

# RRVVQ4-65D-R5V4



16-port sector antenna, 4 x 694-960 MHz (R1-R2), and 4 x 1695-2690 MHz (Y1-Y2) 65° HPBW, 8 x 2300-3800 MHz (P1), 90° HPBW, 5 x RET

- Includes 1x 4-Column Array for 2300-3800MHz and calibration port. Column spacing optimized to support Soft Split Beamforming
- 5 Internal RET's provide independent electrical tilt control for each array
- New aerodynamic endcaps for wind load optimization
- Q4 array uses MQ4/5 cluster connectors

## General Specifications

<b>Antenna Type</b>	Sector- and beamforming
<b>Band</b>	Multiband
<b>Calibration Connector Interface</b>	MQ5
<b>Calibration Connector Quantity</b>	1
<b>Color</b>	Light Gray (RAL 7035)
<b>Grounding Type</b>	RF connector inner conductor and body grounded to reflector and mounting bracket
<b>Performance Note</b>	Outdoor usage
<b>Radome Material</b>	Fiberglass, UV resistant
<b>Reflector Material</b>	Aluminum
<b>RF Connector Interface</b>	4.3-10 Female   MQ4   MQ5
<b>RF Connector Location</b>	Bottom
<b>RF Connector Quantity, high band</b>	8
<b>RF Connector Quantity, mid band</b>	4
<b>RF Connector Quantity, low band</b>	4
<b>RF Connector Quantity, total</b>	16

## Remote Electrical Tilt (RET) Information

<b>RET Hardware</b>	CommRET v2
<b>RET Interface</b>	8-pin DIN Female   8-pin DIN Male
<b>RET Interface, quantity</b>	2 female   2 male
<b>Input Voltage</b>	10-30 Vdc
<b>Internal RET</b>	High band (1)   Low band (2)   Mid band (2)
<b>Power Consumption, active state, maximum</b>	8 W

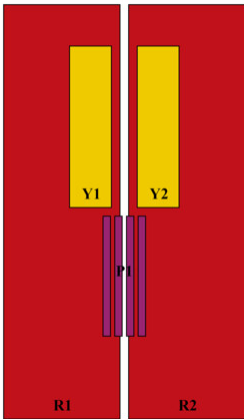
# RRVVQ4-65D-R5V4

<b>Power Consumption, idle state, maximum</b>	1 W
<b>Protocol</b>	3GPP/AISG 2.0 (Single RET)

## Dimensions

<b>Width</b>	498 mm   19.606 in
<b>Depth</b>	197 mm   7.756 in
<b>Length</b>	2688 mm   105.827 in
<b>Net Weight, antenna only</b>	51.8 kg   114.199 lb

## Array Layout

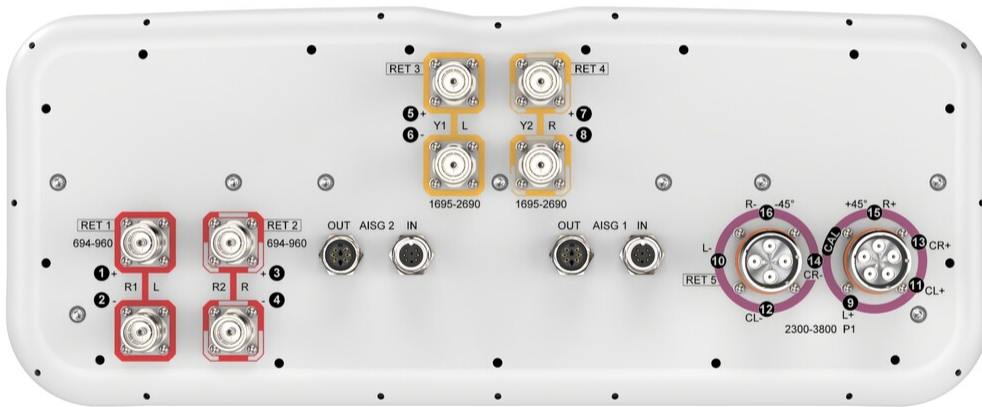


Array ID	Frequency (MHz)	RF Connector	RET (SRET)	AISG No.	AISG RET UID
R1	694-960	1 - 2	1	AISG1	CPXXXXXXXXXXXXR1
R2	694-960	3 - 4	2	AISG1	CPXXXXXXXXXXXXR2
Y1	1695-2690	5 - 6	3	AISG1	CPXXXXXXXXXXXXY1
Y2	1695-2690	7 - 8	4	AISG1	CPXXXXXXXXXXXXY2
P1	2300-3800	9 - 16	5	AISG1	CPXXXXXXXXXXXXP1

