

	Approval Sheet	
	STAE BLE ANTENNA	REV.A

Approval Sheet



MSL Level 1



Product Name	Internal Embedded Antenna
Model/Bandwidth	STAE / BLE
Antenna Type	Stainless steel
Material	SUS301 1/2H / Ni plate
Part No	3003000
Customer Code	
Customer	Model Solution
Supplier	Kyocera AVX Components Gunpo

R F		M E		Q A	P M
Engineer	Approver	Engineer	Approve	Engineer	Approver
					
JH Jang	CH Ryu	IJ Yi	WS Lee	GC Choi	BD Choi

2026. 04. 29

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1. Technical Specification

1.1. Electrical specification

Frequency Range		ANT1 PRX	
		2400 MHz	2480 MHz
V.S.W.R		2.520	1.638
Average Gain	Ver	-16.8 dBi	-15.8 dBi
	Hor	-17.8 dBi	-17.7 dBi
RF TEST Fixture V.S.W.R		3.0±0.5	3.0±0.5
Nominal impedance polarization		50Ω	
		Linear Polarization	
Radiant pattern		Omnidirectional	

* The center value of the JIG SPEC is the Master SPL value, not the absolute value, but the value that can change depending on the surrounding environment.

1.2. Product Specification

Connector	SMT Type
Dimension	Refer to Drawing
Operation Temp	-40℃ ~ +80℃
LOT-NO Marking	-

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2. Electrical Requirements

2.1. Standing Wave Ratio

The antenna shall meet the VSWR requirements specified in the electrical specification.

Frequency Range	BLE ANTENNA	
	2400 MHz	2480 MHz
V.S.W.R (Voltage Standing Wave Ratio)	2.520	1.638

2.2. Pattern of Radiation

The radiated pattern of this antenna shall have a no-orientation pattern in the vertical plane.

2.3. Antenna Gain

The set shall be assembled to test the Gain and efficiency of the antenna and shall be fully assembled and operated.

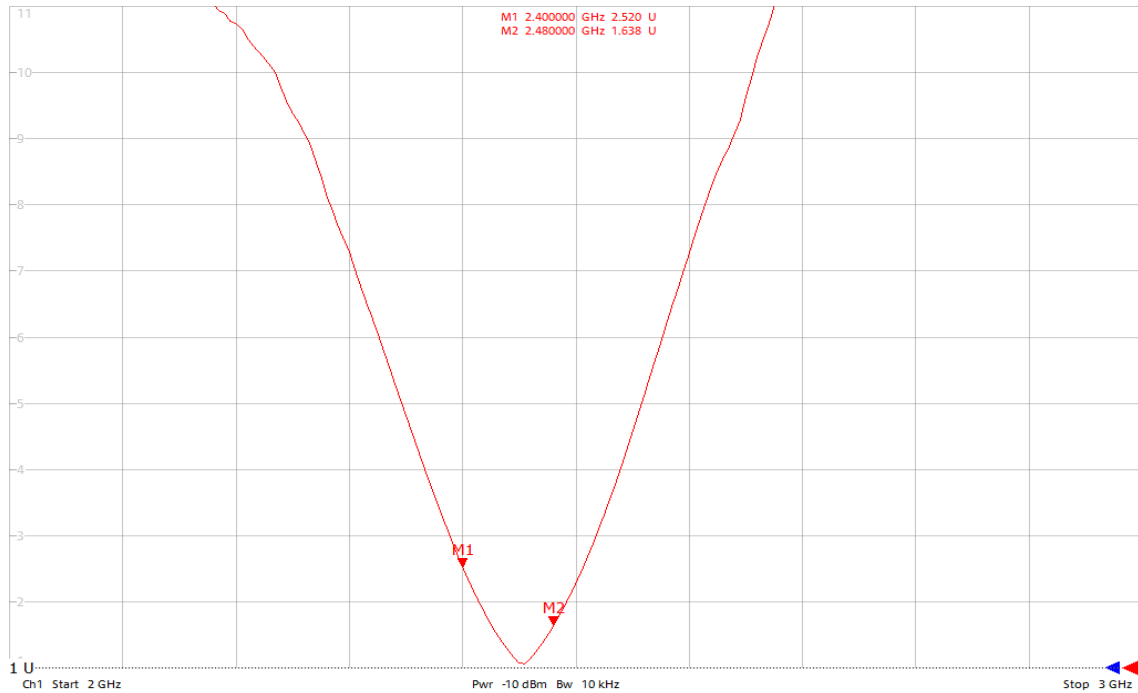
It should be tested on the terminal. The antenna is tested by the H, E1, E2 plan in the free space of the echo-free room.

