



Datasheet

Part No.:

SXP.18.4.A.02

Description:

2320 ~ 2345 MHz SDARS 18mm Patch Antenna
(Satellite Digital Audio Radio System)

Features:

18*18*4mm Ceramic Patch
Excellent Efficiency: 87%
High Gain (Up to 9.5dBiC at Zenith)
Optimized LHCP Radiation Pattern
Pin & Adhesive Mounting
Manufactured in an IATF16949 Approved Facility
RoHS & REACH Compliant

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1. Introduction



The Taoglas SXP.18.4.A.02 is part of a series of patch antennas designed for use with Satellite Digital Audio Radio Services (SDARS). It features left-hand circular polarization and excellent gain characteristics in the 2320 to 2345MHz band, making it compatible with the most popular satellite radio services available in many new vehicles.

The SXP.18 comes in a convenient, compact form factor, with dimensions of just 18mm x 18mm x 4mm, and is manufactured with high-quality ceramic. It is mounted via pin and 3M adhesive tape. The SXP series of patches are manufactured at our IATF16949 approved production facility.

For further optimization to customer-specific device environments, custom tuned patch antennas can be supplied. Your regional Taoglas sales office can help you identify the best patch antenna for your specific SDARS application.

2. Specifications

ELECTRICAL	
Frequency	SIRIUS : 2326.25 MHz $\pm$ 6.25 MHz XM : 2338.75 MHz $\pm$ 6.25 MHz
Centre Frequency	2332.5 MHz $\pm$ 12.5 MHz
Return Loss	SIRIUS: -10 dB max. XM: -10 dB max.
Zenith Gain	SIRIUS: +8 dBiC typ. XM: +9.5 dBiC typ.
Efficiency	SIRIUS: 86 % XM: 87 %
Polarization	LHCP
Impedance	50 Ω
MECHANICAL	
Dimensions	18 x 18 x 4mm
Material	Ceramic
Pin Diameter	0.9mm
Pin Length	1.7mm
Weight	4.9g
ENVIRONMENTAL	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 105°C
Humidity	Non-condensing 65°C 95% RH

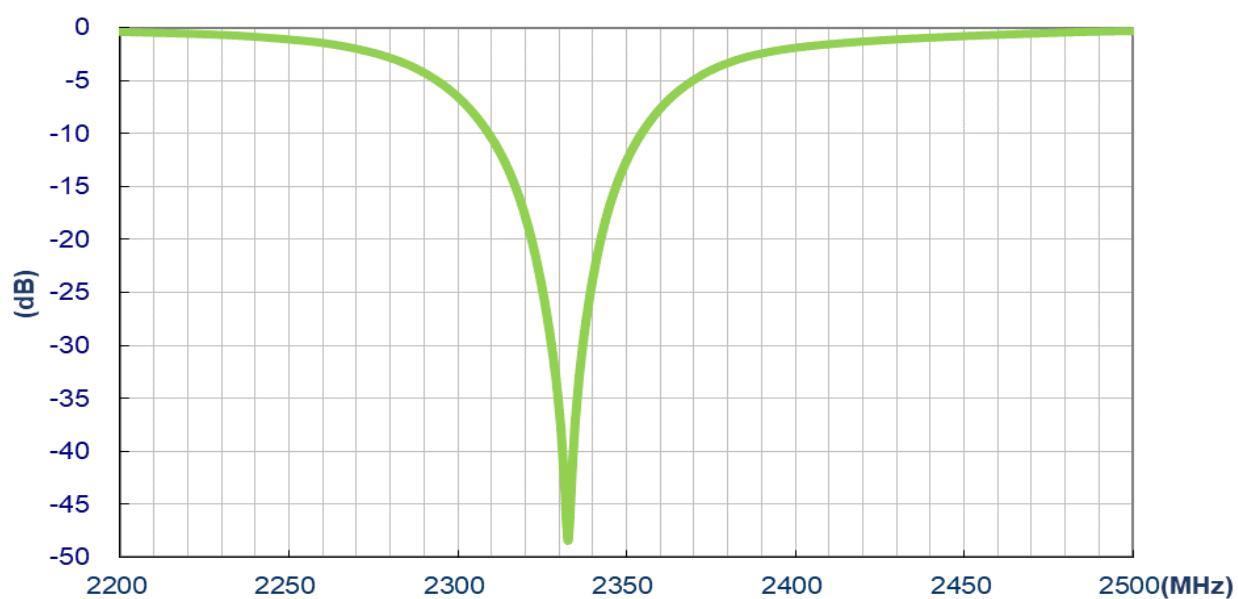
* Antenna properties were measured with the antenna mounted on 70*70mm Ground Plane

