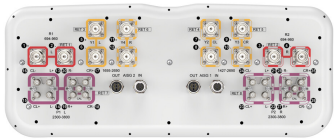


# RRZZVVQ4Q4-65DR8



28-port sector antenna, 4 x 694-960 MHz (R1,R2), 4 x 1695-2690 MHz (Y1,Y4) and 4 x 1427-2690 MHz (Y2,Y3), 65° HPBW, 16 x 2300-3800 MHz (P1,P2), 90° HPBW, 8 x RET

- Eight internal RETs control the antenna arrays
- Two broadband beamforming arrays for 2300-3800 MHz, each with a calibration port
- Q4 array uses M-LOC cluster connectors
- New aerodynamic endcaps for wind load optimization

## General Specifications

<b>Antenna Type</b>	Sector- and beamforming
<b>Band</b>	Multiband
<b>Calibration Connector Interface</b>	M-LOC
<b>Calibration Connector Quantity</b>	2
<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   M-LOC
<b>RF Connector Location</b>	Bottom
<b>RF Connector Quantity, high band</b>	16
<b>RF Connector Quantity, mid band</b>	8
<b>RF Connector Quantity, low band</b>	4
<b>RF Connector Quantity, total</b>	28

## 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 (2)   Low band (2)   Mid band (4)

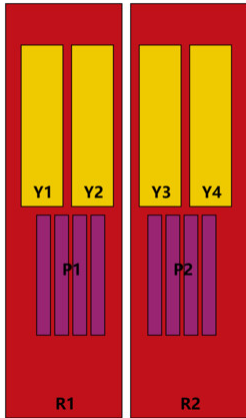
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<b>Power Consumption, active state, maximum</b>	8 W
<b>Power Consumption, idle state, maximum</b>	1 W
<b>Protocol</b>	3GPP/AISG 2.0 (Single RET)

## 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>	56.5 kg   124.561 lb

## Array Layout

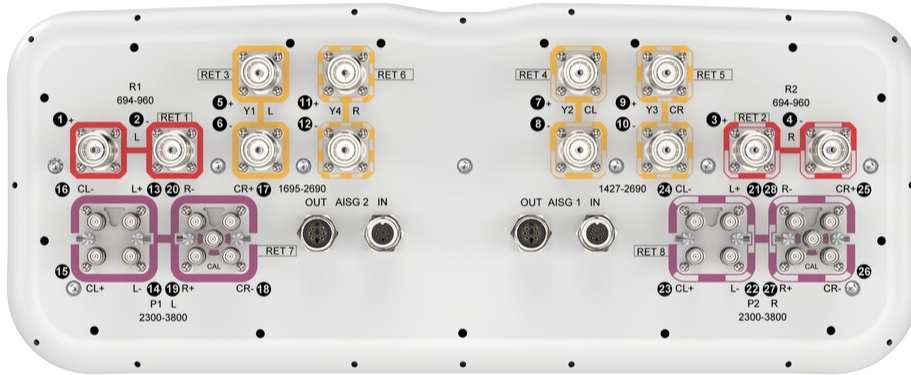


Array ID	Frequency (MHz)	RF Connector	HPBW	RET (SRET)	AISG No.	AISG RET UID
R1	694-960	1 - 2	65°	1	AISG2	CPxxxxxxxxxxxxR1
R2	694-960	3 - 4	65°	2	AISG1	CPxxxxxxxxxxxxR2
Y1	1695-2690	5 - 6	65°	3	AISG2	CPxxxxxxxxxxxxY1
Y2	1427-2690	7 - 8	65°	4	AISG1	CPxxxxxxxxxxxxY2
Y3	1427-2690	9 - 10	65°	5	AISG1	CPxxxxxxxxxxxxY3
Y4	1695-2690	11 - 12	65°	6	AISG2	CPxxxxxxxxxxxxY4
P1	2300-3800	13 - 20	90°	7	AISG2	CPxxxxxxxxxxxxP1
P2	2300-3800	21 - 28	90°	8	AISG1	CPxxxxxxxxxxxxP2

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

## Port Configuration

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## Electrical Specifications

