PRODUCT DATASHEET

**APXVB4LTY14AB_43MQ-C-I20**

Hybrid FDD/TDD Antenna, X-Pol, 1.4m, 10-ports FDD 1x 698-960/4x 1710-2690MHz, 65deg, 8T8R 3300-3800MHz, 90deg unit beam, MQ4/MQ5 Connectors, Integrated RET, Site Sharing Optional

### FEATURES / BENEFITS

- Hybrid FDD + TDD beamforming within a radome
- 2 ports / 1 cross pol system in low band (698-960MHz)
- 8 ports / 4 cross pol systems in high band (1710-2690MHz)
- TDD 8ports + 1 calibration port in 3.5GHz (3300-3800MHz)
- Integrated and field replaceable SRET
- ACU HW Version: 2.02
- Compliant with AISG V2.0 and 3GPP

## Technical features

### ELECTRICAL SPECIFICATIONS

| Electrical Specification Header | | Low Band Array (698-960 MHz) [R1] | | |
|---|---|---|---|---|
| **Frequency Band** | MHz | 698-806 | 790-894 | 880-960 |
| **Gain Typical** | dBi | 14.7 | 14.8 | 15.4 |
| **Gain Over all Tilts** | dBi | 13.2 +/- 1.5 | 14.3 +/- 0.5 | 14.9 +/- 0.5 |
| **Azimuth Beamwidth 3dB** | Deg | 67.7 +/- 7 | 68.6 +/- 5 | 66.6 +/- 4.8 |
| **Elevation Beamwidth 3dB** | Deg | 17.7 +/- 1.5 | 15.7 +/- 1 | 14.3 +/- 0.5 |
| **Cross Polar Discrimination at Boresight** | dB | 16 | 20 | 24 |
| **Cross Polar Discrimination over Sector** | dB | 3 | 6 | 8 |
| **F/B at +/-30deg Total Power** | dB | 17 | 20.6 | 21 |
| **First Upper Side Lobe Suppression** | dB | 18 | 15 | 15 |
| **Electrical Downtilt** | Deg | 2 to 14 | | |
| **Cross Polar Isolation** | dB | 25 | | |
| **Interband Isolation** | dB | 25 | | |
| **VSWR** | - | 1.5 | | |
| **Passive Intermodulation (3rd Order, 2 x 43dBm)** | dBc | -153 | | |
| **Maximum Effective Power per Port** | Watt | 350 | | |

# APXVB4LTY14AB_43MQ-C-I20

Hybrid FDD/TDD Antenna, X-Pol, 1.4m, 10-ports FDD 1x 698-960/4x 1710-2690MHz, 65deg, 8T8R 3300-3800MHz, 90deg unit beam, MQ4/MQ5 Connectors, Integrated RET, Site Sharing Optional

## ELECTRICAL SPECIFICATIONS

| Electrical Specification Header | | High Band Array (1710-2690 MHz) [Y1] | | | | |
|---|---|---|---|---|---|---|
| **Frequency Band** | MHz | 1710-1880 | 1850-1990 | 1920-2170 | 2300-2400 | 2490-2690 |
| **Gain Typical** | dBi | 14.2 | 14.5 | 15.8 | 14.9 | 15.1 |
| **Gain Over all Tilts** | dBi | 13.2 +/- 1 | 13.7 +/- 0.8 | 14.3 +/- 1.5 | 13.9 +/- 1 | 14.6 +/- 0.5 |
| **Azimuth Beamwidth 3dB** | Deg | 68.4 +/- 9.5 | 63.5 +/- 9 | 58.7 +/- 11.5 | 57 +/- 4.8 | 59.4 +/- 10.5 |
| **Elevation Beamwidth 3dB** | Deg | 14.7 +/- 2 | 13 +/- 1.6 | 12.1 +/- 1.5 | 11.1 +/- 1.2 | 10.5 +/- 1.2 |
| **Cross Polar Discrimination at Boresight** | dB | 17.1 | 18 | 19 | 15.3 | 16 |
| **Cross Polar Discrimination over Sector** | dB | 10 | 9 | 4 | 1 | 2.4 |
| **F/B at +/-30deg Total Power** | dB | 16.7 | 18 | 16 | 17 | 17.2 |
| **First Upper Side Lobe Suppression** | dB | 12 | 10 | 11 | 15 | 13 |
| **Electrical Downtilt** | Deg | 2 to 12 | | | | |
| **Cross Polar Isolation** | dB | 25 | | | | |
| **Interband Isolation** | dB | 25 | | | | |
| **VSWR** | - | 1.5 | | | | |
| **Passive Intermodulation (3rd Order, 2 x 43dBm)** | dBc | -153 | | | | |
| **Maximum Effective Power per Port** | Watt | 250 | | | | |

