                |
| Passive Intermodulation 3rd Order for 2x20 W Carriers | dBm (dBc) | < -110 (< -153) |                |
| Front-to-Back Ratio                                   | dB        | > 24            | > 24           |
| Upper Sidelobe Suppression                            | dB        | > 18 (Typical)  | > 18 (Typical) |
| Maximum Power Per Port                                | Watts     | 500             |                |
| In-Band Isolation                                     | dB        | > 25            | > 25           |
| Isolation Between Ports                               | dB        | > 30            | > 30           |

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## HEX454CW0000x

TRI BAND | 6-PORT PANEL | XPOL | 45° | 1189 MM (46.8 IN)

### ELECTRICAL SPECIFICATIONS Mid Band

■ B1, ■ B2

|  |              |                 |                |                |
|--|--------------|-----------------|----------------|----------------|
| Frequency Range  | MHz          | 1695-2180       |                |                |
| Frequency Sub-Range                                      | MHz          | 1695-1850       | 1850-1990      | 2100-2180      |
| Polarization   | ---          | ±45°            |                |                |
| Gain   | dBi          | 16.5            | 17.0           | 17.5           |
| Azimuth Beamwidth  | degrees      | 50.0            | 45.0           | 43.0           |
| Elevation Beamwidth                                      | degrees      | 9.0             | 8.5            | 7.8            |
| Electrical Downtilt                                      | degrees      | 0-10            |                |                |
| Impedance  | Ohms         | 50              |                |                |
| VSWR   | ---          | < 1.5:1         |                |                |
| Passive Intermodulation<br>3rd Order for 2x20 W Carriers | dBm<br>(dBc) | < -110 (< -153) |                |                |
| Front-to-Back Ratio                                      | dB           | > 27            | > 27           | > 27           |
| Upper Sidelobe Suppression                               | dB           | > 15 (Typical)  | > 15 (Typical) | > 15 (Typical) |
| Maximum Power Per Port                                   | Watts        | 250             |                |                |
| In-Band Isolation  | dB           | > 28            | > 28           | > 28           |
| Isolation Between Ports                                  | dB           | > 30            | > 30           | > 30           |

## HEX454CW0000x

TRI BAND | 6-PORT PANEL | XPOL | 45° | 1189 MM (46.8 IN)

### ELECTRICAL DOWNTILT CONTROL

For multiband antennas, electrical downtilt for each band can be controlled separately.

|                                      |   |
|--------------------------------------|---|
| Manual Electrical Tilt (MET) Control | A colored knob at the end of the tilt indicator allows change of the tilt without need of a tool. The knob color is identical to the corresponding connector ring color. To access the knob, remove the cap by turning it counter-clockwise. It is re-installed by opposite rotation. <b>Do not remove the transparent cap(s) from the antenna.</b>   |
| Remote Electrical Tilt (RET) Control | The remote control of the electrical tilt is managed by a Multi-Device Control Unit (MDCU) or a Multi-Device Dual Unit (MDDU) inserted in the bottom of the antenna. <i>See details below and refer to the ordering options to see which actuators are available with this particular antenna.</i> A single actuator individually controls the tilt of each band (no need for daisy chain cables between the bands). This module does not add any additional length to the antenna. For RET control, the transparent caps must be in place and locked. The tilt angle indicators always remain visible and the antenna still has manual tilt control (manual override). <b>Do not remove the transparent cap(s) from the antenna.</b> |