XM Gain Requirements (Satellite) – Ground Plane			
AUT Location	Elevation Angle(degrees)	XM Sirius Limits(dBiC)	Measured Average Gain(dBiC)
Passive Ground Plane	20 $\leq\phi\leq$ 25	0.5	2.5
	25 $\leq\phi\leq$ 30	1	3.5
	30 $\leq\phi\leq$ 50	2	4.9
	50 $\leq\phi\leq$ 70	4	7.0
	70 $\leq\phi\leq$ 90	2	8.1

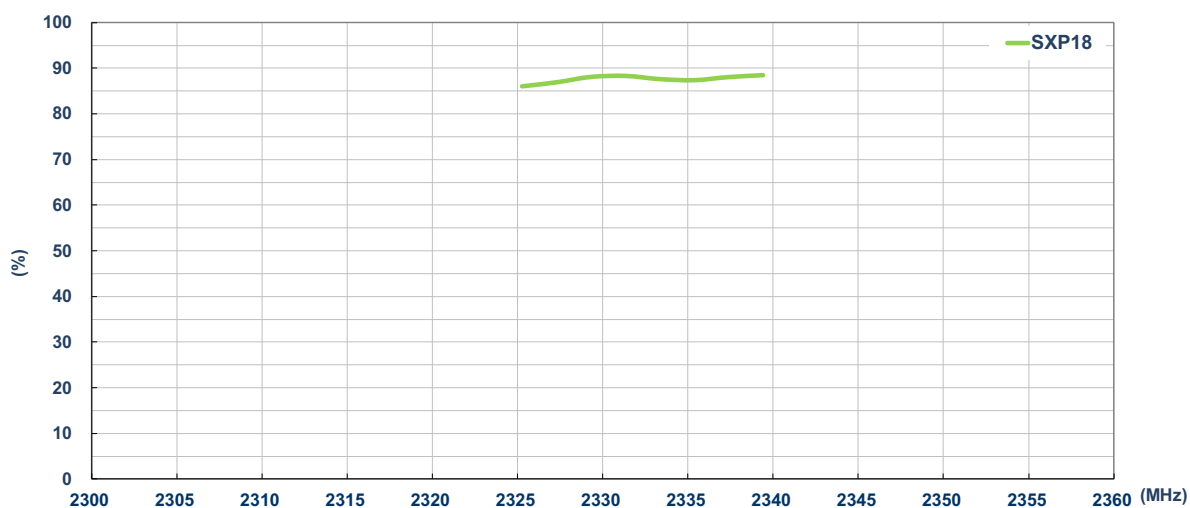
XM Gain Requirements (Terrestrial) – Ground Plane			
AUT Location	Elevation Angle(degrees)	Antenna Mean Passive VP Gain Over Solid Angle (dBi)	Antenna P/P Gain variation (dB)
Passive Ground Plane	0 $\leq\phi\leq$ 10°	-2.65dBi	-
	$\Phi=5^\circ$	-	2326.25MHz=1.6 dBiC 2338.75MHz=1.2 dBiC