<b>Impedance</b>	50 ohm
<b>Operating Frequency Band</b>	1427 – 2690 MHz   1695 – 2690 MHz   2300 – 3800 MHz   694 – 960 MHz
<b>Polarization</b>	±45°
<b>Total Input Power, maximum</b>	1,600 W @ 50 °C

## Electrical Specifications

	R1,R2	R1,R2	R1,R2	Y1,Y4	Y1,Y4	Y1,Y4	Y1,Y4
<b>Frequency Band, MHz</b>	698–806	790–894	890–960	1695–1995	1920–2300	2300–2500	2490–2690
<b>RF Port</b>	1,2,3,4	1,2,3,4	1,2,3,4	5,6,11,12	5,6,11,12	5,6,11,12	5,6,11,12
<b>Gain at Mid Tilt, dBi</b>	15.8	16.1	16.1	16.7	17.8	18.2	18.3

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<b>Beamwidth, Horizontal, degrees</b>	68	62	63	71	61	57	57
<b>Beamwidth, Vertical, degrees</b>	8.7	7.9	7.4	6.2	5.5	4.9	4.6
<b>Beam Tilt, degrees</b>	2-12	2-12	2-12	2-12	2-12	2-12	2-12
<b>USLS (First Lobe), dB</b>	18	20	19	17	18	20	20
<b>Front-to-Back Ratio at 180°, dB</b>	30	28	27	33	32	32	32
<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>	-153	-153	-153	-153	-153	-153	-153
<b>Input Power per Port at 50°C, maximum, watts</b>	300	300	300	250	250	200	200

## Electrical Specifications, BASTA

Frequency Band, MHz	698-806	790-894	890-960	1695-1995	1920-2300	2300-2500	2490-2690
<b>Gain by all Beam Tilts, average, dBi</b>	15.7	16	15.9	16.6	17.6	18	18.1
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.4	±0.4	±0.5	±0.8	±0.7	±0.6	±0.5
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±6	±3	±4	±8	±9	±4	±3
<b>Beamwidth, Vertical Tolerance, degrees</b>	±0.5	±0.5	±0.2	±0.5	±0.4	±0.3	±0.3
<b>USLS, beampeak to 20° above beampeak, dB</b>	17	17	17	16	17	18	17
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	22	21	22	26	27	28	26
<b>CPR at Boresight, dB</b>	21	21	18	22	24	21	22

## Electrical Specifications

	Y2,Y3	Y2,Y3	Y2,Y3	Y2,Y3	Y2,Y3
Frequency Band, MHz	1427-1518	1695-1995	1920-2300	2300-2500	2490-2690
<b>RF Port</b>	7,8,9,10	7,8,9,10	7,8,9,10	7,8,9,10	7,8,9,10
<b>Gain at Mid Tilt, dBi</b>	15.5	17	17.9	18.2	18.2
<b>Beamwidth, Horizontal, degrees</b>	78	66	60	60	58
<b>Beamwidth, Vertical, degrees</b>	7.9	6.4	5.7	5	4.7

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Beam Tilt, degrees	2-12	2-12	2-12	2-12	2-12
USLS (First Lobe), dB	17	17	17	18	19
Front-to-Back Ratio at 180°, dB	34	36	36	30	30
Isolation, Cross Polarization, dB	25	25	25	25	25
Isolation, Inter-band, dB	25	25	25	25	25
VSWR   Return loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153
Input Power per Port at 50°C, maximum, watts	250	250	250	200	200

## Electrical Specifications, BASTA

Frequency Band, MHz	1427-1518	1695-1995	1920-2300	2300-2500	2490-2690
Gain by all Beam Tilts, average, dBi	15.5	16.9	17.7	18	17.9
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.7	±0.5	±0.5	±0.6
Beamwidth, Horizontal Tolerance, degrees	±7	±6	±4	±4	±6
Beamwidth, Vertical Tolerance, degrees	±0.4	±0.6	±0.6	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	15	16	16	17	17
Front-to-Back Total Power at 180° ± 30°, dB	25	29	29	27	28
CPR at Boresight, dB	22	23	22	23	24

