

TEST REPORT

Applicant: Alinco Incorporated, Electronics Division

Address: Yodoyabashi Dai Building 13F, 4-4-9 Koraibashi, Chuo-Ku, Osaka, 541-0043, Japan

Product Name: VHF FM TRANSCEIVER

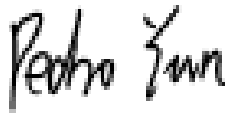
FCC ID: PH3-DR-138TMKII

Standard(s): FCC Part 15B
ANSI C63.4-2014

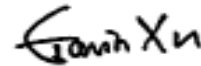
Report Number: 2402Y66907E-RF-00C

Report Date: 2025/1/15

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).



Reviewed By: Pedro Yun
Title: **Project Engineer**



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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402Y66907E-RF-00C	Original Report	2025/1/15

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	VHF FM TRANSCEIVER
EUT Model:	DR-138TMKII
Highest Operation Frequency^:	2480MHz
Rated Input Voltage:	DC 13.8V from vehicle system
Serial Number:	2TQW-1
EUT Received Date:	2024/10/30
EUT Received Status:	Good

1.2 Accessory Information

Accessory Description	Manufacturer	Model	Parameters
/	/	/	/

1.3 Equipment Modifications

No modifications are made to the EUT during all test items.

2. SUMMARY OF TEST RESULTS

Standard Clause	Description of Test	Test Result
FCC§15.107	Conducted emissions	Not Applicable
FCC§15.109	Radiated emissions	Compliant
FCC§15.121(b)	Scanning receivers and frequency converters used with scanning receivers	Compliant
FCC§15.111	Antenna power conduction limits for receivers	Compliant

3. DESCRIPTION OF TEST CONFIGURATION

3.1 Operation Frequency And Test Channel:

Operation Modes	Operation Frequency Range (MHz)	Test Frequency (MHz)
Scanning	108-174	108-174
VHF Receiving	108-174	108.0125/122/135.9875/136.0125/155/173.987

3.2 Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user). The following summary table is showing all test modes to demonstrate in compliance with the standard:

Test Items	Test Mode(s)
Radiated Spurious Emission:	M1: Operating & BT Link & Scanning M2: Operating & BT Link & Receiving
AC Line Conducted Emission:	N/A

3.3 EUT Exercise Software

No software was used to test.

3.4 Support Equipment List and Details

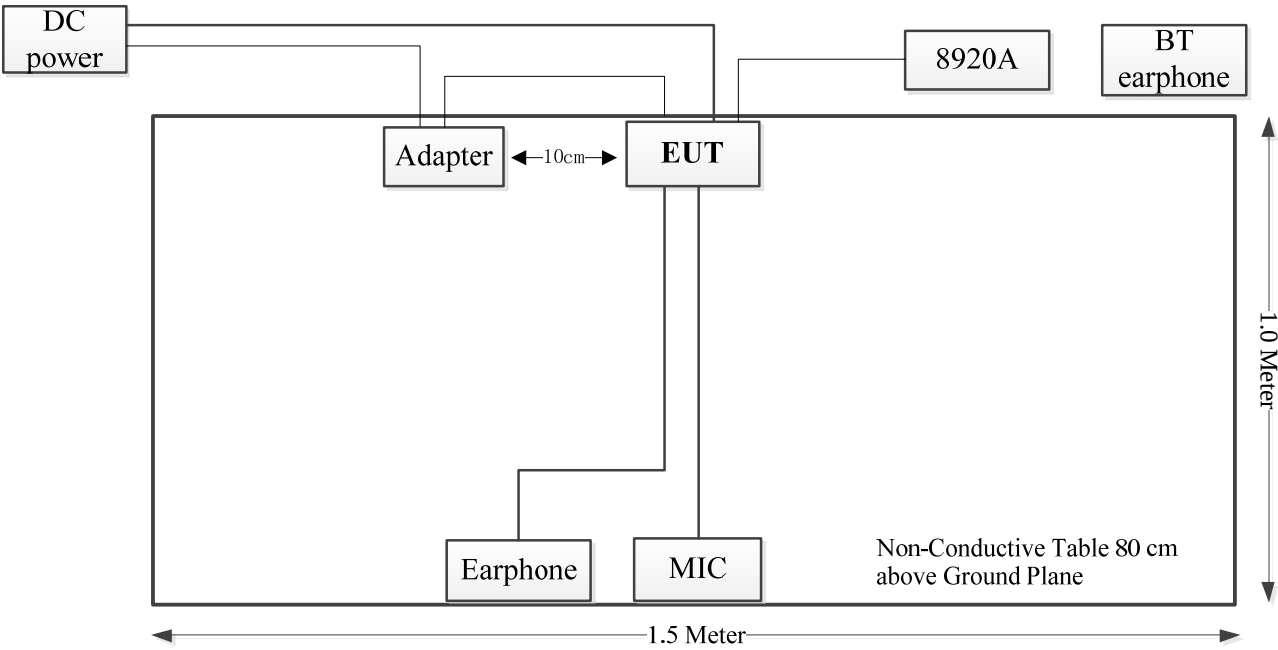
Manufacturer	Description	Model	Serial Number
TDK-Lambda	DC Power	KYT173381	LOC-825A153-0016
Alinco	BT earphone	/	/
HP	RF Communications Test Set	8920A	3438A05201
/	Earphone(AE)	/	/

3.5 Support Cable List and Details

Cable Description	Shielding Cable	Ferrite Core	Length (m)	From Port	To
DC Power cable	No	No	1.7	DC power	EUT
Coaxial Cable	Yes	No	0.6	Terminal	EUT
Earphone cable	No	No	1.2	Earphone	EUT
MIC cable	Yes	No	2	MIC	EUT
Antenna cable	Yes	No	10	8920A	EUT

3.6 Block Diagram of Test Setup

M1:



3.7 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 829273, the FCC Designation No. : CN5044.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

3.8 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	9kHz~30MHz: 3.3dB, 30MHz~200MHz: 4.55 dB 200MHz~1GHz: 5.92 dB, 1GHz~6GHz: 4.98 dB 6GHz~18GHz: 5.89 dB, 18GHz~26.5GHz: 5.47 dB 26.5GHz~40GHz: 5.63 dB
AC Power Lines Conducted Emission	3.11 dB (150 kHz to 30 MHz)
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$

4. REQUIREMENTS AND TEST PROCEDURES

4.1 AC Line Conducted Emissions

4.1.1 Applicable Standard

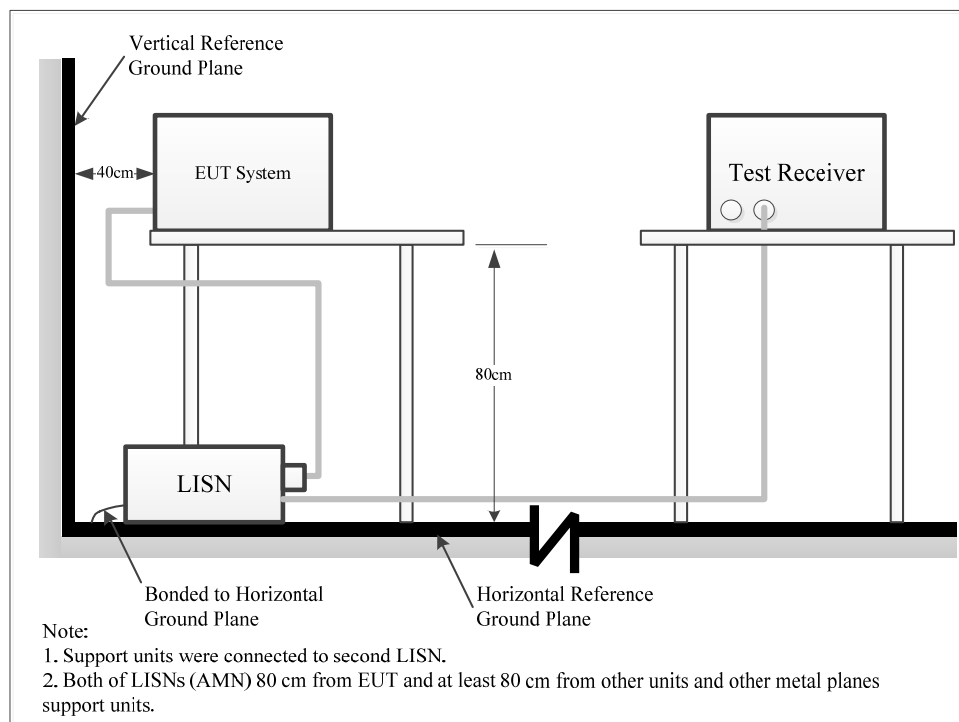
FCC§15.107

(a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

*Decreases with the logarithm of the frequency.

