



ShenZhen Eastong Electronic technology Co., LTD

APPROVAL SHEET
FOR
C11
(2/3/4G dual band internal antenna)

Issued by		Checked by	
Confirmed by		Date	2025-03-15
Customer Confirm			

Project: C11		Author: XuXiaorong	File Name: C11-APP-RA
Date: 2025-3-15			
Rev:	Language:	Check:	
A	ENG		
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Revision History

Date	Revision	Description of Changes
2025-03-15	R:A	Antenna performance approved by customer

1 SUMMARY

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1 Summary

This report summarizes the electrical results of the proposed antenna to support the C11 program. We test the antenna with the latest version handset .

2 General Description

2.1 Definitions

VSWR: Voltage Standing Wave Rate

3 Mechanical Description

4 Electrical Performance

4.1 Set-up

4.1.1 VSWR and return loss

VSWR measurements (S_{11}) were performed using an Agilent E5070B Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

4.1.2 Efficiency, Gain and TRP/TIS

The gain of the antenna was measured in Dong Xin's 3D anechoic chamber in Shenzhen. The chamber is capable of doing tests from 380MHz to 6GHz. Coaxial chokes on the feed cable were used to mitigate surface currents. The measurement results are calibrated using dipole standards. For TRP and TIS the chamber uses a Agilent 8960 to establish the connection with the mobile device. During TRP tests the 8960 reads the power received through the chamber probes whilst during TIS tests the 8960 transmits through the probe. All data is afterwards corrected by a calibration table.

4.1.3 Matching Circuit Description

No matching.

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4.2 Measurement Data

Effective Radiated Power Summation (TRP)

GSM	EGSM900			DCS1800		
Let	1	62	124	512	698	885
TRP	25.4	25.3	25.1	22.0	22.3	23.4
TIS			-101.3			-102.5

GSM	EGSM850			PCS1900		
Let	128	190	251	512	661	810
TRP	22.6	23.5	24.3	24.0	23.5	22.4
TIS			-102.1			-101.8

WCDMA	W850			W900		
Let	4357	4408	4458	2937	3013	3088
TRP	14.5	14.6	15.3	16.2	16.0	15.3
TIS			-102.9			-102.1

WCDMA	W2100			W1900		
Let	10562	10700	10838	9662	9800	9938
TRP	16.2	15.5	15.1	15.3	15.6	16.1
TIS			-101.9			-102.4

FDD	B1			B2		
Let	L	M	H	L	M	H
TRP	15.5	14.2	14.0	14.1	14.5	15.3
TIS			-86.0			-87.1

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FDD	B3			B4		
Let	L	M	H	L	M	H
TRP	14.2	14.8	15.6	15.5	15.1	15.0
TIS			-87.5			-87.2

