

Shenzhen Yusheng Communication Equipment Co., LTD

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Sample Approval Sheet

Customer name: Shenzhen Sanuo Digital Technology Co., LTD

Customer material number / model type Antenna B-2286

specifications FPCB IPEX-1 2.4G L=120mm B-2286 VSWR 2.0 PE bag Packaging Coaxial package EVA RoHS REACH Yusheng

Material Composition Test report:

NO	material quality	report number	valid till
1	PI-CCL electrolytic flexible copper-clad plate	SHAEC2202460504/SHAEC2202460904	2023-02/021/2023/02/22
2	3M 9471E back glue	REACH:SHAEC221756903 Halogen: SHAEC2217569207 ROHS: SHAEC2217569205	REACH:2024-01-04 Halogen: 2024-01-04 ROHS: 2024-01-04

The Supplier Review Team:

fabrication	examine and verify	ratify	Sample delivery date / company seal
<u>Yuan Shujun</u>	<u>Chen Kehong</u>	<u>Zeng Xiang good</u>	<u>2023-03-13</u>

Customer (NO) Review Group:

Recognition No.: _____ **order of the edition** _____ **date** _____

admit	examine and verify	approval	Admit date

Review item: ☐ Recognition letter not less than 2 ☐ specifications / drawings ☐ Test Report ☐ Reliability Test Report
☒ sample ☐ PCS ☐ safety regulations ☐ HSF

Review Conclusion: ☐ Accept ☐ conditionally accept ☐ rejection

remarks:

B-2286 Project antenna material requirements specification

Customer name: Shenzhen Sanuo Digital Technology Co., LTD

Customer name: Antenna B-2286

Product name: Antenna assembly

Product specification FPCB IPEX-1 2.4 GL = 120 mB-2286 VSWR 2.0 PE bag package EVA RoHS REACH Yusheng

Antenna Type: FPC Antenna

Change Content CV:

NO	edition	state	availability date	person liable	page number	remarks
1	T:B	T:B	2023-03-13	Yuan Shujun	19	
2						

The Supplier acknowledges the signature of the following documents:

Responsible person / date		IQC/ date	Review / Date	Approval / Date
MD	Feng Jiwu	Zhong Qihong	Zeng Xiang Hao	
RF	He jiejun			

The Demander acknowledges the signature (please send it back after the confirmation):

The demander's judgment result: ☐ qualified ☐ unqualified			
Development & Design Engineer / Date	SQE Engineer / Date	Purchasing Leader / Date	Development Manager approval / date

catalogue

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1. Overview

1.1 Scope of application

This requirement stipulates B-2286 Product Antenna technical requirements and Materials and materials Requirements specification.

Root Required to apply At B-2286 Product Antenna selection, testing and acceptance.

1.2 Project basic information

Antenna name:	<u>B-2286</u>
Antenna frequency:	BT : 2.4G-2.5G
Antenna material:	FPC + coaxial + EVA cotton
Antenna version:	V1.0

2. Technical index requirements

2.1 Introduction of test items and equipment

inventory	test item	equipment
S11 parameter	Standing wave ratio, echo loss	network analyzer
Active test	TRP, TIS	Integrated tester, microwave darkroom
Passive test	Gain, efficiency	network analyzer

2.2 No-Source Report

2.2.1 Instructions for passive testing

Test equipment: network analyzer

Test method: Export a 50 Ohm from the instrument test port with a CABLE cable, use the SMA connector of the hand mechanism after the calibrator, and record the echo loss or standing wave ratio corresponding to the relevant frequency point.

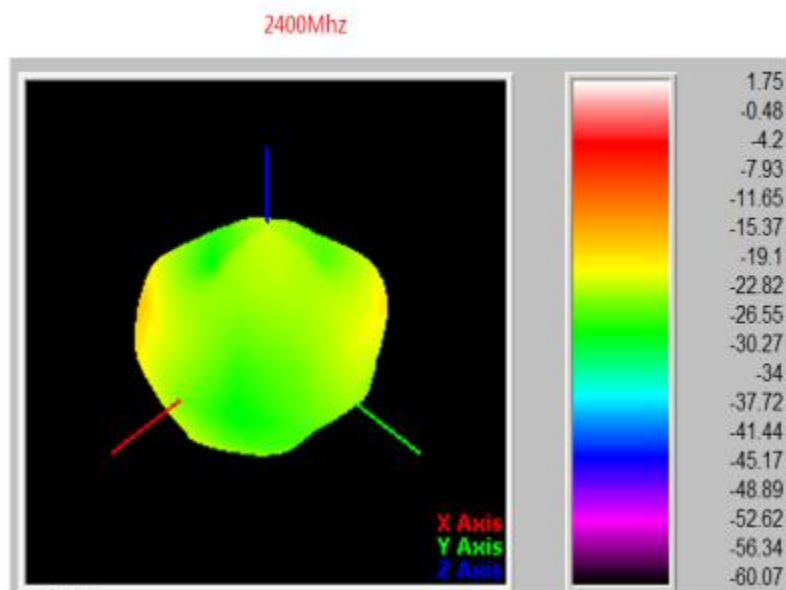
2.2.2 BT antenna (file LOGMAG + VSWR + SMITH)



