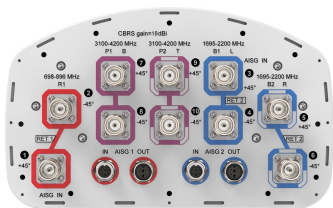


NHHSS-65B-R2BT4



10-port sector antenna, 2x 698–896, 4x 1695–2200 and 4x 3100–4200 MHz, 65° HPBW, 2x RETs and 2x SBTs. Both high bands share the same electrical tilt.

- Perfect antenna to add 3.5GHz CBRS to macro sites
- Low band and mid band performance mirrors the performance of existing NHH hex port antennas
- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- One LB RET and one HB RET. Both high bands are controlled by one RET to ensure same tilt level for 4x MIMO

General Specifications

Antenna Type	Sector
Band	Multiband
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	Fiberglass, UV resistant
Radiator Material	Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	4
RF Connector Quantity, mid band	4
RF Connector Quantity, low band	2
RF Connector Quantity, total	10

Remote Electrical Tilt (RET) Information

RET Hardware	CommRET v2
RET Interface	4x 8 pin connector as per IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female Pin3: RS485A(AISG_B), Pin5: RS485B(AISG_A), Pin6: DC 10~30V, Pin7: DC_ Return

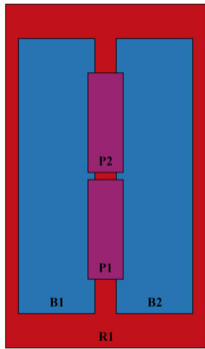
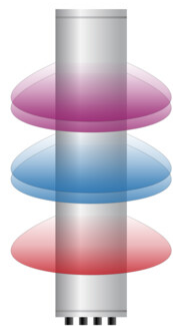
NHHSS-65B-R2BT4

RET Interface, quantity	2 female 2 male
Input Voltage	10–30 Vdc
Internal RET	High band (1) Low band (1)
Power Consumption, active state, maximum	10 W
Power Consumption, idle state, maximum	2 W
Protocol	3GPP/AISG 2.0 (Single RET)

Dimensions

Width	301 mm 11.85 in
Depth	181 mm 7.126 in
Length	1828 mm 71.969 in
Net Weight, antenna only	23.1 kg 50.927 lb

Array Layout

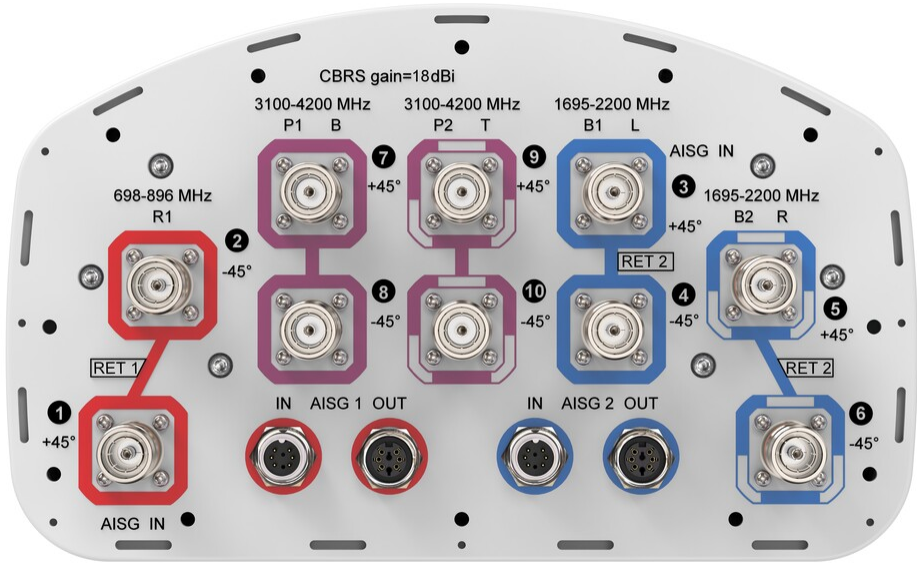


Array ID	Frequency (MHz)	RF Connector	RET (SRET)	AISG No.	AISG RET UID
R1	698-896	1 - 2	1	AISG1	CPxxxxxxxxxxxxxxR1
B1	1695-2200	3 - 4	2	AISG2	CPxxxxxxxxxxxxxxB1
B2	1695-2200	5 - 6			
P1	3100-4200	7 - 8	N/A	NA	N/A
P2	3100-4200	9 - 10			