FDD	B5			B7		
Let	L	M	H	L	M	H
TRP	15.3	15.5	14.6	17.1	17.3	17.0
TIS			-86.8			-88.4

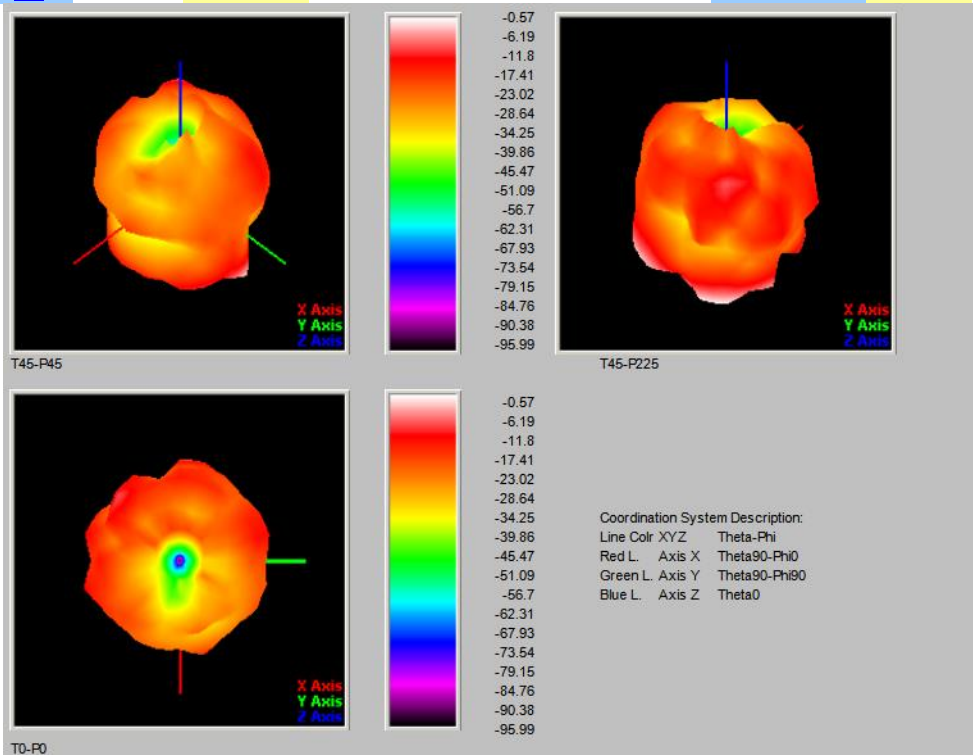
FDD	B8			B12		
Let	L	M	H	L	M	H
TRP	15.5	14.6	14.3	10.7	11.2	11.6
TIS			-86.5			-85.5

FDD	B20		
Let	L	M	H
TRP	16.5	16.8	15.2
TIS			-87.3

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TDD	B38		
Let	L	M	H
TRP	17.1	16.5	16.2
TIS			-87.3

Test Point ID	Freq. (MHz)	TRP (dBm)	Gain (dBi)	Directivity (dBi)	Efficiency (%)	Efficiency (dB)	Max (dBm)
1	2400.0	2400.00	-0.57	4.61	30.3%	-5.18	-0.57
2	2410.0	2410.00	-0.68	4.32	31.7%	-4.99	-0.68
3	2420.0	2420.00	1.48	6.15	34.1%	-4.67	1.48
4	2430.0	2430.00	0.41	5.09	34.0%	-4.69	0.41
5	2440.0	2440.00	0.02	5.10	31.1%	-5.08	0.02
6	2450.0	2450.00	-0.09	4.35	36.0%	-4.44	-0.09
7	2460.0	2460.00	-0.63	4.00	34.4%	-4.63	-0.63
8	2470.0	2470.00	0.24	4.98	33.6%	-4.74	0.24
9	2480.0	2480.00	-0.97	3.10	39.2%	-4.06	-0.97
10	2490.0	2490.00	0.92	4.42	44.7%	-3.49	0.92
11	2500.0	2500.00	2.41	5.19	52.7%	-2.78	2.41