## ELECTRICAL SPECIFICATIONS

| Electrical Specification Header | | High Band Array (1710-2690 MHz) [Y2] | | | | |
|---|---|---|---|---|---|---|
| **Frequency Band** | MHz | 1710-1880 | 1850-1990 | 1920-2170 | 2300-2400 | 2490-2690 |
| **Gain Typical** | dBi | 13.9 | 14.4 | 15.1 | 15.1 | 16 |
| **Gain Over all Tilts** | dBi | 13.4 +/- 0.5 | 13.5 +/- 0.9 | 14.1 +/- 1 | 14.6 +/- 0.5 | 15.5 +/- 0.5 |
| **Azimuth Beamwidth 3dB** | Deg | 63.4 +/- 5 | 64.7 +/- 6.5 | 64.9 +/- 5.5 | 57 +/- 6.5 | 53.2 +/- 4.7 |
| **Elevation Beamwidth 3dB** | Deg | 12.6 +/- 1.5 | 11.9 +/- 1 | 11.3 +/- 1.5 | 9.3 +/- 0.5 | 8.6 +/- 0.5 |
| **Cross Polar Discrimination at Boresight** | dB | 19 | 17 | 16 | 17 | 17 |
| **Cross Polar Discrimination over Sector** | dB | 7 | 8 | 8 | 1 | 1 |
| **F/B at +/-30deg Total Power** | dB | 18 | 18 | 18 | 20 | 18 |
| **First Upper Side Lobe Suppression** | dB | 13 | 12 | 11 | 11 | 10 |
| **Electrical Downtilt** | Deg | 2 to 12 | | | | |
| **Cross Polar Isolation** | dB | 25 | | | | |
| **Interband Isolation** | dB | 25 | | | | |
| **VSWR** | - | 1.5 | | | | |
| **Passive Intermodulation (3rd Order, 2 x 43dBm)** | dBc | -153 | | | | |
| **Maximum Effective Power per Port** | Watt | 250 | | | | |

## ELECTRICAL SPECIFICATIONS

| Electrical Specification Header | | High Band Array (1710-2690 MHz) [Y3] | | | | |
|---|---|---|---|---|---|---|
| **Frequency Band** | MHz | 1710-1880 | 1850-1990 | 1920-2170 | 2300-2400 | 2490-2690 |
| **Gain Typical** | dBi | 14.9 | 14.8 | 15.7 | 15.4 | 16.3 |
| **Gain Over all Tilts** | dBi | 13.9 +/- 1 | 14.3 +/- 0.5 | 14.7 +/- 1 | 14.4 +/- 1 | 15.3 +/- 1 |
| **Azimuth Beamwidth 3dB** | Deg | 67.8 +/- 8 | 65.9 +/- 5.6 | 64.7 +/- 5.4 | 60.9 +/- 5 | 54 +/- 4.6 |
| **Elevation Beamwidth 3dB** | Deg | 13.3 +/- 0.5 | 12.7 +/- 0.5 | 12.1 +/- 1 | 10.3 +/- 0.5 | 9.4 +/- 0.5 |
| **Cross Polar Discrimination at Boresight** | dB | 19 | 19 | 18 | 24.8 | 19.7 |
| **Cross Polar Discrimination over Sector** | dB | 8 | 7 | 7 | 7.9 | 2 |
| **F/B at +/-30deg Total Power** | dB | 18 | 18 | 19 | 18 | 20 |
| **First Upper Side Lobe Suppression** | dB | 13 | 14 | 14 | 14 | 12 |
| **Electrical Downtilt** | Deg | 2 to 12 | | | | |
| **Cross Polar Isolation** | dB | 25 | | | | |
| **Interband Isolation** | dB | 25 | | | | |
| **VSWR** | - | 1.5 | | | | |
| **Passive Intermodulation (3rd Order, 2 x 43dBm)** | dBc | -153 | | | | |
| **Maximum Effective Power per Port** | Watt | 250 | | | | |

