

REVISIONS

REV	DESCRIPTION	DATE	APPVL
A	DOCUMENT RELEASED PER CDR#01857	3/11/02	PS

General Notes:

THE FOLLOWING STI SPECIFICATIONS APPLY:

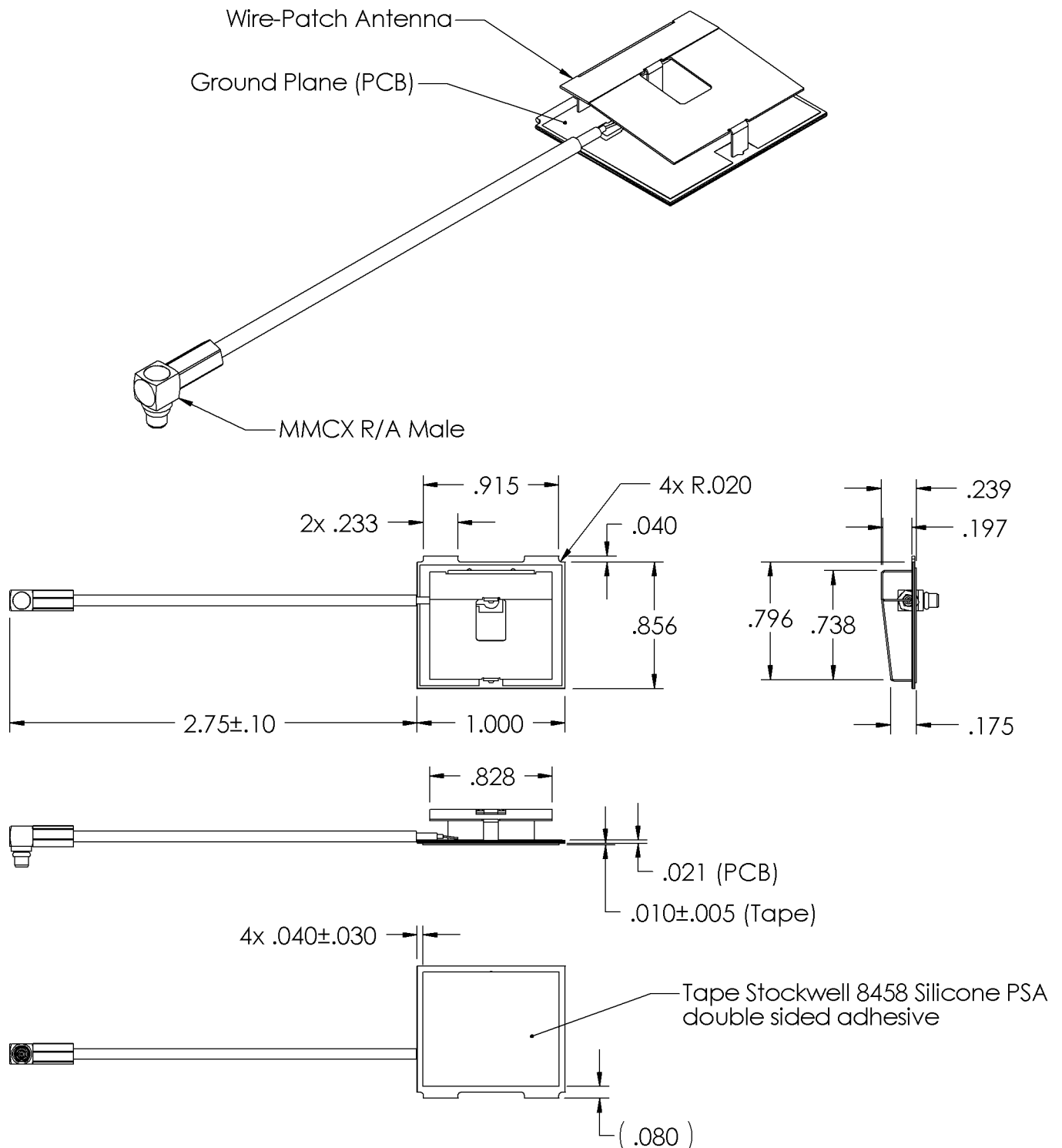
50-04100-013: **Specification For Supplier Packaging And Labeling Requirements**



