NNVVS4-360S-BF2



16-port small cell antenna, 4x 698-896, 4x 1695–2690 and 8x Beamforming 3300- 4000, 360° Horizontal Beamwidth, fixed tilt.

- Two broadband low band arrays (Bands 12/13/29/14/5) with 4T4R (4X MIMO) capability
- Two broadband mid band arrays (Bands 25/66/30/40/41) with 4T4R (4X MIMO) capability
- 8T8R omni beamforming array with calibration port for 3.5 GHz (Bands 48, 77, 78)

General Specifications

Antenna Type	Small Cell
Band	Multiband
Calibration Connector Interface	4.3-10 Female
Calibration Connector Quantity	1
Color	Light Gray (RAL 7035)
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Performance Note	Outdoor usage
Radome Material	ASA
Radiator Material	Aluminum | Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	8
RF Connector Quantity, mid band	4
RF Connector Quantity, low band	4
RF Connector Quantity, total	16

Dimensions

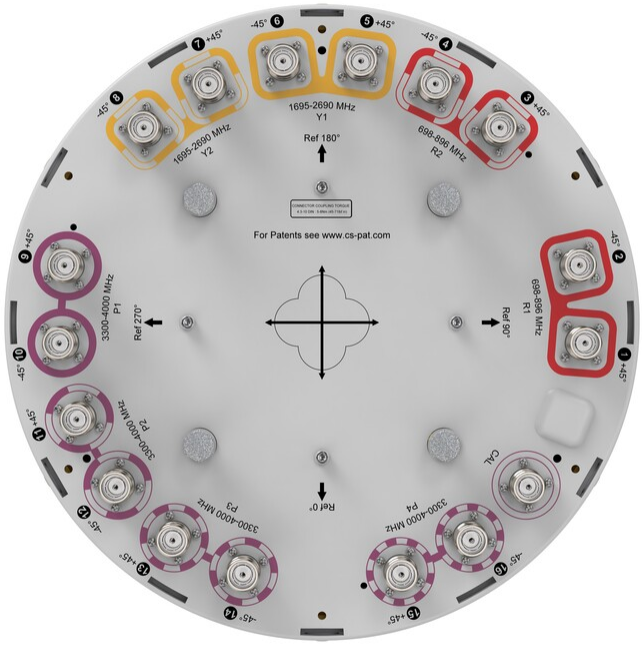
Length	610 mm | 24.016 in
Net Weight, antenna only	14.8 kg | 32.628 lb
Outer Diameter	370 mm | 14.567 in

Port Configuration

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Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2690 MHz | 3300 – 4000 MHz | 698 – 896 MHz
Polarization	±45°
Total Input Power, maximum	1,200 W @ 50 °C

Electrical Specifications

	R1,R2	R1,R2	Y1-Y2	Y1-Y2	Y1-Y2	Y1-Y2	P1-P4	P1-P4	P1-P4
Frequency Band, MHz	**698–806**	**806–896**	**1695–1920**	**1920–2180**	**2300–2360**	**2360–2690**	**3300–3550**	**3550–3700**	**3700–4000**
RF Port	1-4	1-4	5-8	5-8	5-8	5-8	9-16	9-16	9-16
Gain, dBi	5.3	5.5	7.8	8.3	8.8	8.6	8.3	8.8	8.8
Beamwidth, Horizontal, degrees	360	360	360	360	360	360	360	360	360
Beamwidth, Vertical,	45.9	42	21	18.2	16.4	15.6	9.5	9	8.5

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degrees									
Beam Tilt, degrees	2	2	2	2	2	2	2	2	2
Coupling level, Amp, Antenna port to Cal port, dB							26	26	26
Coupling level, max Amp Δ, Antenna port to Cal port, dB							±2	±2	±2
Coupler, max Amp Δ, Antenna port to Cal port, dB							1	1	1
Coupler, max Phase Δ, Antenna port to Cal port, degrees							10	10	10
Isolation, Cross Polarization, dB	25	25	25	25	25	25	25	25	25
Isolation, Inter-band, dB	25	25	25	25	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	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	-153	-145	-145	-145
Input Power per Port at 50° C, maximum, watts	100	100	100	100	100	100	75	75	75

Electrical Specifications, Service Beam

Frequency Band, MHz	**3300–3550**	**3550–3700**	**3700–4000**
Steered 0° Gain, dBi	12.1	12.2	12.3
Steered 0° Beamwidth, Horizontal, degrees	63	63	61

Electrical Specifications, Broadcast 360°

Frequency Band, MHz	**3300–3550**	**3550–3700**	**3700–4000**
Gain, dBi	8.5	8.5	8.7
Beamwidth, Horizontal at 3 dB, degrees	360	360	360
Beamwidth, Vertical, degrees	9.6	8.7	8

Mechanical Specifications

Wind Loading @ Velocity, frontal	129.0 N @ 150 km/h (29.0 lbf @ 150 km/h)
Wind Loading @ Velocity, lateral	129.0 N @ 150 km/h (29.0 lbf @ 150 km/h)
Wind Loading @ Velocity, maximum	129.0 N @ 150 km/h (29.0 lbf @ 150 km/h)
Wind Loading @ Velocity, rear	129.0 N @ 150 km/h (29.0 lbf @ 150 km/h)

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Wind Speed, maximum	241 km/h (150 mph)

Packaging and Weights

Width, packed	478 mm | 18.819 in
Depth, packed	464 mm | 18.268 in
Length, packed	894 mm | 35.197 in
Weight, gross	19 kg | 41.888 lb

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
ROHS	Compliant
UK-ROHS	Compliant

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

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Specifications

The following table outlines the main specifications of RF4461d-13A.

