

TDD : XXXXPoI 2300~2690MHz/3300~3800MHz BCH 65°/65°17/17dBi 2~12°/2~12° Beamforming  
 FDD : XXXXXXPoI 698~960MHz×2/1427~2170MHz×2/2490~2690MHz×2 65°/65°/65° 14/17/17 dBi  
 2~12°/2~12°/2~12° Integrated and replaceable RCU (Remote Control Unit) Antenna

Electrical specifications-TDD					
General parameters	Frequency range(MHz)		P1-2300~3800		
			2300~2690	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			
Radiation parameters	Single column beam	Horizontal 3dB beam width(°)		90±15	60±15
		Gain(dBi)		14.5±0.9	15.0±1.0
		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)		≥21	≥25
		Vertical sidelobe suppression for first sidelobe above main beam(dB)		≥15	≥13
	Broadcast beam	Gain(dBi)		16.7±0.8	16.8±0.8
		SPR(±60°)(%)		≥90	
		Vertical 3dB beam width(°)		≥6.2	≥4.2
		Cross polar ratio(0°)(dB)		≥18	
		Front to back ratio(dB)		≥25	
	Service beam	0° direct beam gain(dBi)		20.3±0.8	21.5±0.8
		0° direct beam horizontal 3dB beam width(°)		≤25	
		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±0.8	19.5±0.8

**Electrical specifications**

Frequency Range (MHz)	R1/R2 -698~960			
	698~803	790~862	824~894	880~960
Polarization	±45°			
Gain at mid tilt (dBi)	13.0	13.3	13.4	13.9
Gain over all tilts (dBi)	12.9±0.7	13.2±0.6	13.3±0.6	13.8±0.4
Horizontal 3dB beamwidth (°)	68±6	70±5	69±6	70±5
Vertical 3dB beamwidth (°)	15.4±1.2	14.1±0.7	13.7±0.6	12.9±0.7
Front to back ratio(dB) Total power, 180°	>20	>22	>23	>24
Cross polar ratio (dB) (at Boresight)	>17	>18	>18	>18
Electrical downtilt (°)	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 (2×43dBm carrier)	≤-150 dBc			
Impedance (Ω)	50			
Max. power per input (W) @50°C	400			
Lightning protection	Dc Ground			

**Electrical specifications**

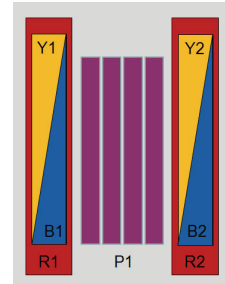
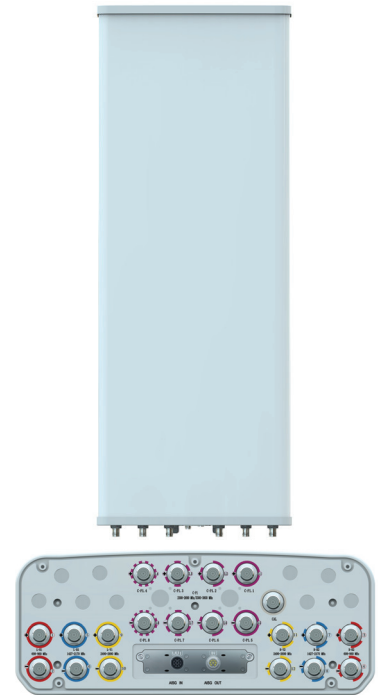
Frequency Range (MHz)	B1/B2-1427~2170			Y1/Y2-2490~2690
	1427~1518	1710~1990	1920~2170	2490~2690
Polarization	±45°			±45°
Gain at mid tilt (dBi)	15.5	16.5	16.8	17.0
Gain over all tilts (dBi)	15.3±0.4	16.3±0.4	16.6±0.6	16.8±0.5
Horizontal 3dB beamwidth (°)	68±5	66±6	64±5	60±6
Vertical 3dB beamwidth (°)	8.3±0.5	6.6±0.6	5.9±0.5	4.8±0.4
Front to back ratio (dB) Total power, ±30°	>26	>26	>25	>24
Cross polar ratio (dB) (at Boresight)	>20	>20	>20	>18
Electrical downtilt (°)	2~12			2~12
Sidelobe suppression (dB) (First sidelobe above main beam)	>16	>15	>15	>15
VSWR	<1.5			<1.5
Isolation: intra-system (dB)	≥25			≥25
Isolation: inter-system (dB)	≥28			≥28
Intermodulation IM3 (2×43dBm carrier)	≤-150 dBc			≤-150 dBc
Impedance (Ω)	50			50
Max. power per input (W) @50°C	200			200
Lightning protection	Dc Ground			Dc Ground

**Mechanical specifications**

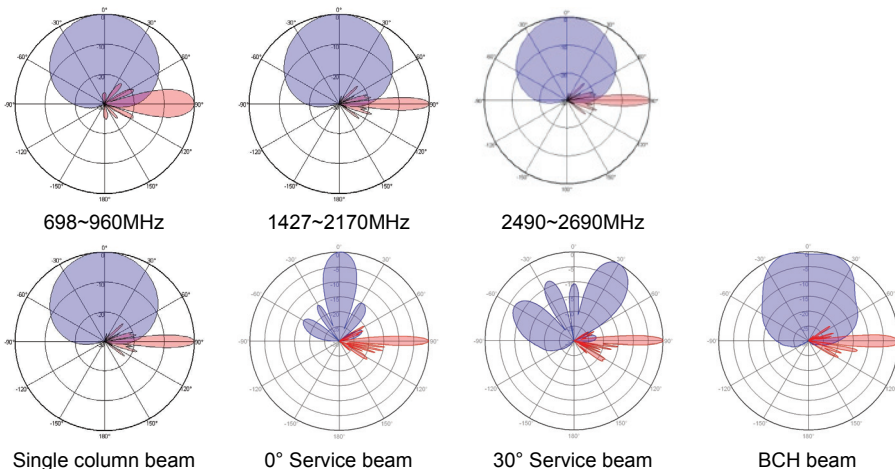
Connector	21×4.3-10-Female
Connector position	Bottom
Height × width × depth (mm)	1499×499×198
Packing size (mm)	1885×620×330
Antenna weight (kg)	36
Installation kit weight (kg)	5.5
Packing weight (kg)	47
Wind load (N,at 150km/h) Frontal/Lateral/Rearside	780/225/880
Max. wind velocity (km/h)	216
Radome 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-TQ20P3V01
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
B1	TY00000.....B1
B2	TY00000.....B2
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 tilt2-12	2300-2690	Amplitude	1	1	1	1	0	0	0	0
			Phase(°)	-80	0	0	-80	0	0	0	0
p1	Fullpower broadcast tilt2-12	2300-2690	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	2300-3800	Amplitude	1	1	1	1	0	0	0	0
			Phase(°)	0	0	0	0	0	0	0	0
-45°	0°for tilt2-12	2300-3800	Amplitude	0	0	0	0	1	1	1	1
			Phase(°)	0	0	0	0	0	0	0	0
+45°	30°for tilt2-12	2300-2690	Amplitude	1	1	1	1	0	0	0	0
			Phase(°)	0	100	200	300	0	0	0	0
-45°	30°for tilt2-12	2300-2690	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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