3. Antenna Characteristics

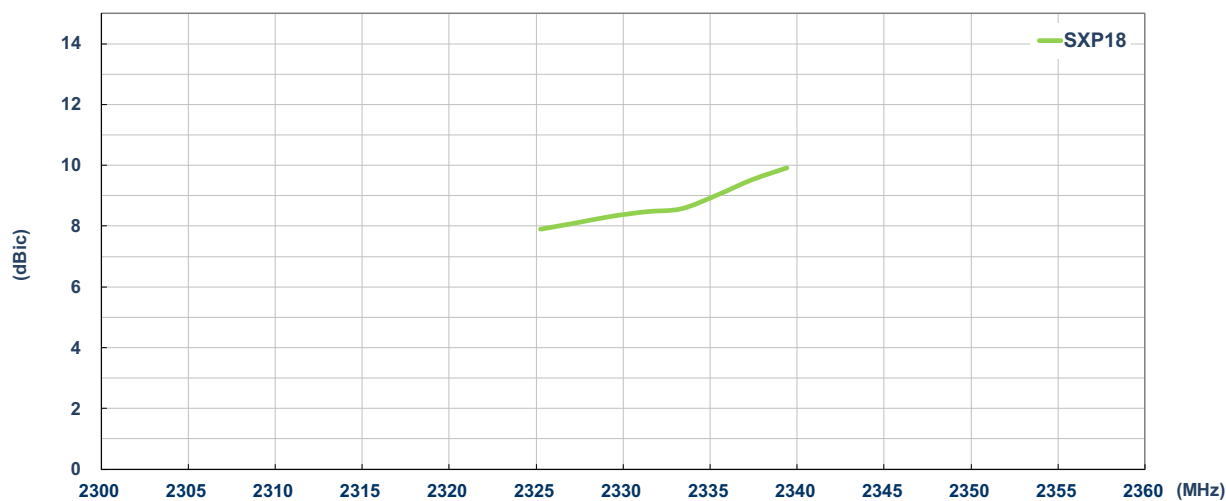
3.1 Return Loss S11



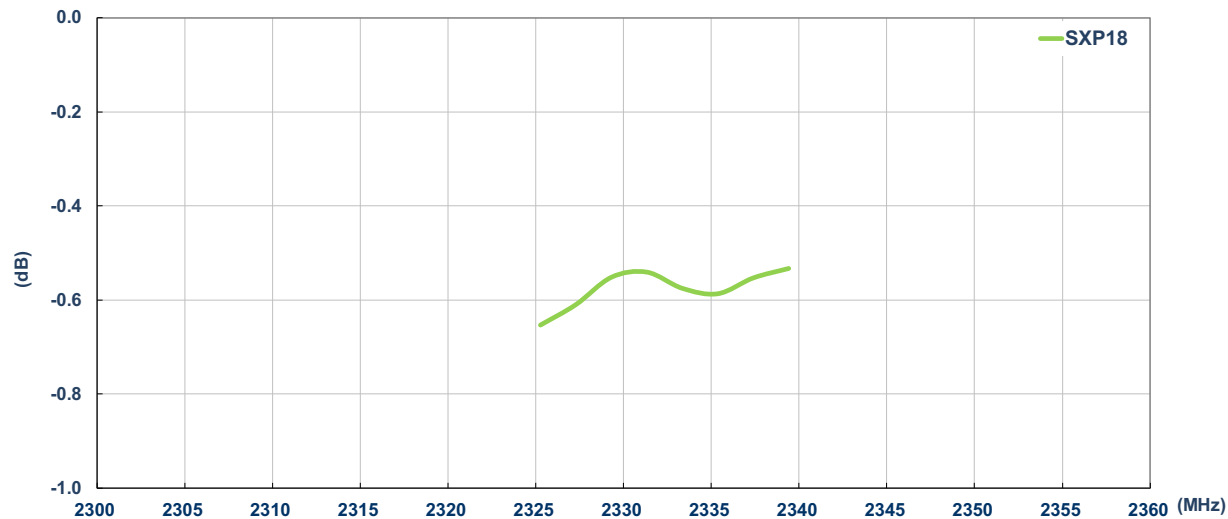
3.2 Efficiency



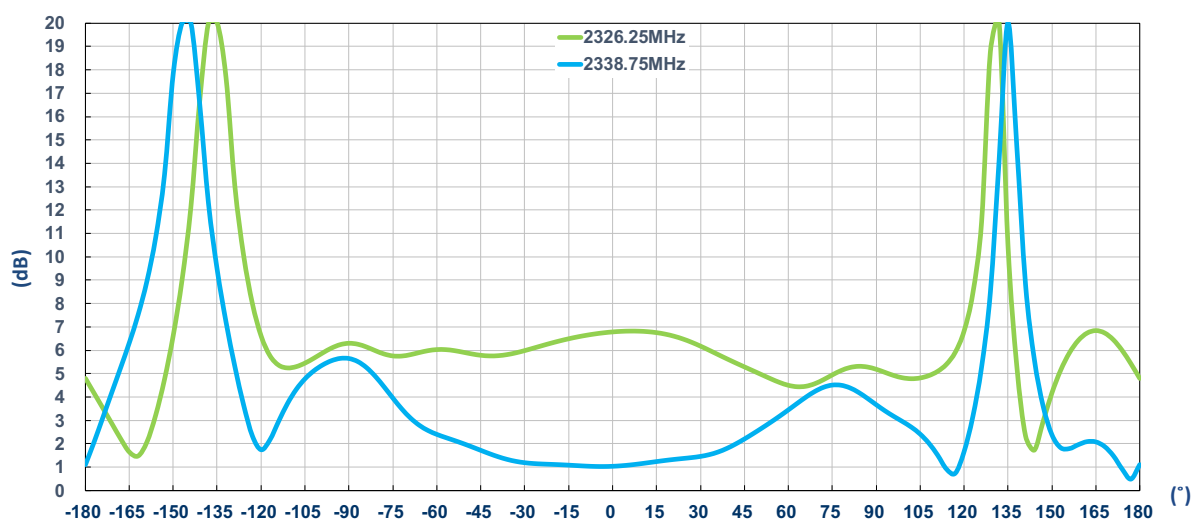
3.3 Peak Gain



