

APXVHHRRTM20AB_43-C-I20

Features

- 4 ports / 2 cross pol systems in low band (698-803 MHz)
- 4 ports / 2 cross pol systems in high band (1710-2170 MHz)
- 8 ports / 4 cross pol systems in high band (2515-2675 MHz)
- Integrated and field-replaceable SRET
- ACU HW version: 2.02
- Compliant with AISG v2.0 and 3GPP



| PRODUCT OVERVIEW | Frequency Range (MHz) | FDD | | | | TDD | | | |
|---------------------|--|---------------|-------|----------------|-------|------------------|-------|-------|-------|
| | | (2x) 698-803 | | (2x) 1710-2170 | | (8T8R) 2515-2675 | | | |
| | Array | ■ R1 | ■ R2 | ■ B1 | ■ B2 | ■ Y1 | | | |
| | Connector | 1-2 | 3-4 | 5-6 | 7-8 | 9-10 | 11-12 | 13-14 | 15-16 |
| | | 4 PORTS | | 4 PORTS | | 8 PORTS | | | |
| | | 4.3-10 Female | | 4.3-10 Female | | N-Type Female | | | |
| | Polarization | XPOL | | XPOL | | XPOL | | | |
| | Azimuth Beamwidth (avg) | 65° | | 65° | | 65° Unit Beam | | | |
| Electrical Downtilt | 2-12° | | 2-12° | | 2-12° | | | | |
| Dimensions | 2090 x 560 x 180 mm (82.2 x 22.0 x 7.1 in) | | | | | | | | |

ORDERING OPTIONS Select from the following ordering options

| ANTENNA MODEL NUMBER | CONFIGURATION | MOUNTING HARDWARE | MOUNTING PIPE DIAMETER | SHIPPING WEIGHT |
|-------------------------|-------------------------------------|------------------------------------|------------------------|---------------------|
| APXVHHRRTM20AB_43-C-I20 | ACU-I20-B5 Internal RET Included | APM50-B1 Beam Tilt Kit Included | 50-110 mm (2.0-4.3 in) | 51.5 kg (113.5 lbs) |



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APXVHHRRTM20AB_43-C-I20

ELECTRICAL SPECIFICATIONS

■ R1

| | | | |
|---|----------------|--------------------------------------|------------|
| Frequency Range | MHz | 698-803 | |
| Polarization | --- | ±45° | |
| Gain | Over all Tilts | dBi | 14.8 ± 0.4 |
| | Max Gain | dBi | 15.2 |
| Azimuth Beamwidth (3 dB) | degrees | 76° ± 4.5° | |
| Elevation Beamwidth (3 dB) | degrees | 11.1° ± 0.7° | |
| Electrical Downtilt | degrees | 2-12° | |
| Impedance | Ohms | 50Ω | |
| VSWR (Return Loss) | --- | 1.5:1 (-14 dB) | |
| Passive Intermodulation | dBc | -150 (3rd Order for 2x20 W Carriers) | |
| Front-to-Back Ratio, Total Power, ± 30° | dB | 21.2 | |
| First Upper Side Lobe Suppression | dB | 14.6 | |
| Cross-Pol Over Sector | dB | 9.4 | |
| Cross Polar Discrimination (XPD) at Mechanical Boresight (0°) | dB | 20.6 | |
| Maximum Effective Power Per Port | Watts | 350 W | |
| Cross Polar Isolation | dB | 26 | |
| Interband Isolation | dB | 26 | |

Specifications follow BASTA guidelines.

ELECTRICAL SPECIFICATIONS

■ R2

| | | | |
|---|----------------|--------------------------------------|------------|
| Frequency Range | MHz | 698-803 | |
| Polarization | --- | ±45° | |
| Gain | Over all Tilts | dBi | 14.7 ± 0.4 |
| | Max Gain | dBi | 15.1 |
| Azimuth Beamwidth (3 dB) | degrees | 74.8° ± 3.8° | |
| Elevation Beamwidth (3 dB) | degrees | 11.2° ± 0.8° | |
| Electrical Downtilt | degrees | 2-12° | |
| Impedance | Ohms | 50Ω | |
| VSWR (Return Loss) | --- | 1.5:1 (-14 dB) | |
| Passive Intermodulation | dBc | -150 (3rd Order for 2x20 W Carriers) | |
| Front-to-Back Ratio, Total Power, ± 30° | dB | 22.2 | |
| First Upper Side Lobe Suppression | dB | 17 | |
| Cross-Pol Over Sector | dB | 10.1 | |
| Cross Polar Discrimination (XPD) at Mechanical Boresight (0°) | dB | 24.9 | |
| Maximum Effective Power Per Port | Watts | 350 W | |
| Cross Polar Isolation | dB | 26 | |
| Interband Isolation | dB | 26 | |