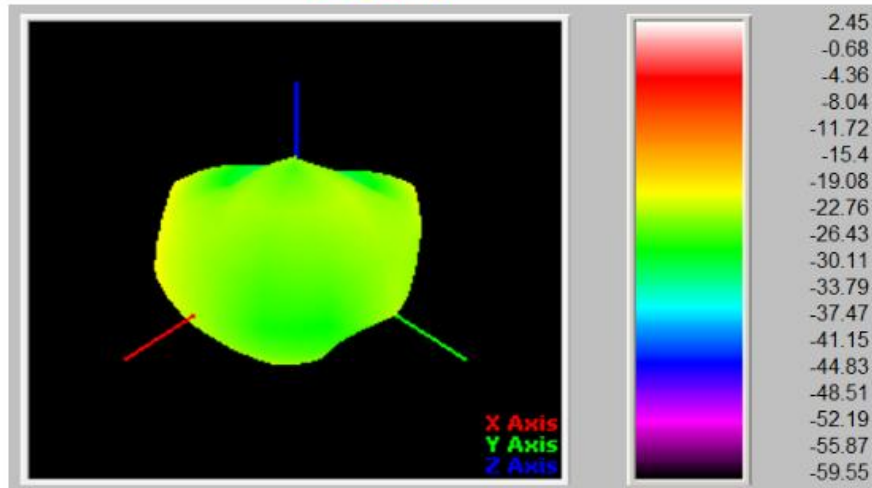
2.2.3 BT-antenna efficiency and gain

Passive Test For 2400MHz~2500MHz				
Freq	Effi	Effi	Gain	
(MHz)	(%)	(dB)	(dBi)	
2400	51.8%	-2.86	1.75	
2410	52.6%	-2.79	1.88	
2420	53.8%	-2.69	1.91	
2430	54.1%	-2.67	2.24	
2440	54.6%	-2.63	2.37	
2450	55.8%	-2.53	2.45	
2460	54.7%	-2.62	2.32	
2470	53.2%	-2.74	2.16	
2480	52.4%	-2.81	1.87	
2490	52.8%	-2.77	1.93	
2500	51.9%	-2.85	1.83	

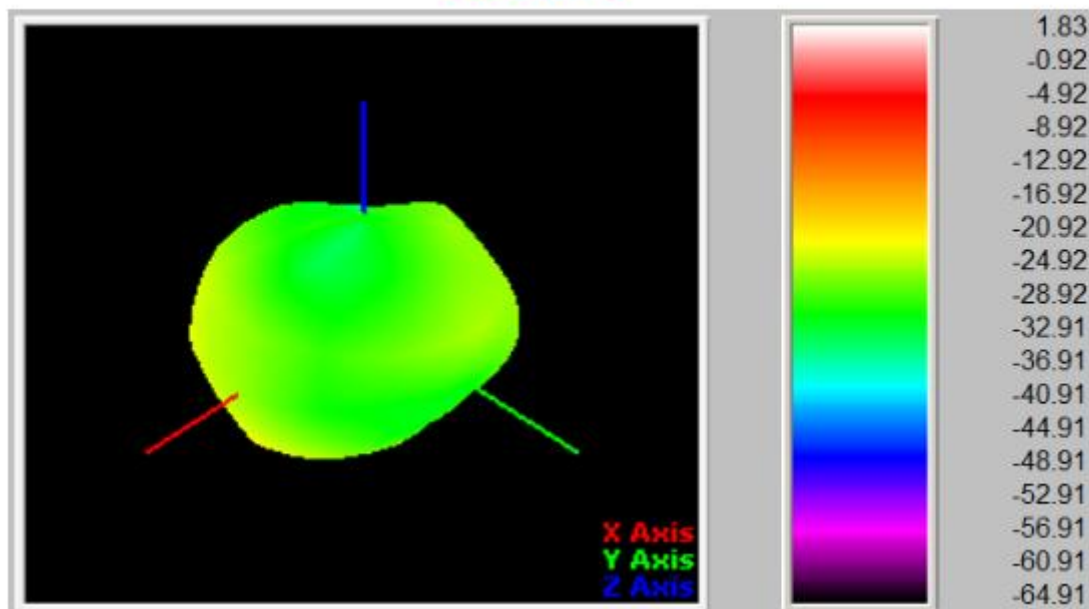
2.2.4 Radiation Pattern For BT Antenna (2450MHz) , Peak Gain : 2.45dbi



