

TECHNICAL SPECIFICATION

20-port Sector Antenna,
FDD:2×690-960&4×1710-2690MHz,65Deg,16&18dBi,
TDD:4×2300-3800MHz,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,16&18dBi, TDD:4×2300-3800MHz,90Deg,16.5dBi, Integrated RET				
ZTT Product Code	HBH488V651618				
Frequency Range	MHz	FDD:2×690-960(R1/R2)			
Frequency Band	MHz	690-824	790-894	880-960	
Gain Over All Tilts	dBi	14.9±0.4	15.1±0.4	15.4±0.3	
Gain by Tilt Average Mid	dBi	15.1	15.2	15.4	
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	16.9±0.4	17.2±0.5	17.5±0.5	17.8±0.5
Gain by Tilt Average Mid	dBi	16.8	17.1	17.4	17.7
Horizontal 3dB Beam Width	Deg	72±6	67±5	60±5	58±5
Vertical 3dB Beam Width	Deg	7.3±0.7	6.6±0.6	5.8±0.5	5.5±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			
Port to port Isolation	dB	>25			

Intermodulation IM3		dBc	≤-153(2×43 dBm carrier)		
Max. Effective Power Whole Antenna		Watt	1500		
Electrical Specifications					
Frequency Range			MHz	TDD:4×2300-3800(P1)	
Frequency Band			MHz	2300-2690 3300-3800	
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	<7 <9	
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	75±20 65±20	
	Vertical 3dB Beam Width		Deg	5.5±0.5 4.8±0.5	
	Gain Over All Tilts		dBi	15.5±0.5 16.5±0.6	
	Gain by Tilt Average Mid		dBi	15.6 16.7	
	Cross-Polar Ratio 0Deg		dB	>15 >15	
	1st Upper Side Lobe Suppression Above Main Beam		dB	>15 >15	
	Front to Back Ratio at 180Deg ±30Deg		dB	>20 >20	
Broadcast Beam	Horizontal 3dB Beam Width		Deg	62±9	
	Vertical 3dB Beam Width		Deg	4.8±0.7	
	Gain Over All Tilts		Deg	16.5±0.5	
	Gain by Tilt Average Mid		dBi	16.4	
	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	20.5±0.5 21.1±0.6	
	0° Beam Gain by Tilt Average Mid		dBi	20.5 21.2	

	0° Beam Horizontal 3dB Beam Width	Deg	25±2	28±2
	0° Beam Horizontal Sidelobe	dB	>12	>12
	0° Beam Front to Back Ratio	dB	>27	>27
	0° Beam Cross-Polar Ratio at 0Deg	dB	>18	>17

Mechanical Specifications

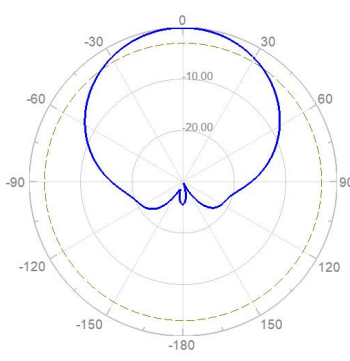
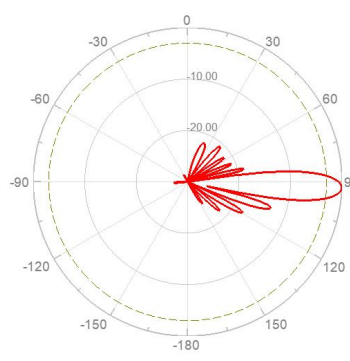
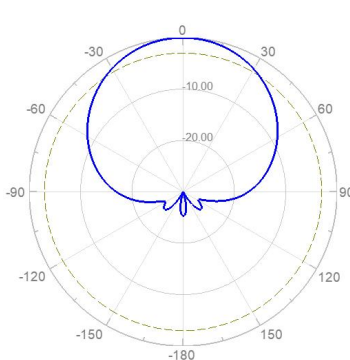
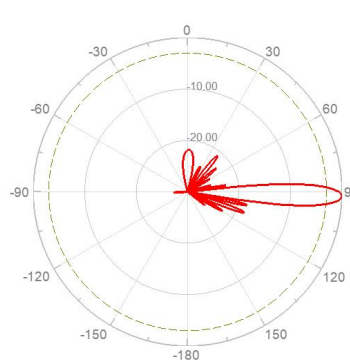
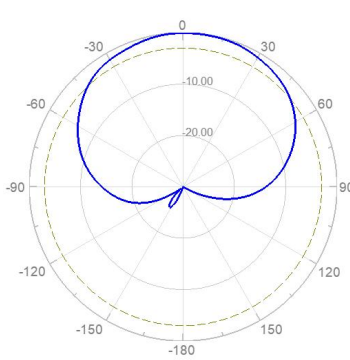
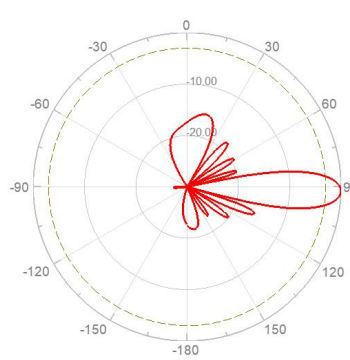
Antenna Dimensions	mm	2195×499×199
Antenna Net Weight	kg	41.5
Packing Dimensions	mm	2445×595×295
Antenna Gross Weight	kg	59.0
Connector Type	/	12×4.3-10 Female +1×MQ4&MQ5
Connector Position	/	Bottom
Radiator Material	/	Aluminum&Low loss circuit board
Radome Material / Color	/	Fiberglass / Light Grey 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

