

**TDD : XXXXPol 3300~3800MHz 65° 17 dBi2~12°Beamforming**
**FDD : XXXXPol 698~960MHz×2/1710~2690MHz×2 65°/65° 14.5/18dBi 2°~12°/2°~12° Integrated and replaceable RCU (Remote Control Unit) Antenna**

Electrical specifications-TDD					
General parameters	Frequency range(MHz)		3300~3600	3600~3800	
	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@2~4°;≥25@5~12°		
	Cross-polarization isolation between ports(dB)		≥22		
Inter array spacing(mm)		43(0.51λ@3550MHz)			
Radiation parameters	Single column beam	Horizontal 3dB beam width(°)		90±15	86±15
		Gain(dBi)		14.3±0.5	15±0.6
		Vertical 3dB beam width(°)		≥6	≥5.5
		Cross polar ratio(0°)(dB)		≥15	
		Cross polar ratio(±60°)(dB)		≥8	
		Front to back ratio(dB)		≥23	
	Vertical sidelobe suppression for first sidelobe above main beam(dB)		≥15		
	Broadcast beam	Gain(dBi)		16.5±0.5	16.5±0.6
		SPR(±60°)(%)		≥90	
		Vertical 3dB beam width(°)		≥6	≥5.5
		Front to back ratio(dB)		≥25	
	Service beam	0° direct beam gain(dBi)		20±0.5	20±0.6
		0° direct beam horizontal 3dB beam width(°)		≤30	≤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)		18.3±0.5	19±0.6

**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)	13.4	13.6	13.8	14.2
Gain over all tilts (dBi)	13.3 $\pm$ 0.6	13.5 $\pm$ 0.5	13.7 $\pm$ 0.5	14.1 $\pm$ 0.6
Horizontal 3dB beamwidth ( $^\circ$ )	67 $\pm$ 5	68 $\pm$ 5	69 $\pm$ 6	69 $\pm$ 5
Vertical 3dB beamwidth ( $^\circ$ )	15.8 $\pm$ 1.2	14.4 $\pm$ 0.9	13.8 $\pm$ 0.8	13.0 $\pm$ 1.0
Front to back ratio (dB) Total power, $\pm 30^\circ$	>20	>22	>23	>24
Cross polar ratio (dB) (at Boresight)	>19	>18	>19	>20
Electrical downtilt ( $^\circ$ )	2~12			
Sidelobe suppression (dB) (First sidelobe above main beam)	>15	>15	>15	>15
VSWR	<1.5			
Isolation: intra-system (dB)	$\geq 25$			
Isolation: inter-system (dB)	R1//R2 $\geq 25$ R1,R2//other $\geq 28$			
Intermodulation IM3 (2 $\times$ 43dBm carrier)	$\leq -150$ dBc			
Impedance ( $\Omega$ )	50			
Max. power per input (W) @50 $^\circ$ C	400			
Lightning protection	Dc Ground			

**Electrical specifications**

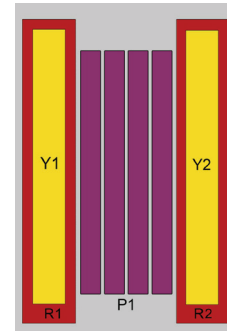
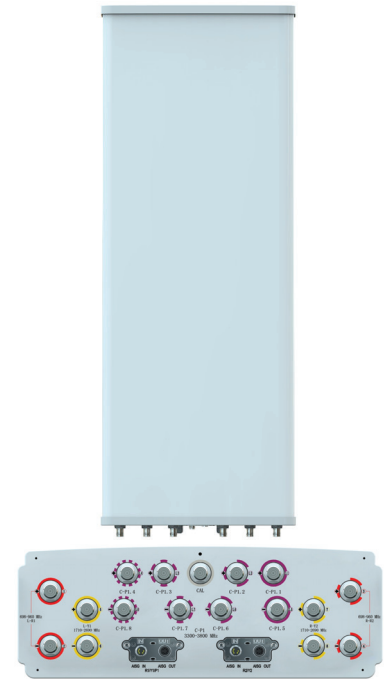
Frequency Range (MHz)	Y1/Y2 -1710~2690			
	1710~1990	1920~2200	2200~2490	2490~2690
Polarization	$\pm 45^\circ$			
Gain at mid tilt (dBi)	16.7	17.2	17.7	17.5
Gain over all tilts (dBi)	16.6 $\pm$ 0.6	17.1 $\pm$ 0.5	17.5 $\pm$ 0.5	17.3 $\pm$ 0.5
Horizontal 3dB beamwidth ( $^\circ$ )	67 $\pm$ 6	64 $\pm$ 5	61 $\pm$ 4	59 $\pm$ 5
Vertical 3dB beamwidth ( $^\circ$ )	6.8 $\pm$ 0.4	6.0 $\pm$ 0.5	5.2 $\pm$ 0.4	4.7 $\pm$ 0.3
Front to back ratio (dB) Total power, $\pm 30^\circ$	>25	>26	>25	>25
Cross polar ratio (dB) (at Boresight)	>17	>22	>20	>21
Electrical downtilt ( $^\circ$ )	2~12			
Sidelobe suppression (dB) (First sidelobe above main beam)	>17	>17	>16	>15
VSWR	<1.5			
Isolation: intra-system (dB)	>25			
Isolation: inter-system (dB)	>28			
Intermodulation IM3 (2 $\times$ 43dBm carrier)	$\leq -150$ dBc			
Impedance ( $\Omega$ )	50			
Max. power per input (W) @50 $^\circ$ C	200			
Lightning protection	Dc Ground			