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

Port Configuration

NHHSS-65B-R2BT4



Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2200 MHz 3100 – 4200 MHz 698 – 896 MHz
Polarization	±45°
Total Input Power, maximum	1,000 W @ 50 °C

Electrical Specifications

	R1	R1	B1,B2	B1,B2	B1,B2	P1,P2	P1,P2	P1,P2
Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	3100–3550	3550–3700	3700–4200
RF Port	1,2	1,2	3,4,5,6	3,4,5,6	3,4,5,6	7,8,9,10	7,8,9,10	7,8,9,10
Gain, dBi	14.8	15.2	17.4	17.8	18	17.7	17.3	17.9
Gain at Mid Tilt, dBi	14.6	14.9	17	17.5	17.8	17.3	17	17.2
Beamwidth, Horizontal, degrees	65	62	66	61	64	54	64	60
Beamwidth, Vertical, degrees	13	11.6	5.5	5.2	4.9	5.7	5.3	4.9
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	4	4	4
USLS (First Lobe), dB	15	15	16	18	18	16	17	18
Front-to-Back Ratio at 180°, dB	26	29	31	28	27	30	33	29
CPR at Boresight, dB	24	17	16	21	19	15	17	14
Isolation, Cross Polarization,	25	25	25	25	25	25	25	25

NHHSS-65B-R2BT4

dB								
Isolation, Inter-band, dB	25	25	25	25	25	28	28	28
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
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-140	-140	-140
Input Power per Port at 50°C, maximum, watts	300	300	300	300	300	100	100	100

Mechanical Specifications

Wind Loading @ Velocity, frontal	278.0 N @ 150 km/h (62.5 lbf @ 150 km/h)
Wind Loading @ Velocity, lateral	230.0 N @ 150 km/h (51.7 lbf @ 150 km/h)
Wind Loading @ Velocity, maximum	537.0 N @ 150 km/h (120.7 lbf @ 150 km/h)
Wind Loading @ Velocity, rear	282.0 N @ 150 km/h (63.4 lbf @ 150 km/h)
Wind Speed, maximum	241 km/h (150 mph)

Packaging and Weights

Width, packed	380 mm 14.961 in
Depth, packed	295 mm 11.614 in
Length, packed	1956 mm 77.008 in
Weight, gross	34.4 kg 75.839 lb

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
REACH-SVHC	Compliant as per SVHC revision on www.andrew.com/ProductCompliance
ROHS	Compliant
UK-ROHS	Compliant



Included Products

BSAMNT-3	–	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.
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* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance
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Chapter 1 Introduction