4.1.2 EUT Setup



The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

4.1.3 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

4.1.4 Test Procedure

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase (“hot”) line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

4.1.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = attenuation caused by cable loss + voltage division factor of AMN

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

4.1.6 Test Result and Data

Not Applicable, the device was powered by vehicle system.

4.2 Radiation Spurious Emissions

4.2.1 Applicable Standard

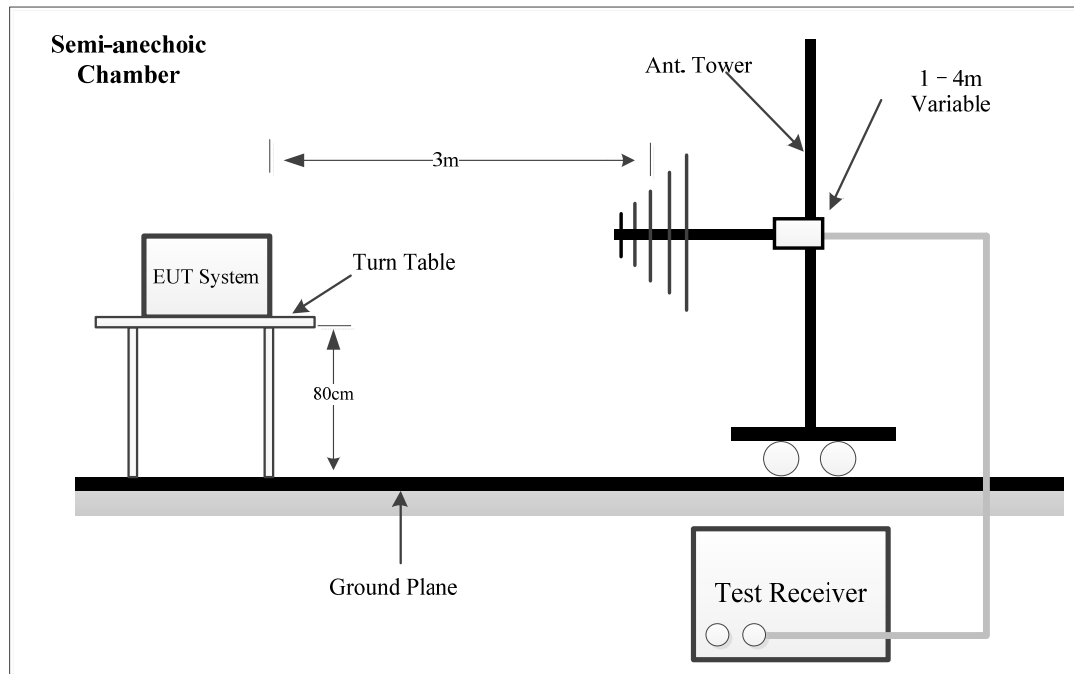
FCC§15.109

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

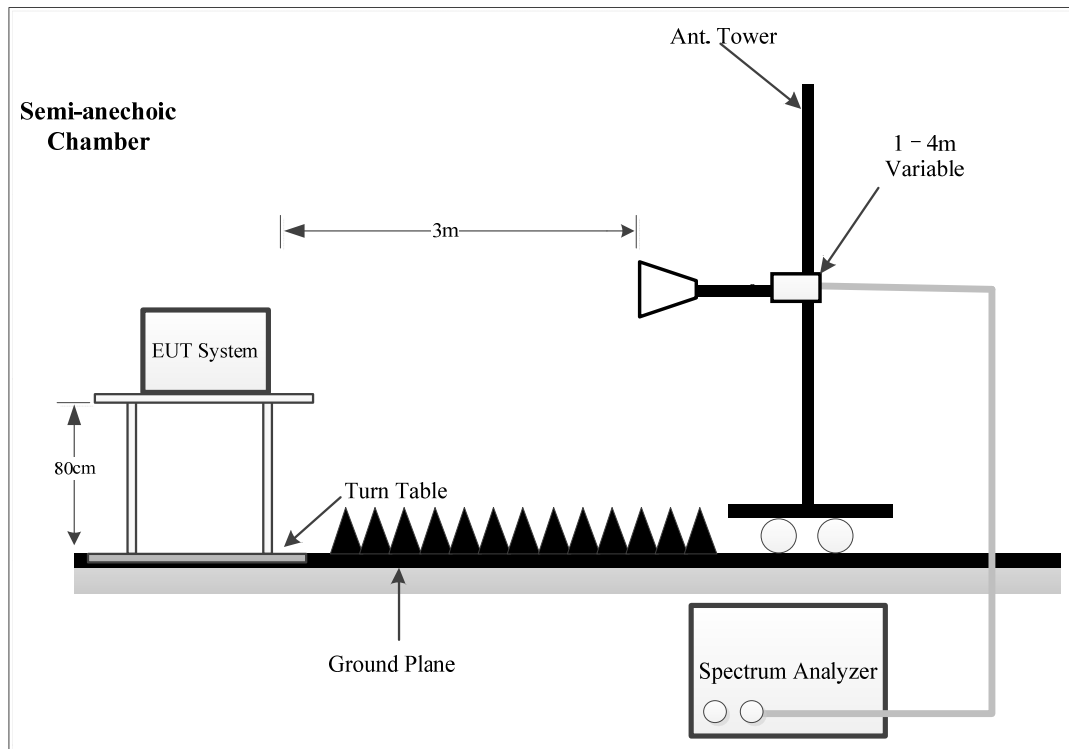
Frequency of emission (MHz)	Field strength (microvolts/meter)
30-88	100
88-216	150
216-960	200
Above 960	500

4.2.2 Test System Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed at the 3 meters distance, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15B Class B limits.

4.2.3 EMI Test Receiver Setup

The system was investigated from 30 MHz to 13 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30MHz – 1000 MHz	100 kHz	300 kHz	/	Peak
	/	/	120kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	3 MHz	/	AVG

4.2.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.

If the maximized peak measured value complies with under the QP limit more than 6dB, then it is unnecessary to perform an QP measurement.

