

TECHNICAL SPECIFICATION

20-port Sector Antenna,
FDD:2×690-960&4×1710-2690MHz,65Deg,15&17dBi,
TDD:4×2500-2694MHz,90Deg,16.5dBi, Integrated RET



A.0	Oct 16, 2025	David	Michael	Klaus
Version	Date	Prepared	Reviewed	Approved

Electrical Specifications					
Description	20-port Sector Antenna, FDD: 2×690-960&4×1710-2690MHz,65Deg,15&17dBi, TDD: 4×2500-2694MHz,90Deg,16.5dBi, Integrated RET				
ZTT Product Code	HBH488S651517				
Frequency Range	MHz	FDD:2×690-960(R1/R2)			
Frequency Band	MHz	690-824	790-894	880-960	
Gain Over All Tilts	dBi	14.5±0.5	14.8±0.5	15.2±0.5	
Gain by Tilt Average Mid	dBi	14.5	14.8	15.3	
Horizontal 3dB Beam Width	Deg	69±3	65±2	60±3	
Vertical 3dB Beam Width	Deg	11.5±0.5	10.5±0.8	10.0±0.6	
1 st Upper Side Lobe Suppression Above Main Beam	dB	>15			
Front to Back Ratio at 180Deg ±30Deg	dB	>25			
Cross-Polar Ratio at 0Deg	dB	>15			
Electrical Downtilt	Deg	2-12,Continuously adjustable			
VSWR	/	<1.5			
Intraband Isolation	dB	>25			
Interband Isolation	dB	>25			
Intermodulation IM3	dBc	≤-153(2×43 dBm carrier)			
Frequency Range	MHz	FDD:4×1710-2690(Y1/Y2/Y3/Y4)			
Frequency Band	MHz	1710-1990	1920-2200	2300-2500	2490-2690
Gain Over All Tilts	dBi	16.5±0.5	16.7±0.5	16.9±0.5	17.1±0.5
Gain by Tilt Average Mid	dBi	16.3	16.5	16.7	17.0
Horizontal 3dB Beam Width	Deg	72±6	67±5	60±5	58±5
Vertical 3dB Beam Width	Deg	8.2±0.7	7.4±0.6	6.5±0.5	6.0±0.5
1 st Upper Side Lobe Suppression Above Main Beam	dB	>15			
Front to Back Ratio at 180Deg ±30Deg	dB	>25			
Cross-Polar Ratio 0Deg	dB	>15			
Electrical Downtilt	Deg	2-12,Continuously adjustable			
VSWR	/	<1.5			
Cross Polar Isolation	dB	>25			

Interband Isolation		dB	>25
Intraband Isolation		dB	>25
Intermodulation IM3		dBc	$\leq -153(2 \times 43 \text{ dBm carrier})$
Max. Effective Power Whole Antenna		Watt	1500
Electrical Specifications			
Frequency Range		MHz	TDD:4×2500-2694(Y5)
Frequency Band		MHz	2500-2694
Coupling Factor between Calibration Port and Each Antenna Port		dB	-26±2
Max.Amplitude Tolerance from Calibration Port to Input Ports		dB	<0.9
Max.Phase Tolerance from Calibration Port to Input Ports		Deg	<8
VSWR		/	<1.5
Electrical Downtilt		Deg	2-12,Continuously adjustable
Maximum Power		Watt	50(at 50℃ ambient temperature)
Co-polarization Isolation Between Ports		dB	>20
Cross-polarization Isolation Between Ports		dB	>25
Single Column Beam	Horizontal 3dB Beam Width	Deg	83±12
	Vertical 3dB Beam Width	Deg	4.8±0.5
	Gain Over All Tilts	dB	16.4±0.4
	Gain by Tilt Average Mid	dB	16.5
	Cross-Polar Ratio 0Deg	dB	>15
	1st Upper Side Lobe Suppression Above Main Beam	dB	>15
	Front to Back Ratio at 180Deg ±30Deg	dB	>25
Broadcast Beam	Horizontal 3dB Beam Width	Deg	62±9
	Vertical 3dB Beam Width	Deg	5.0±0.7
	Gain Over All Tilts	Deg	16.5±0.5
	Gain by Tilt Average Mid	dB	16.3
	Cross-Polar Ratio at 0Deg	dB	>15
	1st Upper Side Lobe Suppression Above Main Beam	dB	>15
	Front to Back Ratio at 180Deg ±30Deg	dB	>25

