

2JE21

5GNR Surface Mount

Key Features

5GNR

- 617-960 MHz
- 1427-2690 MHz
- 3300-5000 MHz
- 5150-5925 MHz

Surface Mount

High Performance

Fiberglass Material

Ground Plane Dependent

Dimensions 40 x 7 x 3 mm



1. Antenna and electrical specifications

Parameters	5GNR Antenna			
Technologies	5G, 4G, 3G and 2G			
Standards	5GNR/4GLTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G			
Frequency (MHz)	617-960	1427-2690	3300-5000	5150-5925
Band (MHz)	600, 700, 850, 900	1500, 1600, 1700, 1800, 1900, 2000, 2100, 2300, 2500, 2600	3300, 3500, 3600, 3700, 4500	5200, 5500, 5800
5GNR Bands	n5, n8, 12, n20, n28, n71, n81, n82, n83,	n1, n2, n3, n7, n25, n34, n38, n39, n40, n41, n50, n51, n66, n70, n74, n75, n76, n80, n84, n86	n77, n78, n79	
4GLTE Bands	B5, B6, B8, B12, B13, B14, B17, B18, B19, B20, B26, B27, B28, B29, B44, B67, B68, B71, B85	B1, B2, B3, B4, B7, B9, B10, B11, B21, B23, B24, B25, B30, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B45, B50, B51, B65, B66, B69, B70, B74, B75, B76	B22, B42, B43, B48, B49, B52	B46, B47, B252, B255
3GCELL Bands	B5, B6, B8, B12, B13, B14, B19, B20, B26	B1, B2, B3, B4, B7, B9, B10, B11, B21, B25, B32, B33, B34, B35, B36, B37, B38, B39, B40	B22	
2GCELL Bands	710, 750, 810T, 850, 900P, 900E, 900R	1800DCS, 1900PCS		
CDMACELL Bands	BC0, BC2, BC3, BC7, BC9, BC10, BC12, BC18, BC19	BC1, BC4, BC6, BC8, BC13, BC14, BC15, BC16, BC20, BC21		
Return Loss (dB)	~-6.6	~-9.0	~-6.6	~-7.9
VSWR	~3.0:1	~2.3:1	~2.8:1	~2.4:1
Efficiency (%)	~53.0	~60.8	~45.3	~43.1
Peak Gain (dBi)	~1.4	~3.3	~2.9	~1.8
Average Gain (dB)	~-2.8	~-2.2	~-3.5	~-3.7
Impedance (Ohm)	50			
Polarisation	Linear			
Radiation Pattern	Omni-Directional			
Max. Input Power (W)	25			

Antenna Measurement Conditions:

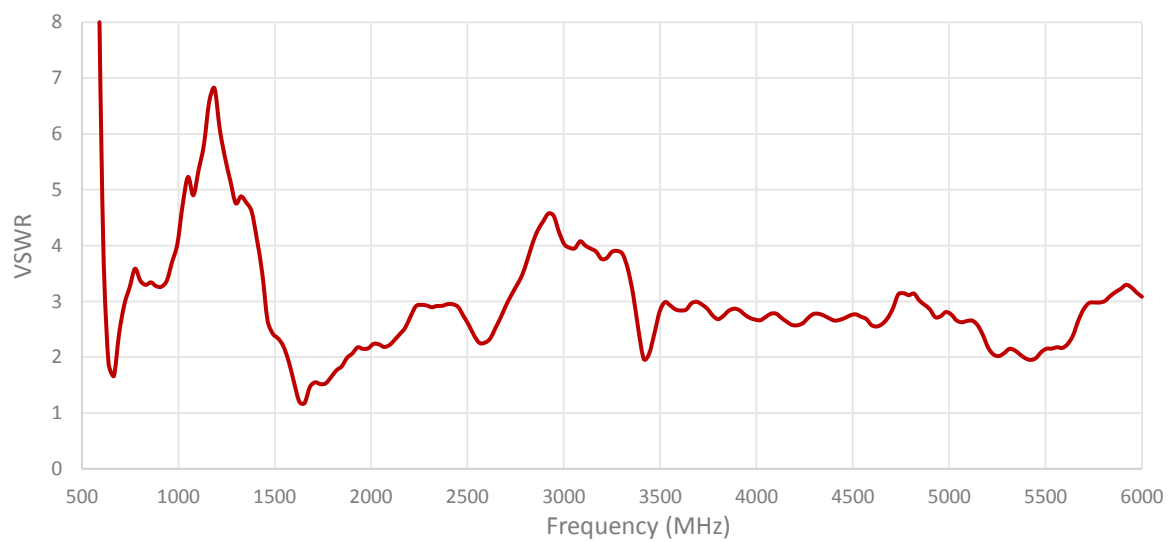
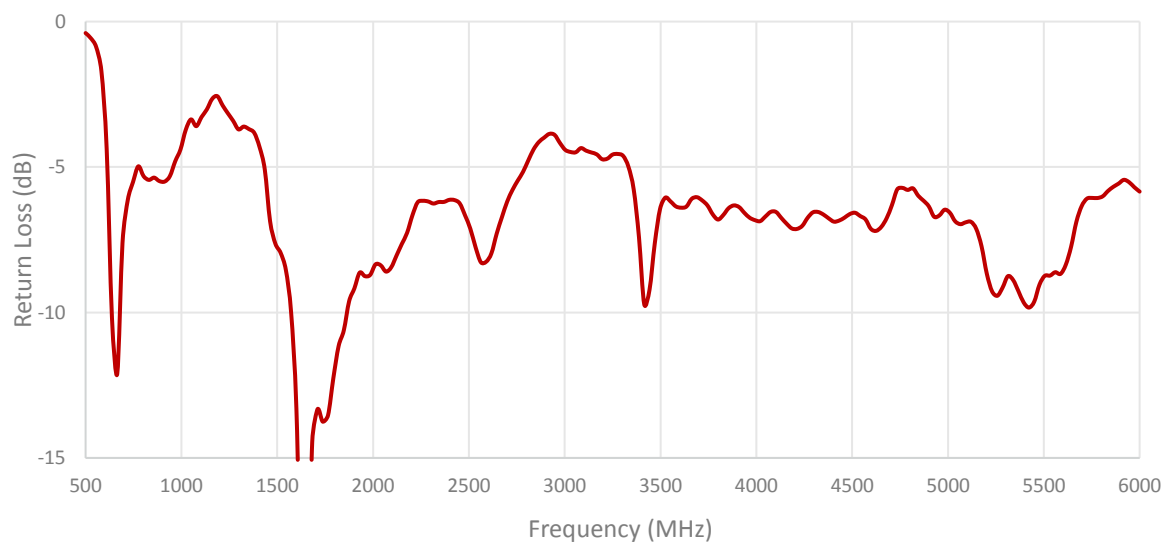
Mounted on ground plane of 120 x 40.4 mm