## Electrical Specifications

	P1,P2	P1,P2	P1,P2	P1,P2
Frequency Band, MHz	2300-2500	2490-2690	3300-3600	3600-3800
RF Port	13-28	13-28	13-28	13-28
Gain at Mid Tilt, dBi	14.2	15	15.6	15.8
Beamwidth, Horizontal, degrees	90	92	73	63
Beamwidth, Vertical, degrees	6.2	5.7	5.4	5.4
Beam Tilt, degrees	2-12	2-12	2-12	2-12
USLS (First Lobe), dB	11	13	12	13
Front-to-Back Ratio at 180°, dB	27	29	27	27

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dB				
Coupling level, Amp, Antenna port to Cal port, dB	-26	-26	-26	-26
Coupling level, max Amp $\Delta$ , Antenna port to Cal port, dB	$\pm 2$	$\pm 2$	$\pm 2$	$\pm 2$
Coupler, max Amp $\Delta$ , Antenna port to Cal port, dB	0.9	0.9	0.9	0.9
Coupler, max Phase $\Delta$ , Antenna port to Cal port, degrees	7	7	7	7
Isolation, Cross Polarization, dB	23	23	23	23
Isolation, Inter-band, dB	25	25	25	25
Isolation, Co-polarization, dB	18	18	18	18
VSWR   Return loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-140	-140	-140	-140
Input Power per Port at 50°C, maximum, watts	75	75	75	75

## Electrical Specifications, BASTA

Frequency Band, MHz	2300–2500	2490–2690	3300–3600	3600–3800
Gain by all Beam Tilts, average, dBi	14.1	14.9	15.4	15.6
Gain by all Beam Tilts Tolerance, dB	$\pm 1.2$	$\pm 1.1$	$\pm 0.6$	$\pm 0.8$
Beamwidth, Horizontal Tolerance, degrees	$\pm 16$	$\pm 18$	$\pm 14$	$\pm 9$
Beamwidth, Vertical Tolerance, degrees	$\pm 0.5$	$\pm 0.4$	$\pm 0.3$	$\pm 0.3$
USLS, beampeak to 20° above beampeak, dB	11	13	12	13
Front-to-Back Total Power at 180° $\pm$ 30°, dB	19	19	20	20
CPR at Boresight, dB	14	16	18	16

## Electrical Specifications, Broadcast 65°

Frequency Band, MHz	2300–2500	2490–2690	3300–3600	3600–3800
Gain, dBi	17.1	18	16.9	17
Beamwidth, Horizontal at 3 dB, degrees	65	65	65	65

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<b>Beamwidth, Horizontal at 10 dB, degrees</b>	117	110	115	114
<b>Beamwidth, Vertical, degrees</b>	6.1	5.7	5.4	5.4
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	24	25	22	23
<b>USLS (First Lobe), dB</b>	12	15	15	17

## Electrical Specifications, Service Beam

<b>Frequency Band, MHz</b>	<b>2300–2500</b>	<b>2490–2690</b>	<b>3300–3600</b>	<b>3600–3800</b>
<b>Steered 0° Gain, dBi</b>	19.7	20.5	21.2	21.3
<b>Steered 0° Beamwidth, Horizontal, degrees</b>	27	25	19	18
<b>Steered 0° Front-to-Back Total Power at 180° ± 30°, dB</b>	27	28	27	28
<b>Steered 0° Horizontal Sidelobe, dB</b>	13	13	11	11
<b>Steered 30° Gain, dBi</b>	18.8	19.8	19.4	19.3
<b>Steered 30° Beamwidth, Horizontal, degrees</b>	29	28	22	19
<b>Steered 30° Front-to-Back Total Power at 180° ± 30°, dB</b>	24	26	24	24

## Electrical Specifications, Soft Split

<b>Frequency Band, MHz</b>	<b>2300–2500</b>	<b>2490–2690</b>
<b>Gain, dBi</b>	18.6	19.5
<b>Beamwidth, Horizontal, degrees</b>	33	31
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	25	27
<b>Horizontal Sidelobe, dB</b>	17	17

## Mechanical Specifications

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

# RRZZVVQ4Q4-65DR8

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<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>	78 kg   171.96 lb

## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
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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