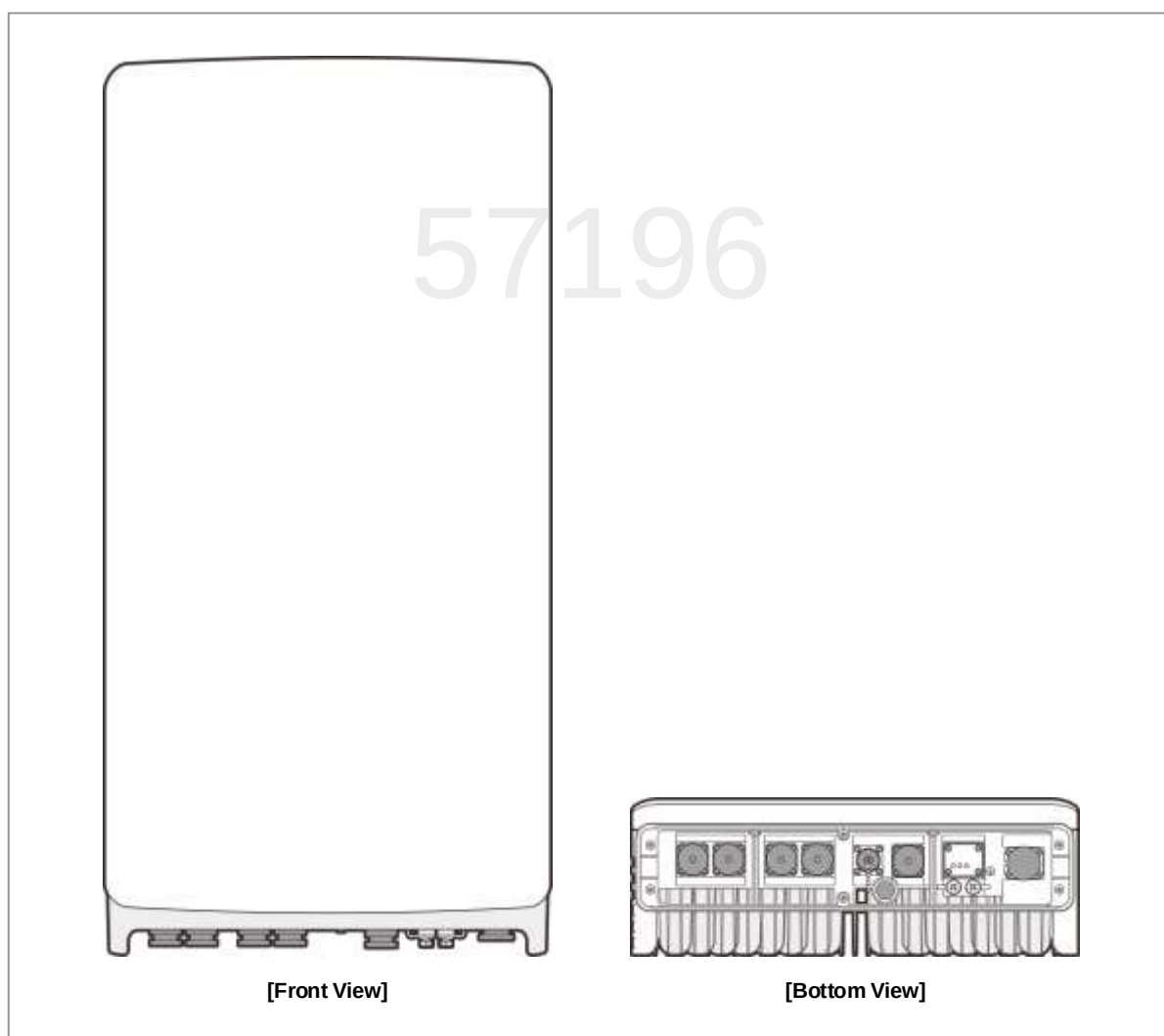
This chapter provides the hardware overview, functional description, and general specification of the product.

Overview

The MT6413-77A is a Massive MIMO Unit (MMU) consisting of digital and radio blocks. The digital block supports the interface with Digital Unit (DU) and the Low-PHY function (functional split option 7-2). The radio block transmits and receives the Radio Frequency (RF) signals with an integrated 64T64R antenna.

The following figure depicts the appearance of the MT6413-77A.

Figure 1. MT6413-77A Appearance



Specifications

The following table displays the main specifications of the MT6413-77A.

Table 2. Specifications of the MT6413-77A

Item		MT6413-77A
Air Technology		5G
Band/Duplex		n77/TDD
OFR		3,700 to 3,980 MHz
IBW		200 MHz
OBW		200 MHz
Carrier Configuration	Ch. BW	NR 20/40/60/80/100 MHz
	Number of carriers (per unit)	2CC
TRX Path Configuration		64T64R
Antenna Configuration		4V16H 192 AE (3 x 1 sub-array)
Conductive Power		320 W
MIMO Capacity		DL 16L, UL 16RX (8L)
Function Split		Opt. 7-2x
Optic Interface		20 km, 25 Gbps × 4 ports
Input Voltage		-48 V DC (-36 to -58 V DC)
Power Consumption ^{a)}		• 882 W @ 40 % room temp • 1,260 W @ 100 % room temp • 1,299 W @ 100 % all temp
Volume / Dimension (W x H x D)		41.1 L / 15.75 x 28.9 x 5.51 in. (400 x 734 x 140 mm)
Weight		57.32 lb (26 kg) or less (without a Bracket)
Operating Temperature ^{b)}		-104 °F to +131 °F (-40 °C to +55 °C), (without solar load)
Cooling Scheme		Natural Convection
Installation		Pole, Wall
Operating Humidity ^{b)}		5% to 100% RH (non-condensing, not to exceed 30 g/m ³ 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 3.40.1
Wind Resistance		Telcordia GR-487-CORE, Issue 5, Section 3.36
Earthquake		Telcordia GR-63-CORE, Issue 5, Section 4.4.1 (Zone 4)
Vibration		Telcordia GR-63-CORE, Issue 5, Section 4.4.4 / 4.4.5
EMC		FCC Title 47 CFR Part 15 Subpart B

Item	MT6413-77A
Safety	UL 62368-1
RF	FCC Title 47, CFR Part 27



¹⁾ These values are predictive of simulation. When development is completed, measurement data can change by +/- 10%.