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APXVHHRRTM20AB_43-C-I20

ELECTRICAL SPECIFICATIONS

■ B1

| | | | | | |
|---|----------------|---------|--------------------------------------|--------------|--------------|
| Frequency Range | | MHz | 1710-2170 | | |
| | | MHz | 1710-1880 | 1850-1990 | 1920-2170 |
| Polarization | | --- | ±45° | | |
| Gain | Over all Tilts | dBi | 17.2 ± 0.6 | 17.5 ± 0.5 | 17.6 ± 0.6 |
| | Max Gain | dBi | 17.8 | 18 | 18.2 |
| Azimuth Beamwidth (3 dB) | | degrees | 52.8° ± 4.1° | 48.5° ± 2.5° | 48.3° ± 3.4° |
| Elevation Beamwidth (3 dB) | | degrees | 5.9° ± 0.5° | 5.4° ± 0.4° | 5.2° ± 0.4° |
| Electrical Downtilt | | degrees | 2-12° | | |
| Impedance | | Ohms | 50Ω | | |
| VSWR (Return Loss) | | --- | 1.5:1 (-14 dB) | | |
| Passive Intermodulation | | dBc | -150 (3rd Order for 2x20 W Carriers) | | |
| Front-to-Back Ratio, Total Power, ± 30° | | dB | 24 | 24.1 | 24.1 |
| First Upper Side Lobe Suppression | | dB | 11.3 | 12.1 | 15.7 |
| Cross-Pol Over Sector | | dB | 0.9 | 1 | 0.7 |
| Cross Polar Discrimination (XPD) at Mechanical Boresight (0°) | | dB | 15.7 | 16.7 | 15.7 |
| Maximum Effective Power Per Port | | Watts | 250 W | | |
| Cross Polar Isolation | | dB | 26 | | |
| Interband Isolation | | dB | 26 | | |

Specifications follow BASTA guidelines.

ELECTRICAL SPECIFICATIONS

■ B2

| | | | | | |
|---|----------------|---------|--------------------------------------|-------------|--------------|
| Frequency Range | | MHz | 1710-2170 | | |
| | | MHz | 1710-1880 | 1850-1990 | 1920-2170 |
| Polarization | | --- | ±45° | | |
| Gain | Over all Tilts | dBi | 17.3 ± 0.7 | 17.7 ± 0.5 | 17.7 ± 0.4 |
| | Max Gain | dBi | 18 | 18.2 | 18.1 |
| Azimuth Beamwidth (3 dB) | | degrees | 54.3° ± 4.9° | 49° ± 3.7° | 48.5° ± 3.6° |
| Elevation Beamwidth (3 dB) | | degrees | 5.9° ± 0.4° | 5.5° ± 0.4° | 5.1° ± 0.4° |
| Electrical Downtilt | | degrees | 2-12° | | |
| Impedance | | Ohms | 50Ω | | |
| VSWR (Return Loss) | | --- | 1.5:1 (-14 dB) | | |
| Passive Intermodulation | | dBc | -150 (3rd Order for 2x20 W Carriers) | | |
| Front-to-Back Ratio, Total Power, ± 30° | | dB | 24.7 | 23.9 | 23.9 |
| First Upper Side Lobe Suppression | | dB | 12.7 | 14.3 | 13 |
| Cross-Pol Over Sector | | dB | 0.9 | 0.9 | 1 |
| Cross Polar Discrimination (XPD) at Mechanical Boresight (0°) | | dB | 15.7 | 17.4 | 15.5 |
| Maximum Effective Power Per Port | | Watts | 250 W | | |
| Cross Polar Isolation | | dB | 26 | | |
| Interband Isolation | | dB | 26 | | |

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■ Y1

ELECTRICAL SPECIFICATIONS

Cal. Board and S Parameter

| | | |
|--|---------|-----------|
| Frequency Range | MHz | 2515-2675 |
| Coupling between Cal. Port to Input Port | dB | -26 ± 2 |
| Coupling Amplitude Accuracy | dB | ≤ 0.9 |
| Coupling Phase Accuracy | degrees | ≤ 7° |
| VSWR | --- | ≤ 1.5 |
| Maximum Power | Watts | 80 W |
| ISO Co-Polar at 2-6° Tilt | dB | ≥ 19 |
| ISO Co-Polar at 7-12° Tilt | dB | ≥ 25 |
| ISO Cross-Polar at 2-6° Tilt | dB | ≥ 24 |
| ISO Cross-Polar at 7-12° Tilt | dB | ≥ 25 |

Specifications follow BASTA guidelines.