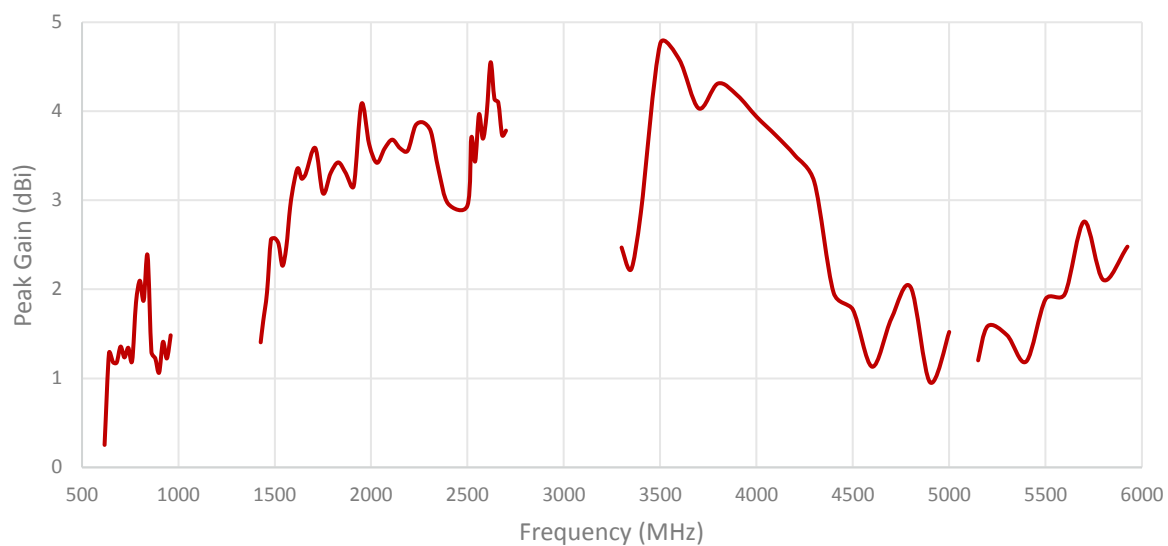
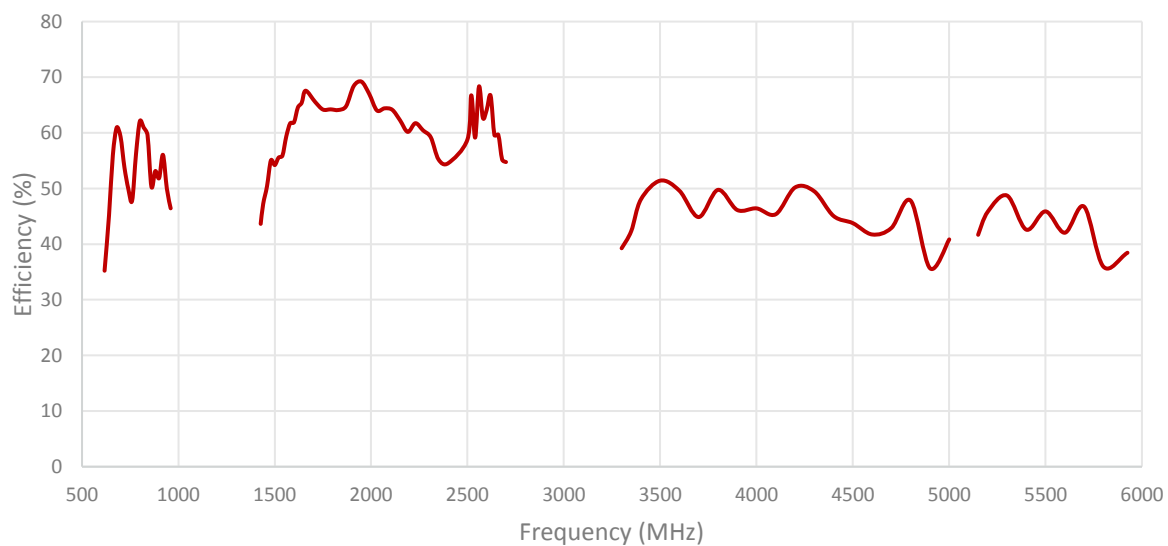
Measured in Certified CTIA 3D Anechoic Chamber

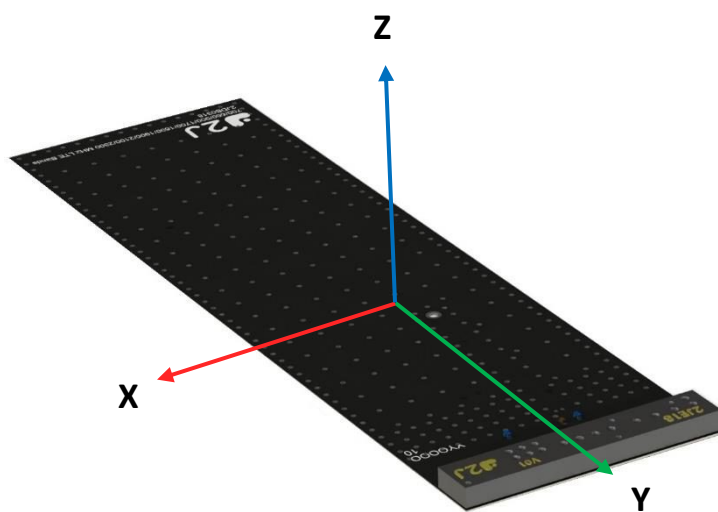
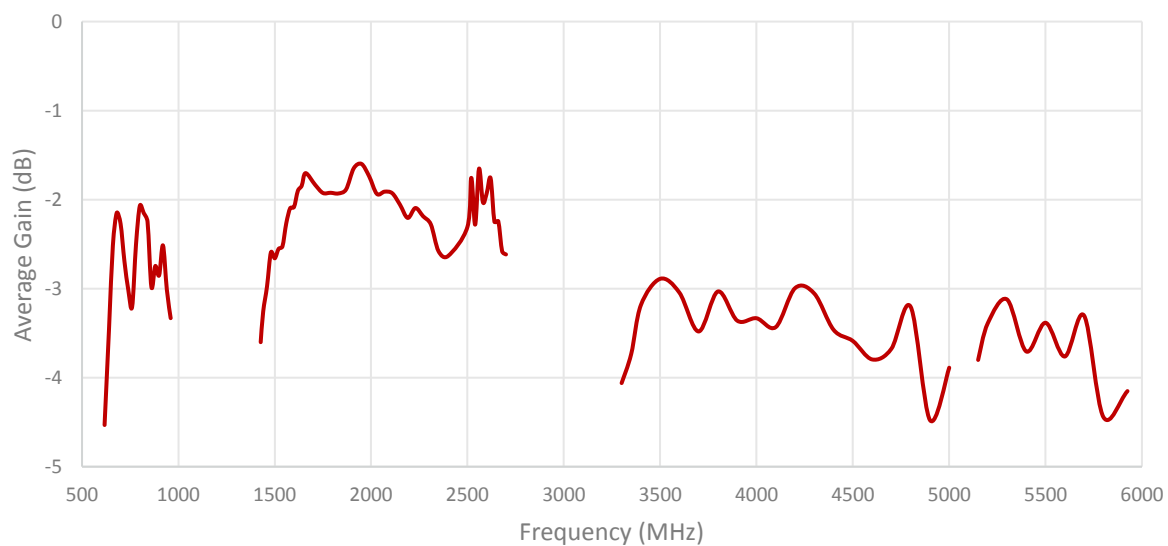
2. Mechanical and environmental specifications