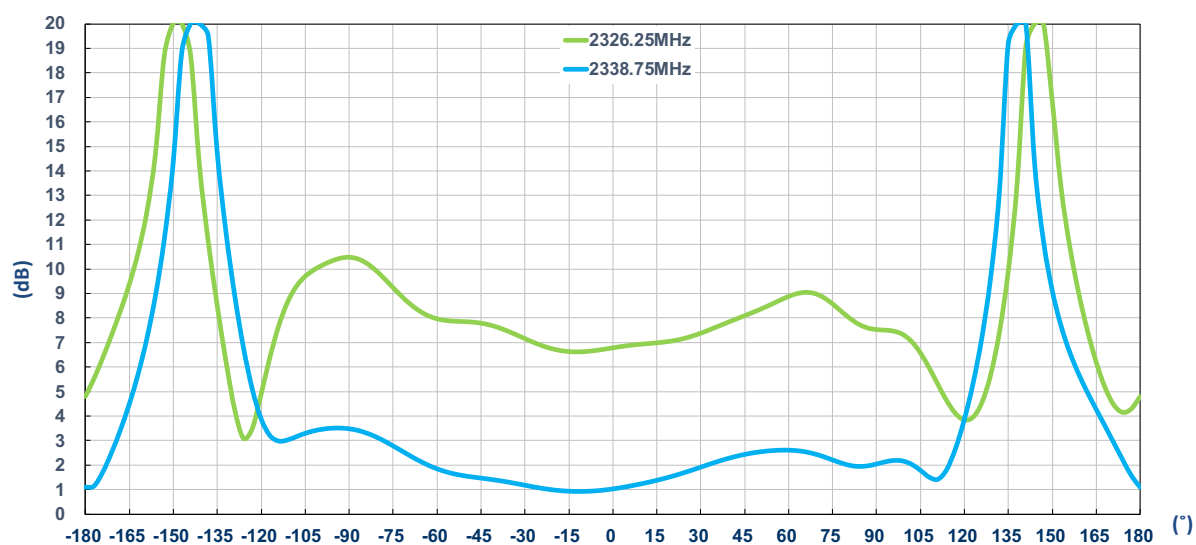
3.4 Average Gain



3.5 Axial Ratio @ $\Phi=0^\circ$

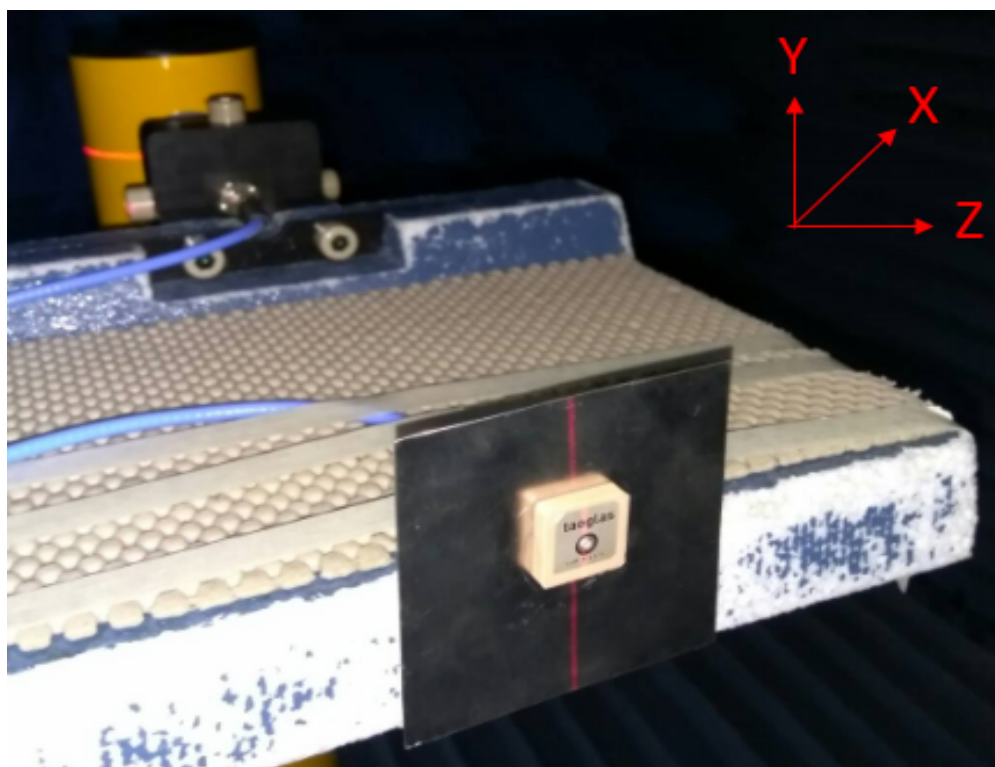


3.6 Axial Ratio @ $\Phi=90^\circ$

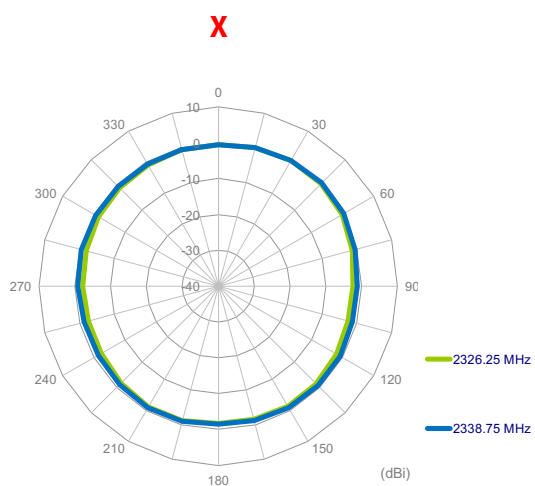