²⁾ Temperature and humidity are measured 1.5 m above the floor and 400 mm from the equipment's front panel.

57196

Samsung Forecast Planning



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Product transition: ORAN Macro 700/850 (New Filter)

	WxHxD (mm)	WxHxD (in)	Volume	Weight	Power consumption
Macro ORAN LL	380 x 380 x 230	14.96 x 14.96 x 9.05	33.2L	31.9kg	1121W
Macro ORAN LL New Filter	380 x 380 x 260	14.96 x 14.96 x 10.24	37.5L	35.9kg	1230W

Current:

SFG-ARR27201VZ/1900413090 O-RAN 700/850 B13/B5
(RF4440d-13A)

New Filter:

SFG-ARR57201VZ/MMID TBD
Filter (RF4461d-13A)

ORAN 700/850 B13/B5 New

- Dimension Changes / Impacts: Yes
- Timing: ~Q1'2024 (design change required)
- Ancillary Change: No

AWS/PCS 4T8R 640W

[AWS/PCS 4T8R 640W] Specification



Item	4T8R ORU (640W)	
Product Name	RF4801d-25A	
Product Code	SFG-ARR9J	
Air interface	LTE, NR	
Band	B25(B2)	B66(B4)
Frequency	DL : 1930~1995 MHz	DL : 2110~2200 MHz
	UL : 1850~1915 MHz	UL : 1710~1780 MHz
IBW	65 MHz	90 MHz(DL) / 70 MHz (UL)
OBW	30 MHz	60 MHz
Carrier Bandwidth	LTE: 5/10/15/20 MHz, NR: 5/10/15/20/25/30/40 MHz	
# of carriers	3 carriers	5 carriers
Total # of carriers	6 carriers + AWS4(SDL) 1 carrier	
RF Chain	4T8R, 4T4R, 2T4R*, 2T4R+2T4R bi-sector*, 2T2R+2T2R bi-sector*	
RF Output Power	Total: 640 W (4x80W+4x80W or 4x60+4x100W)	
	4 x 80 W	4 x 100 W
Spectrum Analyzer	TX/RX Support	
RX Sensitivity	LTE: Typ. -104.6dBm@1Rx (SCS 15kHz, 25RBs 5MHz) NR : Typ. -104.4dBm@1Rx (SCS 15kHz, 25RBs 5MHz)	
Modulation	256QAM support, (1024QAM with 1~2 dB power back-off)	
Input Power	-48 VDC (-44 ~ -57 VDC)**	
Power Consumption	Typical 1810 Watt@ 100% RF load, room temp Typical 1940 Watt@ 100% RF load, all temp	
Size (WHD)	440x550x184 mm (17.3x21.7x7.2 inch)	
Volume	44.5 L	
Weight (w/o Solar Shield)	39.9 kg (87.96 lb.)	
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)	
Cooling	Natural convection	
Unwanted Emission	3GPP 36.104	3GPP 36.104
	[B2] : FCC 47 CFR 24.238	[B66] : FCC 47 CFR 27.53 h)
	[BAS filtering] -30 dBm/100 kHz@2109.45 MHz per port -32 dBm/100 kHz@2108.95 MHz per port	
CPRI Cascade	Not supported	
Optic Interface	25 Gbps x 2 port (15/30km Bi-di or 15km tunable DWDM Duplex)	
RET & TMA Interface	AISG 3.0	
Bias-T	4 ports (2 ports per band)	
Mounting Options	Pole, wall, tower	
NB-IoT	2GB or 2IB or 1GB+1IB	
# of antenna port	8	
External Alarm	4Rx	
Fronthaul Interface	Opt. 7-2x	
Compression	BFPC 9bit	

* HW ready
** power booster is required (not supplied by Samsung)

Hybrid HTTA Connectivity Solutions DC Power and Fiber Distribution

RTH-0306-PFC

Ruggedized, hybrid
breakout solutions for
HTTA applications.



Description

Hybrid Breakout Units are equipped with Senko connectors and are able to support up to 3 RRHs. The closures are designed for quick factory installation.

Features

- Compact, Lightweight Design
- Easy Wiring / Fiber Routing
- Senko connectors
- Ground Terminal provided
- Suitable for pole, wall, frame mounting
- Non-halogenated, non-flame propagating enclosure rated for indoor and outdoor use
- Moisture / pressure equalization vent
- Factory installed Strikesorb over voltage protection modules
- IK 10 Impact Protection
- IP 67 Environmental Rating
- Optional alarm board