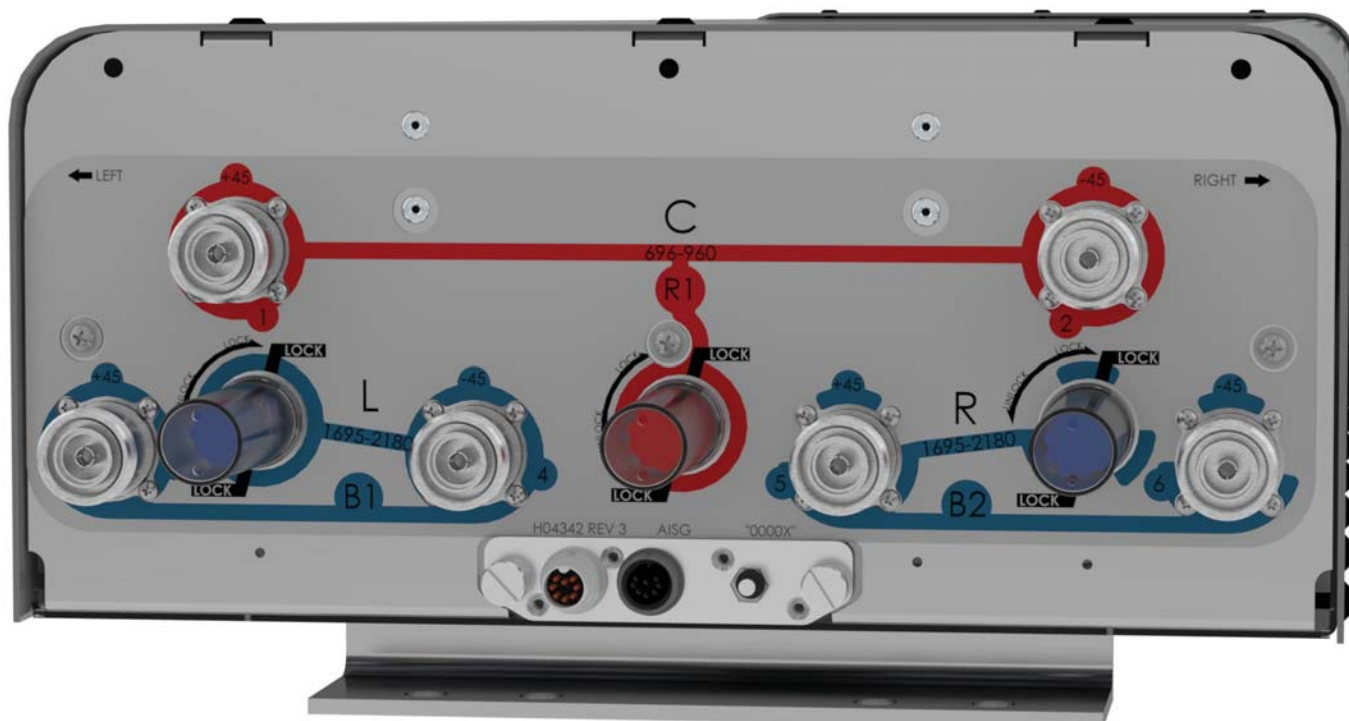
### RET ACTUATOR

Amphenol's **RET-READY** antennas are delivered with the RET Actuator already installed and pre-commissioned with all antenna parameters. Every RET device is factory configured and calibrated so the antenna is ready to be used once delivered to the site which means that there is no need for further installation of RET devices or for programming their configuration or for running a calibration process.

|                               |  |  |
|-------------------------------|--|--|
| RET-READY ACTUATORS           | <b>Multi-Device Control Unit (MDCU).</b> The MDCU is an electronic module that allows the remote control of the electrical downtilt (RET) in Amphenol antennas with factory embedded motors. The MDCU is factory installed and has one pair of AISG Male and Female connectors (type IEC60130-9). <i>Refer to the ORDERING OPTIONS for availability with this model.</i>     |  |
|                               | <b>Multi-Device Dual Unit (MDDU).</b> The MDDU allows two separate RET Controllers to independently drive the RETs in antennas with factory embedded motors (for antenna sharing or two technologies). The MDDU is factory installed and has two male AISG 8 pin connectors (type IEC60130-9 Ed 3.0). <i>Refer to the ORDERING OPTIONS for availability with this model.</i> |  |
| Number of RET-READY Actuators |  | One per antenna  |
| Input Voltage                 |  | +10 to +30 V   |
| Power Consumption             | Idle State (AISG P1)   | 0.5 W  |
|                               | High Power Mode (AISG P2)  | 3 W  |
| Protocol                      |  | 3GPP/AISG 2.0  |
| Tilt Change Duration          |  | Less than 15 seconds, typical (may vary dependent on antenna type and outdoor temperature) |
| Precision                     |  | ±0.5°  |
| Tilt Change Capability        |  | 50,000 minimum   |
| Field Replaceable Unit        |  | Yes  |