■ Y1

ELECTRICAL SPECIFICATIONS

Radiation Parameter - Unit Beam

| | | | |
|---|----------------|----------------|------------|
| Frequency Range | MHz | 2515-2675 | |
| Polarization | --- | ±45° | |
| Gain | Over all Tilts | dBi | 15.6 ± 0.5 |
| | Max Gain | dBi | 16.1 |
| Azimuth Beamwidth (3 dB) | degrees | 66.7° ± 13.9° | |
| Elevation Beamwidth (3 dB) | degrees | 6.5° ± 0.6° | |
| Electrical Downtilt | degrees | 2-12° | |
| Impedance | Ohms | 50Ω | |
| VSWR (Return Loss) | --- | 1.5:1 (-14 dB) | |
| Front-to-Back Ratio, Total Power, ± 30° | dB | 19.3 | |
| First Upper Side Lobe Suppression | dB | 16.2 | |
| Cross-Pol Over Sector | dB | 5.6 | |
| Cross Polar Discrimination (XPD) at Mechanical Boresight (0°) | dB | 20.9 | |

Specifications follow BASTA guidelines.

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■ Y1

ELECTRICAL SPECIFICATIONS

Radiation Parameter - Broadcasting Beam

| | | | |
|---|----------------|----------------|------------|
| Frequency Range | MHz | 2515-2675 | |
| Polarization | --- | ±45° | |
| Gain | Over all Tilts | dBi | 17.3 ± 0.7 |
| | Max Gain | dBi | 18 |
| Azimuth Beamwidth (3 dB) | degrees | 48.4° ± 7.9° | |
| Elevation Beamwidth (3 dB) | degrees | 6.6° ± 0.5° | |
| Electrical Downtilt | degrees | 2-12° | |
| Impedance | Ohms | 50Ω | |
| VSWR (Return Loss) | --- | 1.5:1 (-14 dB) | |
| Front-to-Back Ratio, Total Power, ± 30° | dB | 21.2 | |
| First Upper Side Lobe Suppression | dB | 17.4 | |

Specifications follow BASTA guidelines.

■ Y1

ELECTRICAL SPECIFICATIONS

Radiation Parameter - Working Beam

| | | | |
|---|----------------|--------------|----------|
| Frequency Range | MHz | 2515-2675 | |
| Polarization | --- | ±45° | |
| Gain | Over all Tilts | dBi | 21 ± 0.3 |
| | Max Gain | dBi | 21.3 |
| Azimuth Beamwidth (3 dB) | degrees | 20.2° ± 1.2° | |
| Elevation Beamwidth (3 dB) | degrees | 6.7° ± 0.4° | |
| Electrical Downtilt | degrees | 2-12° | |
| Impedance | Ohms | 50Ω | |
| Front-to-Back Ratio, Total Power, ± 30° | dB | 23.5 | |
| First Upper Side Lobe Suppression | dB | 17.4 | |

Specifications follow BASTA guidelines.

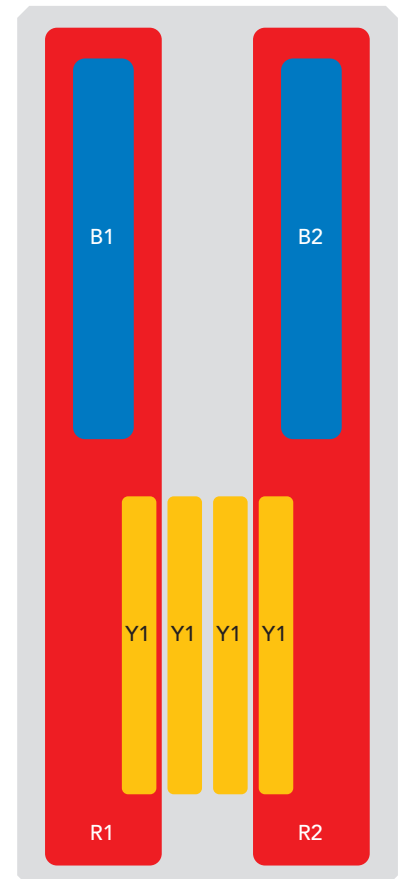
APXVHHRRTM20AB_43-C-I20

BOTTOM VIEW - LABELING



ARRAY LAYOUT

| ARRAY | FREQUENCY | CONNECTOR | CONNECTOR TYPE | RET | AISG RET UID |
|--|---------------|-----------|--------------------|-----|-----------------|
| ■ R1 | 698-803 MHz | 1-2 | (2x) 4.3-10 Female | R1 | RFxxxxxxxxxx-R1 |
| ■ R2 | 698-803 MHz | 3-4 | (2x) 4.3-10 Female | R2 | RFxxxxxxxxxx-R2 |
| ■ B1 | 1710-2170 MHz | 5-6 | (2x) 4.3-10 Female | B1 | RFxxxxxxxxxx-B1 |
| ■ B2 | 1710-2170 MHz | 7-8 | (2x) 4.3-10 Female | B2 | RFxxxxxxxxxx-B2 |
| ■ Y1 | 2515-2675 MHz | 9-10 | (2x) N-Type Female | Y1 | RFxxxxxxxxxx-Y1 |
| | 2515-2675 MHz | 11-12 | (2x) N-Type Female | | |
| | 2515-2675 MHz | 13-14 | (2x) N-Type Female | | |
| | 2515-2675 MHz | 15-16 | (2x) N-Type Female | | |



The illustration is not shown to scale.