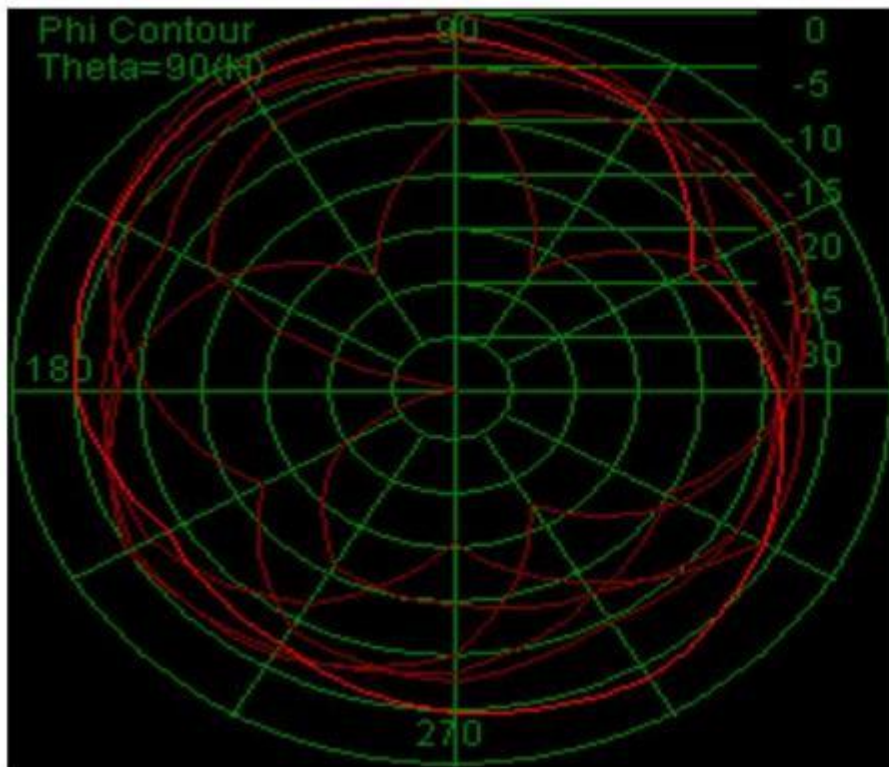
2450Mhz



2500Mhz



2.2.5 Antenna passive parameters-BT direction diagram



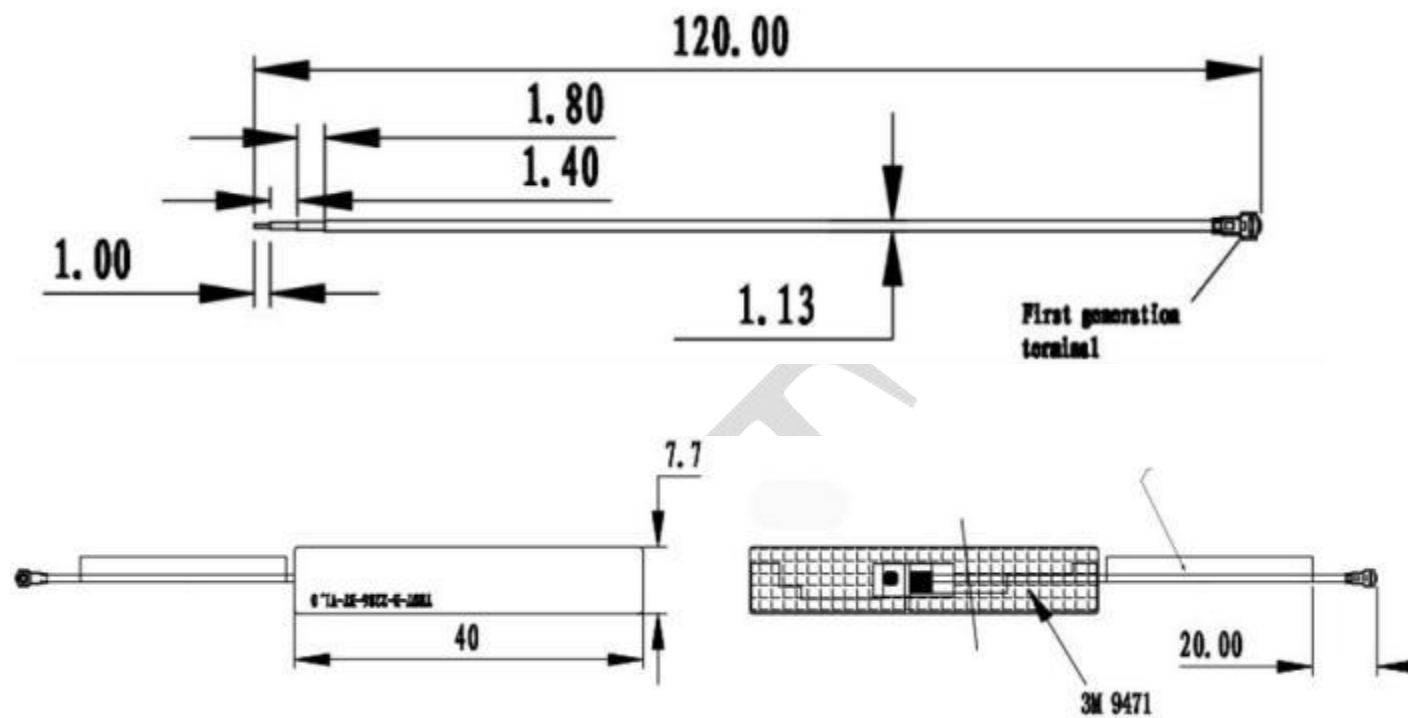
2.2.6 Active parameters of BT antenna

Test	BT		
Result	1	39	78
TRP (dBm)	7.20	6.71	6.85
TIS (dBm)	-89.04	-89.25	-89.14

2.3 Antenna position



2.4 Antenna design-Dipole



2.5 active parameters of BT antenna (0 channel)

Bluetooth, Channel 0, TRP														
H+V Total (30° Step)		0	30	60	90	120	150	180	210	240	270	300	330	360
	0	-4.33	-4.33	-4.07	-4.07	2.13	2.13	—	—	—	—	—	—	—
	30	-4.33	-4.33	-4.07	-4.07	2.13	2.13	4.98	4.98	2.01	2.01	-4.86	-4.86	—
	60	-3.94	-1.78	0.46	5.62	10.30	11.65	11.43	11.86	11.90	9.02	3.38	1.23	—
	90	-3.32	-1.65	-2.73	7.97	12.05	10.16	10.08	12.07	12.76	12.38	7.22	0.25	—
	120	-3.01	-3.91	0.36	9.13	11.98	11.53	12.39	12.09	12.41	12.03	7.04	-3.83	—
	150	-0.03	-0.03	2.13	2.13	11.16	11.16	11.60	11.60	10.84	10.84	4.55	4.55	—
	180	-0.03	-0.03	2.13	2.13	11.16	11.16	—	—	—	—	—	—	—
H (30° Step)		0	30	60	90	120	150	180	210	240	270	300	330	360
	0	-7.69	-7.69	-7.65	-7.65	-0.14	-0.14	—	—	—	—	—	—	—
	30	-7.69	-7.69	-7.65	-7.65	-0.14	-0.14	4.47	4.47	1.15	1.15	-5.10	-5.10	—
	60	-8.56	-3.28	-14.27	4.11	10.23	11.30	10.39	11.41	11.72	8.71	2.56	0.21	—
	90	-4.97	-5.70	-3.78	7.76	13.01	9.33	9.03	11.88	12.69	12.27	7.10	-0.71	—
	120	-3.40	-4.99	-0.21	8.98	12.66	9.83	11.09	12.77	12.38	11.90	6.62	-5.60	—
	150	-0.06	-0.06	1.95	1.95	10.53	10.53	9.84	9.84	10.60	10.60	2.18	2.18	—
	180	-0.06	-0.06	1.95	1.95	10.53	10.53	—	—	—	—	—	—	—
V (30° Step)		0	30	60	90	120	150	180	210	240	270	300	330	360
	0	-7.02	-7.02	-6.57	-6.57	-1.78	-1.78	—	—	—	—	—	—	—
	30	-7.02	-7.02	-6.57	-6.57	-1.78	-1.78	-4.59	-4.59	-5.43	-5.43	-17.61	-17.61	—
	60	-5.78	-7.14	0.31	0.31	-7.80	0.58	4.73	1.79	-2.13	-2.56	-4.25	-5.56	—
	90	-8.33	-3.82	-9.39	-5.19	-7.19	2.54	3.38	-1.53	-5.38	-3.77	-8.51	-6.77	—
	120	-13.71	-10.50	-8.76	-5.61	1.56	6.62	6.52	1.58	-7.70	-2.39	-3.27	-8.57	—
	150	-21.95	-21.95	-11.70	-11.70	2.46	2.46	6.83	6.83	-1.93	-1.93	0.80	0.80	—
	180	-21.95	-21.95	-11.70	-11.70	2.46	2.46	—	—	—	—	—	—	—