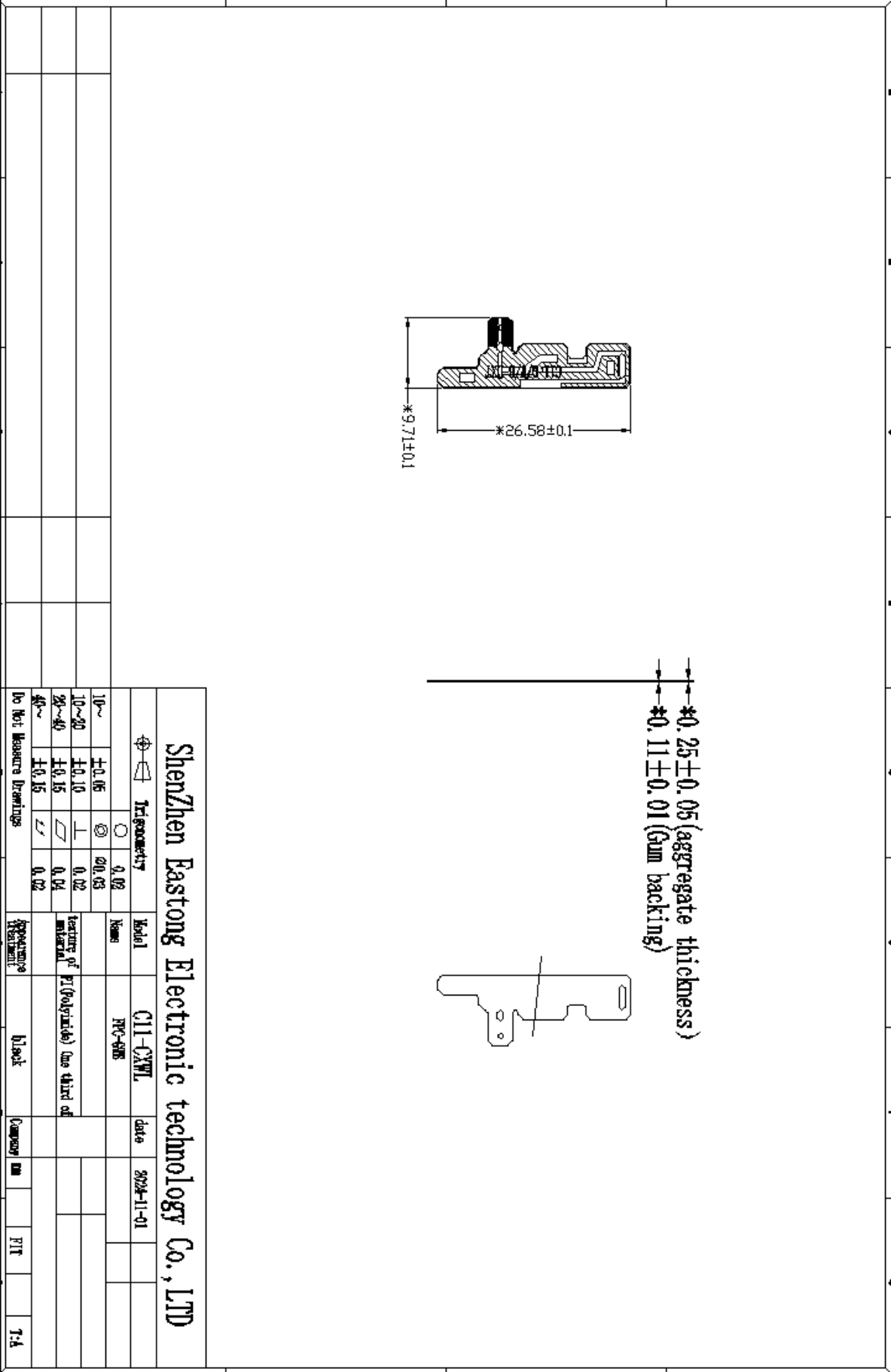


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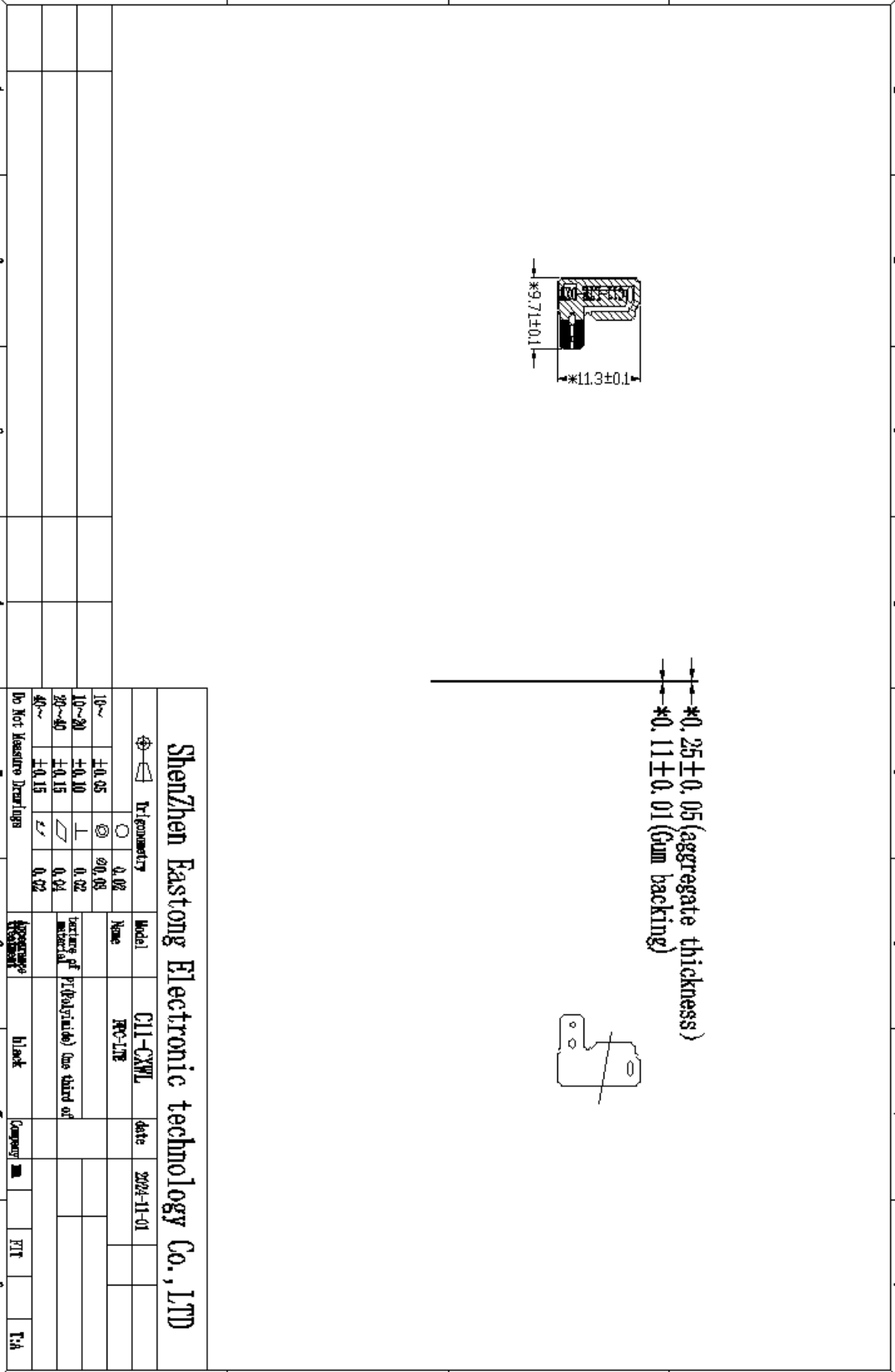
Standard	Band	Gain(dbi)
GSM	850	-1.62
GSM	900	-1.54
GSM	1800	-1.77
GSM	1900	-1.68
WCDMA	W1	-1.63
WCDMA	W2	-1.68
WCDMA	W5	-1.62
WCDMA	W8	-1.54
4G	B1	-1.63
4G	B2	-1.68
4G	B3	-1.77
4G	B4	-1.66
4G	B5	-1.62
4G	B7	-1.35
4G	B8	-1.54
4G	B12	-1.81
4G	B20	-1.65
4G	B38	-1.36
4G	B66	-1.58
WIFI	2.4G	-0.09
BT	2.4G	-0.09
GPS	1575M	-1.24