It should be done. Antenna orientation shall be measured in the middle of the transfer and acceptance bands.

3. Antenna Performance and Instrumentation Specifications

3.1. Electrical characteristics Data

3.1.1. IN Put Return Loss and V.S.W.R



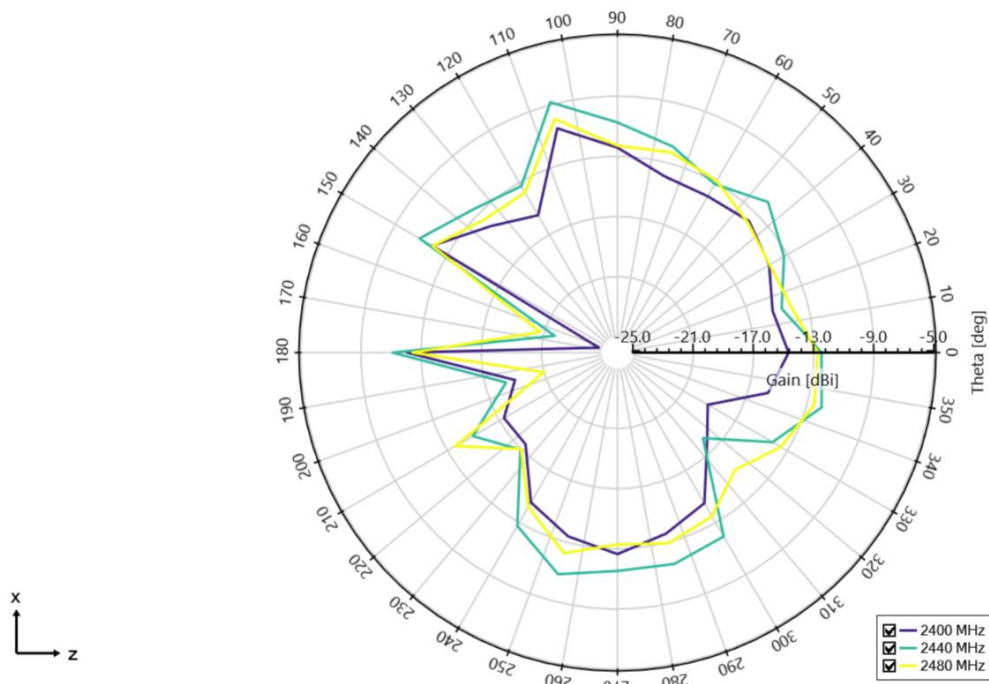
BLE ANTENNA

3.1.2. ANTENNA GAIN

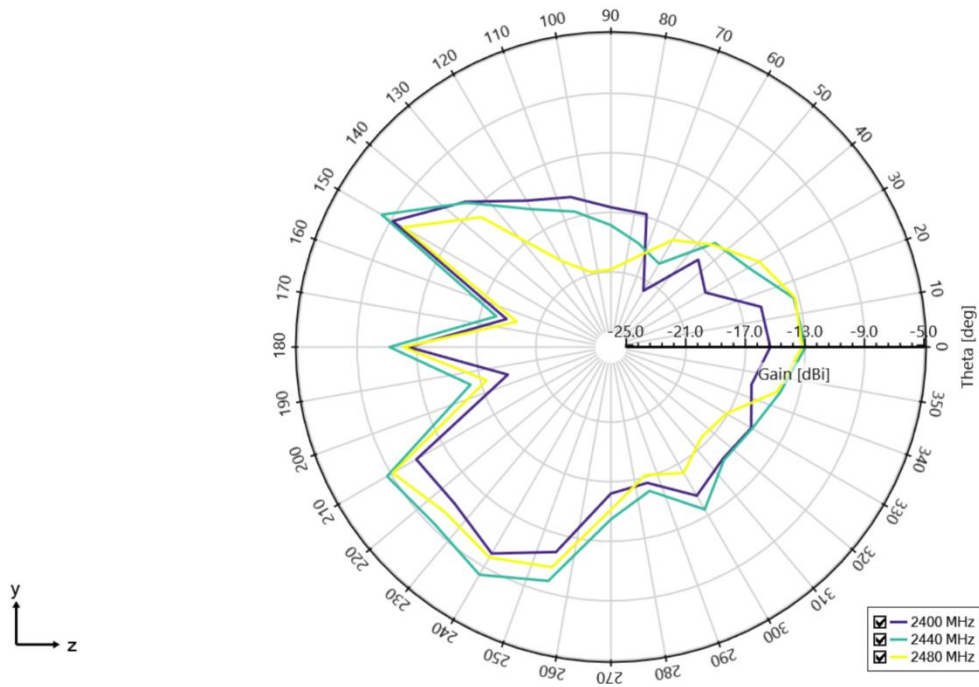
Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2,400,000,000 Hz	3.8 %	-16.8 dBi	-17.8 dBi	-14.2 dBi	-11.6 dBi	-12.0 dBi	-9.1 dBi
2,410,000,000 Hz	4.6 %	-15.9 dBi	-16.9 dBi	-13.4 dBi	-10.8 dBi	-11.1 dBi	-8.3 dBi
2,420,000,000 Hz	4.9 %	-15.6 dBi	-16.7 dBi	-13.1 dBi	-10.5 dBi	-10.7 dBi	-8.2 dBi