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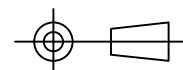
APPROVAL	NAME	DATE	SPECIFICATION CONTROL DRAWING	
DRAWN	J.ADDONISIO	3/11/02	TITLE ANT:PIFA,2.4GHZ,-5.7DBI,W/CBL	
CHECKED	P.SPENGLER			
ENG.	D.KROPP			
CEG.	D.PETRY		DOC. NO. 50-11900-015	REV A
			SHEET 1 of 6	

EMBEDDED OMNIDIRECTIONAL ANTENNA 2.4GHz**50-11900-015****2.75" RG-178 MMCX****Series : Antenna**Unless otherwise specified all tolerances are $\pm .010$ "

All dimensions are in inches

Issue : 02 10

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

**RADIALL/LARSEN**
antenna technologies**50-11900-015 REV A P2/6**

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EMBEDDED OMNIDIRECTIONAL ANTENNA 2.4GHz**50-11900-015****2.75" RG-178 MMCX****Series : Antenna****ELECTRICAL CHARACTERISTICS**

Frequency :	2.4-2.485 GHz
Nominal Impedance :	50 Ω
VSWR (Maximum value with/without the strap and the user hand) :	2:1 Max
Average Gain (Ev) in the Horizontal Plane (Including the cable loss) :	-4.7 dBi ± 0.5 dB
Peak Gain (Ev) in the Horizontal Plane (Including the cable loss):	1.5 dBi ± 1.0 dB
Radiation Pattern (Ev)	
-2 dBi Beamwidth (Azimuth plane):	150°
-6 dBi Beamwidth (Azimuth plane):	198°
Polarization :	Linear Vertical (1)
Power withstanding :	10 W
Connector type :	MMCX R/A
	R110.170.100
Cable type :	RG - 178
Length :	70 mm
Cable Loss @ 2.45 GHz :	0.1 dB

(1) :see axis definition

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EMBEDDED OMNIDIRECTIONAL ANTENNA 2.4GHz**50-11900-015****2.75" RG-178 MMCX****Series : Antenna****MECHANICAL CHARACTERISTICS**

Material :

Antenna CuNi18Zn27**Ground Plane** FR4**Adhesive Tape** Silicone based
adhesive.

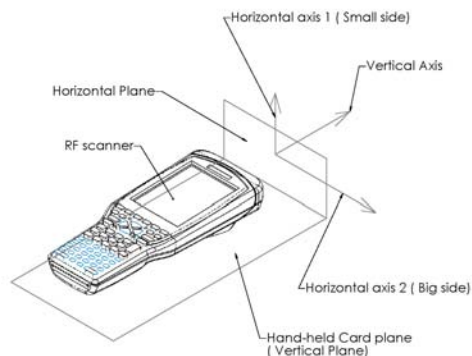
Overall Dimensions :

22.76 x 25.4 x 6.07 mm**0.896 x 1.0 x 0.239 inch**Fixing system : **Double Side Adhesive Tape****ENVIRONMENTAL CHARACTERISTICS**

Operating temperature :

-20/+70 ° C**OTHERS CHARACTERISTICS**

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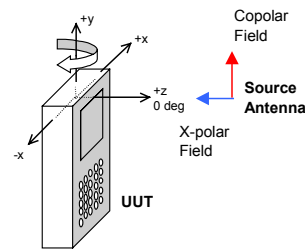
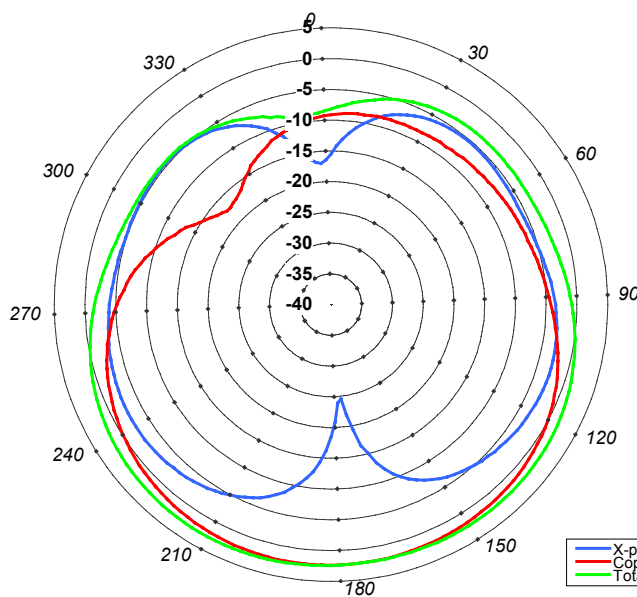
Polarization Considerations :*Definition of Vertical and Horizontal Axis and Planes
According Symbol***Issue : 02 10**

