

TECHNICAL SPECIFICATION

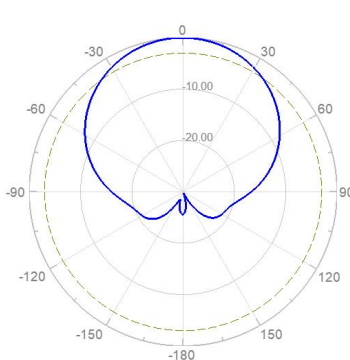
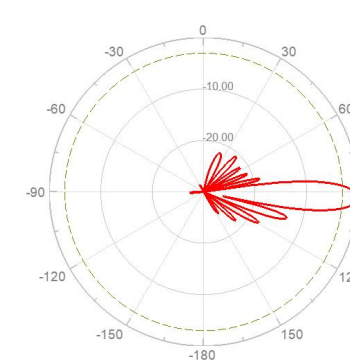
12-port Sector Antenna,
FDD:2×690-960MHz,65Deg,16dBi,
TDD:4×1710-2690MHz,90Deg,18dBi, Integrated RET



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

Electrical Specifications				
Description	12-port Sector Antenna, FDD:2×690-960MHz,65Deg,16dBi, TDD:4×1710-2690MHz,90Deg,18dBi, Integrated RET			
ZTT Product Code	HBH48V651618			
Frequency Range	MHz	FDD:2×690-960(R1/R2)		
Frequency Band	MHz	690-824	790-894	880-960
Gain Over All Tilts	dBi	15.3±0.3	15.5±0.4	15.7±0.3
Gain by Tilt Average Mid	dBi	15.4	15.6	15.8
Horizontal 3dB Beam Width	Deg	69±3	65±2	60±3
Vertical 3dB Beam Width	Deg	10.5±0.5	9.5±0.8	9.0±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		
Isolation between ports	dB	>25		
Intermodulation IM3	dBc	≤-153(2×43 dBm carrier)		
Electrical Specifications				
Frequency Range		MHz	TDD:4×1710-2690(Y1)	
Frequency Band		MHz	1710-2300	2300-2690
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	Horizontal 3dB Beam Width	Deg	74±6	58±5
Column Beam	Vertical 3dB Beam Width	Deg	5.5±0.5	4.8±0.5

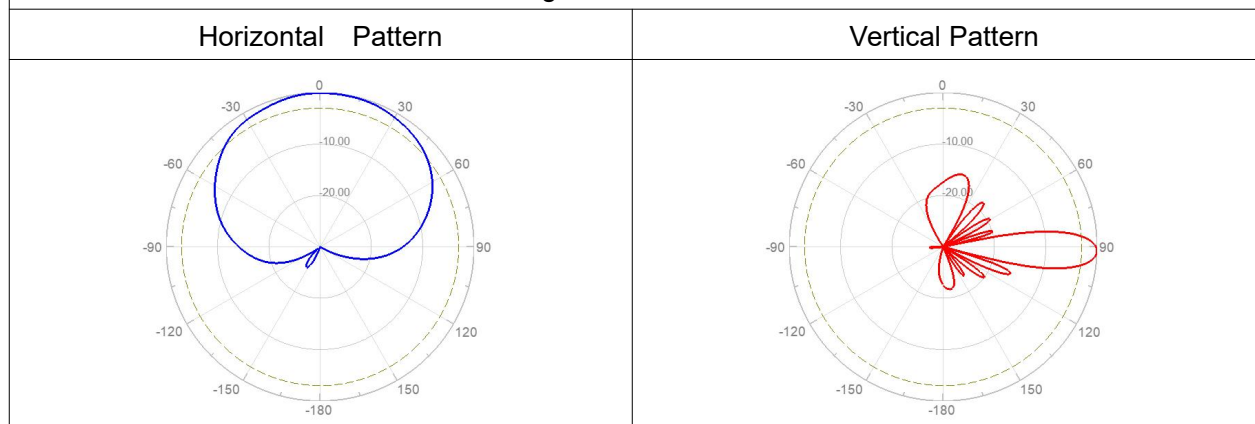
	Gain Over All Tilts	dBi	17.4±0.4	17.5±0.5
	Gain by Tilt Average Mid	dBi	17.2	17.3
	Cross-Polar Ratio 0Deg	dB	>15	>15
	1st Upper Side Lobe Suppression Above Main Beam	dB	>15	>15
	Front to Back Ratio at 180Deg ±30Deg	dB	>25	
Broadcast Beam	Horizontal 3dB Beam Width	Deg	62±9	
	Vertical 3dB Beam Width	Deg	5.5±0.5	
	Gain Over All Tilts	Deg	17.5±0.5	
	Gain by Tilt Average Mid	dBi	17.5	
	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	28±2	25±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	2299×499×199		
Antenna Net Weight	kg	33.8		
Packing Dimensions	mm	2540×595×295		
Antenna Gross Weight	kg	50.3		
Connector Type	/	12×4.3-10 Female +2×MQ4+CAL Female		
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)	/	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

