

TECHNICAL SPECIFICATION

12-port Hybrid Dual-beam Antenna,
2×690-960,65Deg,15dBi,
4×1710-2690MHz,33Deg,18dBi,Integrated RET



A.0	Oct 10, 2025	David	Michael	Klaus
Version	Date	Prepared	Reviewed	Approved

Electrical Specifications

Description	12-port Hybrid Dual-beam Antenna, 2×690-960,65Deg,15dBi, 4×1710-2690MHz,33Deg,18dBi,Integrated RET				
ZTT Product Code	HBD48P651518				
Frequency Range	MHz	FDD:2×690-960(R1/R2)			
Frequency Band	MHz	690-806	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 0Deg	dB	>16			
Electrical Downtilt	Deg	2-14,Continuously adjustable			
VSWR	/	<1.5			
Isolation between Ports	dB	>25			
Intermodulation IM3	dBc	≤-153(2×43 dBm carrier)			
Polarization	/	±45			
Impedance	Ω	50			
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	17.6±0.6	17.9±0.6	17.7±0.5	17.5±0.4
Gain by Tilt Average Mid	dBi	17.5	17.8	18.0	17.6
Horizontal 3dB Beam Width	Deg	35±8	33±8	30±8	28±8
Vertical 3dB Beam Width	Deg	9.3±0.7	8.8±0.7	8.0±0.6	7.5±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	>16			
Electrical Downtilt	Deg	2-12,Continuously adjustable			
VSWR	/	<1.5			

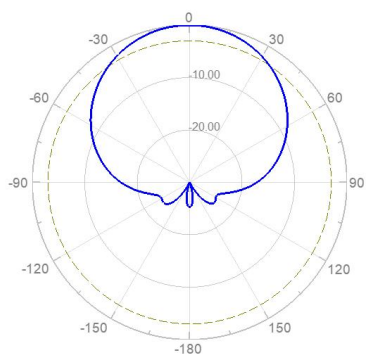
Isolation between Ports	dB	>25
Intermodulation IM3	dBc	$\leq -153(2 \times 43 \text{ dBm carrier})$
Polarization	/	± 45
Impedance	Ω	50
Maximum Effective Power Whole Antenna.	Watt	1000
Mechanical Specifications		
Antenna Dimensions	mm	2195×499×197
Antenna Net Weight	kg	41.3
Packing Dimensions	mm	2450×610×315
Antenna Gross Weight	kg	55.4
Connector Type	/	12×4.3-10 Female
Connector Position	/	Bottom
Radiator Material	/	Aluminum
Radome Material / Color	/	Fiberglass / Light Grey RAL7035
Reflector Material	/	Aluminum
Storage Temperature	°C	-40 to +65
Operating Temperature	°C	-40 to +65
Humidity	/	5% to 95%
Max. operational Wind Speed	km/h	200
Wind Load @Rated Wind Front	N	1379
Wind Load @Rated Wind Side	N	226
Wind Load @Rated Wind Rear	N	1546
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)

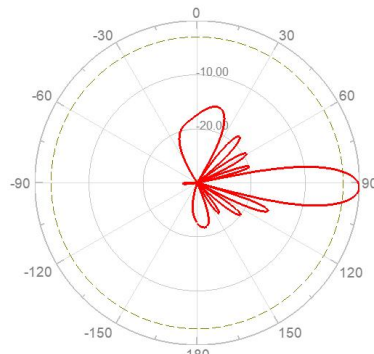
Reference Pattern

FDD:690-960MHz

Horizontal Pattern

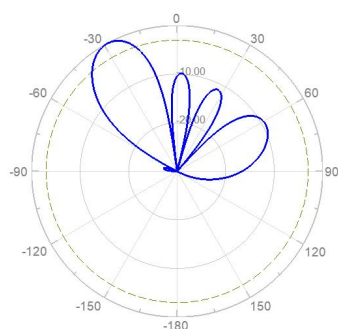


Vertical Pattern

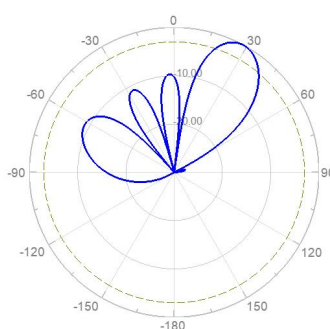


FDD:1710-2690MHz

1710-2690 -30°

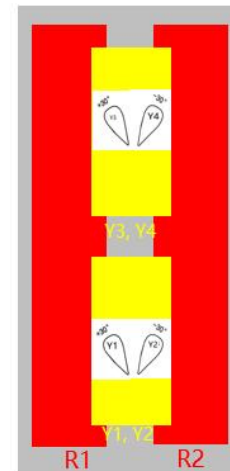


1710-2690 +30°



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



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