## ELECTRICAL SPECIFICATIONS

| Electrical Specification Header | | High Band Array (1710-2690 MHz) [Y4] | | | | |
|---|---|---|---|---|---|---|
| **Frequency Band** | MHz | 1710-1880 | 1850-1990 | 1920-2170 | 2300-2400 | 2490-2690 |
| **Gain Typical** | dBi | 15 | 15.7 | 15.8 | 16 | 16.3 |
| **Gain Over all Tilts** | dBi | 14.4 +/- 0.6 | 15 +/- 0.7 | 15.3 +/- 0.5 | 15 +/- 1 | 15.6 +/- 0.7 |
| **Azimuth Beamwidth 3dB** | Deg | 72.4 +/- 4.5 | 69.2 +/- 2.3 | 67.1 +/- 4 | 61 +/- 3 | 57.3 +/- 4.2 |
| **Elevation Beamwidth 3dB** | Deg | 13.4 +/- 0.5 | 12.5 +/- 0.5 | 11.9 +/- 1 | 10.4 +/- 0.5 | 9.4 +/- 0.5 |
| **Cross Polar Discrimination at Boresight** | dB | 20 | 22.6 | 23 | 23 | 21 |
| **Cross Polar Discrimination over Sector** | dB | 11 | 14 | 12 | 4 | 1.7 |
| **F/B at +/-30deg Total Power** | dB | 22 | 22.8 | 21 | 20 | 18 |
| **First Upper Side Lobe Suppression** | dB | 15 | 14 | 14 | 16 | 12 |
| **Electrical Downtilt** | Deg | 2 to 12 | | | | |
| **Cross Polar Isolation** | dB | 25 | | | | |
| **Interband Isolation** | dB | 25 | | | | |
| **VSWR** | - | 1.5 | | | | |
| **Passive Intermodulation (3rd Order, 2 x 43dBm)** | dBc | -153 | | | | |
| **Maximum Effective Power per Port** | Watt | 250 | | | | |

## ELECTRICAL SPECIFICATIONS

| | | | |
|---|---|---|---|
| **Electrical Specification Header** | | Cal. board and S parameter (3300-3800 MHz) [P1] | |
| **Frequency Band** | MHz | 3300-3600 | 3600-3800 |
| **Coupling between cal. Port to input port** | dB | -26+/-2 | |
| **Coupling amplitude accuracy** | dB | ≤ 0.9 | |
| **Coupling phase accuracy** | deg | ≤ 7 | |
| **VSWR** | - | ≤ 1.5 | |
| **Maximum Power** | Watt | 50 | |
| **ISO co-polor @ 2-6 deg tilt** | dB | ≥ 19 | |
| **ISO co-polor @ 7-12 deg tilt** | dB | ≥ 25 | |
| **ISO cross-polor @ 2-6 deg tilt** | dB | ≥ 24 | |
| **ISO cross-polor @ 7-12 deg tilt** | dB | ≥ 25 | |