4. 2D Radiation Patterns

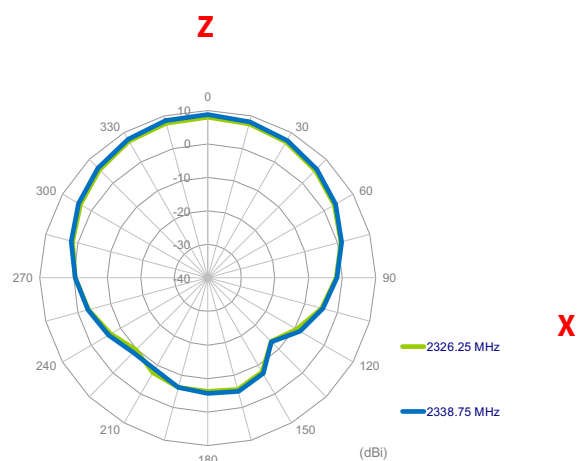
4.1 Test Setup



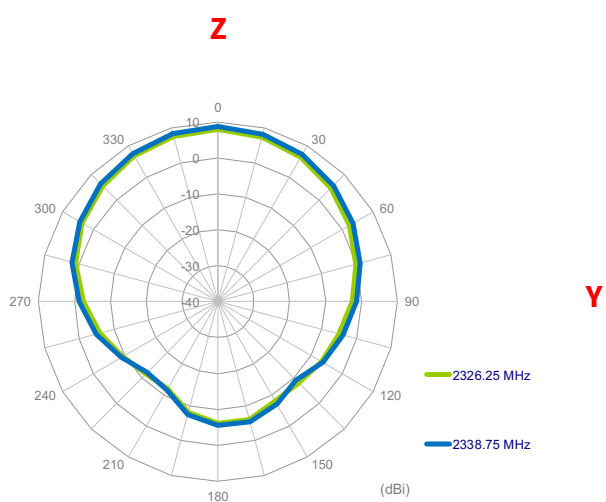
XY Plane



XZ Plane

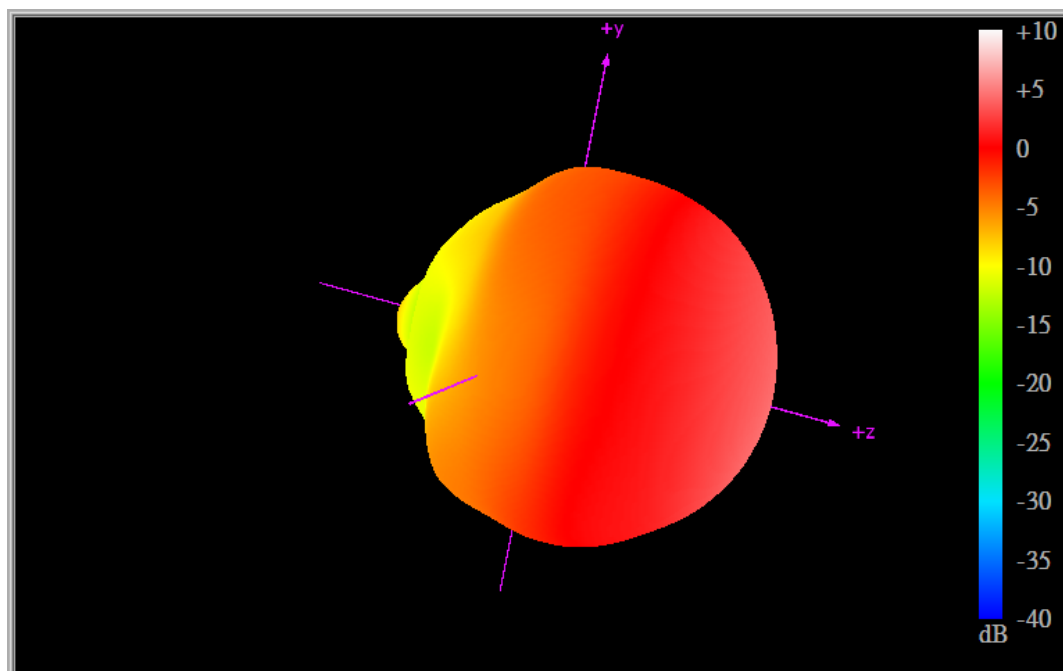


YZ Plane

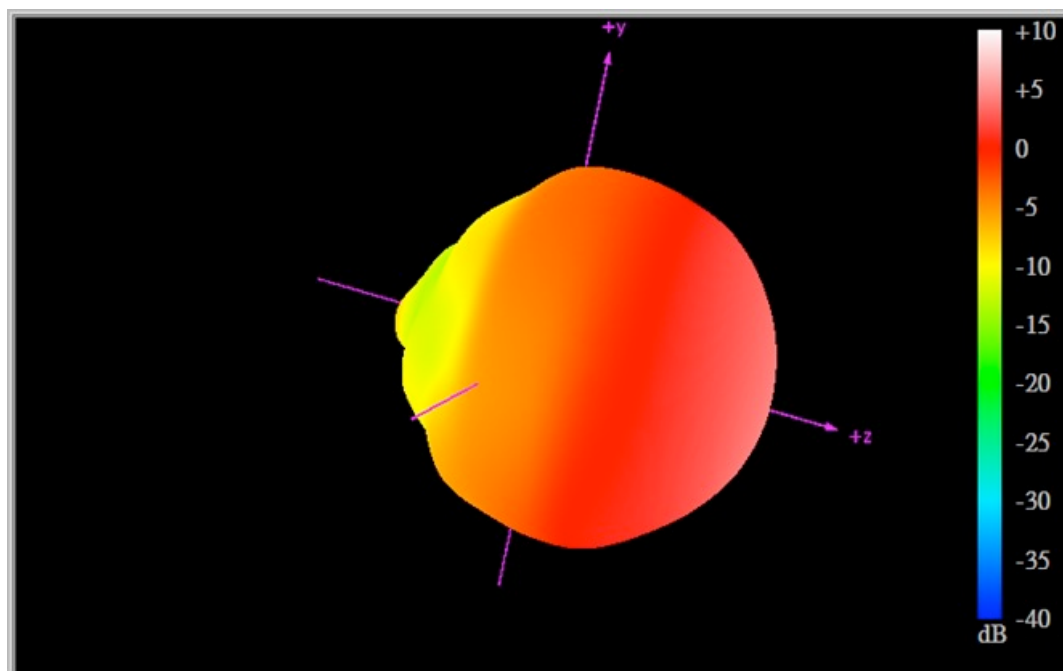