Specifications	2JE21
Mounting Type	Surface Mount
Dimensions (mm)	40 x 7 x 3
Material	Fiberglass
Operating Temperature (C)	-40 to +105
Storage Temperature (C)	-40 to +85
Storage Relative Humidity (%)	Up to 93 at 30 C
Substance Compliance	RoHS
Shear Force Test	Minimum specified shear force: 25 kgf according to Relevant Standards for Tests: IEC62137-1-2 (2007)

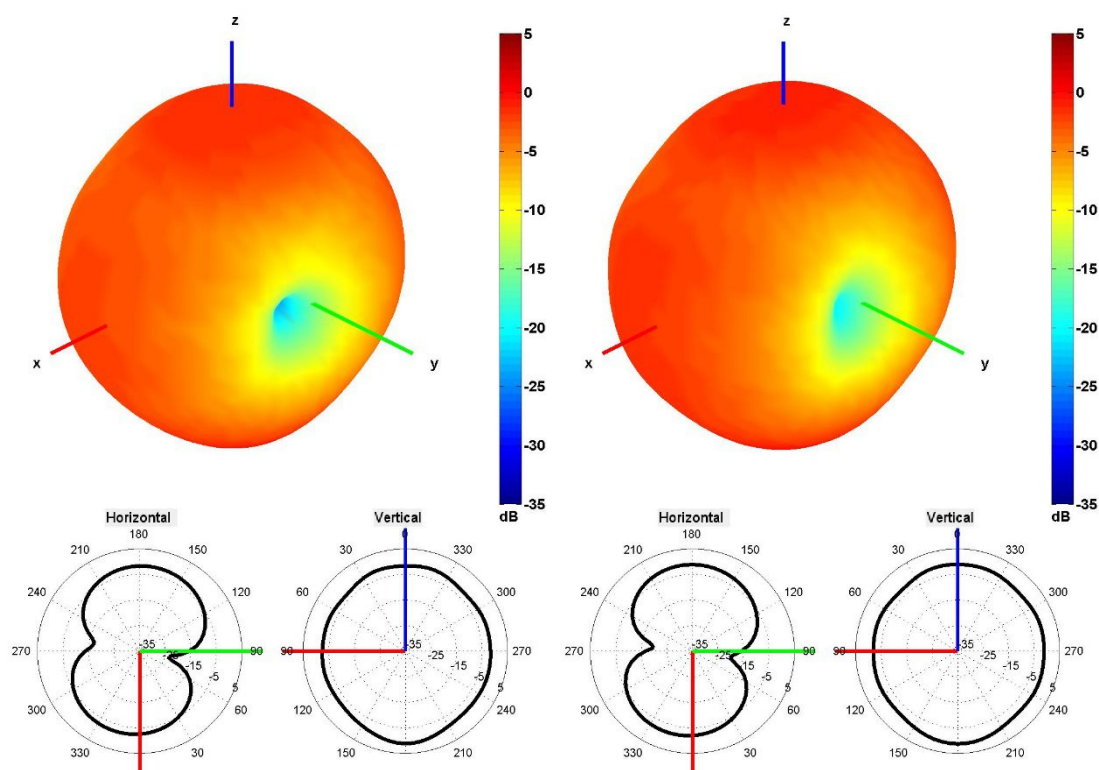
3. Antenna parameters



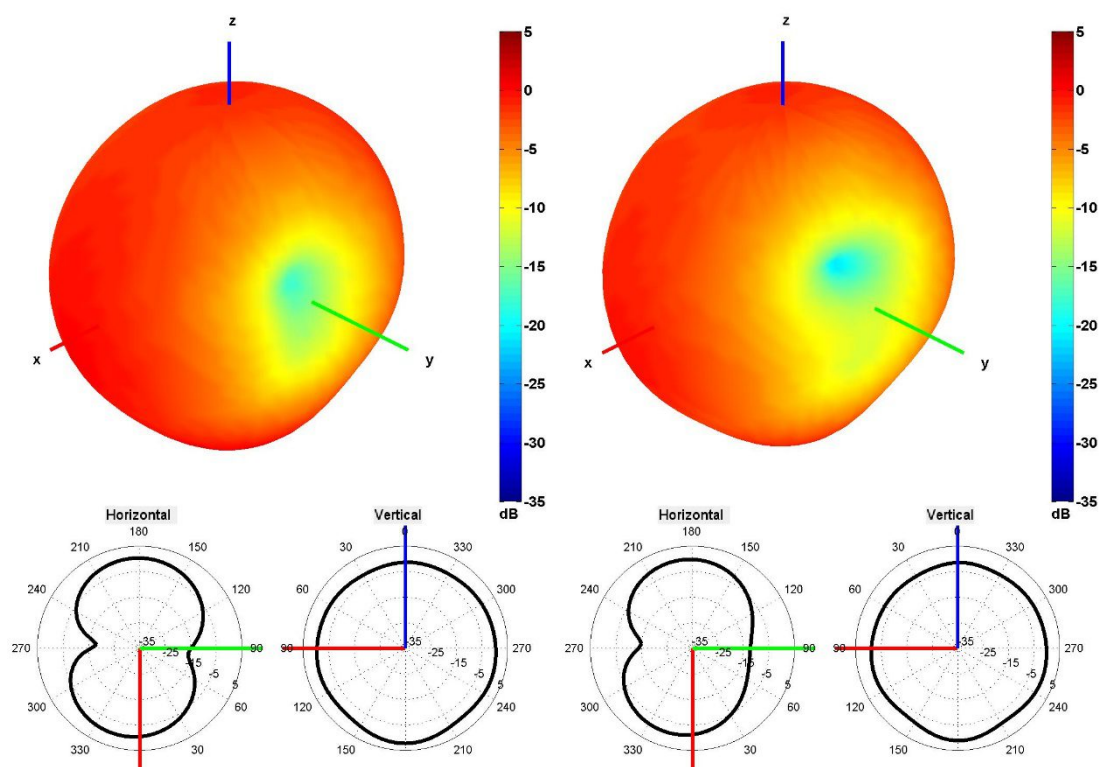




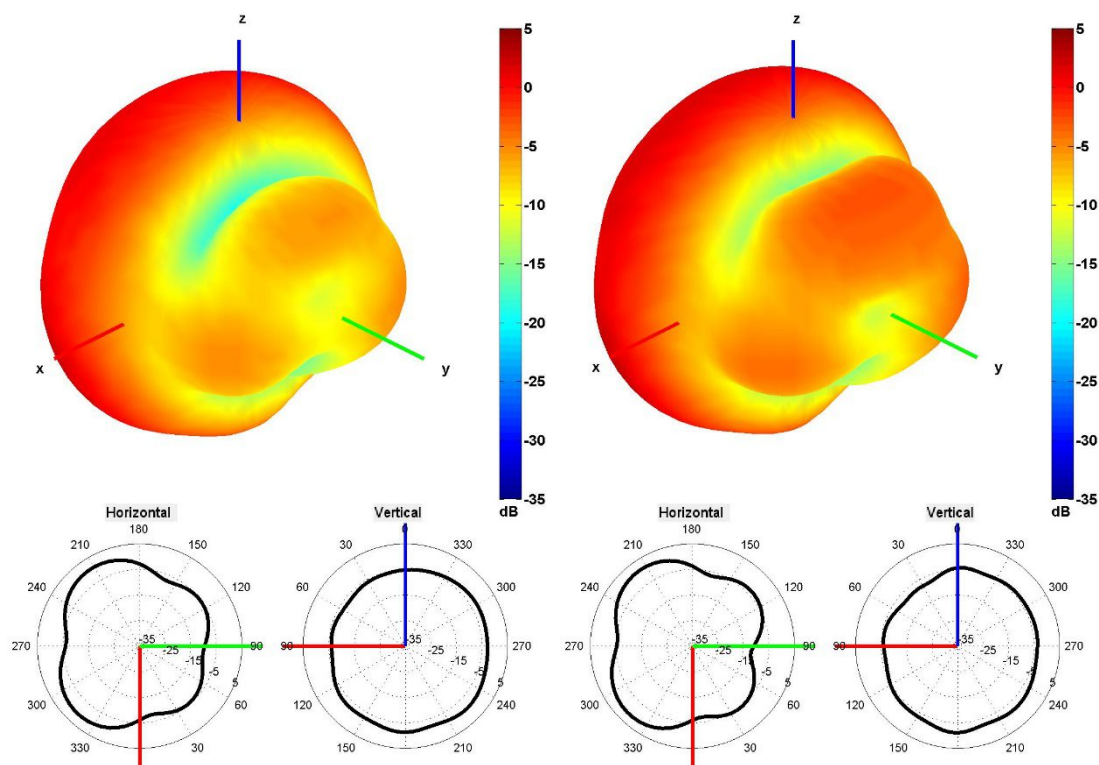
Radiation pattern reference



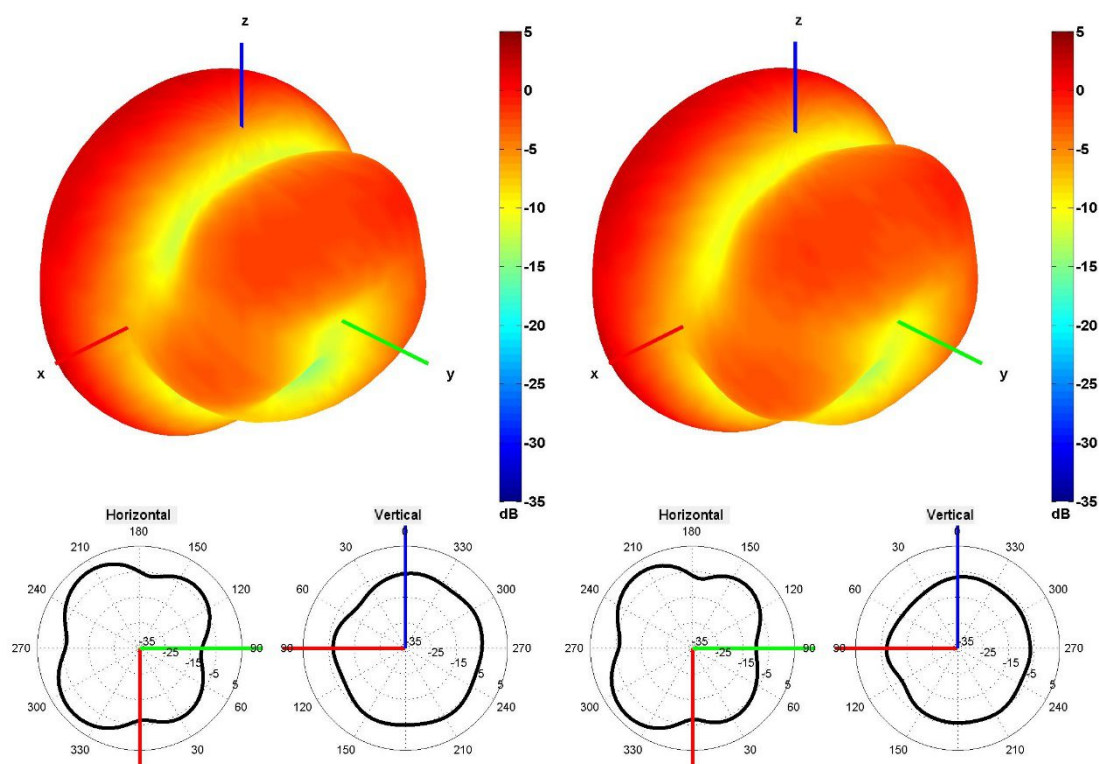
650 and 750 MHz Radiation pattern



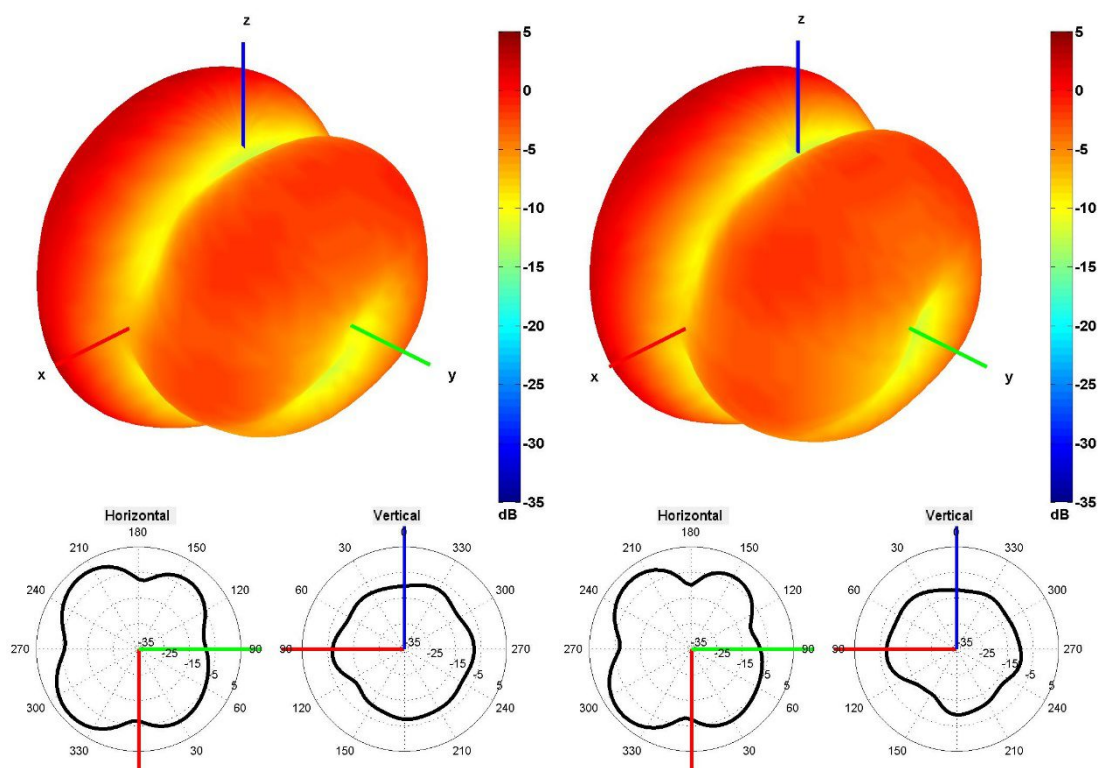
850 and 940 MHz Radiation pattern



