

Address: 9F,Block B,D3 Building, TCL International E City,No.1001 Zhongshanyuan Road, Nanshan District,
ShenZhen,CHINA

1 Antenna Characteristics

Antenna indicator test items

Testing Item	Testing Requirements
Maximum gain of GNSS antenna	L2≥4.0dB L1≥5.0dB
Antenna axis ratio	≤3dB
Output vswr	≤2.0

Frequency point （MHz）	1164	1167	1170	1173	1176	1179	1182	1185	1188	1191	1194	1197
Gain（dBi）	0.65	0.88	1.07	1.26	1.50	1.77	2.03	2.21	2.38	2.63	2.88	3.04
Frequency point （MHz）	1200	1203	1206	1209	1212	1215	1218	1221	1224	1227	1230	1233
Gain（dBi）	3.18	3.40	3.64	3.79	3.90	4.06	4.22	4.37	4.49	4.58	4.63	4.66
Frequency point （MHz）	1236	1239	1242	1245	1248	1251	1254	1257	1260	1263	1266	1269
Gain（dBi）	4.74	4.81	4.80	4.80	4.81	4.81	4.76	4.71	4.66	4.58	4.48	4.35
Frequency point （MHz）	1272	1275	1278	1535	1538	1541	1544	1547	1550	1553	1556	1559
Gain（dBi）	4.24	4.10	3.91	3.35	3.62	3.92	4.23	4.52	4.77	5.00	5.23	5.41
Frequency point （MHz）	1562	1565	1568	1571	1574	1577	1580	1583	1586	1589	1592	1595
Gain（dBi）	5.54	5.63	5.67	5.69	5.66	5.58	5.52	5.56	5.57	5.50	5.43	5.43

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Frequency point (MHz)	1598	1601	1604	1607	1610							
Gain (dBi)	5.41	5.21	4.89	4.76	4.73							

1.2 WIFI Gain

1.2.1 WIFI Antenna

Frequency point (MHz)	5100	5200	5300	5400	5500	5600	5700	5800
Gain (dBi)	2.08	3.52	4.46	5.22	5.68	6.06	4.38	0.4

2. Low Noise Amplification Index

2.1 testing Item

The test items for low noise amplifier indicators are shown in the table below:

Low Noise Amplifier Indicator Test Items

Testing Item	Testing Requirements
Gain	L2 frequency Band: $30\pm 2\text{dB}$ L1 frequency Band: $30\pm 2\text{dB}$
Noise Coefficient	$\leq 2\text{dB}$
Output Standing Wave	≤ 2.0
Flatness Within The Band	$\pm 2\text{dB}$
Working Voltage	$+3.3 \sim +12\text{VDC}$
Working Current	$\leq 45\text{mA}$
Differential Transmission Delay	$\leq 5\text{ns}$