## ELECTRICAL SPECIFICATIONS

| | | | |
|---|---|---|---|
| **Electrical Specification Header** | | Radiation Parameter - Unit Beam (3300-3800 MHz) [P1] | |
| **Frequency Band** | MHz | 3300-3600 | 3600-3800 |
| **Gain Typical** | dBi | 15 | 15 |
| **Gain Over all Tilts** | dBi | 14 +/- 1 | 14 +/- 1 |
| **Azimuth Beamwidth 3dB** | Deg | 83.4 +/- 5.5 | 73.8 +/- 8.5 |
| **Elevation Beamwidth 3dB** | Deg | 8.6 +/- 1 | 7.9 +/- 1 |
| **Cross Polar Discrimination at Boresight** | dB | 22 | 21.1 |
| **Cross Polar Discrimination over Sector** | dB | 8 | 8.3 |
| **F/B at +/-30deg Total Power** | dB | 19 | 18 |
| **First Upper Side Lobe Suppression** | dB | 15 | 14 |
| **Electrical Downtilt** | Deg | 2 to 12 | |
| **VSWR** | - | 1.5 | |

## ELECTRICAL SPECIFICATIONS

| | | | |
|---|---|---|---|
| **Electrical Specification Header** | | Radiation Parameter - Broad casting Beam (3300-3800 MHz) [P1] | |
| **Frequency Band** | MHz | 3300-3600 | 3600-3800 |
| **Gain Typical** | dBi | 15.3 | 16.2 |
| **Gain Over all Tilts** | dBi | 14.8 +/- 0.5 | 15.2 +/- 1 |
| **Azimuth Beamwidth 3dB** | Deg | 69.5 +/- 6 | 60.1 +/- 6.5 |
| **Elevation Beamwidth 3dB** | Deg | 8.4 +/- 1 | 7.8 +/- 0.5 |
| **F/B at +/-30deg Total Power** | dB | 21 | 20.3 |
| **First Upper Side Lobe Suppression** | dB | 16.7 | 16 |
| **Electrical Downtilt** | Deg | 2 to 12 | |
| **VSWR** | - | 1.5 | |

# APXVB4LTY14AB_43MQ-C-I20

Hybrid FDD/TDD Antenna, X-Pol, 1.4m, 10-ports FDD 1x 698-960/4x 1710-2690MHz, 65deg, 8T8R 3300-3800MHz, 90deg unit beam, MQ4/MQ5 Connectors, Integrated RET, Site Sharing Optional

## ELECTRICAL SPECIFICATIONS

| | | | |
|---|---|---|---|
| **Electrical Specification Header** | | Radiation Parameter - Working Beam (3300-3800 MHz) [P1] | |
| **Frequency Band** | MHz | 3300-3600 | 3600-3800 |
| **Gain Typical** | dBi | 20.4 | 20.2 |
| **Gain Over all Tilts** | dBi | 19.4 +/- 1 | 19.2 +/- 1 |
| **Azimuth Beamwidth 3dB** | Deg | 21.6 +/- 1.3 | 19.9 +/- 1 |
| **Elevation Beamwidth 3dB** | Deg | 8.3 +/- 0.5 | 7.9 +/- 0.7 |
| **F/B at +/-30deg Total Power** | dB | 25 | 25.9 |
| **First Upper Side Lobe Suppression** | dB | 18.7 | 16.6 |
| **Electrical Downtilt** | Deg | 2 to 12 | |
| **VSWR** | - | 1.5 | |

## ELECTRICAL SPECIFICATIONS

| | | |
|---|---|---|
| **Impedance** | Ohm | 50 |
| **Polarization** | Deg | ±45° |