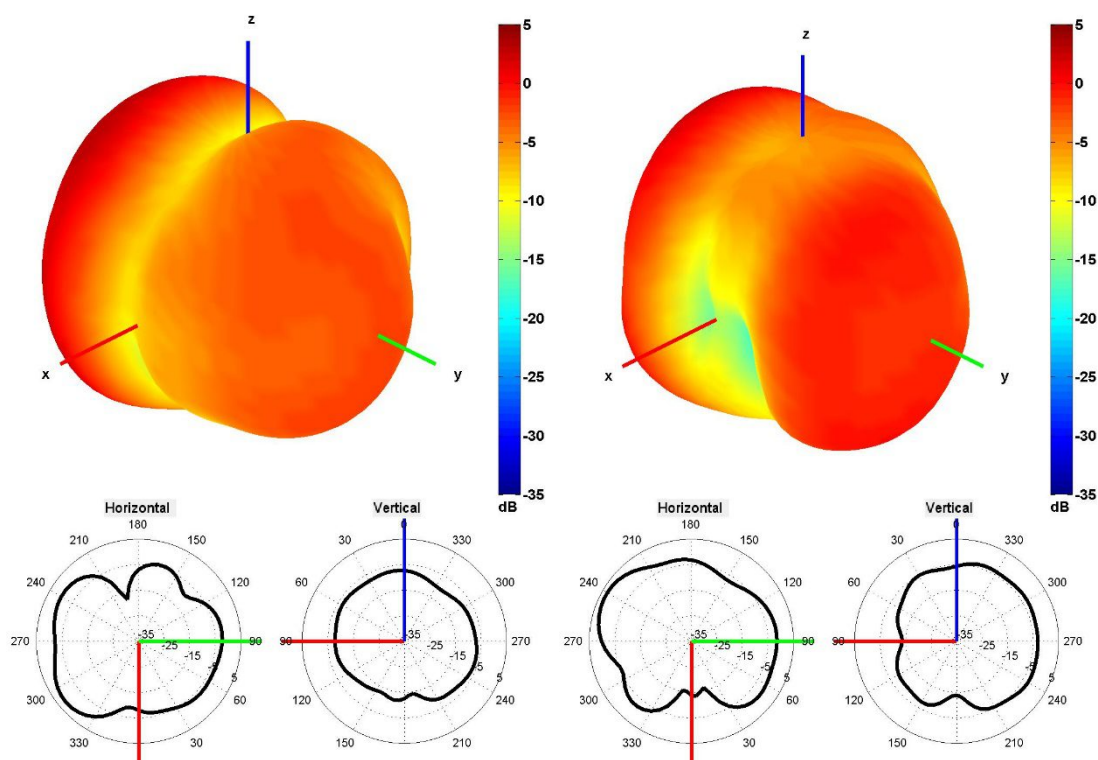
1500 and 1600 MHz Radiation pattern



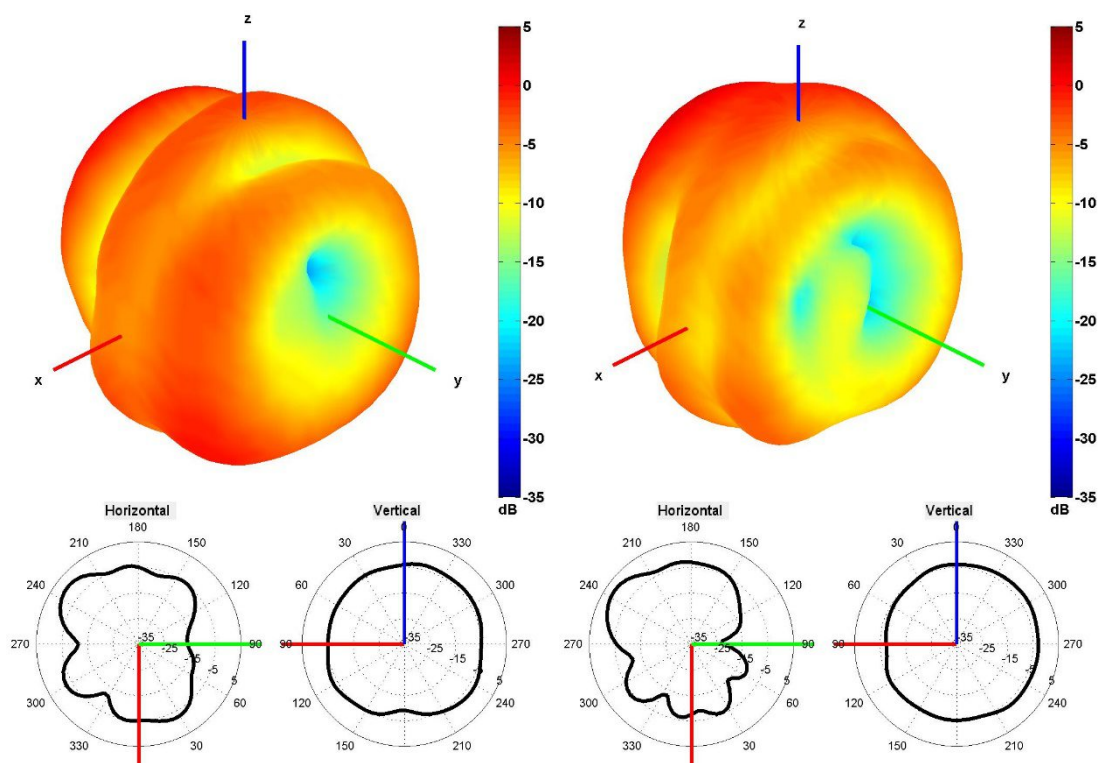
1750 and 1850 MHz Radiation pattern



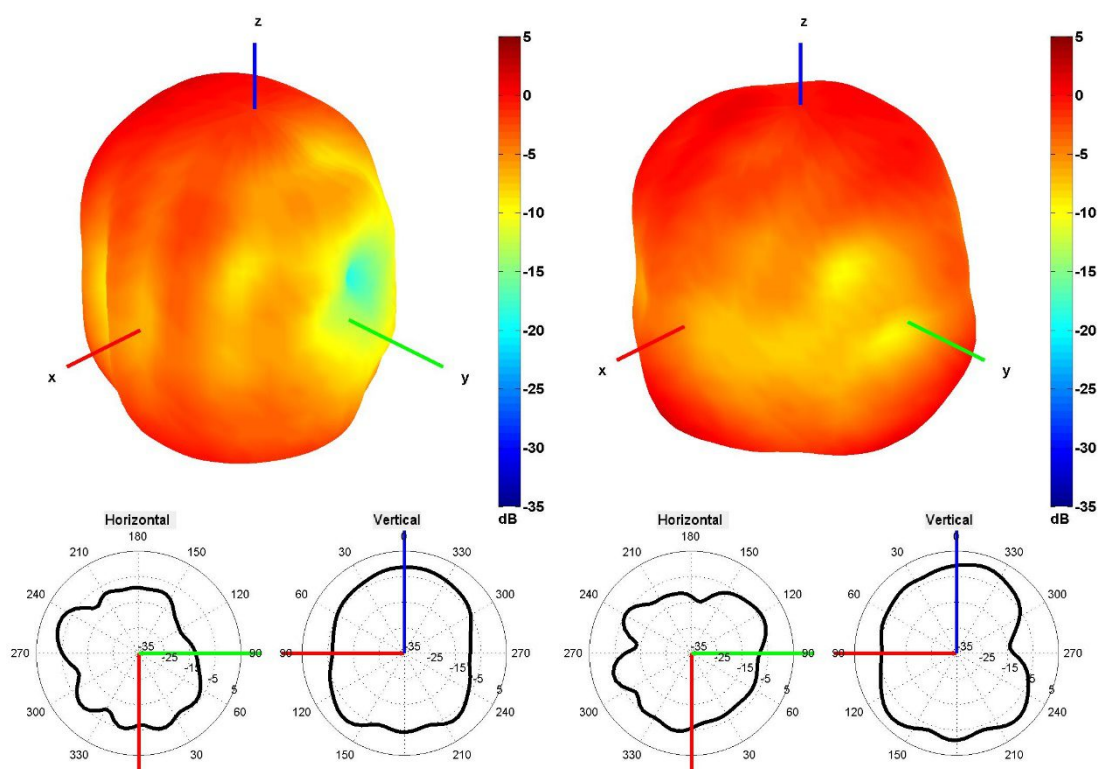
1950 and 2100 MHz Radiation pattern



2350 and 2600 MHz Radiation pattern

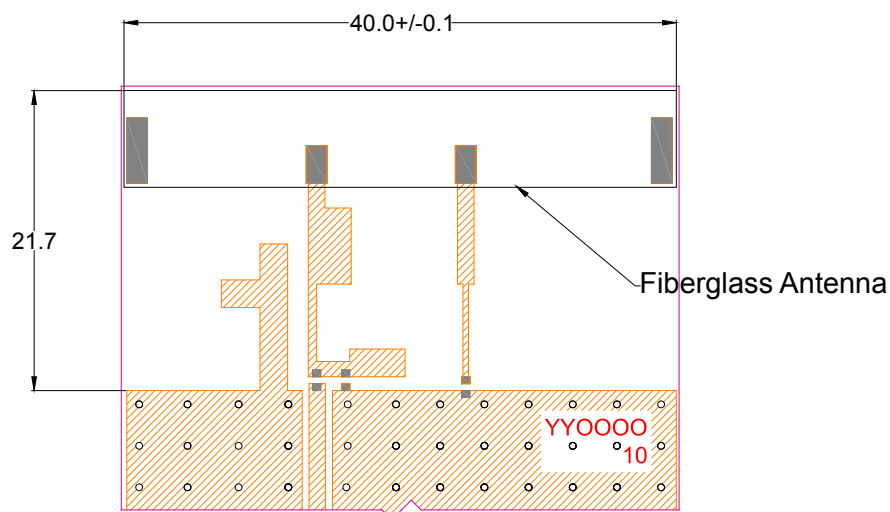


3350 and 3600 MHz Radiation pattern



