

TDD : XXXXPol 2490~2690MHz/3300~3800MHz BCH 65°/65°/17/17dBi 2~12°/2~12° Beamforming
FDD : XXXXPol 698~960MHz×2/1427~2690MHz×2 65°/65° 14/18 dBi 2~12°/2~12° Integrated and replaceable RCU (Remote Control Unit) Antenna

Electrical Specifications-TDD				
General Parameters	Frequency range(MHz)		2490~2690	3300~3800
	Polarization		±45°	
	Electrical downtilt(°)		2~12	
	Electrical downtilt tolerance(°)		±1	
Calibration and Electrical Parameters	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(°)		≤8	
	Ports VSWR		≤1.5	
	Co-polarization isolation between ports(dB)		≥20@2~5°;≥25@6~12°	
	Cross-polarization isolation between ports(dB)		≥ 22	
	Inter array spacing(mm)		55(0.47λ@2590MHz,0.65λ@3550MHz)	
Radiation Parameters	Single Column Beam	Horizontal 3dB beam width(°)	80±15	65±15
		Gain(dBi)	14.3±0.4	14.8±0.4
		Vertical 3dB beam width(°)	≥6.5	≥4.5
		Cross polar ratio(0°)(dB)	≥15	
		Cross polar ratio(±60°)(dB)	≥10	
		Front to back ratio(dB)	≥22	
		Vertical sidelobe suppression for first sidelobe above main beam(dB)	≥15	
	Broadcast Beam	Gain(dBi)	16.5±0.7	16.5±0.8
		SPR(±60°)(%)	≥90	
		Vertical 3dB beam width(°)	≥6.5	≥4.5
		Cross polar ratio(0°)(dB)	≥18	
		Front to back ratio(dB)	≥25	
	Service Beam	0° direct beam gain(dBi)	20±0.8	21±0.8
		0° direct beam horizontal 3dB beam width(°)	≤28	
		0° direct beam sidelobe suppression(dB)	≥10	
		0° direct beam cross polar ratio(axial)(dB)	≥18	
		0° direct beam front to back ratio(dB)	≥25	
		±30° direct beam gain(dBi)	18±0.8	19±0.8

Electrical Specifications				
Frequency range (MHz)	R1/R2 -698~960			
	698~803	790~862	824~894	880~960
Polarization	$\pm 45^\circ$			
Gain at mid tilt (dBi)	13.1	13.3	13.4	13.9
Gain over all tilts (dBi)	13.0 ± 0.7	13.2 ± 0.6	13.3 ± 0.6	13.8 ± 0.4
Horizontal 3dB beamwidth ($^\circ$)	68 ± 6	70 ± 5	69 ± 6	70 ± 5
Vertical 3dB beamwidth ($^\circ$)	15.4 ± 1.2	14.1 ± 0.7	13.7 ± 0.6	12.9 ± 0.7
Front to back ratio(dB)	> 20	> 22	> 23	> 24
Total power, 180°				
Cross polar ratio (dB) (at Boresight)	> 17	> 18	> 18	> 18
Electrical downtilt ($^\circ$)	2~12			
Sidelobe suppression (dB) (First sidelobe above main beam)	> 15	> 15	> 16	> 16
VSWR	< 1.5			
Isolation: intra-system (dB)	≥ 25			
Isolation: inter-system (dB)	R1//R2 ≥ 25 R1,R2//other ≥ 28			
Intermodulation IM3 (2 $\times$ 43dBm carrier)	≤ -150 dBc			
Impedance (Ω)	50			
Max. power per input (W) @50 $^\circ$ C	400			
Lightning protection	Dc Ground			

Electrical Specifications					
Frequency Range (MHz)	Y1/Y2 -1427~2690				
	1427~1518	1710~1990	1920~2200	2200~2490	2490~2690
Polarization	$\pm 45^\circ$				
Gain at mid tilt (dBi)	16	16.7	17.2	17.7	17.5
Gain over all tilts (dBi)	15.9 ± 0.4	16.6 ± 0.4	17 ± 0.6	17.5 ± 0.8	17.2 ± 0.5
Horizontal 3dB beamwidth ($^\circ$)	63 ± 5	65 ± 6	63 ± 5	60 ± 5	59 ± 6
Vertical 3dB beamwidth ($^\circ$)	8.3 ± 0.5	6.6 ± 0.6	5.9 ± 0.5	5.4 ± 0.4	4.8 ± 0.4
Front to back ratio (dB)	> 26	> 26	> 25	> 24	> 24
Total power, $\pm 30^\circ$					
Cross polar ratio (dB) (at Boresight)	> 20	> 20	> 20	> 19	> 18
Electrical downtilt ($^\circ$)	2~12				
Sidelobe suppression (dB) (First sidelobe above main beam)	> 16	> 15	> 14	> 16	> 15
VSWR	< 1.5				
Isolation: intra-system (dB)	≥ 25				
Isolation: inter-system (dB)	≥ 28				
Intermodulation IM3 (2 $\times$ 43dBm carrier)	≤ -150 dBc				
Impedance (Ω)	50				
Max. power per input (W) @50 $^\circ$ C	200				
Lightning protection	Dc Ground				