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MECHANICAL SPECIFICATIONS

| | | |
|--|---------------------------------------|--|
| Length | mm (in) | 2090 (82.2) |
| Width | mm (in) | 560 (22.0) |
| Depth | mm (in) | 180 (7.1) |
| Net Weight - Antenna Only | kg (lbs) | 41 (90.4) |
| Net Weight - Mounting Hardware Only | kg (lbs) | 4.5 (9.9) |
| Wind Load Rated at 150 km/h (93 mph) | Front | N (lbf) 1263 (284) |
| | Side | N (lbf) 348 (78) |
| | Rear | N (lbf) 1278 (287) |
| Survival Wind Speed / Rated Wind Speed | km/h (mph) | 200 (150) |
| Connector Type | -- | (8x) 4.3-10 Female, (8x) N-Type Female, (1x) Cal. Connector, (2x) AISG Connectors (1 Male, 1 Female) at Bottom |
| Radome Color | --- | Light Grey RAL7035 |
| Radome Material | --- | Fiberglass |
| Lightning Protection | --- | DC Ground |
| Shipping | Packing Size (Length x Width x Depth) | mm (in) 2340 x 655 x 285 (92.1 x 25.8 x 11.2) |
| | Shipping Weight | kg (lbs) 51.5 (113.5) |

ENVIRONMENTAL SPECIFICATIONS

| | | |
|----------------------------------|---------|----------------------------------|
| Environmental Standard | --- | ETS 300 019 |
| Operating Temperature | degrees | -40° to +60° C (-40° to +140° F) |
| Product Environmental Compliance | --- | Product is RoHS Compliant |

APXVHHRRTM20AB_43-C-I20

ACCESSORIES Accessories may be ordered separately unless otherwise indicated.

| ITEM | MODEL NUMBER | WEIGHT |
|--|--------------|------------------|
| Beam Tilt Mounting Bracket Kit for Pole Diameter 50-110 mm (2.0-4.3 in) <i>Shipped with antenna</i> | APM50-B1 | 4.5 kg (9.9 lbs) |

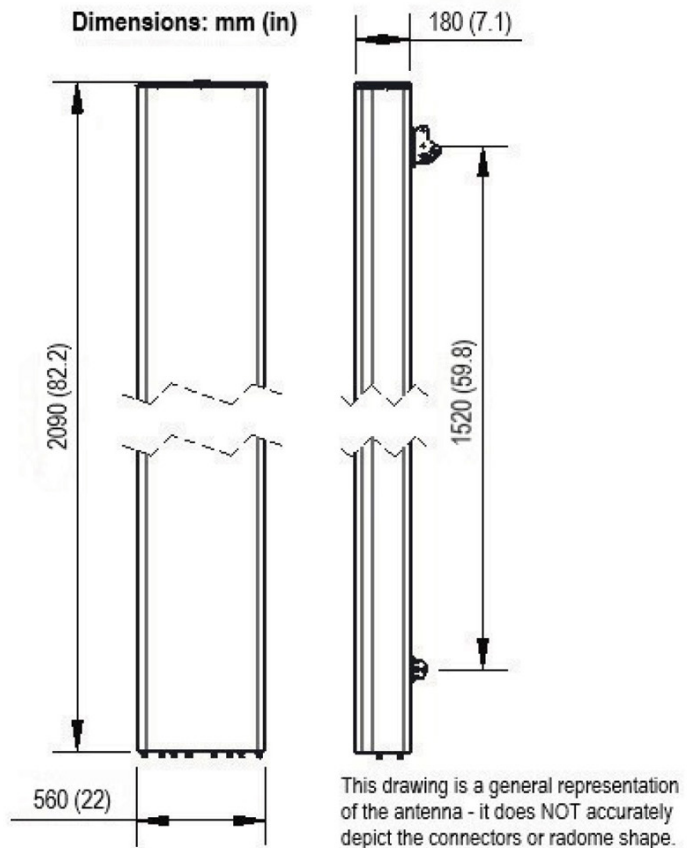
INSTALLATION Please read all installation notes before installing product.



- Always attach the antenna using all mounting points.
- Do not install antenna with the connectors facing upwards.

EXTERNAL DOCUMENT LINKS

[APM50 Mounting Kit Series Installation Instructions](#)



NOTES

- Specifications follow BASTA guidelines.
- For additional mounting information, please check **External Document Links**.
- For Radiating Patterns: [Request pattern files](#)