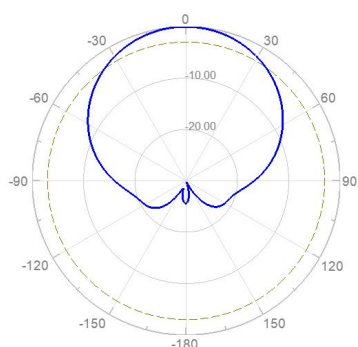
Service Beam	0° Beam Gain Over All Tilts	dBi	20.6±0.6
	0° Beam Gain by Tilt Average Mid	dBi	20.4
	0° Beam Horizontal 3dB Beam Width	Deg	25±2
	0° Beam Horizontal Sidelobe	dB	>12
	0° Beam Front to Back Ratio	dB	>27
	0° Beam Cross-Polar Ratio at 0Deg	dB	>18
Mechanical Specifications			
Antenna Dimensions	mm	2195×499×199	
Antenna Net Weight	kg	41.5	
Packing Dimensions	mm	2445×595×295	
Antenna Gross Weight	kg	50.2	
Connector Type	/	12×4.3-10 Female +1×MQ4&MQ5	
Connector Position	/	Bottom	
Radiator Material	/	Aluminum&Low loss circuit broad	
Radome Material / Color	/	Fiberglass / Light Grey RAL7035	
Reflector Material	/	Aluminum	
Storage Temperature	°C	-40 to +60	
Operating Temperature	°C	-40 to +60	
Humidity	/	5% to 95%	
Max. operational Wind Speed	km/h	200	
Wind Load @Rated Wind Front	N	2340	
Wind Load @Rated Wind Side	N	373	
Wind Load @Rated Wind Rear	N	2623	
Lightning Protection	/	DC ground	
Accessories			
Downtilt Kit (mechanical)	Deg	0-12	
Mounting Accessories (clamp)	/	Included with antenna	
Mounting Pipe Diameter	mm	50-115	
Internal RET Specifications			
RCU (remote control unit)	/	Changable RET (can be exchangable without exchanging antenna)	
		AISG2.0 /3GPP	
Input Voltage Range	V	10-30 DC	
Power Consumption	W	< 10 (motor activated , single RET) < 2 (stand by, single RET)	
Adjustment Time (full range)	s	< 120 (typically, depending on antenna type)	

RET Connector	/	1 pair of AISG 5 pin male & female
Pin Assignment According AISG	/	5-pin circular connector conforming to IEC 60130-9 - Ed. 3.0
Lightning Protection	kA	5 (8/20 μ s differential mode), 8 (8/20 μ s common mode)