4.2.5 Corrected Result & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = Antenna Factor + Cable Loss- Amplifier Gain

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

4.2.6 Test Result and Data

Serial Number:	2TQW-1	Test Date:	2024/11/18~2024/11/22
Test Site:	Chamber A, Chamber B	Test Mode:	M1-M2
Tester:	Alan Xie, Nat Zhou	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	20.9~24.4	Relative Humidity: (%)	42	ATM Pressure: (kPa)	101.8~102.1

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Hybrid Antenna	JB3	A060611-2	2024/4/16	2027/4/15
Narda	Coaxial Attenuator	757C-6dB	34010	2024/4/16	2027/4/15
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2024/7/1	2025/6/30
Sonoma	Amplifier	310N	372193	2024/8/16	2025/8/15
R&S	EMI Test Receiver	ESR3	102453	2024/8/26	2025/8/25
Audix	Test Software	E3	191218 V9	N/A	N/A
ETS-Lindgren	Horn Antenna	3115	000 527 35	2023/9/7	2026/9/6
Xinhang Macrowave	Coaxial Cable	XH750A-N/J-SMA/J-10M	20231117004 #0001	2024/11/17	2025/11/16
AH	Preamplifier	PAM-0118P	469	2024/4/15	2025/4/14
R&S	Spectrum Analyzer	FSV40	101944	2024/9/6	2025/9/5
Audix	Test Software	E3	191218 V9	N/A	N/A
E-Microwave	Band Rejection Filter	OBSF-2400-2483.5-S	OE01601525	2024/2/21	2025/2/20
Micro-tronics	High Pass Filter	HPM50111	G217	2023/12/1	2024/11/30

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

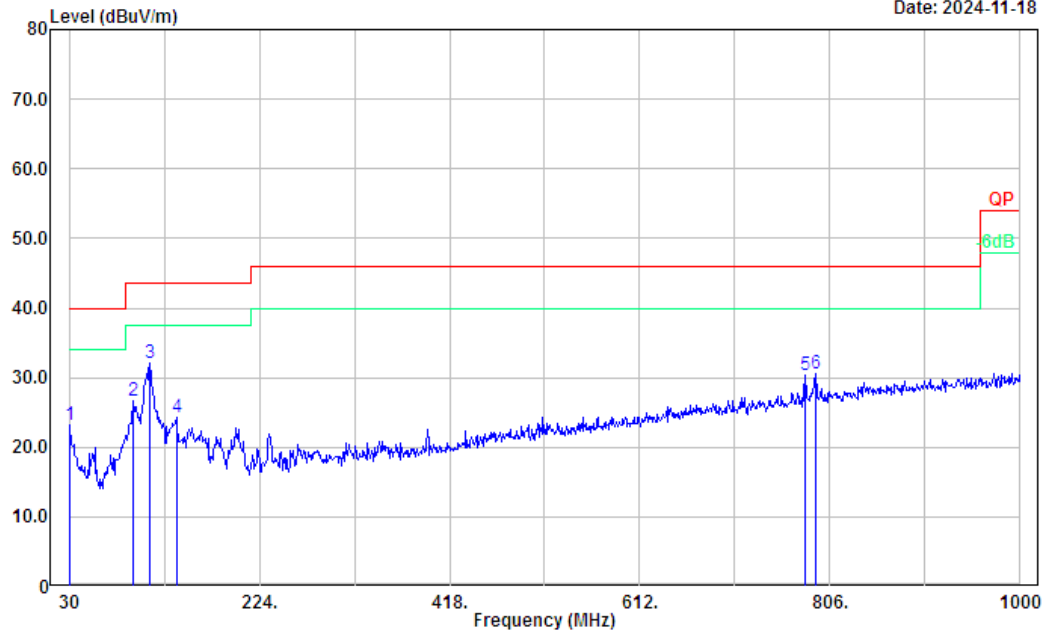
1) 30MHz-1GHz:

108-136 MHz

Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M1
Note: 108-136MHz

Serial No.: 2TQW-1
Tester: Alan Xie

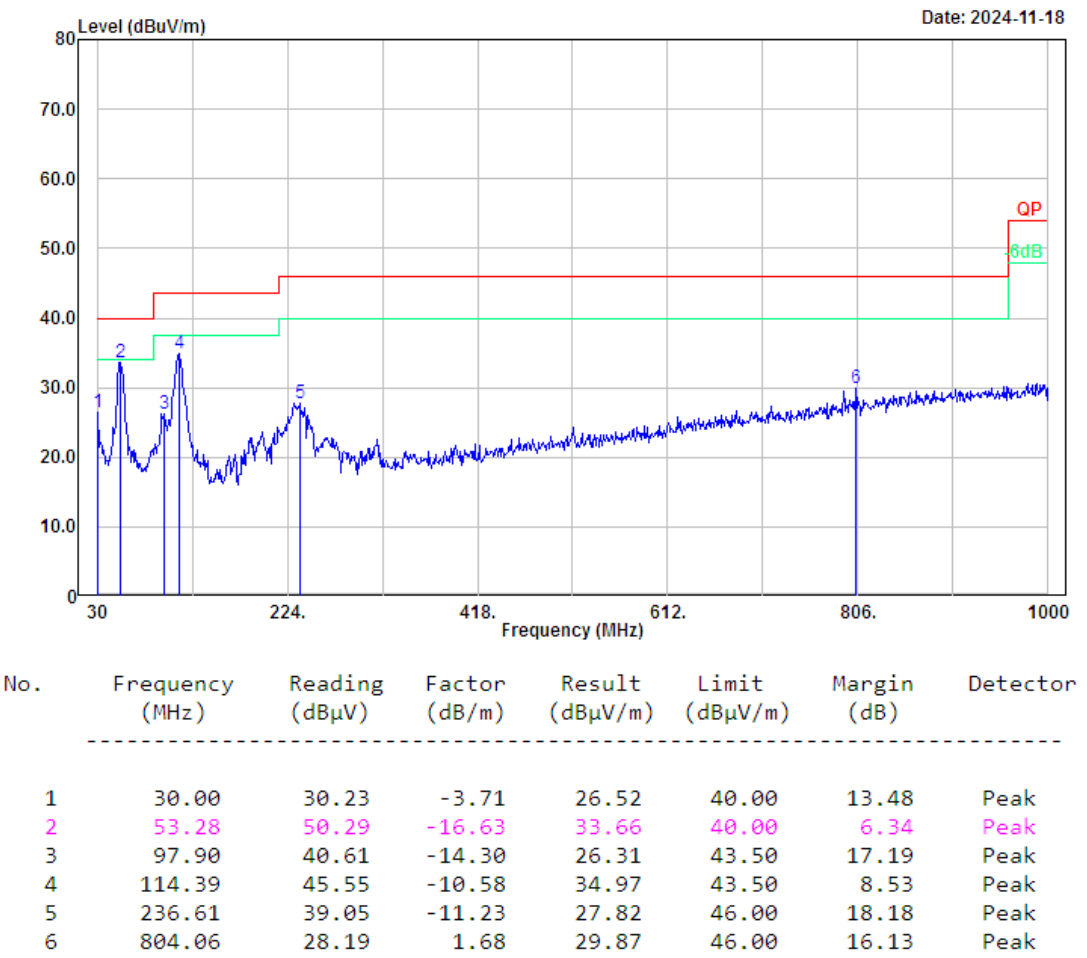
Date: 2024-11-18



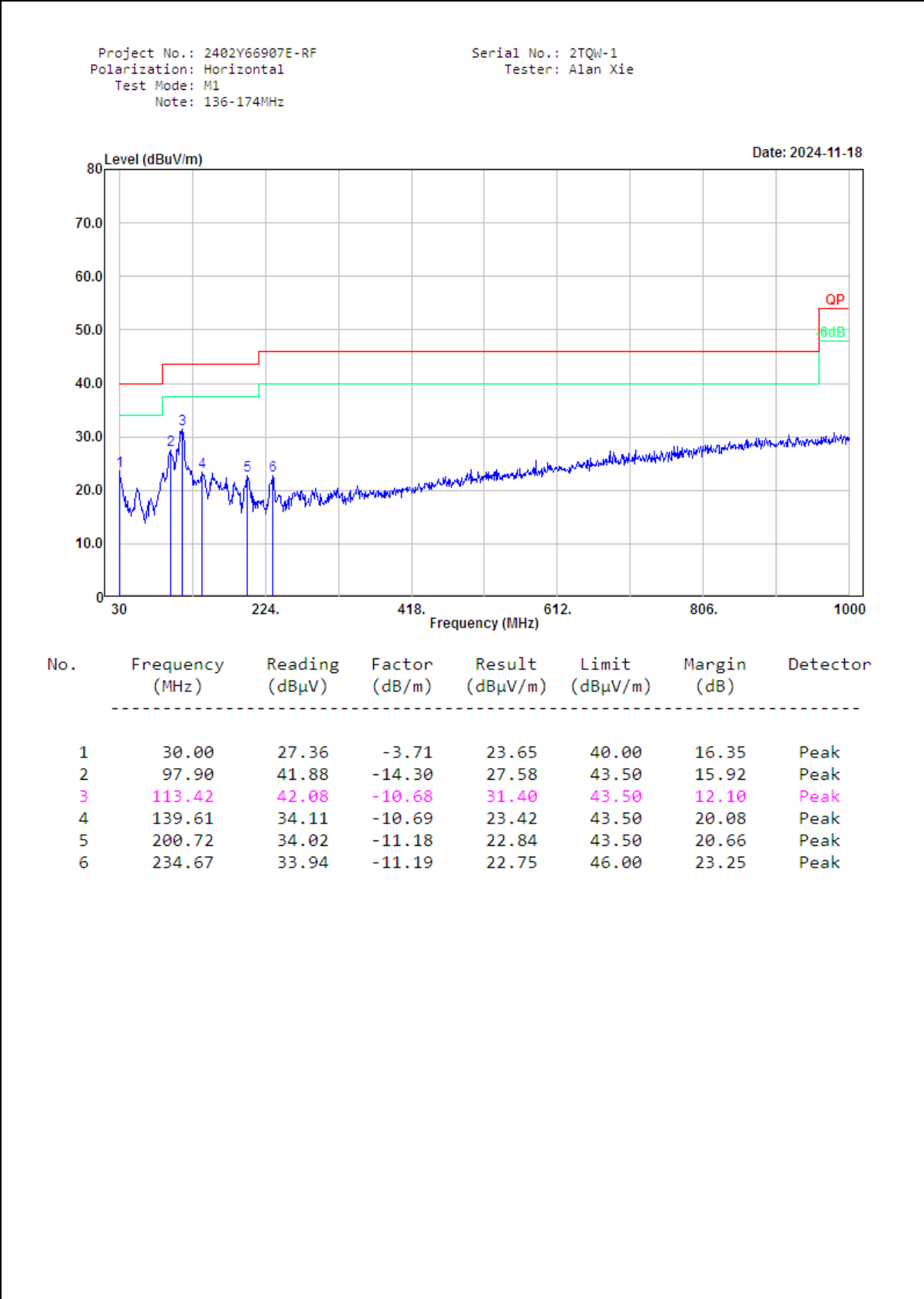
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.00	26.95	-3.71	23.24	40.00	16.76	Peak
2	95.96	41.45	-14.89	26.56	43.50	16.94	Peak
3	112.45	42.78	-10.78	32.00	43.50	11.50	Peak
4	139.61	34.99	-10.69	24.30	43.50	19.20	Peak
5	780.78	29.26	1.11	30.37	46.00	15.63	Peak
6	791.45	29.24	1.38	30.62	46.00	15.38	Peak

Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M1
Note: 108-136MHz

Serial No.: 2TQW-1
Tester: Alan Xie

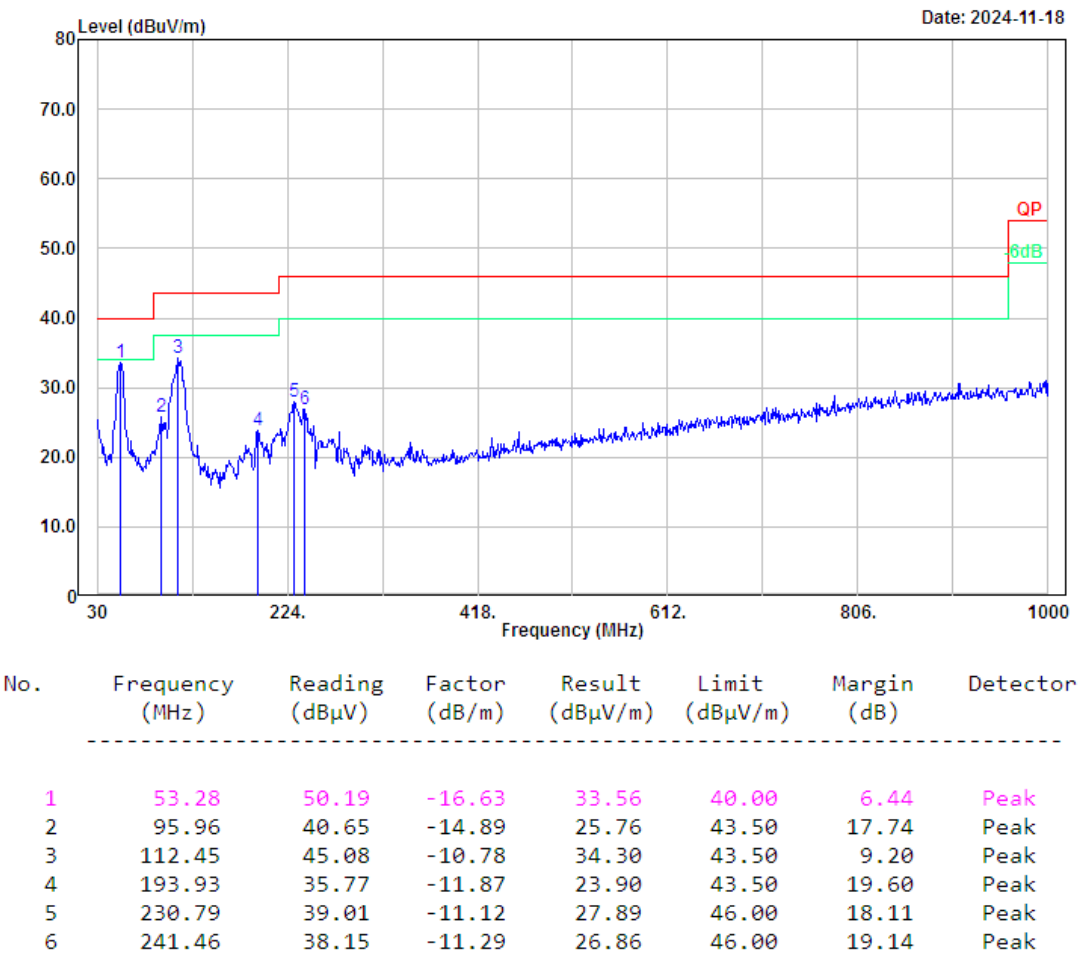


136-174 MHz



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M1
Note: 136-174MHz

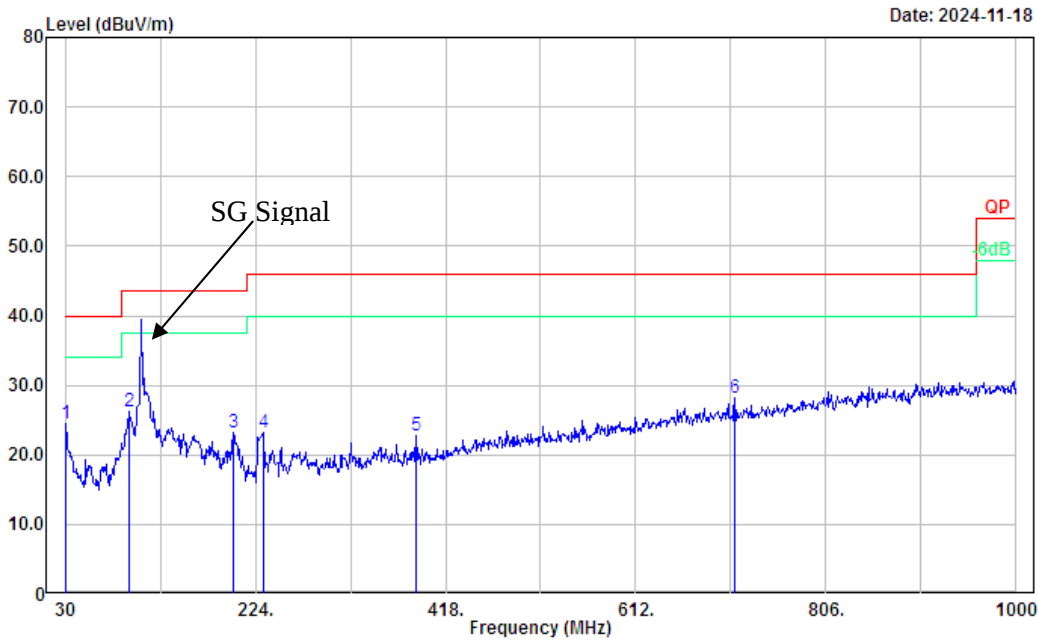
Serial No.: 2TQW-1
Tester: Alan Xie



108.0125 MHz

Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 108.0125MHz

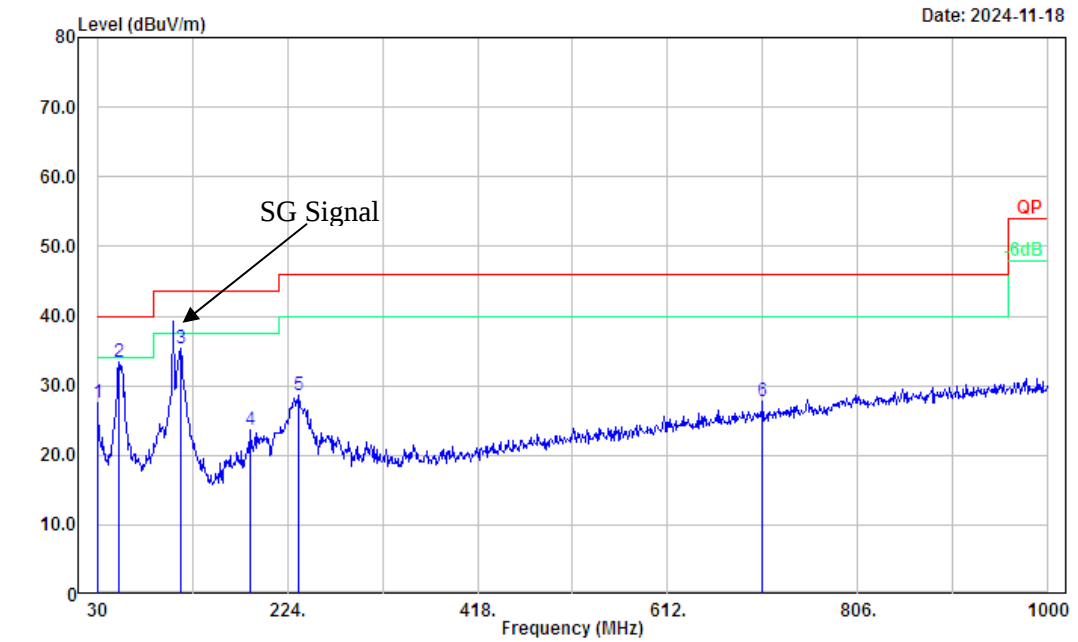
Serial No.: 2TQW-1
Tester: Alan Xie



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.00	28.12	-3.71	24.41	40.00	15.59	Peak
2	95.96	41.10	-14.89	26.21	43.50	17.29	Peak
3	201.69	34.47	-11.17	23.30	43.50	20.20	Peak
4	231.76	34.35	-11.13	23.22	46.00	22.78	Peak
5	387.93	29.73	-7.01	22.72	46.00	23.28	Peak
6	712.88	28.53	-0.26	28.27	46.00	17.73	Peak

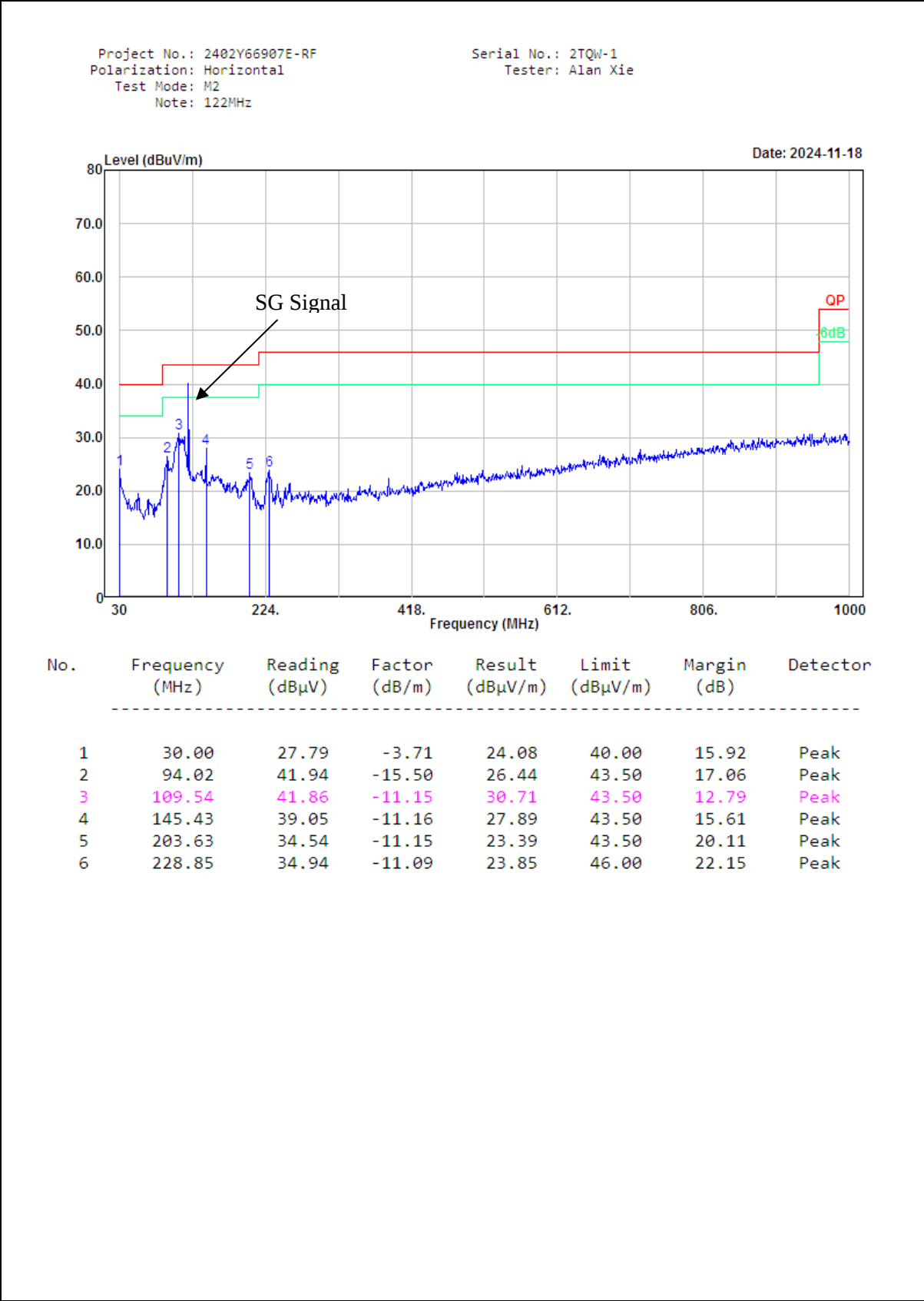
Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 108.0125MHz