Bluetooth, Channel 0, TIS														
H+V Total (30° Step)		0	30	60	90	120	150	180	210	240	270	300	330	360
	0	-80.59	-80.59	-80.85	-80.85	-87.05	-87.05	—	—	—	—	—	—	—
	30	-80.59	-80.59	-80.85	-80.85	-87.05	-87.05	-89.90	-89.90	-86.93	-86.93	-80.06	-80.06	—
	60	-80.98	-83.14	-85.38	-90.54	-95.22	-96.57	-96.35	-93.78	-96.82	-93.94	-88.30	-86.15	—
	90	-81.60	-83.27	-82.19	-92.89	-91.97	-93.08	-95.00	-94.99	-93.68	-93.30	-92.14	-85.17	—
	120	-81.91	-81.01	-85.28	-90.05	-91.90	-93.45	-94.31	-94.01	-94.33	-93.95	-91.96	-81.09	—
	150	-84.89	-84.89	-87.05	-87.05	-91.08	-92.08	-93.52	-93.52	-93.76	-92.76	-89.47	-89.47	—
	180	-84.89	-84.89	-87.05	-87.05	-90.08	-90.08	—	—	—	—	—	—	—
H (30° Step)		0	30	60	90	120	150	180	210	240	270	300	330	360
	0	-77.23	-77.23	-77.27	-77.27	-84.78	-84.78	—	—	—	—	—	—	—
	30	-77.23	-77.23	-77.27	-77.27	-84.78	-84.78	-89.39	-89.39	-86.07	-86.07	-79.82	-79.82	—
	60	-76.36	-81.64	-70.65	-89.03	-92.15	-93.22	-92.31	-96.33	-92.64	-93.63	-87.48	-85.13	—
	90	-79.95	-79.22	-81.14	-92.68	-94.93	-94.25	-93.95	-96.80	-91.61	-92.19	-92.02	-84.21	—
	120	-81.52	-79.93	-84.71	-93.90	-91.58	-94.75	-92.01	-92.69	-93.30	-92.82	-91.54	-79.32	—
	150	-84.86	-84.86	-86.87	-86.87	-91.45	-93.45	-92.76	-92.76	-91.52	-93.52	-87.10	-87.10	—
	180	-84.86	-84.86	-86.87	-86.87	-93.45	-91.45	—	—	—	—	—	—	—
V (30° Step)		0	30	60	90	120	150	180	210	240	270	300	330	360
	0	-77.90	-77.90	-78.35	-78.35	-83.14	-83.14	—	—	—	—	—	—	—
	30	-77.90	-77.90	-78.35	-78.35	-83.14	-83.14	-80.33	-80.33	-79.49	-79.49	-67.31	-67.31	—
	60	-79.14	-77.78	-85.23	-85.23	-77.12	-85.50	-89.65	-86.71	-82.79	-82.36	-80.67	-79.36	—
	90	-76.59	-81.10	-75.53	-79.73	-77.73	-87.46	-88.30	-83.39	-79.54	-81.15	-76.41	-78.15	—
	120	-71.21	-74.42	-76.16	-79.31	-86.48	-91.54	-91.44	-86.50	-77.22	-82.53	-81.65	-76.35	—
	150	-62.97	-62.97	-73.22	-73.22	-87.38	-87.38	-91.75	-91.75	-82.99	-82.99	-85.72	-85.72	—
	180	-62.97	-62.97	-73.22	-73.22	-87.38	-87.38	—	—	—	—	—	—	—

2.6 active parameters of BT antenna (39 channel)