5. 3D Radiation Patterns

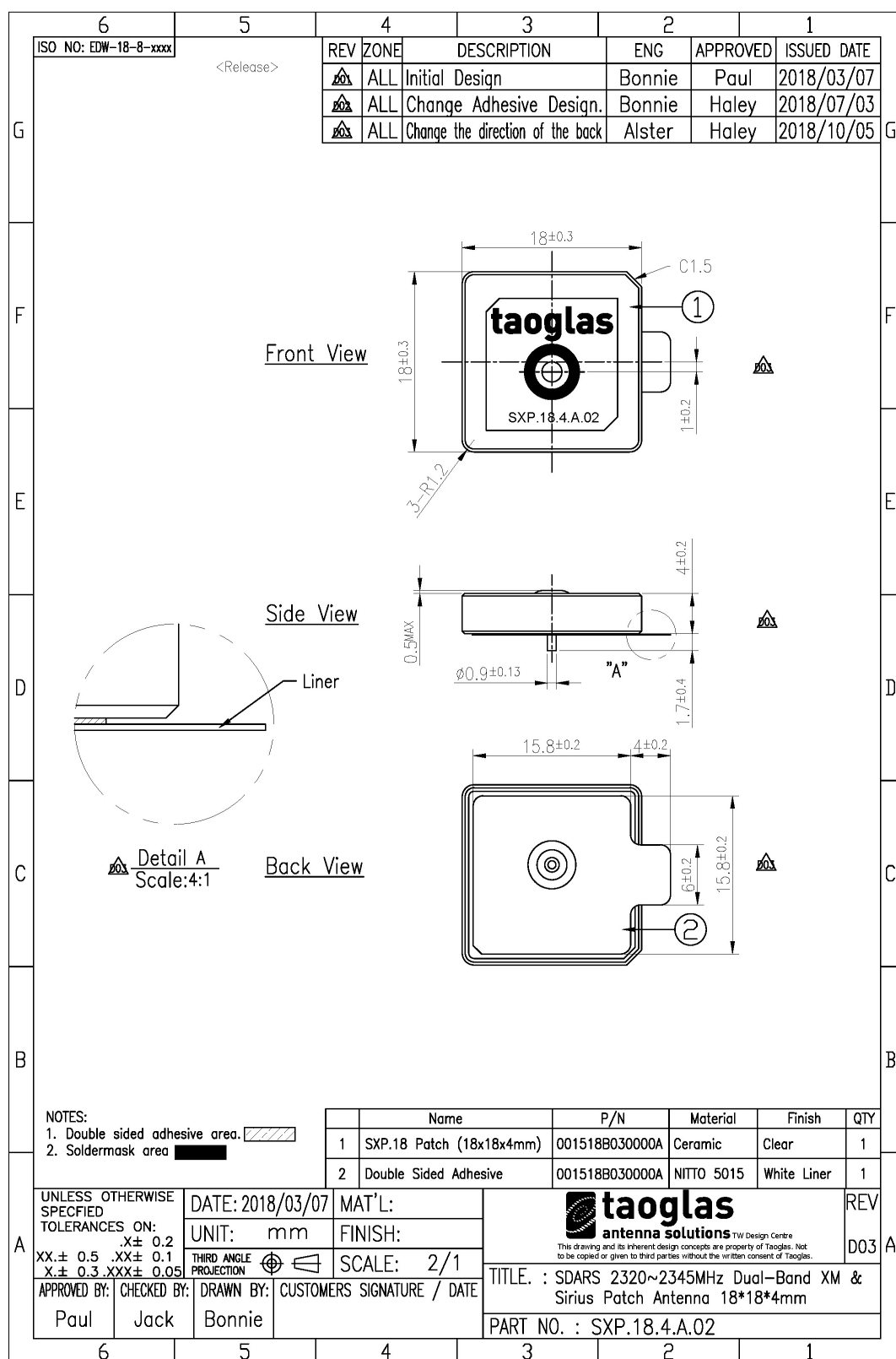
5.1 2326.25MHz



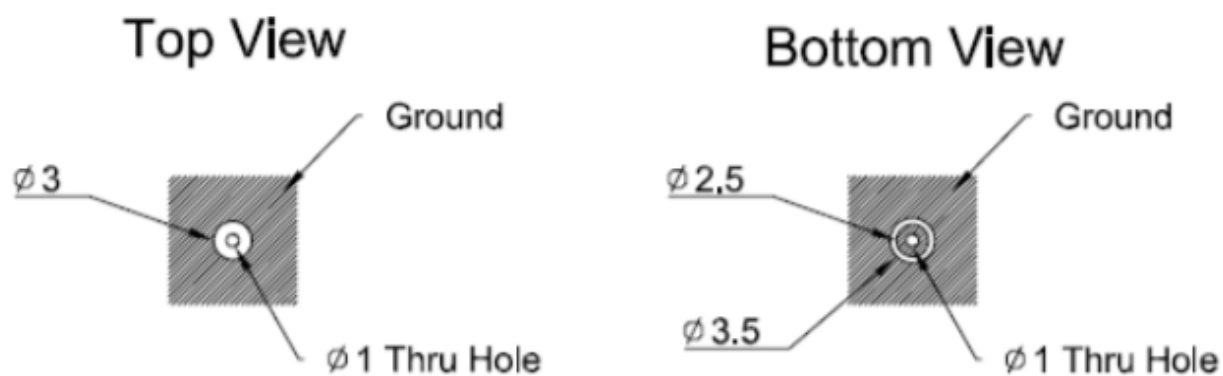
5.2 2338.75MHz



6. Mechanical Drawing-Patch (Units: mm)