## HEX454CW0000x

TRI BAND | 6-PORT PANEL | XPOL | 45° | 1189 MM (46.8 IN)



| ARRAY LAYOUT | ARRAY                                  | FREQUENCY | CONNECTOR | CONNECTOR TYPE  |
|--------------|--|-----------|-----------|-----------------|
|              | <span style="color: red;">■</span> R1  | 696-960   | 1-2       | 7/16-DIN Female |
|              | <span style="color: blue;">■</span> B1 | 1695-2180 | 3-4       | 7/16-DIN Female |
|              | <span style="color: blue;">■</span> B2 | 1695-2180 | 5-6       | 7/16-DIN Female |

## HEX454CW0000x

TRI BAND | 6-PORT PANEL | XPOL | 45° | 1189 MM (46.8 IN)

### MECHANICAL SPECIFICATIONS

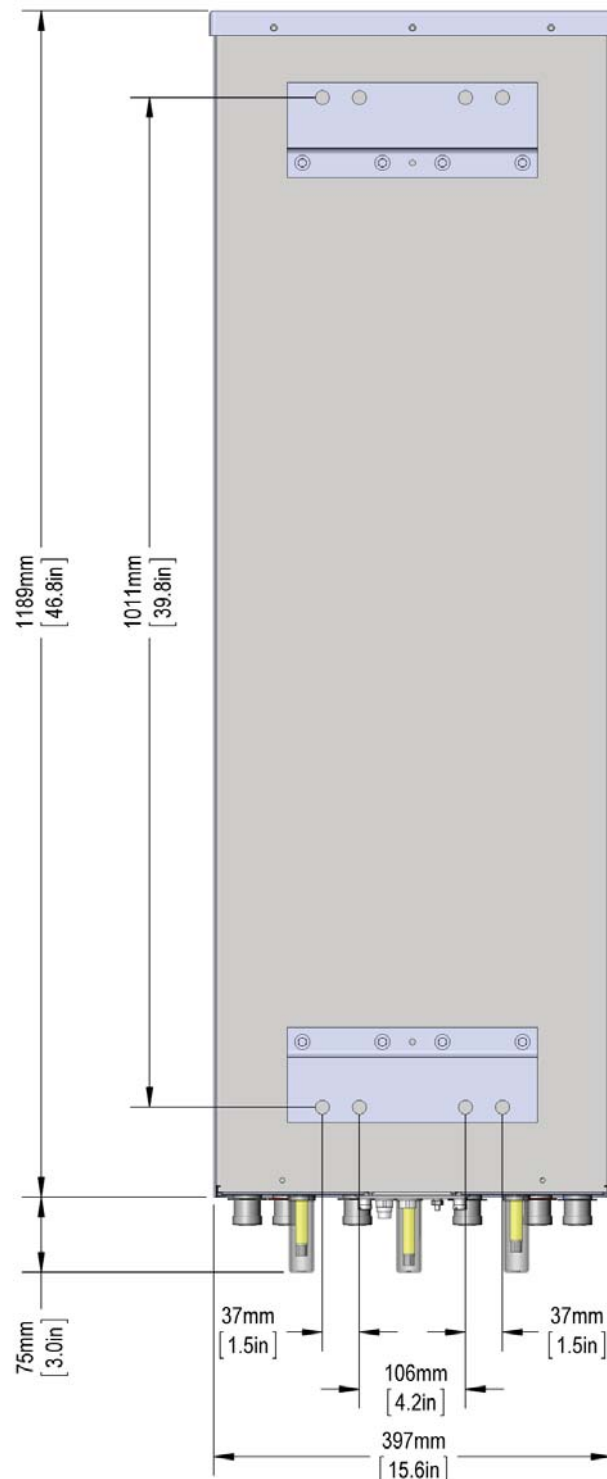
|                                       |             |            |                 |
|---------------------------------------|-------------|------------|-----------------|
| Antenna                               | Length      | mm (in)    | 1189 (46.8)     |
|                                       | Width       | mm (in)    | 397 (15.6)      |
|                                       | Depth       | mm (in)    | 187 (7.4)       |
| Net Weight - Antenna Only             |             | kg (lbs)   | 18.1 (40)       |
| Windload                              | Calculation | km/h (mph) | 161 (100)       |
|                                       | Frontal     | N (lbf)    | 604 (136)       |
|                                       | Lateral     | N (lbf)    | 280 (63)        |
| Survival Wind Speed                   |             | km/h (mph) | 241 (150)       |
| Connector                             | Type        | ---        | 7/16-DIN Female |
|                                       | Quantity    | ---        | 6               |
|                                       | Position    | ---        | Bottom          |
| Lightning Protection (Grounding Type) |             | ---        | Direct Ground   |