(Sizes of colored boxes are not true depictions of array sizes)

## Port Configuration

# RRVVQ4-65D-R5V4



## Electrical Specifications

<b>Impedance</b>	50 ohm
<b>Operating Frequency Band</b>	1695 – 2690 MHz   2300 – 3800 MHz   694 – 960 MHz
<b>Polarization</b>	±45°
<b>Total Input Power, maximum</b>	900 W @ 50 °C

## Electrical Specifications

Frequency Band, MHz	698–806	790–896	890–960	1695–1990	1920–2300	2300–2500	2490–2690
<b>Beamwidth, Horizontal, degrees</b>	70	63	63	61	63	71	71
<b>Beamwidth, Vertical, degrees</b>	8.8	7.9	7.3	7.2	6.4	5.7	5.3
<b>Beam Tilt, degrees</b>	2–12	2–12	2–12	2–12	2–12	2–12	2–12

# RRVVQ4-65D-R5V4

<b>USLS (First Lobe), dB</b>	17	20	20	18	19	22	23
<b>Front-to-Back Ratio at 180°, dB</b>	32	30	32	31	33	32	29
<b>CPR at Boresight, dB</b>	20	19	18	20	20	17	19
<b>CPR at Sector, dB</b>	11	9	12	8	6	5	5
<b>Isolation, Cross Polarization, dB</b>	28	28	28	25	25	25	25
<b>Isolation, Inter-band, dB</b>	28	28	28	25	25	25	25
<b>VSWR   Return loss, dB</b>	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-150	-150	-150	-150	-150	-150	-150
<b>Input Power per Port at 50°C, maximum, watts</b>	300	300	300	250	250	200	200

## Electrical Specifications, BASTA

<b>Frequency Band, MHz</b>	<b>698–806</b>	<b>790–896</b>	<b>890–960</b>	<b>1695–1990</b>	<b>1920–2300</b>	<b>2300–2500</b>	<b>2490–2690</b>
<b>Gain by all Beam Tilts, average, dBi</b>	15.6	15.9	16.2	16	16.5	16.6	16.4
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.3	±0.3	±0.5	±0.4	±0.5	±0.5	±0.4
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±5.9	±4	±3.3	±6.2	±4.8	±4.3	±4.6
<b>Beamwidth, Vertical Tolerance, degrees</b>	±0.4	±0.5	±0.3	±0.6	±0.5	±0.3	±0.3
<b>USLS, beampeak to 20° above beampeak, dB</b>	17	18	18	16	17	16	17
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	22	22	23	26	27	26	25

## Electrical Specifications

<b>Frequency Band, MHz</b>	<b>2300–2500</b>	<b>2490–2690</b>	<b>3400–3600</b>	<b>3600–3800</b>
<b>Beamwidth, Horizontal, degrees</b>	84	88	66	62
<b>Beamwidth, Vertical, degrees</b>	6.1	5.9	5.2	5.1
<b>Beam Tilt, degrees</b>	2–12	2–12	2–12	2–12
<b>USLS (First Lobe), dB</b>	14	14	14	14
<b>Front-to-Back Ratio at 180°, dB</b>	31	32	27	29
<b>Coupling level, Amp, Antenna port to Cal port, dB</b>	-26	-26	-26	-26
<b>Coupling level, max Amp Δ,</b>	±2	±2	±2	±2