Table 2. Specifications of RF4461d-13A

Item		RF4461d-13A
Air Technology		LTE, 5G
Band / Duplex		B13, n13, B5, n5 / FDD
OFR		• Band 13: DL 746 - 756 MHz, UL 777 - 787 MHz • Band 5: DL 869 - 894 MHz, UL 824 - 849 MHz
IBW		• Band 13: 10 MHz • Band 5: 25 MHz
OBW		• Band 13: 10 MHz • Band 5: 25 MHz
Carrier configuration	Ch. BW	[HW readiness] • Band13: LTE 5/10 MHz • Band5: LTE 5/10 MHz, NR 5/10/15/20 MH, DSS 10 MHz [23A] • Band13: LTE 5/10 MHz • Band5: LTE 5/10 MHz, NR 5/10/15 MH, DSS 10 MHz
	# of carriers per band	[HW readiness] • Band 13: Max 2CC • Band 5: LTE Max 3CC or NR/DSS Max 2CC [SVR23A] • Same as above
	# of carriers (per unit)	Max 5CC
	NB-IoT	[HW readiness] • Band13: 2GB+2IB or 4IB • Band5: 2SA+2GB or 2GB+2IB or 4GB [SVR23A] • Band13, NB-IoT (2GB or 1GB+1IB or 2IB) @10M, 1IB@ 5M • Band5, Not support
TRX path configuration		[HW readiness] • 4T4R, 2T4R, 2T2R x 1 Sector • 2T2R x 2 Sector • 1T2R x 1 Sector per Band (Option 8, LTE only) [SVR23A] • Same as above
Conductive power		Max 320 W / Unit • Band13: Max 160 W (60 W / Path for 2T, 40 W/ Path for 4T) • Band5: Max 160 W (60 W / Path for 2T, 40 W/ Path for 4T)
EVM		3.5% (256 QAM)
Modulation		256QAM support, (1024QAM with 1~2dB power back-off)
Ref. sensitivity		Typical : -104.5dBm @1Rx (25RBs 5MHz, room temp)
Unwanted	3GPP	3GPP 36.104 Cat.A

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Item		RF4461d-13A
emission	Local regulation	• B13: FCC 47 CFR 27.53 c), f) • B5: FCC 47 CFR 22.917
	Operator's request	• (851~861.5MHz) -69dBm /30kHz per path • (896 ~901MHz) -69 dBm/100 kHz per path
Function Split		• DL/UL Option 7-2x Cat.A • DL/UL Option 8
Compression		Not support
Optic Interface		20km, 10Gbps x 2 port , Duplex (Option: Bi-di)
Input voltage		DC -48 V (-38 V to -57 V DC)
Power Consumption [a)]		• 650 W @ 40 % data load, room temp • 1,165 W @ 100 % data load, room temp • 1,230 W @ 100 % data load, all temp
Volume / Dimension (W x H x D)		• 37.5 L/380 × 380 × 260 mm (14.96 x 14.96 x10.24 inch) • Excluding connector, partial extrusion, flange
Weight		35.9 kg (79.15 lb) or less (excluding bracket)
Operating Temperature [b)]		-40 to +55 °C (-40 to +131 °F) (without solar load)
Cooling scheme		Natural convection
Installation		Pole, wall, tower, side-by-side, back to back
Misc. Feature		Spectrum analyzer (TX / RX), PIM detection and cancellation
Operating Humidity [b)]		5% to 100% Condensing, not to exceed 30g/m3 absolute humidity
Altitude		Telcordia GR-63-CORE, Issue 5, Section 4.1.3
Noise		Telcordia GR-487-CORE, Issue 5, Section 3.34 (45 dBA)
Ingress Protection Rating		IEC 60529 (IP65)
Salt Fog / Salt Spray		Telcordia GR-487-CORE, Issue 5, Section 3.38.1
Wind Resistance		Telcordia GR-487-CORE Issue5, Section 3.36
Earthquake		Telcordia Earthquake Risk Zone4+ (Telcordia GR-63-CORE)
Vibration		Telcordia GR-63-CORE, Issue 5, Section 4.4.4 / 4.4.5
EMC		FCC Title 47 CFR Part 15
Safety		UL 62368-1, 2nd Edition
RF		FCC Title 47 CFR Part 2, 22, 24, 27

a) These values can be changed by +/- 5% according to product variations.

b) Temperature and humidity are measured at 1.5 m above the floor and at 400 mm away from the front panel of the equipment

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