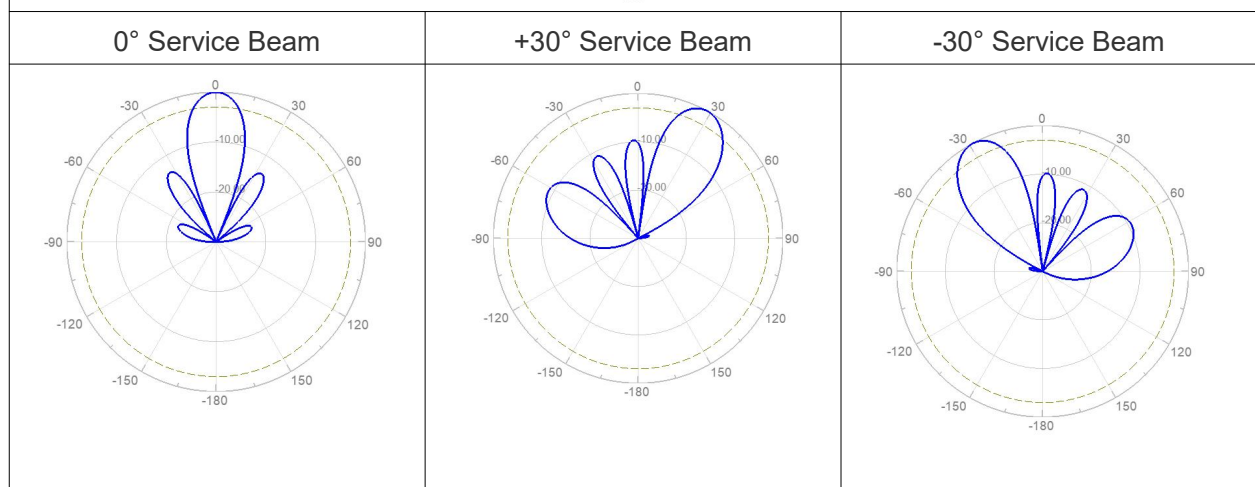
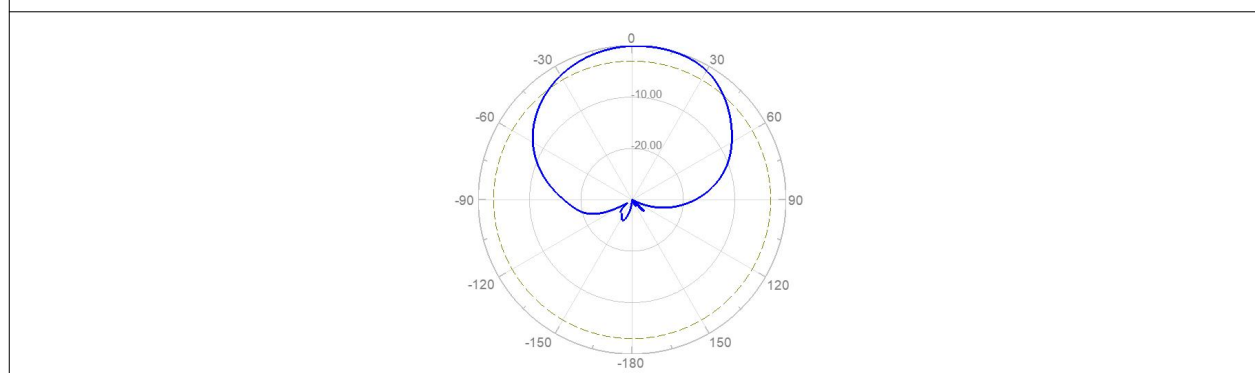


TDD:1710-2690MHz

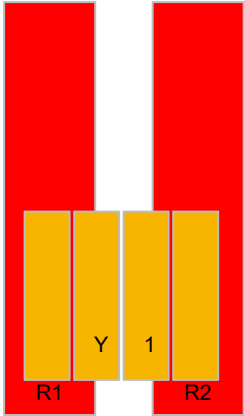
Single Column Beam



Broadcast 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	MQ4&MQ5	1710-2690	ZTY1...03	

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