# RRVVQ4-65D-R5V4

## Antenna port to Cal port, dB

<b>Coupler, max Amp <math>\Delta</math>, Antenna port to Cal port, dB</b>	0.9	0.9	0.9	0.9
<b>Coupler, max Phase <math>\Delta</math>, Antenna port to Cal port, degrees</b>	7	7	7	7
<b>CPR at Boresight, dB</b>	15	17	17	15
<b>CPR at Sector, dB</b>	9	7	7	5
<b>Isolation, Cross Polarization, dB</b>	23	23	23	23
<b>Isolation, Inter-band, dB</b>	25	25	25	25
<b>Isolation, Co-polarization, dB</b>	20	20	20	20
<b>VSWR   Return loss, dB</b>	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-130	-130	-130	-130
<b>Input Power per Port at 50°C, maximum, watts</b>	75	75	75	75

## Electrical Specifications, BASTA

Frequency Band, MHz	2300–2500	2490–2690	3400–3600	3600–3800
<b>Gain by all Beam Tilts, average, dBi</b>	14.7	15.2	15.8	15.9
<b>Gain by all Beam Tilts Tolerance, dB</b>	±1	±0.7	±0.8	±0.9
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±23.7	±16.5	±8.3	±10
<b>Beamwidth, Vertical Tolerance, degrees</b>	±0.5	±0.4	±0.2	±0.2
<b>USLS, beampeak to 20° above beampeak, dB</b>	11	12	12	11
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	22	25	23	23

## Electrical Specifications, Broadcast 65°

Frequency Band, MHz	2300–2500	2490–2690	3400–3600	3600–3800
<b>Gain, dBi</b>	17.3	18.3	17.4	17.5
<b>Beamwidth, Horizontal, degrees</b>	65	65	65	65
<b>Beamwidth, Vertical, degrees</b>	5.9	5.8	5.2	5.1
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	26	30	24	24

# RRVQ4-65D-R5V4

USLS (First Lobe), dB	14	15	15	14
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## Electrical Specifications, Envelope Pattern

Frequency Band, MHz	2300–2500	2490–2690	3400–3600	3600–3800
Gain, dBi	20.1	20.5	21.8	21.9
Beamwidth, Horizontal at 10 dB, degrees	128	121	124	118
Front-to-Back Total Power at 180° ± 30°, dB	28	29	28	27
USLS (First Lobe), dB	16	15	15	14

## Electrical Specifications, Service Beam

Frequency Band, MHz	2300–2500	2490–2690	3400–3600	3600–3800
Steered 0° Gain, dBi	20.2	20.5	21.8	21.8
Steered 0° Beamwidth, Horizontal, degrees	24	25	19	18
Steered 0° Front-to-Back Total Power at 180° ± 30°, dB	30	32	29	29
Steered 0° Horizontal Sidelobe, dB	14	12	14	14
Steered 30° Gain, dBi	19.4	20.2	19.5	19.9
Steered 30° Beamwidth, Horizontal, degrees	29	27	24	20
Steered 30° Front-to-Back Total Power at 180° ± 30°, dB	30	31	26	26

## Electrical Specifications, Soft Split

Frequency Band, MHz	2300–2500	2490–2690
Gain, dBi	19.3	19.9
Beamwidth, Horizontal, degrees	31	30
Front-to-Back Total Power at 180° ± 30°, dB	29	31
Horizontal Sidelobe, dB	20	19
USLS (First Lobe), dB	17	16

## Mechanical Specifications

Wind Loading @ Velocity, frontal	944.0 N @ 150 km/h (212.2 lbf @ 150 km/h)
Wind Loading @ Velocity, lateral	292.0 N @ 150 km/h (65.6 lbf @ 150 km/h)

# RRVVQ4-65D-R5V4

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<b>Wind Loading @ Velocity, maximum</b>	1,130.0 N @ 150 km/h (254.0 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	650.0 N @ 150 km/h (146.1 lbf @ 150 km/h)
<b>Wind Speed, maximum</b>	241 km/h (150 mph)

## Packaging and Weights

<b>Width, packed</b>	565 mm   22.244 in
<b>Depth, packed</b>	309 mm   12.165 in
<b>Length, packed</b>	2935 mm   115.551 in
<b>Weight, gross</b>	73.6 kg   162.26 lb

## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant/Exempted
UK-ROHS	Compliant/Exempted



## Included Products

BSAMNT-4	-	Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.
BSAMNT-M4	-	Middle Downtilt Mounting Kit for Long Antennas for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor bracket set.

## \* Footnotes

<b>Performance Note</b>	Severe environmental conditions may degrade optimum performance
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