## MECHANICAL SPECIFICATIONS

| | | |
|---|---|---|
| **Dimensions - H x W x D** | mm (in) | 1390 x 429 x 199 (54.7 x 16.9 x 7.8) |
| **Weight (Antenna Only)** | kg (lb) | 26.7 (58.9) |
| **Weight (Mounting Hardware only)** | kg (lb) | 4.5 (9.9) |
| **Packing size- HxWxD** | mm (in) | 1660 x 525 x 295 (65.4 x 20.7 x 11.6) |
| **Shipping Weight** | kg (lb) | 37.2 (82) |
| **Connector type** | | 10x 4.3-10 female + 2x Cluster connectors MQ4/MQ5 + 2 AISG connectors (1 male, 1 female) |
| **Radome Material / Color** | | Fiber Glass / Light Grey RAL7035 |

## TESTING AND ENVIRONMENTAL

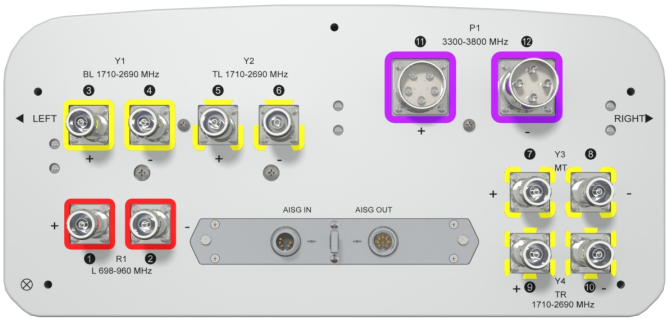
| | | |
|---|---|---|
| **Temperature Range** | °C (°F) | -40 to 60 (-40 to 140 ) |
| **Lightning protection** | | DC Ground |
| **Survival/Rated Wind Velocity** | km/h | 200 (150 ) |
| **Wind Load @Rated Wind Front** | N | 399 |
| **Wind Load @Rated Wind Side** | N | 404 |
| **Wind Load @Rated Wind Rear** | N | 463 |