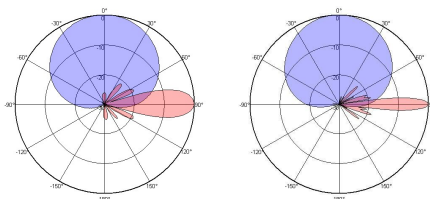
Mechanical Specifications

Connector	TDD:1×(MQ4+MQ5) Connector-Male FDD:8×4.3-10-Female
Connector position	Bottom
Height × width × depth (mm)	1499×499×198
Packing size (mm)	1790×565×250
Antenna weight (kg)	33.4
Installation kit weight (kg)	5.4
Packing weight (kg)	45.3
Wind load (N,at 150km/h) Frontal/Lateral/Maximum	525/150/710
Max. wind velocity (km/h)	250
Radome material	Fiberglass
Radome color	Gray
Mechanical tilt (°)	0~15
Operating temperature (°C)	-50~65
Mounting hardware (mm)	Φ50~Φ115

Integrated RET Properties

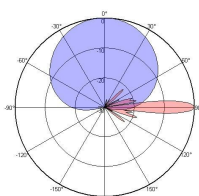
RET model	TRCU-TQ10P2V01
RET type	Integrated (Replaceable)
RET protocol	AISG 2.0 / 3GPP
Power supply(V)	10-30 DC
Power consumption(W)	≤0.6 (Idle,12V),≤6 (in Motion,12V)
Adjustment time (Full Range)	<4Mins
Adjustment cycles	>50,000
Temperature range (°C)	-40~65
Lightning protection	3KA(8/20μs) @ Pin5& Pin3; 5KA(8/20μs) @ Pin1/ Pin6& Pin7
Connectors	2 x 8 Pin circle connector according To IEC 60130-9 And AISG. Daisy chain in:Male,Daisychain out :Female Pin1:12V;Pin3:RS485B;Pin5:RS485A;Pin6:10-30V;Pin7:GND; Pin2 &Pin4 & Pin8:N/C

Antenna Pattern Sample For Reference

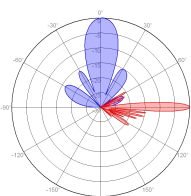


698~960MHz

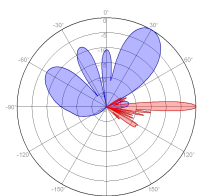
1427~2690MHz



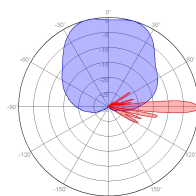
Single column beam



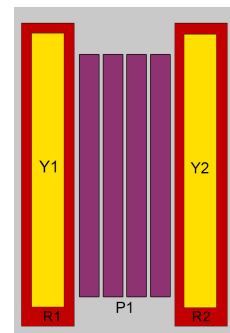
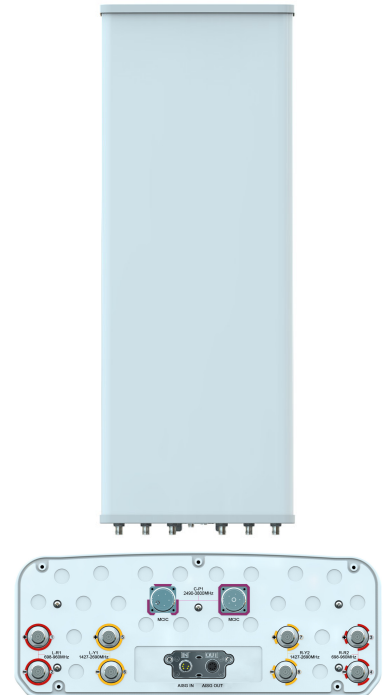
0° Service beam



30° Service beam



BCH beam



Ant Array	RET Unique ID
R1	TY00000.....R1
R2	TY00000.....R2
Y1	TY00000.....Y1
Y2	TY00000.....Y2
P1	TY00000.....P1

Beamforming Weights

Broadcast beamwith 65°			Frequency Range(MHz)	port	port1	port2	port3	port4	port5	port6	port7	port8
P0	Fullpower broadcast tilt2-12	2490~2690	Amplitude	1	1	1	1	0	0	0	0	
			Phase(°)	-80	0	0	-80	0	0	0	0	
P1	Fullpower broadcast tilt2-12	2490~2690	Amplitude	0	0	0	0	1	1	1	1	
			Phase(°)	0	0	0	0	-80	0	0	-80	
P0	Fullpower broadcast tilt2-12	3300~3800	Amplitude	1	1	0	0	0	0	1	1	
			Phase(°)	-20	0	0	0	0	0	0	-180	
P1	Fullpower broadcast tilt2-12	3300~3800	Amplitude	0	0	1	1	1	1	0	0	
			Phase(°)	0	0	0	-180	-20	0	0	0	
Service Beam		Frequency Range(MHz)	port	port1	port2	port3	port4	port5	port6	port7	port8	
+ 45°	0°for tilt2-12	2490~3800	Amplitude	1	1	1	1	0	0	0	0	
			Phase(°)	0	0	0	0	0	0	0	0	
- 45°	0°for tilt2-12	2490~3800	Amplitude	0	0	0	0	1	1	1	1	
			Phase(°)	0	0	0	0	0	0	0	0	
+ 45°	30°for tilt2-12	2490~2690	Amplitude	1	1	1	1	0	0	0	0	
			Phase(°)	0	100	200	300	0	0	0	0	
- 45°	30°for tilt2-12	2490~2690	Amplitude	0	0	0	0	1	1	1	1	
			Phase(°)	0	0	0	0	0	100	200	300	
+ 45°	30°for tilt2-12	3300~3800	Amplitude	1	1	1	1	0	0	0	0	
			Phase(°)	0	130	260	390	0	0	0	0	
- 45°	30°for tilt2-12	3300~3800	Amplitude	0	0	0	0	1	1	1	1	
			Phase(°)	0	0	0	0	0	130	260	390	