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EMBEDDED OMNIDIRECTIONAL ANTENNA 2.4GHz**2.75" RG-178 MMCX****50-11900-015****Series : Antenna****CURVES**

User Hold Position (deg from horizon): 0
 Elevation Angle (deg): 0
 Frequency (Ghz): 2.45

**Gain, (X,Z) plane
dBi**

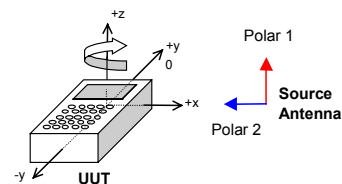
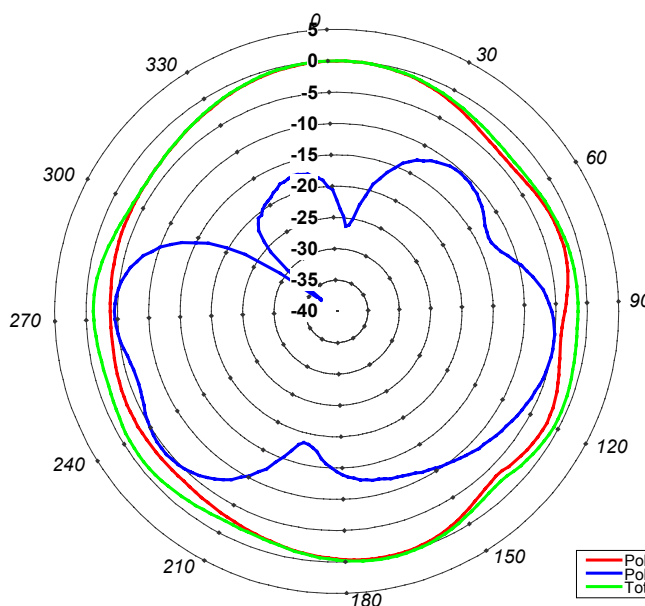
X-polar:
 Avg (dBi) = -6.6
 Peak (dBi) = -2.6
 Total deg >= -6dBi = 242
 Total deg >= -2dBi = 0

Copolar:
 Avg (dBi) = -4.7
 Peak (dBi) = 2.4
 Total deg >= -6dBi = 198
 Total deg >= -2dBi = 150

Total
 Avg (dBi) = -1.4
 Peak (dBi) = 2.8
 Total deg >= -6dBi = 320
 Total deg >= -2dBi = 192

Figure 1 : Radiation Pattern – Azimuth Plane @ 2.45 GHz

User Hold Position (deg from horizon): 0
 Elevation Angle (deg): 0
 Frequency (Ghz): 2.450

**Gain, (X,Y) plane
dBi**

Polar 1:
 Avg (dBi) = -2.4
 Peak (dBi) = 0.0
 Total deg >= -6dBi = 360
 Total deg >= -2dBi = 114

Polar 2:
 Avg (dBi) = -12.1
 Peak (dBi) = -4.5
 Total deg >= -6dBi = 74
 Total deg >= -2dBi = 0

Total
 Avg (dBi) = -1.5
 Peak (dBi) = 0.2
 Total deg >= -6dBi = 360
 Total deg >= -2dBi = 266

Figure 2 : Radiation Pattern – Elevation Cut Plane /φ=90° @ 2.45 GHz**Issue : 02 10**