### ENVIRONMENTAL SPECIFICATIONS

|                       |           |                              |
|-----------------------|-----------|------------------------------|
| Operating Temperature | ° C (° F) | -40° to +60° (-40° to +140°) |
|-----------------------|-----------|------------------------------|

## HEX454CW0000x

TRI BAND | 6-PORT PANEL | XPOL | 45° | 1189 MM (46.8 IN)



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## HEX454CW0000x

TRI BAND | 6-PORT PANEL | XPOL | 45° | 1189 MM (46.8 IN)


### ORDERING OPTIONS Select from the different options listed below

| SELECT ELECTRICAL DOWNTILT<br>CONTROL & AISG PROTOCOL | SELECT<br>ACTUATOR                  | SELECT RET ACTUATOR<br>PORT CONFIGURATION |             | ANTENNA MODEL<br>NUMBER |
|---|-------------------------------------|---|-------------|-------------------------|
|   |                                     | PORT A                                    | PORT B      |                         |
| Manual Electrical Tilt (MET)                          | ---                                 | ---                                       | ---         | HEX454CW0000M           |
| Remote Electrical Tilt (RET)<br>AISG v2.0 / 3GPP      | Multi-Device Control Unit<br>(MDCU) | ---                                       | ---         | HEX454CW0000G           |
|   | Multi-Device Dual Unit<br>(MDDU)    | ■ R1                                      | ■ B1 / ■ B2 | HEX454CW0000L           |
|   |                                     | ■ B1                                      | ■ B2 / ■ R1 | HEX454CW0000L1          |
|   |                                     | ■ B2                                      | ■ B1 / ■ R1 | HEX454CW0000L2          |

### ACCESSORIES All accessories are ordered separately unless otherwise indicated

| MODEL NUMBER | DESCRIPTION                                    | FITS PIPE DIAMETER               | WEIGHT         |
|--------------|--|----------------------------------|----------------|
| 36210006     | 2-point pole mounting and downtilt bracket kit | Ø40 to Ø115 mm (Ø1.6 to Ø4.5 in) | 4.1 kg (9 lbs) |

### INSTALLATION Please read all installation notes before installing this product.

|   |   |
|---|---|
|  | Always attach the antenna using all mounting points.  |
|   | Do not install the antenna with the connectors facing upwards.  |
|   | Do not cut the tethered transparent cap(s) that cover the antenna's tilt adjustment indicators.                               |
|   | In order to operate the RET control, the transparent caps covering the tilt adjustment indicators must be engaged and locked. |