Bluetooth, Channel 39, TRP

		0	30	60	90	120	150	180	210	240	270	300	330	360
H+V Total (30° Step)	0	-6.13	-6.13	-4.79	-4.79	2.54	2.54	—	—	—	—	—	—	—
	30	-6.13	-6.13	-4.79	-4.79	2.54	2.54	5.75	5.75	3.77	3.77	-4.64	-4.64	—
	60	-6.73	-0.78	-1.31	4.19	9.51	10.42	10.42	11.69	11.54	8.23	2.65	-1.07	—
	90	-5.41	-1.97	-3.39	6.26	10.59	8.12	11.09	13.61	11.98	11.65	6.55	-3.48	—
	120	-4.69	-5.37	-1.78	7.86	12.22	10.10	11.43	12.06	11.62	12.31	5.24	-7.73	—
	150	-2.79	-2.79	0.59	0.59	10.32	10.32	10.22	10.22	10.97	10.97	4.22	4.22	—
		180	-2.79	-2.79	0.59	0.59	10.32	10.32	—	—	—	—	—	—
		0	30	60	90	120	150	180	210	240	270	300	330	360
H (30° Step)	0	-7.86	-7.86	-16.84	-16.84	0.91	0.91	—	—	—	—	—	—	—
	30	-7.86	-7.86	-16.84	-16.84	0.91	0.91	5.52	5.52	3.09	3.09	-6.65	-6.65	—
	60	-14.39	-2.73	-11.61	2.32	9.49	10.01	9.16	11.34	11.45	8.05	1.73	-2.16	—
	90	-6.76	-4.58	-4.99	6.03	10.57	6.49	11.54	11.51	11.85	11.46	6.45	-4.64	—
	120	-5.73	-5.41	-2.16	7.75	11.79	7.54	11.32	11.96	11.60	12.16	4.81	-8.59	—
	150	-3.01	-3.01	-0.29	-0.29	9.16	9.16	8.68	8.68	10.74	10.74	1.82	1.82	—
		180	-3.01	-3.01	-0.29	-0.29	9.16	9.16	—	—	—	—	—	—
		0	30	60	90	120	150	180	210	240	270	300	330	360
V (30° Step)	0	-10.96	-10.96	-5.07	-5.07	-2.50	-2.50	—	—	—	—	—	—	—
	30	-10.96	-10.96	-5.07	-5.07	-2.50	-2.50	-7.03	-7.03	-4.61	-4.61	-8.94	-8.94	—
	60	-7.55	-5.19	-1.73	-0.38	-14.87	-0.07	4.42	0.64	-5.24	-5.68	-4.55	-7.60	—
	90	-11.13	-5.43	-8.50	-6.52	-12.66	3.08	2.81	-2.83	-2.23	-1.99	-9.80	-9.78	—
	120	-11.39	-26.30	-12.59	-8.33	1.97	6.58	5.95	-2.56	-10.66	-2.41	-5.06	-15.20	—
	150	-15.81	-15.81	-6.80	-6.80	4.02	4.02	4.97	4.97	-1.91	-1.91	0.49	0.49	—
		180	-15.81	-15.81	-6.80	-6.80	4.02	4.02	—	—	—	—	—	—

Bluetooth, Channel 39, TIS

		0	30	60	90	120	150	180	210	240	270	300	330	360
H+V Total (30° Step)	0	-79.98	-79.98	-81.32	-81.32	-88.65	-88.65	—	—	—	—	—	—	—
	30	-79.98	-79.98	-81.32	-81.32	-88.65	-88.65	-91.86	-91.86	-89.88	-89.88	-81.47	-81.47	—
	60	-79.38	-85.33	-84.80	-90.30	-91.62	-93.53	-92.53	-92.80	-92.65	-91.34	-88.76	-85.04	—
	90	-80.70	-84.14	-82.72	-92.37	-91.70	-91.23	-92.20	-91.72	-92.09	-92.76	-92.66	-82.63	—
	120	-81.42	-80.74	-84.33	-93.97	-91.33	-92.21	-93.54	-92.17	-92.73	-91.42	-91.35	-78.38	—
	150	-83.32	-83.32	-86.70	-86.70	-91.43	-92.43	-92.33	-91.33	-92.08	-92.08	-90.33	-90.33	—
		180	-83.32	-83.32	-86.70	-86.70	-91.43	-91.43	—	—	—	—	—	—
		0	30	60	90	120	150	180	210	240	270	300	330	360
H (30° Step)	0	-78.25	-78.25	-69.27	-69.27	-87.02	-87.02	—	—	—	—	—	—	—
	30	-78.25	-78.25	-69.27	-69.27	-87.02	-87.02	-91.63	-91.63	-89.20	-89.20	-79.46	-79.46	—
	60	-71.72	-83.38	-74.50	-88.43	-93.60	-91.12	-92.27	-91.45	-91.56	-92.16	-87.84	-83.95	—
	90	-79.35	-81.53	-81.12	-92.14	-92.68	-92.60	-92.65	-92.62	-91.96	-91.57	-92.56	-81.47	—
	120	-80.38	-80.70	-83.95	-93.86	-91.90	-93.65	-97.43	-93.07	-91.71	-92.27	-90.92	-77.52	—
	150	-83.10	-83.10	-85.82	-85.82	-95.27	-95.27	-94.79	-91.79	-92.85	-91.85	-87.93	-87.93	—
		180	-83.10	-83.10	-85.82	-85.82	-95.27	-95.27	—	—	—	—	—	—
		0	30	60	90	120	150	180	210	240	270	300	330	360
V (30° Step)	0	-75.15	-75.15	-81.04	-81.04	-83.61	-83.61	—	—	—	—	—	—	—
	30	-75.15	-75.15	-81.04	-81.04	-83.61	-83.61	-79.08	-79.08	-81.50	-81.50	-77.17	-77.17	—
	60	-78.56	-80.92	-84.38	-85.73	-71.24	-86.04	-90.53	-86.75	-80.87	-80.43	-81.56	-78.51	—
	90	-74.98	-80.68	-77.61	-79.59	-73.45	-89.19	-88.92	-83.28	-83.88	-84.12	-76.31	-76.33	—
	120	-74.72	-59.81	-73.52	-77.78	-88.08	-92.69	-92.06	-83.55	-75.45	-83.70	-81.05	-70.91	—
	150	-70.30	-70.30	-79.31	-79.31	-90.13	-90.13	-91.08	-91.08	-84.20	-84.20	-86.60	-86.60	—
		180	-70.30	-70.30	-79.31	-79.31	-90.13	-90.13	—	—	—	—	—	—