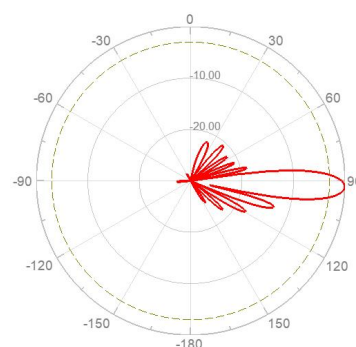
Reference Pattern

FDD:690-960MHz

Horizontal Pattern

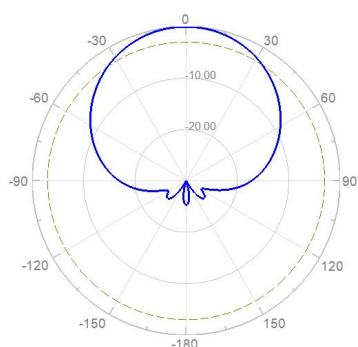


Vertical Pattern

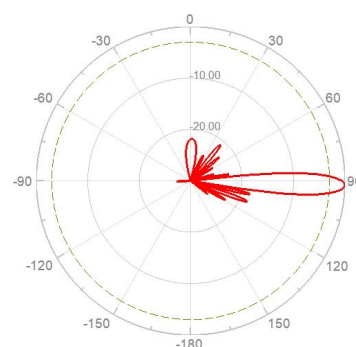


FDD:1710-2690MHz

Horizontal Pattern



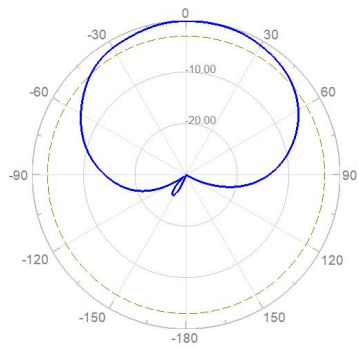
Vertical Pattern



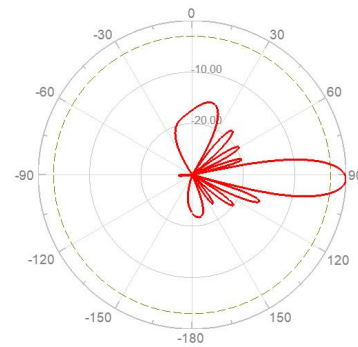
TDD:2500-2694MHz

Single Column Beam

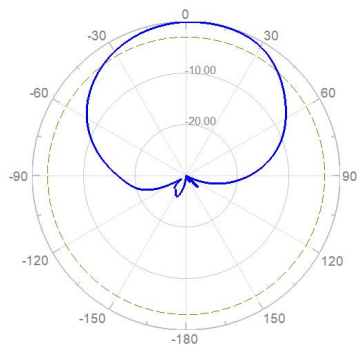
Horizontal Pattern



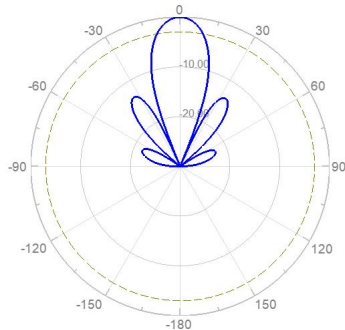
Vertical Pattern



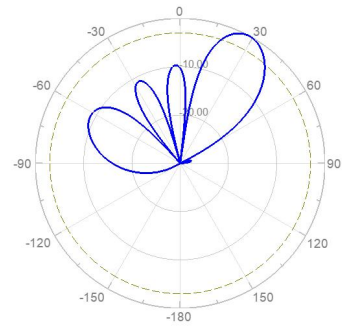
Broadcast Beam



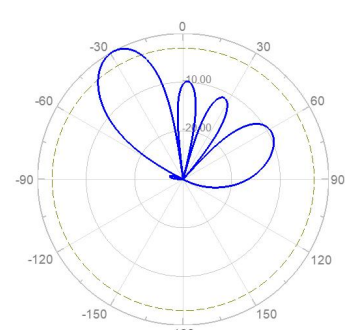
0° Service Beam

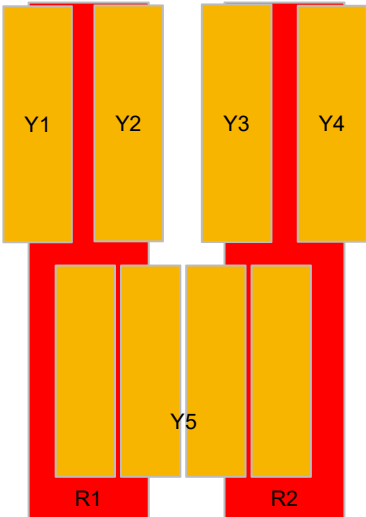


+30° Service Beam



-30° Service Beam



Layout of Array				
Array	Connector	Frequency(MHz)	RET Serial	
R1	1-2	690-960	ZTR1...01	
R2	3-4	690-960	ZTR2...02	
Y1	5-6	1710-2690	ZTY1...03	
Y2	7-8	1710-2690	ZTY2...04	
Y3	9-10	1710-2690	ZTY3...05	
Y4	11-12	1710-2690	ZTY4...06	
Y5	MQ4&MQ5	2500-2694	ZTY5...07	

All data are based on NGMN recommendations on Base Station Antenna Standards (BASTA V12.0).