**Mechanical specifications**

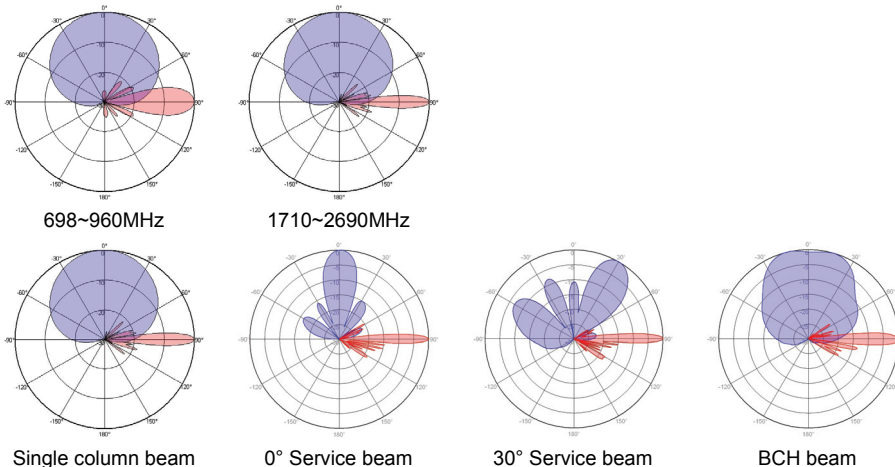
Connector	17×4.3-10-Female
Connector position	Bottom
Height × width × depth (mm)	1499×499×178
Packing size (mm)	1880×620×330
Antenna weight (kg)	33.5
Installation kit weight (kg)	5.4
Packing weight (kg)	45.5
Wind load (N,at 150km/h) Frontal/Lateral/Rearside	815/167/826
Max. wind velocity (km/h)	216
Radome 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



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

**Antenna pattern sample for reference**


**Beamforming Weights**

Broadcast beamwith 65°		Frequency Range(MHz)	port	port1	port2	port3	port4	port5	port6	port7	port8
P0	Fullpower broadcast tilt2-6	3300~3800	Amplitude	1	1	0	0	0	0	1	1
			Phase(°)	-37	0	0	0	0	0	26	-30
P1	Fullpower broadcast tilt2-6	3300~3800	Amplitude	0	0	1	1	1	1	0	0
			Phase(°)	0	0	26	-30	-37	0	0	0
P0	Fullpower broadcast tilt7-12	3300~3800	Amplitude	1	1	0	0	0	0	1	1
			Phase(°)	-64	0	0	0	0	0	10	-42
P1	Fullpower broadcast tilt7-12	3300~3800	Amplitude	0	0	1	1	1	1	0	0
			Phase(°)	0	0	10	-42	-64	0	0	0
Service beam		Frequency Range(MHz)	port	port1	port2	port3	port4	port5	port6	port7	port8
+ 45°	0°for tilt2-12	3300~3800	Amplitude	1	1	1	1	0	0	0	0
			Phase(°)	0	0	0	0	0	0	0	0
- 45°	0°for tilt2-12	3300~3800	Amplitude	0	0	0	0	1	1	1	1
			Phase(°)	0	0	0	0	0	0	0	0
+ 45°	30°for tilt2-12	3300~3800	Amplitude	1	1	1	1	0	0	0	0
			Phase(°)	-106	0	106	-148	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	-106	0	106	-148

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Tel: +86-760-85318111 Fax: +86-760-85594662  
website: [www.tycc.cn](http://www.tycc.cn) Email: [sales@tycc.cn](mailto:sales@tycc.cn)