2.7 Active parameters of BT antenna (78 channel)

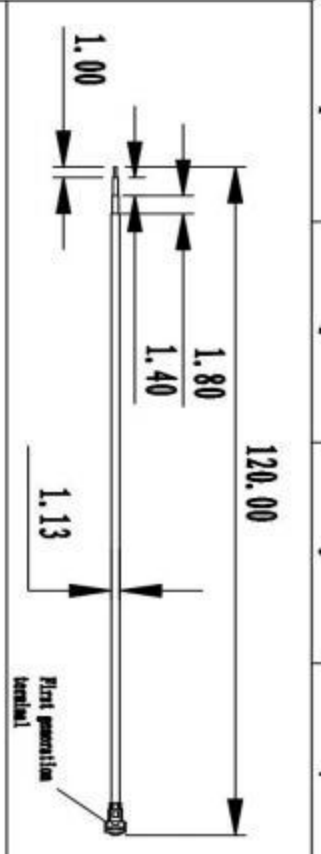
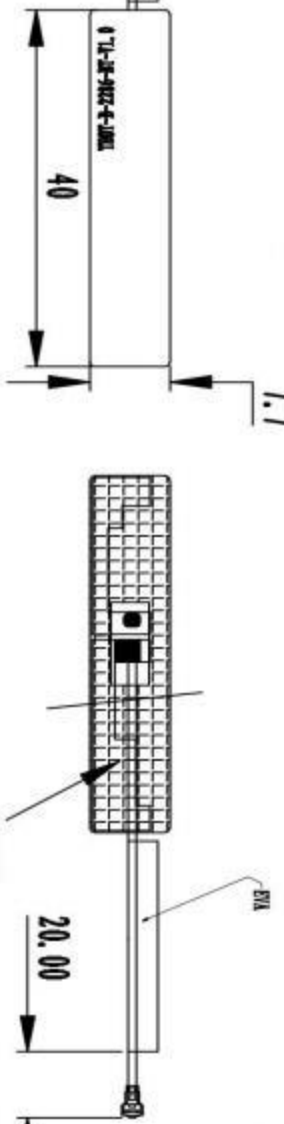
Bluetooth, Channel 78, TRP

		0	30	60	90	120	150	180	210	240	270	300	330	360
H+V Total (30° Step)	0	-10.60	-10.60	-4.76	-4.76	1.60	1.60	—	—	—	—	—	—	—
	30	-10.60	-10.60	-4.76	-4.76	1.60	1.60	4.31	4.31	2.43	2.43	-5.43	-5.43	—
	60	-8.10	-2.12	-3.36	2.59	7.06	8.66	8.47	10.07	10.13	6.99	1.62	-4.01	—
	90	-11.03	-4.71	-3.01	3.97	8.17	6.75	11.77	13.11	12.24	10.30	4.40	-6.85	—
	120	-9.34	-7.44	-5.73	5.78	10.08	9.29	12.26	11.59	12.50	10.72	3.75	-5.05	—
	150	-4.18	-4.18	-3.67	-3.67	7.72	7.72	8.23	8.23	9.42	9.42	2.89	2.89	—
	180	-4.18	-4.18	-3.67	-3.67	7.72	7.72	—	—	—	—	—	—	—
		0	30	60	90	120	150	180	210	240	270	300	330	360
H (30° Step)	0	-10.67	-10.67	-13.90	-13.90	-0.24	-0.24	—	—	—	—	—	—	—
	30	-10.67	-10.67	-13.90	-13.90	-0.24	-0.24	4.12	4.12	1.82	1.82	-11.98	-11.98	—
	60	-14.61	-4.29	-8.11	0.76	7.03	8.20	7.27	9.72	10.09	6.81	0.81	-5.46	—
	90	-15.33	-6.74	-3.85	3.61	8.09	5.22	11.33	13.06	12.09	9.94	4.19	-7.30	—
	120	-11.95	-7.46	-5.79	5.69	9.47	6.87	11.58	13.55	12.49	10.53	3.55	-5.45	—
	150	-4.65	-4.65	-4.37	-4.37	6.40	6.40	6.36	6.36	9.18	9.18	-0.86	-0.86	—
	180	-4.65	-4.65	-4.37	-4.37	6.40	6.40	—	—	—	—	—	—	—
		0	30	60	90	120	150	180	210	240	270	300	330	360
V (30° Step)	0	-28.73	-28.73	-5.33	-5.33	-3.01	-3.01	—	—	—	—	—	—	—
	30	-28.73	-28.73	-5.33	-5.33	-3.01	-3.01	-9.46	-9.46	-6.37	-6.37	-6.52	-6.52	—
	60	-9.20	-6.17	-5.13	-2.05	-15.23	-1.35	2.29	-1.08	-10.09	-6.89	-6.10	-9.49	—
	90	-13.05	-8.98	-10.55	-7.08	-8.98	1.49	1.62	-6.43	-2.43	-0.67	-8.96	-16.89	—
	120	-12.80	-30.24	-24.28	-10.99	1.23	5.60	3.90	-6.63	-12.36	-2.88	-9.78	-15.65	—
	150	-14.05	-14.05	-11.96	-11.96	1.90	1.90	3.68	3.68	-3.26	-3.26	0.52	0.52	—
	180	-14.05	-14.05	-11.96	-11.96	1.90	1.90	—	—	—	—	—	—	—