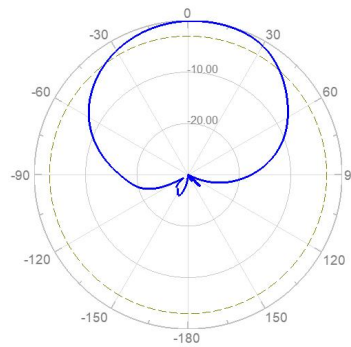
Accessories

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)	/	Replaceable RET (can be exchangeable 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.

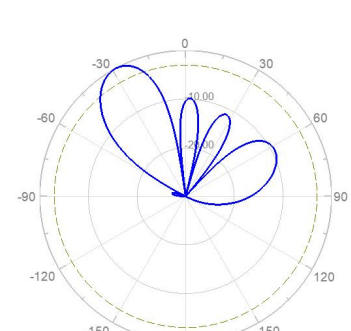
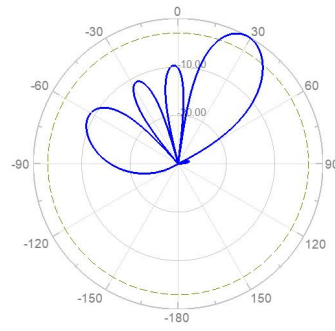
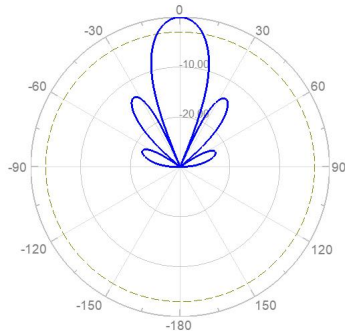
		3.0
Lightning Protection	kA	5 (8/20 μ s differential mode), 8 (8/20 μ s common mode)
Reference Pattern		
FDD:690-960MHz		
Horizontal Pattern		Vertical Pattern
		
FDD:1710-2690MHz		
Horizontal Pattern		Vertical Pattern
		
TDD:2300-3800MHz		
Single Column Beam		
Horizontal Pattern		Vertical Pattern
		
Broadcast Beam		



0° Service Beam

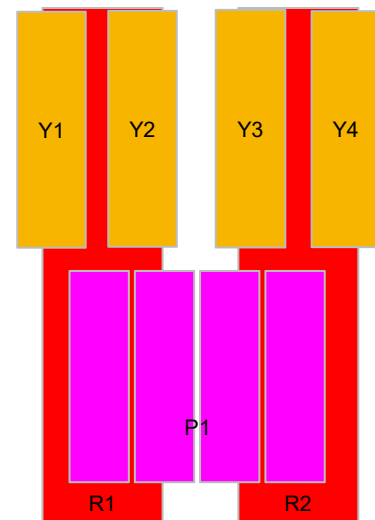
+30° Service Beam

-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
P1	MQ4&MQ5	2300-3800	ZTP1...07



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