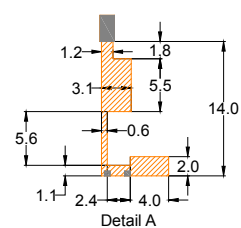
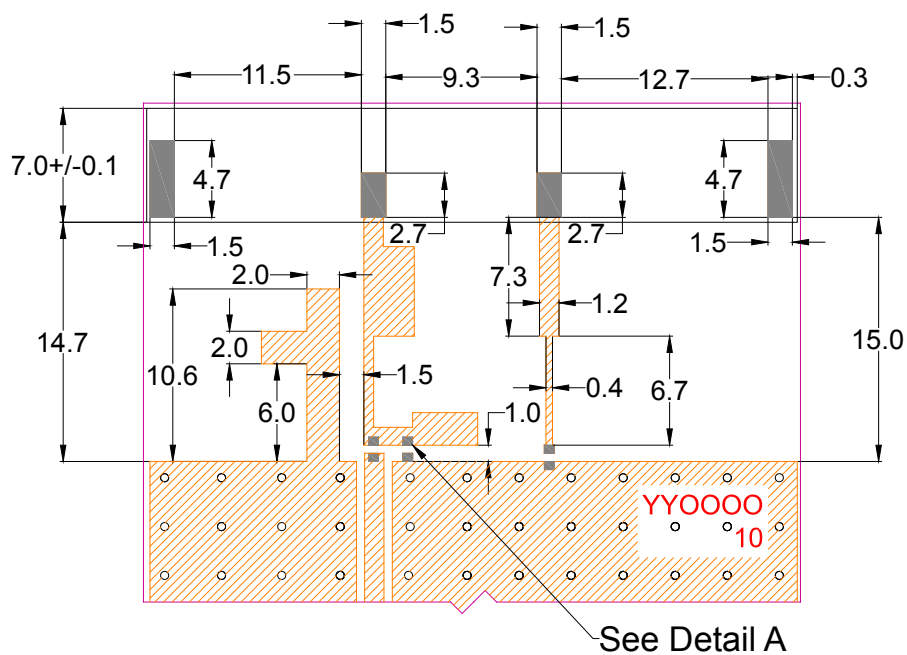
4500 and 5500 MHz Radiation pattern

4. PCB Layout



Minimum area required for antenna integration (40mm × 21.7mm)

- Solder Region
- ▨ Copper Region
- Copper-Free Region



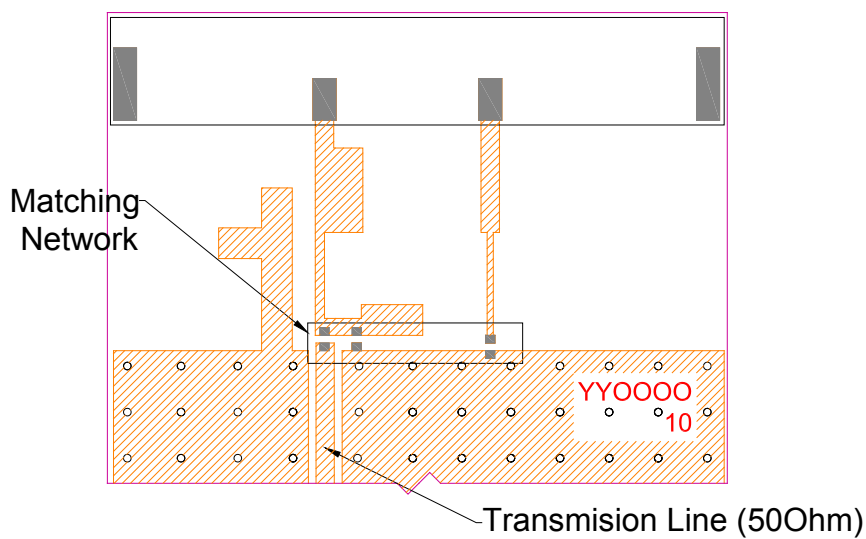
Tolerance of Linear Dimensions
(unless otherwise indicated):