Bluetooth, Channel 78, TIS

		0	30	60	90	120	150	180	210	240	270	300	330	360
H+V Total (30° Step)	0	-75.46	-75.46	-81.30	-81.30	-87.66	-87.66	—	—	—	—	—	—	—
	30	-75.46	-75.46	-81.30	-81.30	-87.66	-87.66	-90.37	-90.37	-88.49	-88.49	-80.63	-80.63	—
	60	-77.96	-83.94	-82.70	-88.65	-93.12	-91.72	-91.53	-92.13	-91.19	-93.05	-87.68	-82.05	—
	90	-75.03	-81.35	-83.05	-90.03	-94.23	-92.81	-92.83	-93.17	-92.30	-96.36	-90.46	-79.21	—
	120	-76.72	-78.62	-80.33	-91.84	-92.14	-92.35	-91.32	-93.65	-91.56	-91.78	-89.81	-81.01	—
	150	-81.88	-81.88	-82.39	-82.39	-93.78	-93.78	-91.29	-91.29	-91.48	-91.48	-88.95	-88.95	—
	180	-81.88	-81.88	-82.39	-82.39	-93.78	-93.78	—	—	—	—	—	—	—
		0	30	60	90	120	150	180	210	240	270	300	330	360
H (30° Step)	0	-75.39	-75.39	-72.16	-72.16	-85.82	-85.82	—	—	—	—	—	—	—
	30	-75.39	-75.39	-72.16	-72.16	-85.82	-85.82	-90.18	-90.18	-87.88	-87.88	-74.08	-74.08	—
	60	-71.45	-81.77	-77.95	-86.82	-91.09	-91.26	-93.33	-92.78	-92.15	-92.87	-86.87	-80.60	—
	90	-70.73	-79.32	-82.21	-89.67	-91.15	-91.28	-92.39	-92.12	-91.15	-92.00	-90.25	-78.76	—
	120	-74.11	-78.60	-80.27	-91.75	-92.53	-92.93	-91.64	-92.61	-91.55	-92.59	-89.61	-80.61	—
	150	-81.41	-81.41	-81.69	-81.69	-92.46	-92.46	-92.42	-92.42	-91.24	-91.24	-85.20	-85.20	—
	180	-81.41	-81.41	-81.69	-81.69	-92.46	-92.46	—	—	—	—	—	—	—
		0	30	60	90	120	150	180	210	240	270	300	330	360
V (30° Step)	0	-57.33	-57.33	-80.73	-80.73	-83.05	-83.05	—	—	—	—	—	—	—
	30	-57.33	-57.33	-80.73	-80.73	-83.05	-83.05	-76.60	-76.60	-79.69	-79.69	-79.54	-79.54	—
	60	-76.86	-79.89	-80.93	-84.01	-70.83	-84.71	-88.35	-84.98	-75.97	-79.17	-79.96	-76.57	—
	90	-73.01	-77.08	-75.51	-78.98	-77.08	-87.55	-87.68	-79.63	-83.63	-85.39	-77.10	-69.17	—
	120	-73.26	-55.82	-61.78	-75.07	-87.29	-91.66	-89.96	-79.43	-73.70	-83.18	-76.28	-70.41	—
	150	-72.01	-72.01	-74.10	-74.10	-87.96	-87.96	-89.74	-89.74	-82.80	-82.80	-86.58	-86.58	—
	180	-72.01	-72.01	-74.10	-74.10	-87.96	-87.96	—	—	—	—	—	—	—

3. structural drawings

1	2	3	4	5	6	7	8
							
Skills requirements:				PI substrate: PI substrate: Electrolytic copper: Double-sided tape: Micro platelet 3"mm Surface ink color: Printing front color: Printing front height:			
1. PVC substrate specifications:				0.5mm 0.5mm (20) 3M 9471/50 0.0125mm Black Black According to drawings			
2. Electroplating specifications:				Surface ink color: Printing front color: Printing front height:			
3. Surface ink requirements:				According to drawings			
4. Reliability requirements:				1. Reliability test: salt spray test\rubber friction test\alcohol resistance test\100 grid test. 2. The front ink, the surface of the ink is required to be folded in half without cracking, scratching, etc.			
5. Tolerance requirements:				1. Shape tolerance ± 0.10 ; 2. Copper foil etching tolerance ± 0.05 ; 3. The position of the copper foil to the shape is ± 0.15 ; 4. Hole-to-hole position tolerance ± 0.10 ; hole-to-shape position tolerance ± 0.15 ; 5. The size tolerance of gold finger is ± 0.20 ; 6. For other unmarked dimensions, refer to 2D drawings.			
6. Key control sites:				The dimensions marked with numbers are regarded as important dimensions, and the others refer to 2D drawings			
7. Environmental requirements:				Parts meet RoHS, 6/PP/Reach/CF environmental protection requirements			
8. Packaging requirements:				Packed in PP bags, the quantity of each bag is 100PCS, there is a mark on the outside of the bag			
DATE				Modify the content			
Version				Revised			
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3				4			
5				6			
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13				14			
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ShenZhen Yu Sheng Communication Equipment Co., Ltd.			
Model			
S-2286			
DATE			
202303013			
Name			
RF antenna			
Design			
JFB			
Part NO			
259048-1A			
Revised			
JFB			
Material quality			
Electrolytic copper (half to half)			
Ball action			
3M 9471			
Approval			
CONFIRM			
DATE			
202303013			
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3M 94			

4. Full-size test

WIFI antenna assembly product appearance and size report

Customer name: SanNuo Customer material number project name B-2286 Date of testing: 2023-03-04
product type: ☐ stamping ☐ plastic parts ☐ assembly parts

Item times	Inspection specifications	Sample:1	Sample:2	Sample:3	Sample:4	Sample :5	res ult	inspection tool	rema rks
1	6.70±0.15	6.75	6.77	6.72	6.68	6.69	OK	Secondary element projector	
2	40.00±0.15	40.05	40.03	40.02	40.05	40.11	OK	Secondary element projector	
3	200.00±0.5	200.5	200.15	200.3	200.2	200.1	OK	Secondary element projector	
nature ability survey try	salt spray test	√	√	√	√	√	OK	Salt mist test machine	
	broken circuit	√	√	√	√	√	OK	universal electric meter	
	Bige test							Beige glue, Beige knife	
	antenna performance	√	√	√	√	√	OK	Microwave dark room	
outside observe	product appearance	√	√	√	√	√	OK	microscope	
	Packaging identification	√	√	√	√	√	OK	visual	
	date of manufacture							visual	
Control of harmful substances		√	√	√	√	√	OK	EDX	
Final judgment result		□ Accept □ rejected □ heavy industry □ special production							
remarks	1. Performance, reliability, electrical, appearance inspection qualified, play "V". 2. Check the measured data and only record 5 groups. The samples selected for the size and function part should be different from the shipment batch LOT No.be as the criterion. 3. Comprehensive output: initial 4N, dial 20								