2,430,000,000 Hz	5.4 %	-15.2 dBi	-16.3 dBi	-12.7 dBi	-10.1 dBi	-10.2 dBi	-8.0 dBi
2,440,000,000 Hz	5.4 %	-15.1 dBi	-16.4 dBi	-12.7 dBi	-10.0 dBi	-10.2 dBi	-8.3 dBi
2,450,000,000 Hz	5.5 %	-15.0 dBi	-16.4 dBi	-12.6 dBi	-9.8 dBi	-10.2 dBi	-8.3 dBi
2,460,000,000 Hz	5.1 %	-15.2 dBi	-16.8 dBi	-12.9 dBi	-10.0 dBi	-10.5 dBi	-8.7 dBi
2,470,000,000 Hz	4.7 %	-15.5 dBi	-17.2 dBi	-13.3 dBi	-10.3 dBi	-10.9 dBi	-8.9 dBi
2,480,000,000 Hz	4.4 %	-15.8 dBi	-17.7 dBi	-13.6 dBi	-10.5 dBi	-11.5 dBi	-9.1 dBi

3.1.3. Radiation Pattern

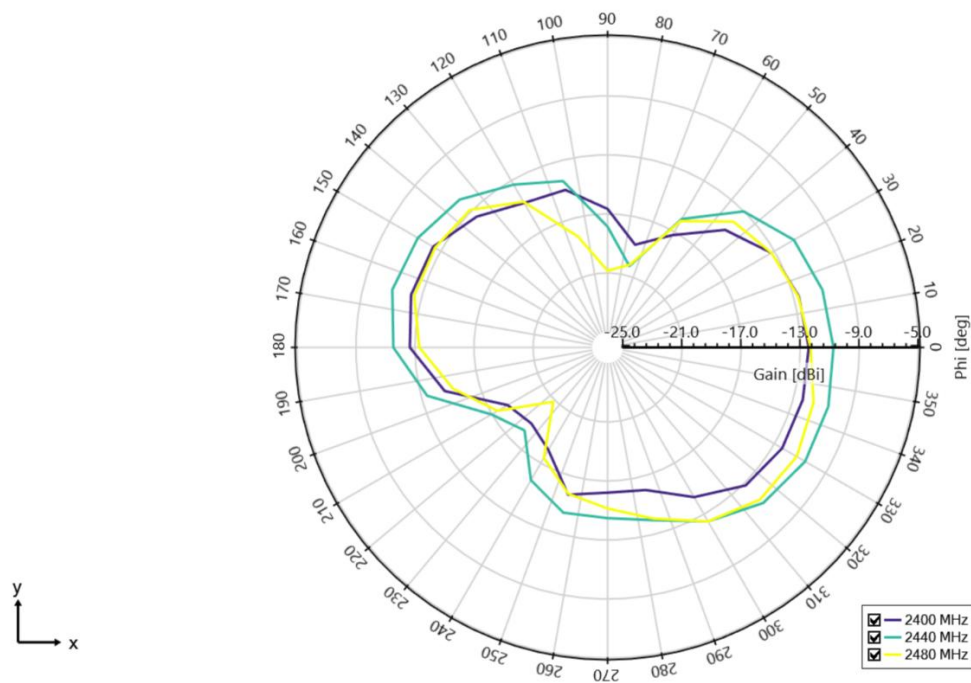
3.1.4. STAE BLE ANTENNA (XZ-plane)



