



**TDD : XXXXPol2490~2690MHz/3300~3800MHz BCH 65°/65° 16.5/16.5dBi 2~12°/2~12°Beamforming**  
**FDD : XXXXPol 698~862MHz×1/880~960MHz×1/1710~2170MHzx1/2490~2690MHzx1 65°/65°/65°/65°**  
**13/13.5/16.5/17dBi 2~12°/2~12°/2~12°/2~12° Integrated and replaceable RCU (Remote Control Unit)**  
**Antenna**

Electrical specifications-TDD					
General parameters	Frequency range(MHz)		P1-2490~3800		
			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(°)		7.5±0.6	5.6±0.6
		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(°)		27.0±3	19.5±3
		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)	R1-698~862		R2-880~960
	698~803	790~862	880~960
Polarization	$\pm 45^\circ$		
Gain at mid tilt (dBi)	12.9	13.1	13.6
Gain over all tilts (dBi)	12.8 $\pm$ 0.7	13.0 $\pm$ 0.6	13.5 $\pm$ 0.6
Horizontal 3dB beamwidth ( $^\circ$ )	70 $\pm$ 6	69 $\pm$ 6	65 $\pm$ 6
Vertical 3dB beamwidth ( $^\circ$ )	15.6 $\pm$ 1.2	14.1 $\pm$ 0.8	13.1 $\pm$ 0.7
Front to back ratio(dB) Total power, 180 $^\circ$	>20	>22	>23
Cross polar ratio (dB) (at Boresight)	>17	>18	>18
Electrical downtilt ( $^\circ$ )	2~12		
Sidelobe suppression (dB) (First sidelobe above main beam)	>15	>15	>16
VSWR	<1.5		
Isolation: intra-system (dB)	$\geq$ 25		
Isolation: inter-system (dB)	$\geq$ 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**

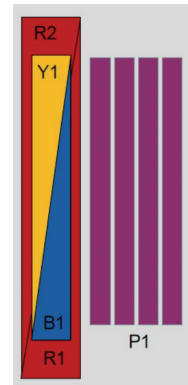
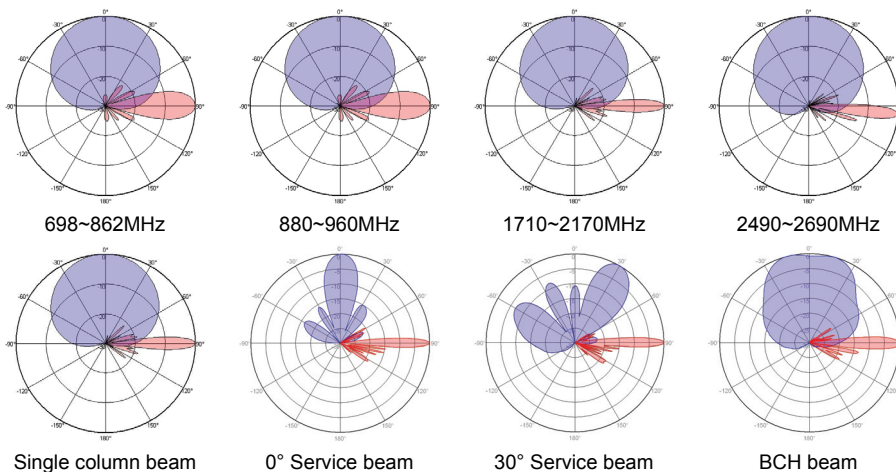
Frequency Range (MHz)	B1 -1710~2170		Y1 -2490~2690
	1710~1990	1920~2170	2490~2690
Polarization	$\pm 45^\circ$		
Gain at mid tilt (dBi)	16.5	16.8	17.2
Gain over all tilts (dBi)	16.3 $\pm$ 0.6	16.6 $\pm$ 0.6	17.0 $\pm$ 0.6
Horizontal 3dB beamwidth ( $^\circ$ )	65 $\pm$ 6	64 $\pm$ 6	61 $\pm$ 6
Vertical 3dB beamwidth ( $^\circ$ )	6.9 $\pm$ 0.4	6.3 $\pm$ 0.5	5.0 $\pm$ 0.3
Front to back ratio (dB) Total power, $\pm$ 30 $^\circ$	>25	>26	>25
Cross polar ratio (dB) (at Boresight)	>17	>20	>19
Electrical downtilt ( $^\circ$ )	2~12		
Sidelobe suppression (dB) (First sidelobe above main beam)	>16	>15	>15
VSWR	<1.5		
Isolation: intra-system (dB)	$\geq$ 25		
Isolation: inter-system (dB)	$\geq$ 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	TDD:1×(MQ4+MQ5) Connector-Male FDD:8×4.3-10-Female
Connector position	Bottom
Height × width × depth (mm)	1499×379×177
Packing size (mm)	1885×485×275
Antenna weight (kg)	30
Installation kit weight (kg)	5.5
Packing weight (kg)	39.8
Wind load (N,at 150km/h) Frontal/Lateral/Rearside	636/203/711
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


**Antenna pattern sample for reference**


Ant Array	RET Unique ID
R1	TY00000.....R1
R2	TY00000.....R2
B1	TY00000.....B1
Y2	TY00000.....Y1
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	0	0	0	0	1	1
			Phase(°)	50	0	0	0	0	0	0	0
P1	Fullpower broadcast tilt2-12	2490~2690	Amplitude	0	0	1	1	1	1	0	0
			Phase(°)	0	0	0	50	50	0	0	0
P0	Fullpower broadcast tilt2-12	3300~3800	Amplitude	1	1	0	0	0	0	1	1
			Phase(°)	90	0	0	0	0	0	0	0
P1	Fullpower broadcast tilt2-12	3300~3800	Amplitude	0	0	1	1	1	1	0	0
			Phase(°)	0	0	0	90	90	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

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Tongyu reserves the right to change specifications without prior notice.A0220220506A060021743069056

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