Dimension (mm)	Tolerance
0.5-6	+/-0.05
6-30	+/-0.07
30-50	+/-0.1

- Solder Region
- ▨ Copper Region
- Copper-Free Region

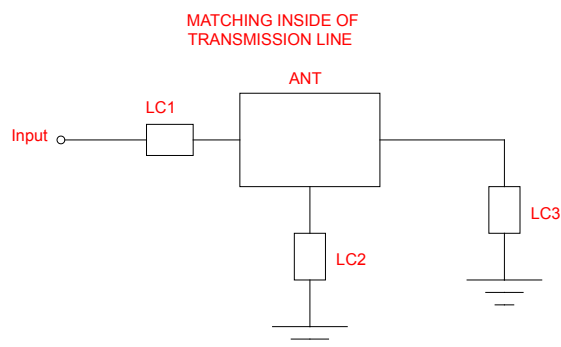
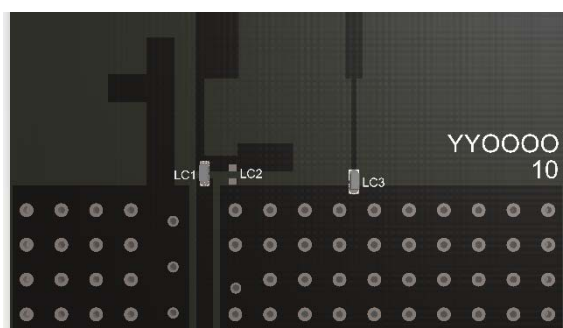
Layout dimensions for antenna integration (mm)

5. Matching Network



- Solder Region
- Copper Region
- Copper-Free Region

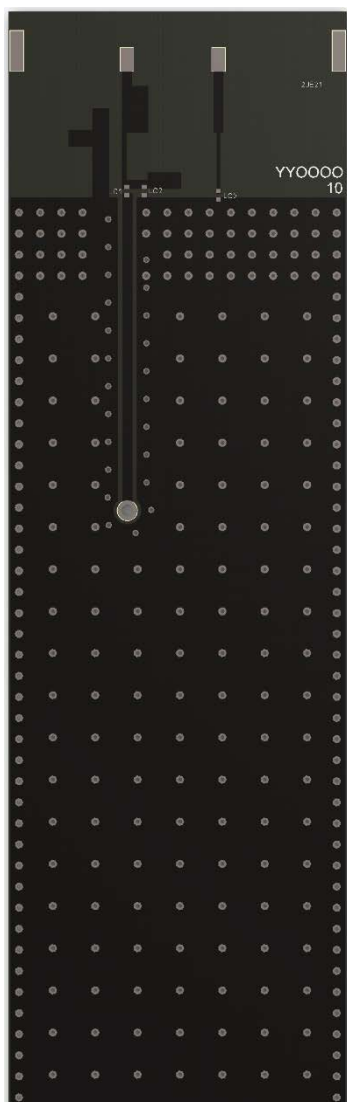
Matching network drawing



3D View of matching components and recommended values
(LC1=0Ohm, LC2=OPEN, LC3=8.2nH)

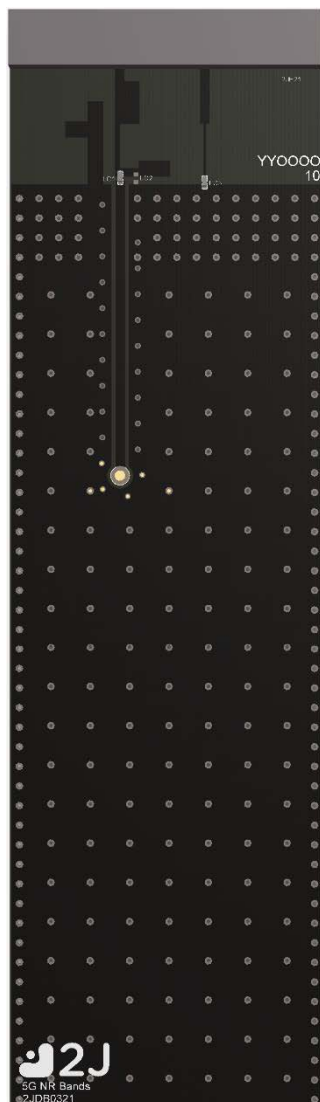
6. Evaluation Board

140mm x 40.4mm



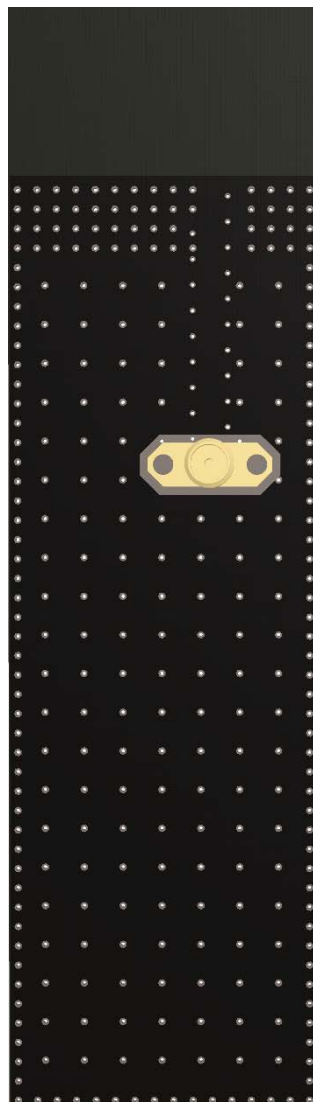
Front View without Antenna

140mm x 40.4mm



Front View with Antenna

140mm x 40.4mm



Back View

140mm x 40.4mm
(PCB: 0.8mm, Antenna: 3mm,
Connector: 9.5mm)