Serial No.: 2TQW-1
Tester: Alan Xie



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.00	31.28	-3.71	27.57	40.00	12.43	Peak
2	52.31	49.92	-16.57	33.35	40.00	6.65	Peak
3	115.36	45.73	-10.48	35.25	43.50	8.25	Peak
4	186.17	35.96	-12.25	23.71	43.50	19.79	Peak
5	235.64	39.86	-11.21	28.65	46.00	17.35	Peak
6	709.00	28.00	-0.32	27.68	46.00	18.32	Peak

122 MHz



Project No.: 2402Y66907E-RF

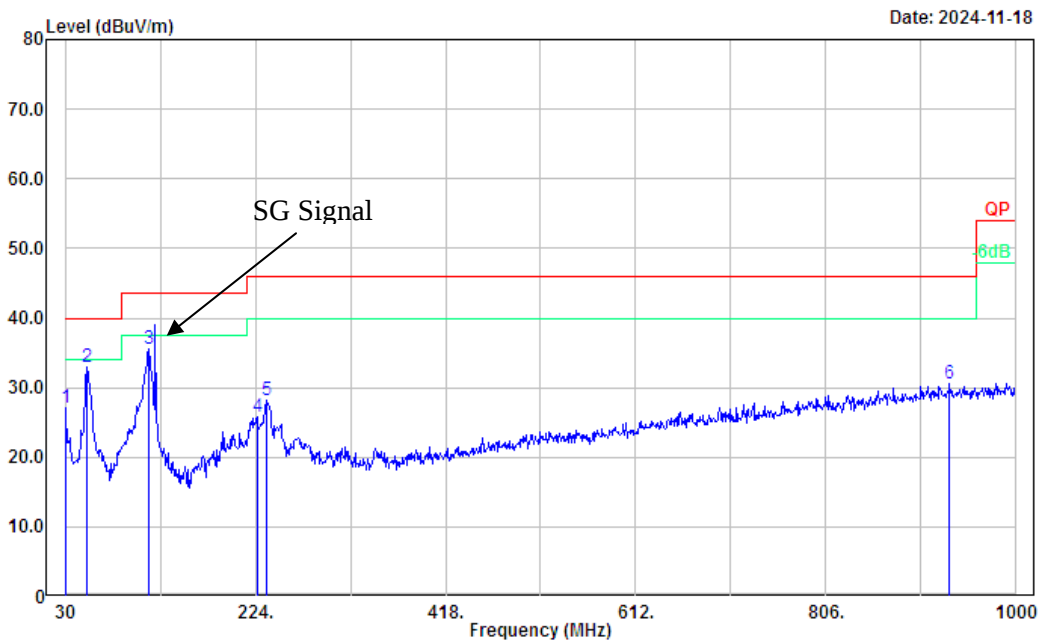
Serial No.: 2TQW-1

Polarization: Vertical

Tester: Alan Xie

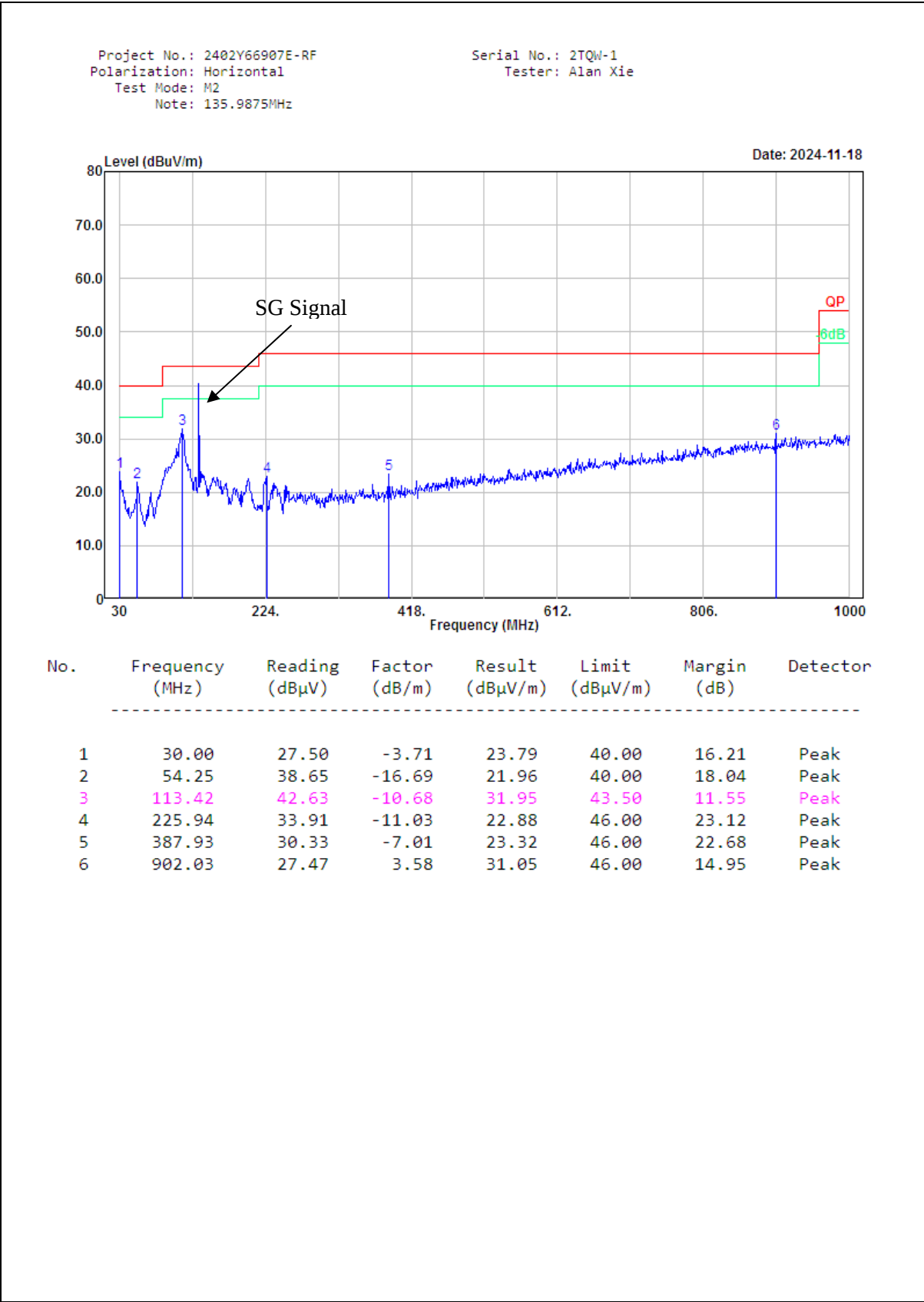
Test Mode: M2

Note: 122MHz



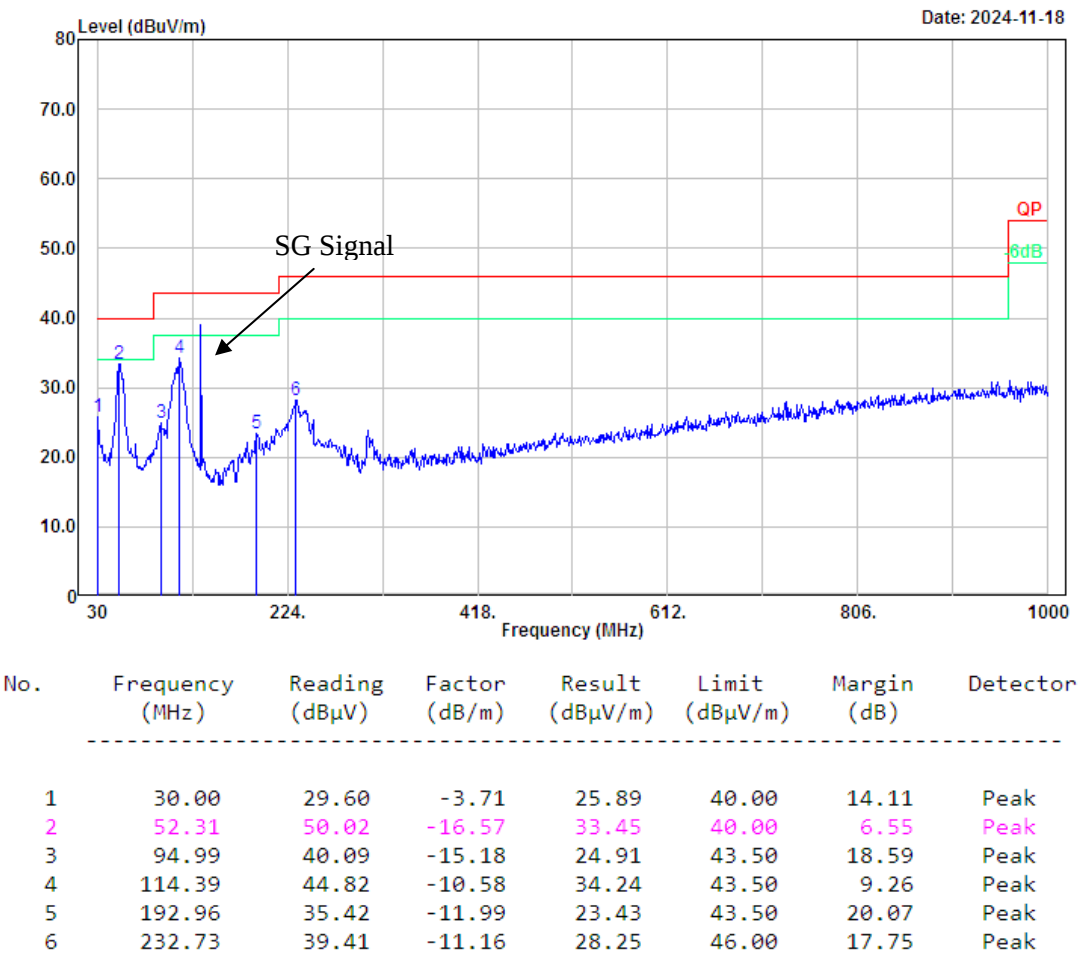
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.00	30.74	-3.71	27.03	40.00	12.97	Peak
2	52.31	49.60	-16.57	33.03	40.00	6.97	Peak
3	115.36	45.97	-10.48	35.49	43.50	8.01	Peak
4	225.94	36.94	-11.03	25.91	46.00	20.09	Peak
5	235.64	39.41	-11.21	28.20	46.00	17.80	Peak
6	932.10	26.57	4.08	30.65	46.00	15.35	Peak