5 Mechanical drawing

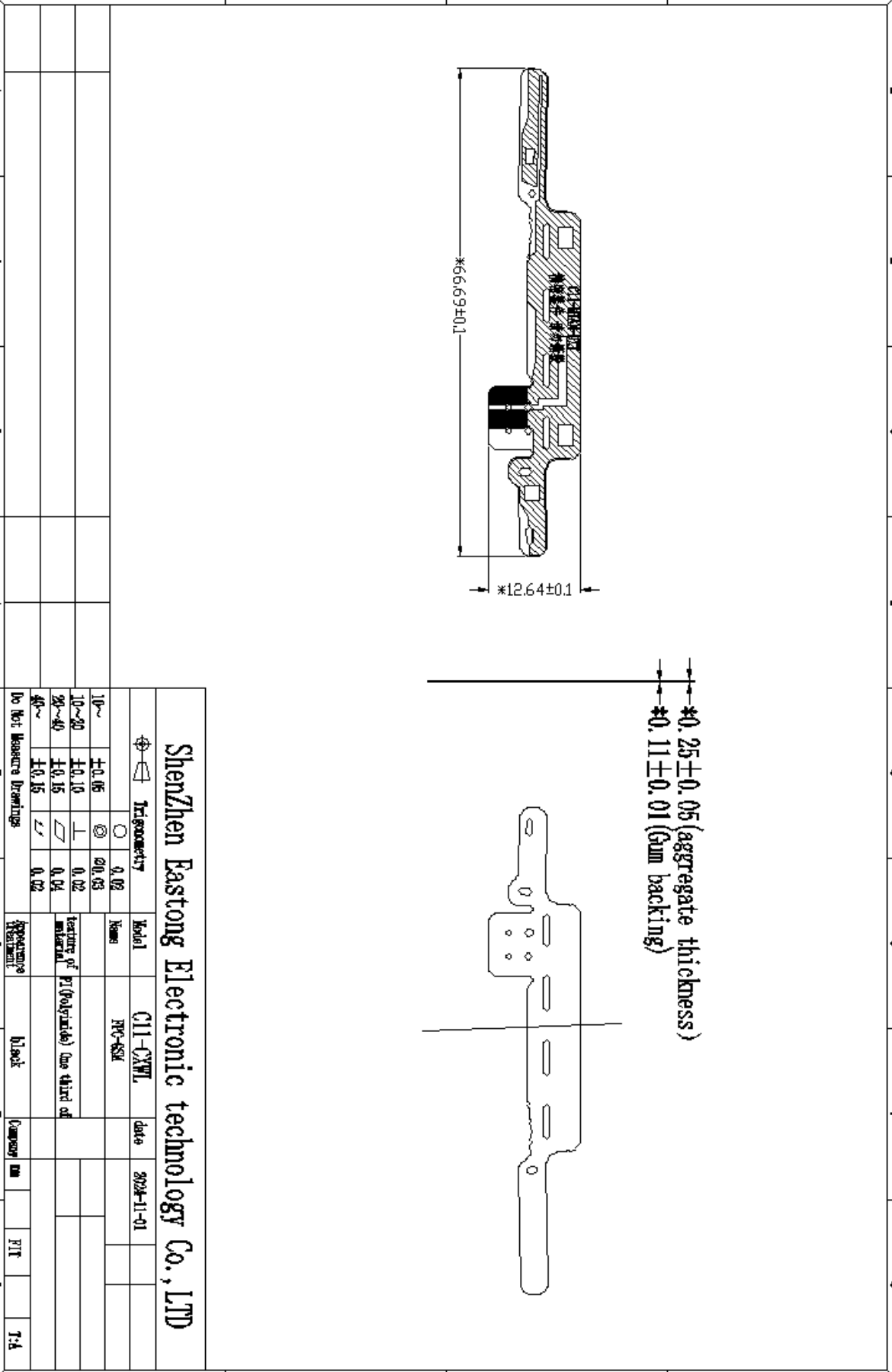
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