7. PCB Footprint Recommendation



Tolerance: ± 0.20

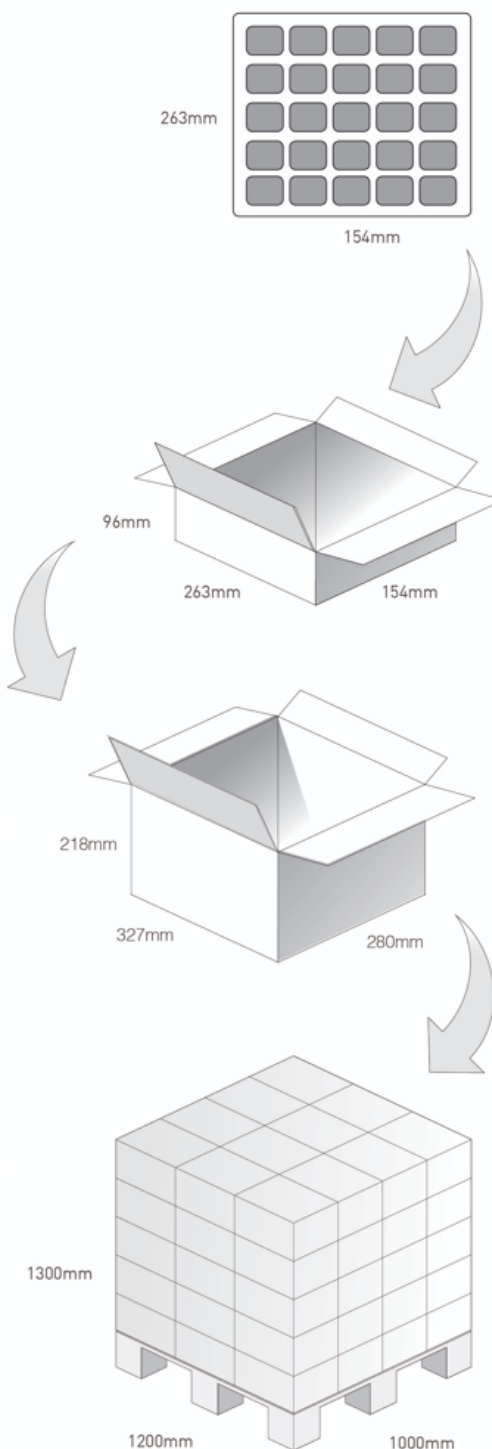
Unit:mm

8. Packaging

25pcs SXP.18.4.A.02 per tray
Tray Dimensions -263*154*mm
Total Weight – 143g

8 trays / 200 pcs SXP.18.4.A.02 per small box
Small Box Dimensions -263*154*96mm
Weight – 1.1Kg

4 small boxes / 800 pcs SXP.18.4.A.02 6 per Carton
Carton dimensions - 327*280*218mm
Weight – 4.6Kg





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