Approval: Jiang Fangbai

Production: Lu Tingying

5.Reliability test report

5.1 Salt spray detection report

Salt mist detection report

customer name	3nod			production order direct labor cost summary		THOT-2023030401	
product name	B-2286			Test the number		8PCS	
Product material number	249048			testing standard		24 Hours	
examination date	2023-03-04			Goods material		antenna	
Test time: 2023.03.04 to 2023.03.05							
test item	Requirements for standards	actual numerical value	judge	test item	Requirements for standards	actual numerical value	judge
Test instrument specifications	KD-60	KD-60	OK	testing time	24H	24H	OK
Salt mist test type	NSS neutral	NSS neutral	OK	Salt fog box temperature	35°C	35°C	OK
Saline PH	6.5-7.2	7	OK	Salt spray settlement amount (H.80C)	1-2ml	1.7ml	OK
Spray way	Continuous spray	Continuo us spray	OK	Material of goods	FPC	FPC	OK
Saline ingredients	5%/NaCL	5%/NaCL	OK	Compressed air joint pressure	1±0.1KG/CM²	1	OK
saturation temperature	47°C	47°C	OK	Place the Angle of the sample	90°	90°	OK
Test observation time	Observe the phenomenon						
4H	NA						
12H	NA						
24H	NA						
Judgment standard: according to the national standard 5944-86 rating method judgment, grade 9 or above is qualified							
Final judgment result	qualified √						
tester	Zhang Xiaoping	examine and verify		Mo dongyuan	examine and approve	He Benxin	
Note: The commonly used salt spray test methods are: caring salt spray test in NSS, AASS acetate salt spray test, CASS copper acetic acid accelerated test.							

5.2 Constant temperature, humidity, cold and heat impact test report

client	3nod	date	2023-03-04	Factory number	THOT-2023030402
Antenna model	249048	quantity	5PCS	testing time	48H
material specification	FPC	supplier	Renesola communication	reference standard	MIL-STD-202Method017IEC60749-25 JEDEC JESD22-A104-B IEC68-2-1MIL-STD-2168-85

Test purpose: To test the reliability of products and coating binding force, coating and oxidation resistance and corrosion resistance.

Equipment name: high and low temperature test box

laboratory environment

temperature	22-26°C	relative humidity	65-70%	atmos	1MPa
-------------	---------	-------------------	--------	-------	------

test parameter

temperature	high temperature		80℃	low temperature	-40℃		Temperature tolerance	1℃
time	constant temperature	high temperature	2H	High temperature heating	10min		remarks	1. High temperature warming rises from normal temperature to set high temperature. 2
		low temperature	2H	Low temperature cooling	10min			
cycle index	31 Times		else	relative humidity	65%			
visual inspection	lamination	ACC	oxidize	ACC	blister	ACC	The ink fell off	ACC
test	antistripping	≥0.8kgf/cm2	spot welding	ACC	Bige test	ACC	Wear-resistant experiment	ACC

test record:

identification of product	Product test results		judge
	After the end of the experiment, the product had no abnormality		ACC

test controler: Zhang Xiaoping

5.3 Coaxial terminal tension test

Shenzhen Yusheng Communication Equipment Co., LTD

Coaxial terminal tension test

Test method:

clamp the coaxial terminal on the tension test table and place it vertically, and stretch the wire position at 50 + / - 10mm / min until the tension value reaches the test requirements (800g / terminal without falling off); assemble twice, and the sample function is qualified.

Judgment result:

after the test, the same axis is not damaged, and the sample function is normal

Customer: 3nod

model : B-2286

Test date: 2023-03-04

NO	1	2			Betermine ■ ACC □ REJ
fruit	No shedding, normal performance	No shedding, normal performance			

Test by: Anahsys:

Review: Lin Dan

Controlled file, no replication

6. List of materials

YUSHENG COMMUNICATION TECHNOLOGY CO.,LTD.

249048(S-2286)-BOM

Edition: R/A

client:249

Model: 249048

date: 20230313

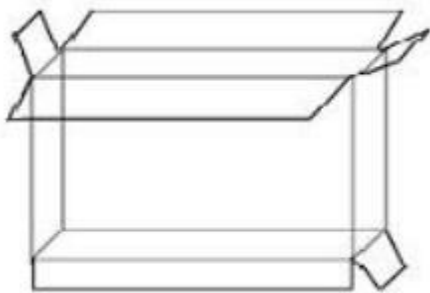
Item	Part No	Name	Types of	version	specification	Material quality	colour	surface treatment	unit	Quantity
1	249048-1A	BT- antenna	Z	R/A	7.70*40.00*1.60MM				PCS	1
1.1	249048-1A-01	BT-FPC	Z	R/A	6.70*40.00*0.12MM	Electrolytic copper (half to half)	black	Gold plated	PCS	1
1.2	249048-1A-02	CABLE1 wire rod 1	Z	R/A	1.13*120MM	1.13 cable	black	Gold plated	PCS	1
1.3	249048-1A-03	EVA	Z	R/A	10*75MM	EVA	black		PCS	1
The above parts meet the environmental requirements of ROHS2.0 HF Reach GP										
Type: W. Outsourcing B. Semi-finished products Z. Finished products C. Customer supply										

Confirmation:

Review:

Production: FJW

7. Package schematic diagram

Packaging method diagram		
product name	Antenna components	
P / N	Antenna	
Project model	B-2286	
File details	Carton Size 1: 35*25*24.5cm Carton Size 2: Depending on the order quantity / volume	
	Boating method	Packaging by order quantity
	Total number of binning	Packaging by order quantity
matters need attention		
1. Due to the limitation of order quantity, the packing method of each material is the size of the box according to the total quantity of the order or the physical volume		
2. Storage temperature: room temperature		
3. Preservation conditions: store them in a cool and dry place		