3.1.5. STAE BLE ANTENNA (YZ-plane)



3.1.6. STAE BLE ANTENNA (XY-plane)



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3.2. PART LIST

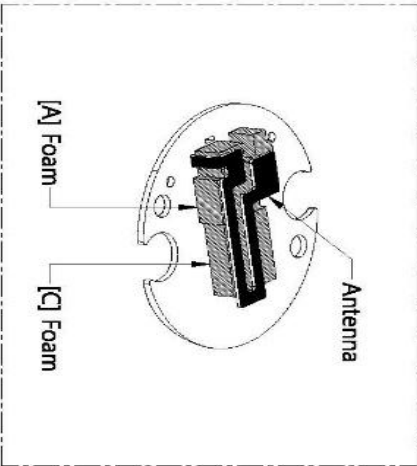
Part Name	Specification	Material	Supplier	Plating Thickness	Q' ty	Remark
Antenna Pattern	SUS Plate	SUS301 1/2H	PTC VINA	Min 3um	1	-
Foam[A]	Foam	EGFC-AHN01-1.55T	K-won		1	-
	D/T Tape	KW-5100	K-won			
Foam[C]	Foam	HL A130FC	K-won		1	-
	D/T Tape	KW-5050	K-won			

3.3. Drawing

				KYOCERA CONFIDENTIAL			
REVISION	ZONE	REVISION NOTE	CHANGED BY	DATE			
A		FIRST RELEASE	U YI	2023.04.16			

NOTES:

- MECHANICAL REQUIREMENTS:
 - 1.1 PLATING : SEE THE TABLE
 - 1.2 GRAIN DIRECTION SHALL BE AS INDICATED DRAWING.
 - 1.3 BURR HEIGHT SHOULD NOT EXCEED 0.012mm.
 - 1.4 BURR DIRECTION SHALL BE AS INDICATED DRAWING.
 - 1.5 ALL SURFACE SHALL HAVE NO SCRATCH.
 - 1.6 PART SHALL BE CLEAN AND FREE OF ALL FOREIGN MATTER.
 - 1.7 TOOL DRAWINGS SHALL BE REVIEWED BY KYOCERA-AVX PRIOR TO TOOL FABRICATION.
 - 1.8 NO CHANGE SHALL BE ALLOWED ON TOOLING OR MATERIAL SPECIFICATION WITHOUT PRIOR EXPLICIT WRITTEN APPROVAL BY KYOCERA-AVX.
- QUALITY ASSURANCE REQUIREMENTS:
 - 2.1 FIRST ARTICLE MEASUREMENT SHALL BE PERFORMED FOR ALL DRAWING DIMENSIONS ON 5 RANDOMLY SELECTED PARTS PER CAVITY. A DIMENSIONAL REPORT MUST BE SUBMITTED TO KYOCERA-AVX ALONG WITH THE MANUFACTURED PARTS.
 - 2.2 DIMENSIONS FOR CRITICAL TO QUALITY (CTQ) AND CAPABILITY STUDY ARE INDICATED BY (CTQ).
 - 2.3 PRODUCTION LOT SAMPLES MUST DEMONSTRATE A CPK VALUE OF 1.33 OR HIGHER. IF THE CPK DROPS BELOW 1.33 AT ANY TIME DURING THE MANUFACTURE OF THIS PARTS, THEN THE SUPPLIER MUST 100% SCREEN ALL THOSE PARTS.
- RHS REQUIREMENTS:
 - 3.1 PART MUST BE COMPLIANT WITH THE REQUIREMENTS OF EU DIRECTIVE 2002/95/EC (RoHS), ADDITIONALLY THEY SHALL NOT CONTAIN INTENTIONALLY ADDED MATERIALS REQUIRING REMOVAL FROM SEPARATELY COLLECTED WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT PER EU DIRECTIVE 2002/96/EC (WEEE).



Set Assembly View

NO	PART NAME	MATERIAL	FINISH	UNIT	QTY	REMARKS
1	PACKATOR	SUS301 1/2H 2.2T	Ni-Silver Plating P-Ni-Plating		1 EA	
2	PU Foam [A]	EDPC-AVX-M1-1.5ST			1 EA	
3	PU Foam [C]	IL-A1730C			1 EA	
4						
5						

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN ACCORDANCE WITH JIS B 1301				PROJECT NAME STAE	
MATERIAL REFER TO "TABLE"		FINISH REFER TO "TABLE"		TITLE STAE	
TOLERANCE REFER TO "TABLE"		CHECKED WIS LEE		DATE 04/18/2026	
THIRD ANGLE PROJECTION		APPROVED TYU KIM		DATE 04/18/2026	
PART CODE 3003000		SHEET NO. 1 of 4		REVISION A	
RELEASE LEVEL MP					