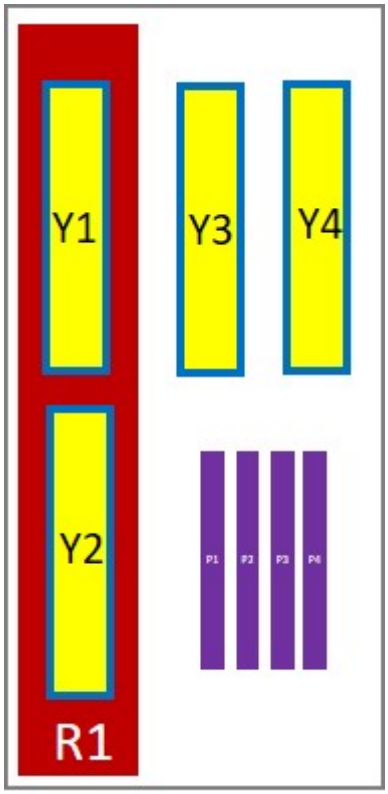
## ORDERING INFORMATION

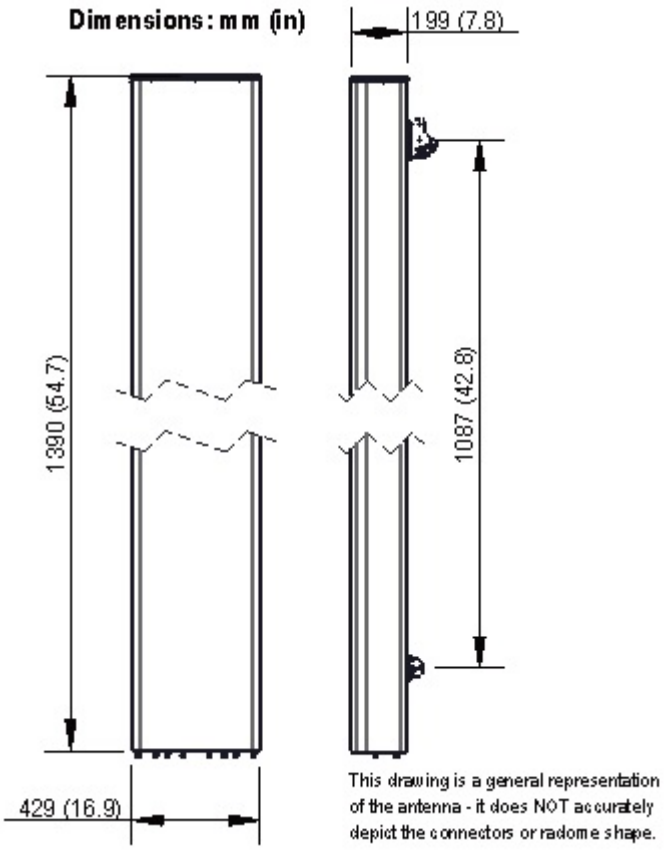
| Order No. | Configuration | Mounting Hardware | Mounting pipe Diameter | Shipping Weight |
|---|---|---|---|---|
| **APXVB4LTY14AB_43MQ-C-I20** | Internal RET (ACU-I20-B6) | APM50-B1 | 50-110mm | 37.2 kg |
| **APXVB4LTY14AB_43MQ-C-I20S (Material Code: 50016718)** | Internal RET (ACU-X20-B6) Dynamic Site Sharing mode | APM50-B1 | 50-110mm | 37.2 kg |
| **APXVB4LTY14AB_43MQ-C-I20S (Material Code: 50016719)** | Internal RET (ACU-X20-B6) Static Site Sharing mode | APM50-B1 | 50-110mm | 37.2 kg |

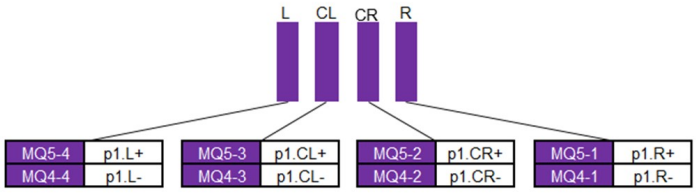
**APXVB4LTY14AB_43MQ-C-I20**

Hybrid FDD/TDD Antenna, X-Pol, 1.4m, 10-ports FDD 1x 698-960/4x 1710-2690MHz, 65deg, 8T8R 3300-3800MHz, 90deg unit beam, MQ4/MQ5 Connectors, Integrated RET, Site Sharing Optional




Physical array & port mapping according to AISG naming convention:
Left - Center Left - Center Right -Right (seen from front of antenna)

External Document Links

APM50_Series_Installation_Instructions

| APXVB4LTY14AB_43MQ-C-I20 | | | | |
|---|---|---|---|---|
| **Port** | **Array** | **Frequency** | **RET** | **AISG RET UID** |
| 1 | R1 | 698-960 | R1 | RFxxxxxxxxxxxxxxx-R1 |
| 2 | | | | |
| 3 | Y1 | 1710-2690 | Y1 | RFxxxxxxxxxxxxxxx-Y1 |
| 4 | | | | |
| 5 | Y2 | 1710-2690 | Y2 | RFxxxxxxxxxxxxxxx-Y2 |
| 6 | | | | |
| 7 | Y3 | 1710-2690 | Y3 | RFxxxxxxxxxxxxxxx-Y3 |
| 8 | | | | |
| 9 | Y4 | 1710-2690 | Y4 | RFxxxxxxxxxxxxxxx-Y4 |
| 10 | | | | |
| 11 | P1 | 3300-3800 | P1 | RFxxxxxxxxxxxxxxx-P1 |
| 12 | | | | |

Notes

- All electrical parameters are compliant with BASTA NGMN 11.1 requirements.
- Horizontal dipole column spacing: 55mm.
- MQ4/MQ5 cluster connectivity follow NGMN.
- For additional mounting information please click "External Document Links".

- **Radiating patterns:** Request pattern files