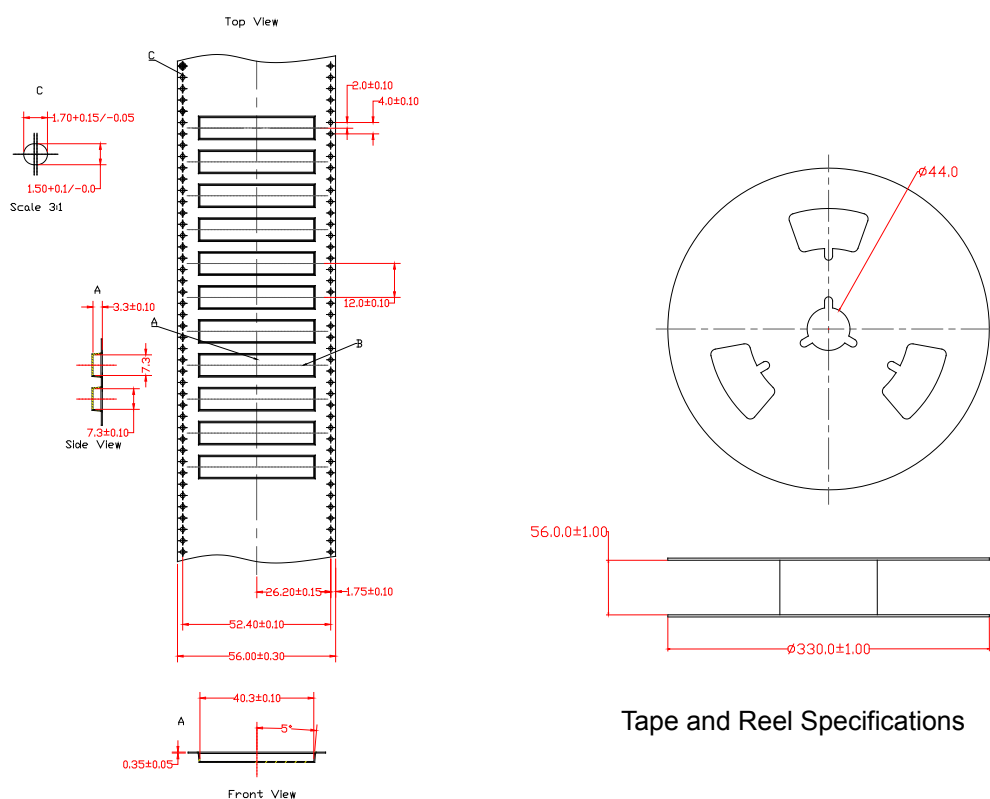
Side View

7. Packaging

PACKAGING SPECIFICATION

Antenna	2JE21
REEL	
Max Quantity per Reel	1000 / 2.5Kg per Reel
REEL CARTON	
Reels per Carton	2
Max Quantity per Carton	2000
Reel Carton Dimensions (cm)	36.5 x 36.5 x 16
Reel Carton Weight (Kg)	5
PALLET	
Max Cartons per Pallet	42
Cartons per Layer	6
Number of Layers	7
Max Quantities per Pallet	84,000
Total Cartons Dimensions (cm)	109.5 x 73 x 112
Total Cartons Weight (Kg)	210
Pallet size and weight not included above	
Typical Pallet Size (cm)	120 x 100 x 14.4
Typical Pallet Weight (Kg)	5-25

8. Tape and Reel Information

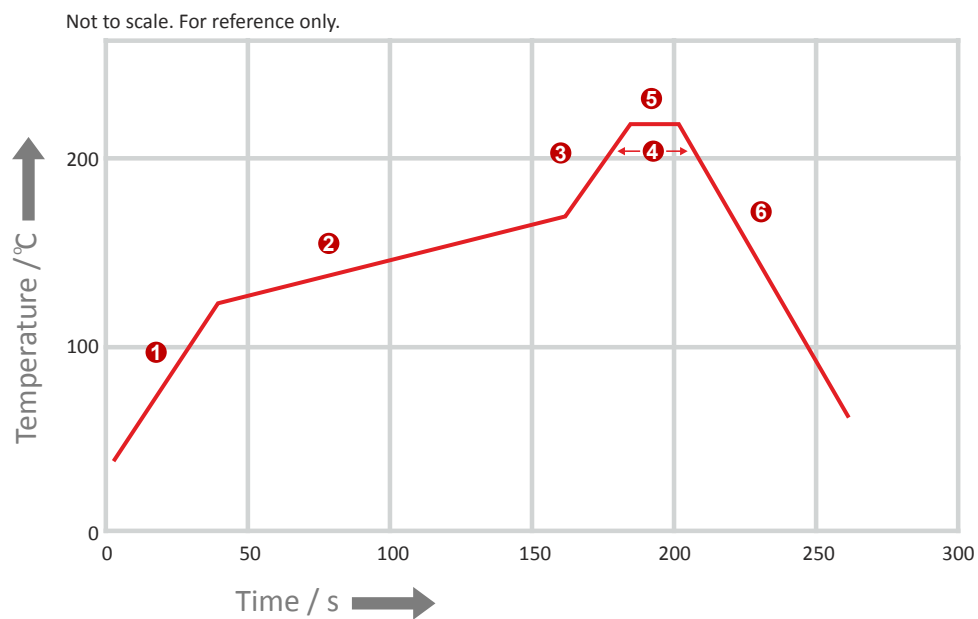


Tape and Reel Specifications

REFLOW TEMPERATURE PROFILE

Minimum Recommended Reflow Profile

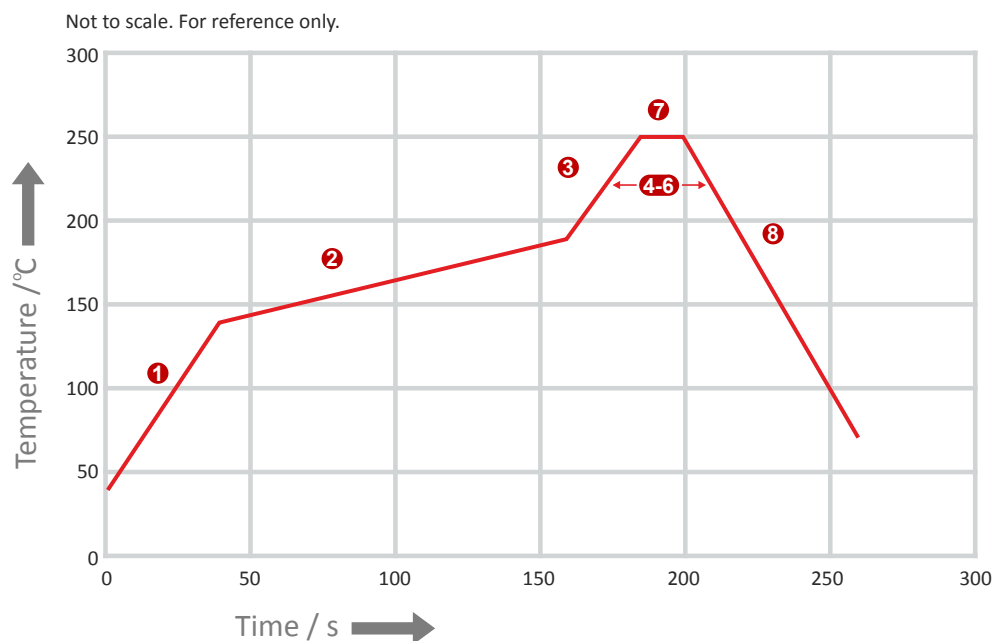
	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 30 sec
5	Peak temperature in reflow	230 °C for 10 seconds
6	Temperature gradient in cooling	Max -5 °C/s



REFLOW TEMPERATURE PROFILE

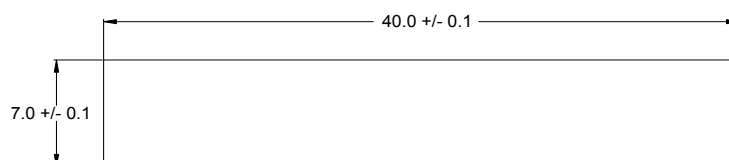
Maximum Recommended Reflow Profile

	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 60 sec
5	Time above 230 °C	Max 50 sec
6	Time above 250 °C	Max 10 sec
7	Peak temperature in reflow	260 °C for 5 seconds
8	Temperature gradient in cooling	Max -5 °C/s



9. Antenna drawings

Top View



Front View



Bottom View



Back View



Dimensions for fiberglass antenna 40 x 7 x 3 mm ± 0.2 mm

10. Antenna Images