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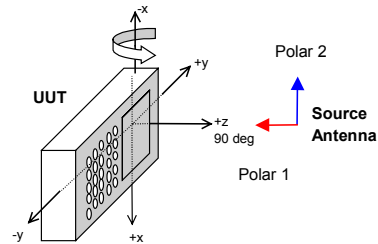
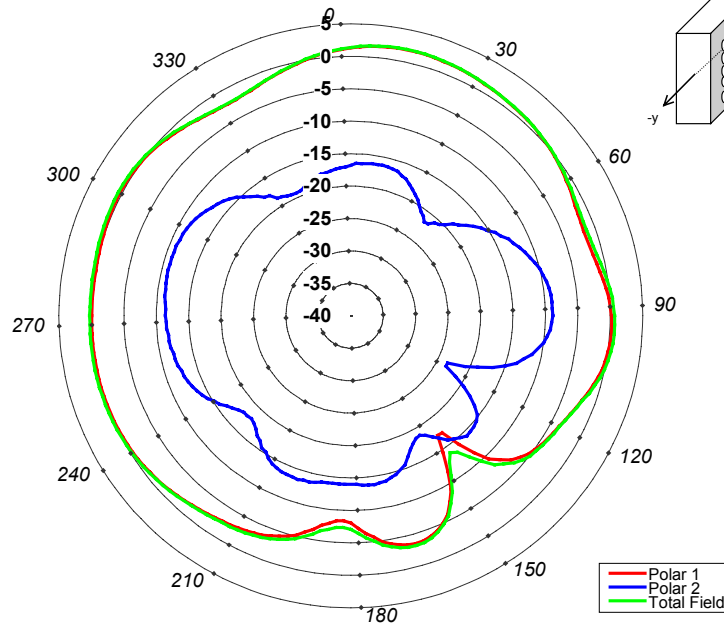
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EMBEDDED OMNIDIRECTIONAL ANTENNA 2.4GHz**2.75" RG-178 MMCX****50-11900-015****Series : Antenna**

User Hold Position (deg from horizon): 0
 Elevation Angle (deg): 0
 Frequency (Ghz): 2.45

**Gain, (Y,Z) plane
 dBi**



Polar 1:
 Avg (dBi) = -2.0
 Peak (dBi) = 1.9
 Total deg >= -6dBi = 322
 Total deg >= -2dBi = 238

Polar 2:
 Avg (dBi) = -15.0
 Peak (dBi) = -8.8
 Total deg >= -6dBi = 0
 Total deg >= -2dBi = 0

Total:
 Avg (dBi) = -1.6
 Peak (dBi) = 2.0
 Total deg >= -6dBi = 326
 Total deg >= -2dBi = 246

Figure 3 : Radiation Pattern – Elevation Cut Plane / $\phi=0^\circ$ @ 2.45 GHz

S11 Parameter-Antenna + 2.75 inches RG178 cable + MMCX connector

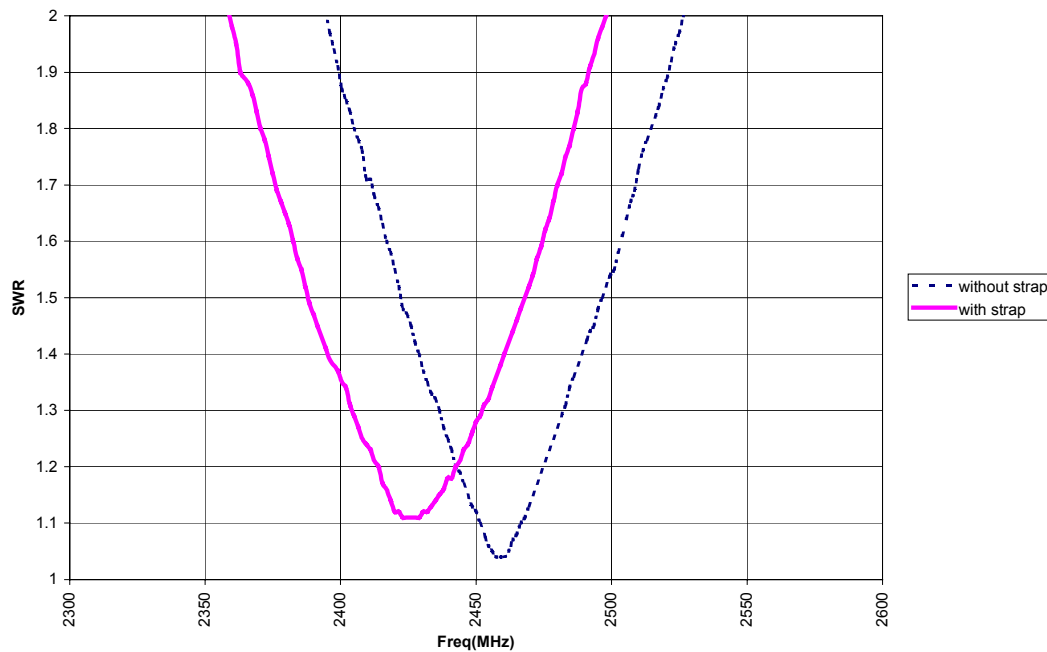


Figure 4 : VSWR

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