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2.2 Test Data And Results

2.2.1 Gain And Flatness

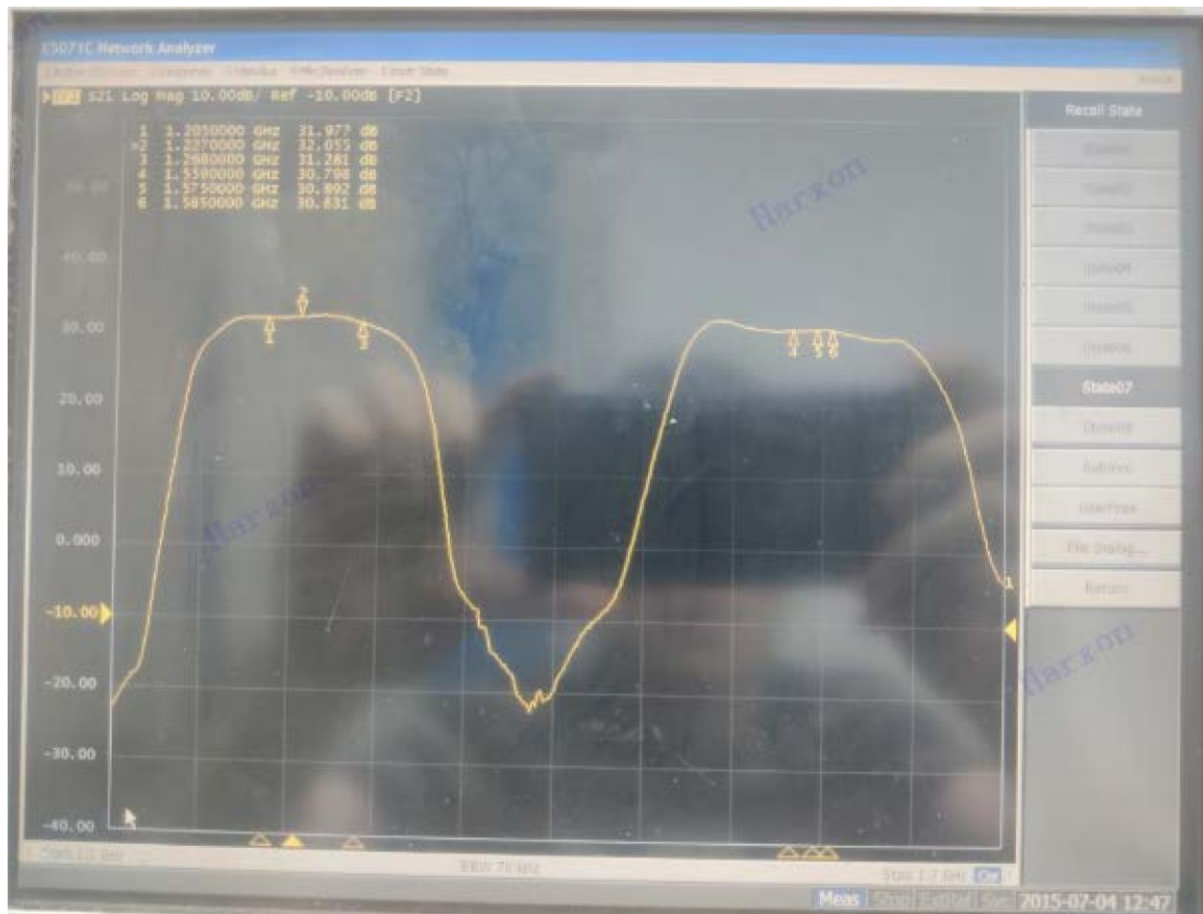


Figure 2.1 L1/L2 Gain And Flatness

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2.2.2 Figure



Figure 2.3 L2 Frequency Band Noise Coefficient



Figure 2.4 L1 Frequency Band Noise Coefficient

2.2.3 Output Vswr

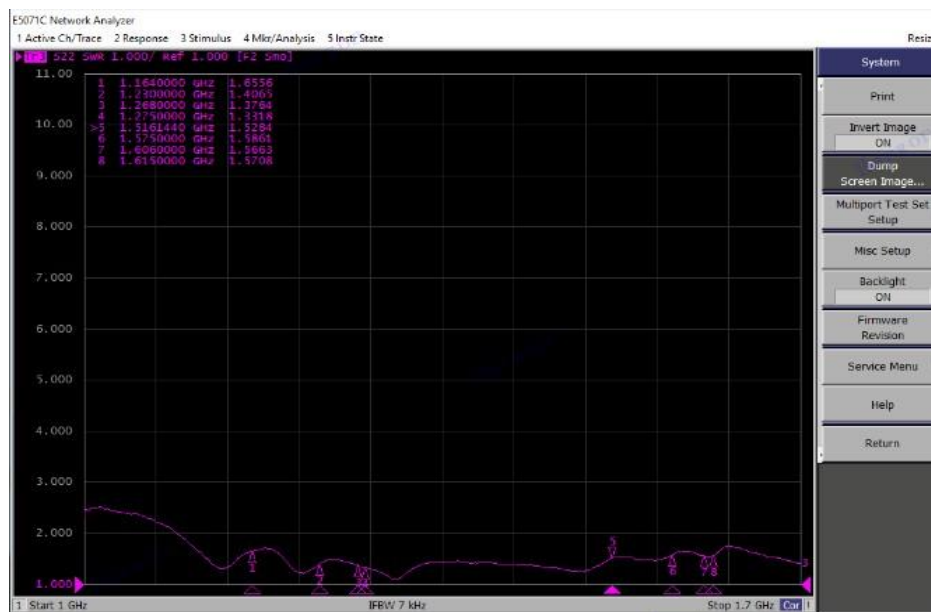


Figure 2.5 Output Standing Wave

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2.2.4 Working Voltage And Current



Figure 2.6 Working Voltage and Current

2.2.5 Differential Transmission Delay



Figure 2.7 Differential Transmission Delay

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2.2.6 Low Noise Amplifier Indicator Test Results

Comparison Table of Low Noise Amplification Index Test Results

Testing Item	Testing Requirements	Test Result	Compliance	Notes
Gain	L2 Frequency Band : 30±2dB L1 Frequency Band : 30±2dB	L2 Frequency Band : 28.5 L1 Frequency Band : 29.5	conform	
Noise Coefficient	≤1.8dB	L2 Frequency Band: 1.07~1.21dB L1 Frequency Band: 1.28~1.78dB	conform	
Output Standing Wave	≤2.0	≤1.65	conform	
Flatness Within The Band	±2dB	L2 Frequency Band : +0.81dB/-0.88dB L1 Frequency Band : +0.96dB/-0.53dB	conform	
Working Voltage	+3.3 ~ +12VDC	+3.3 ~ +12VDC	conform	
Working Current	≤45mA	35~37mA	conform	
Differential Transmission Delay	≤5ns	≤4ns	conform	