135.9875MHz

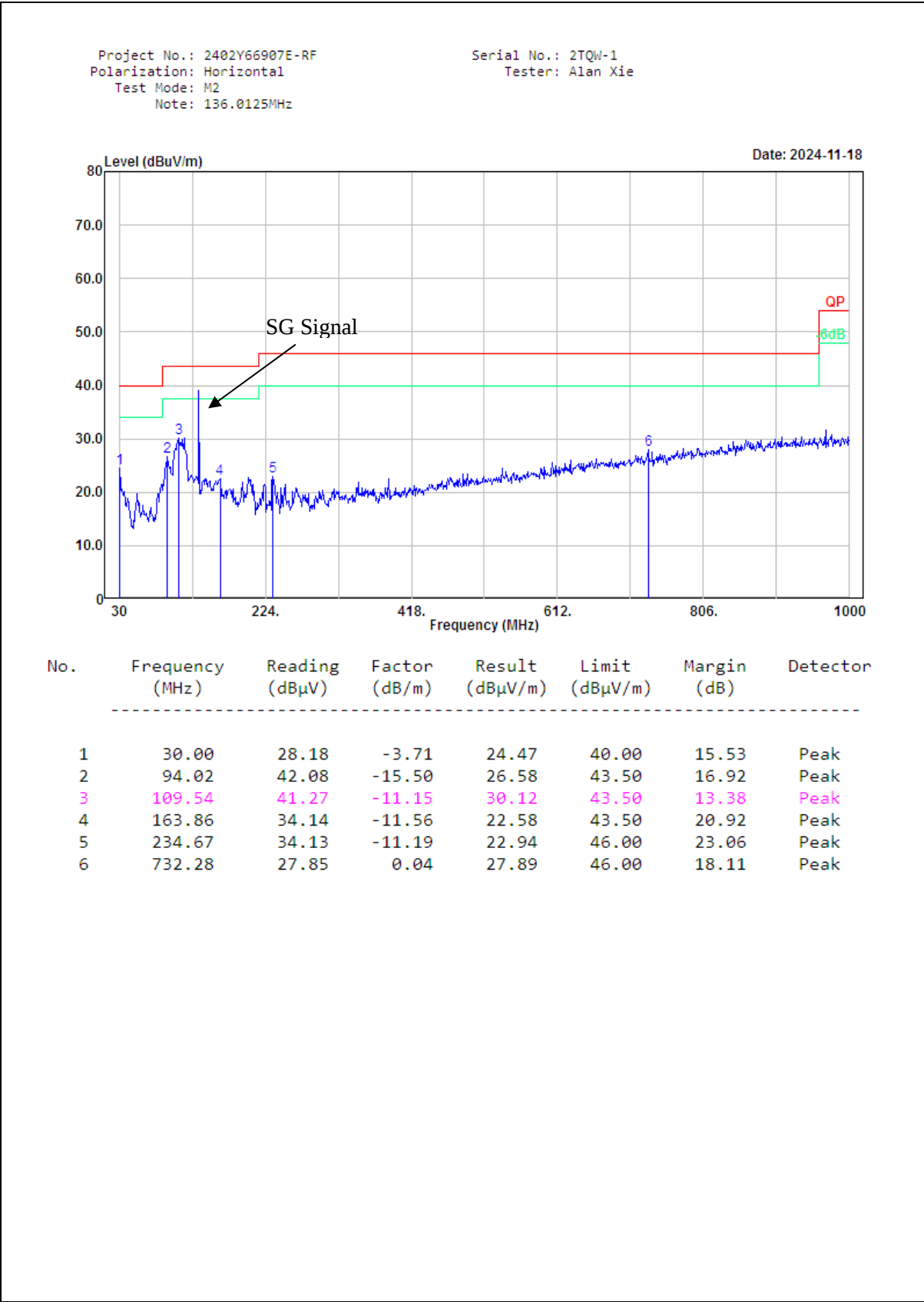


Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 135.9875MHz

Serial No.: 2TQW-1
Tester: Alan Xie



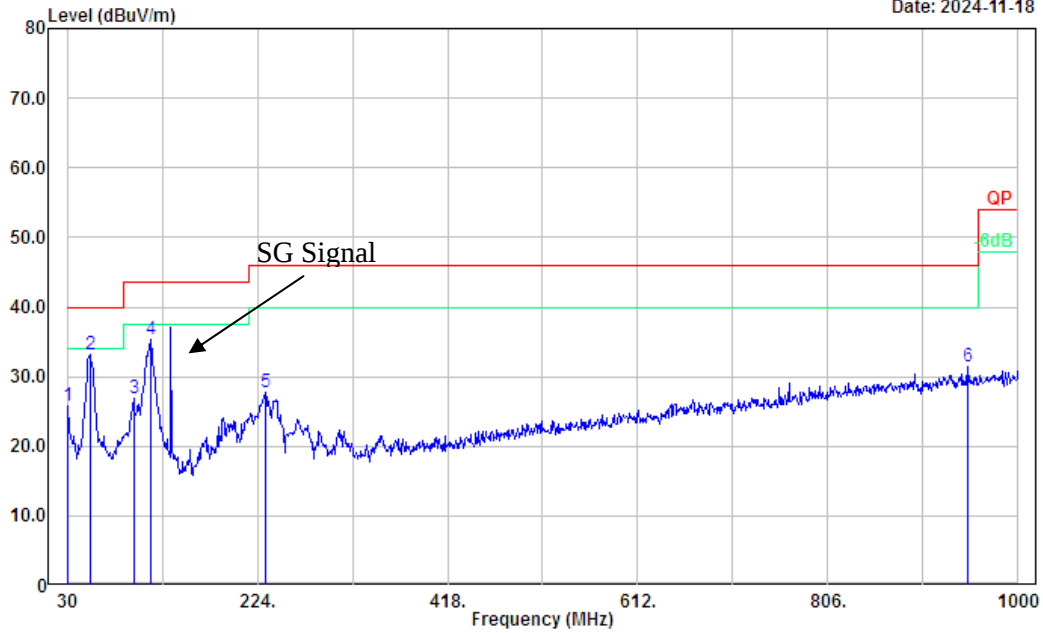
136.0125 MHz



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 136.0125MHz

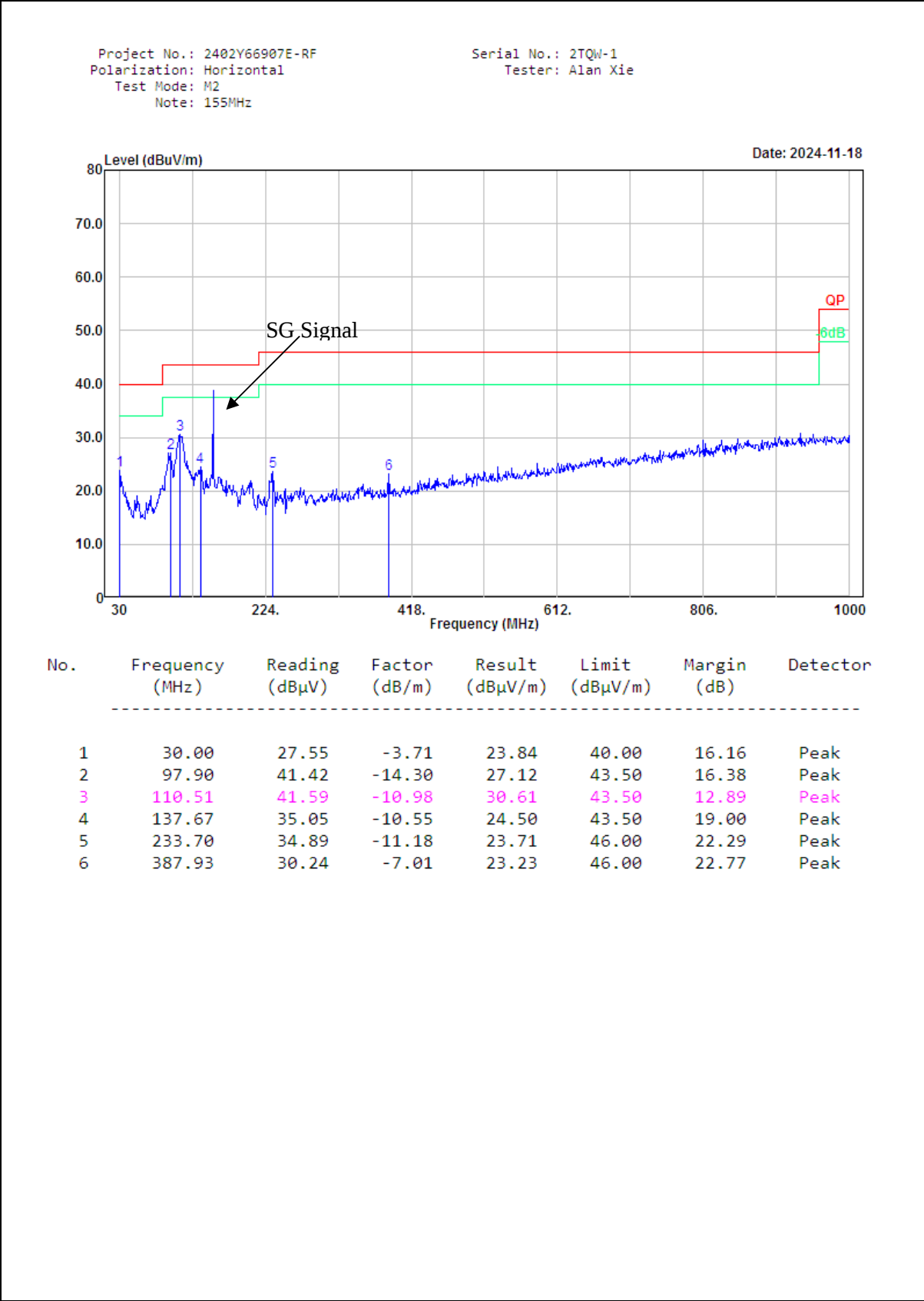
Serial No.: 2TQW-1
Tester: Alan Xie

Date: 2024-11-18



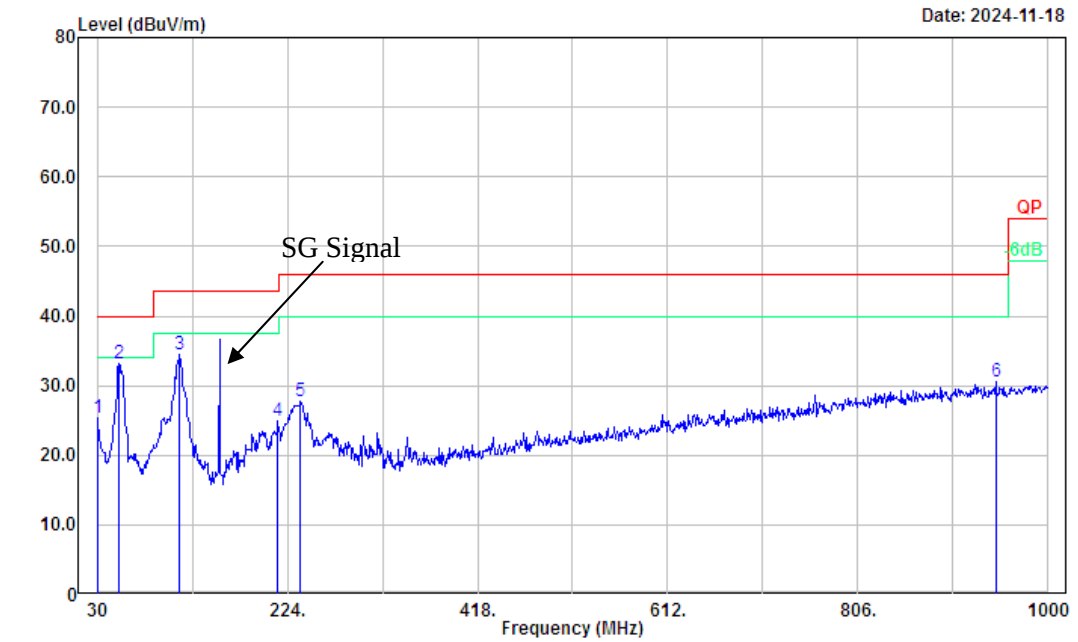
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.00	29.48	-3.71	25.77	40.00	14.23	Peak
2	53.28	49.74	-16.63	33.11	40.00	6.89	Peak
3	97.90	41.09	-14.30	26.79	43.50	16.71	Peak
4	115.36	45.83	-10.48	35.35	43.50	8.15	Peak
5	232.73	38.91	-11.16	27.75	46.00	18.25	Peak
6	948.59	27.11	4.36	31.47	46.00	14.53	Peak

155 MHz



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 155MHz

Serial No.: 2TQW-1
Tester: Alan Xie

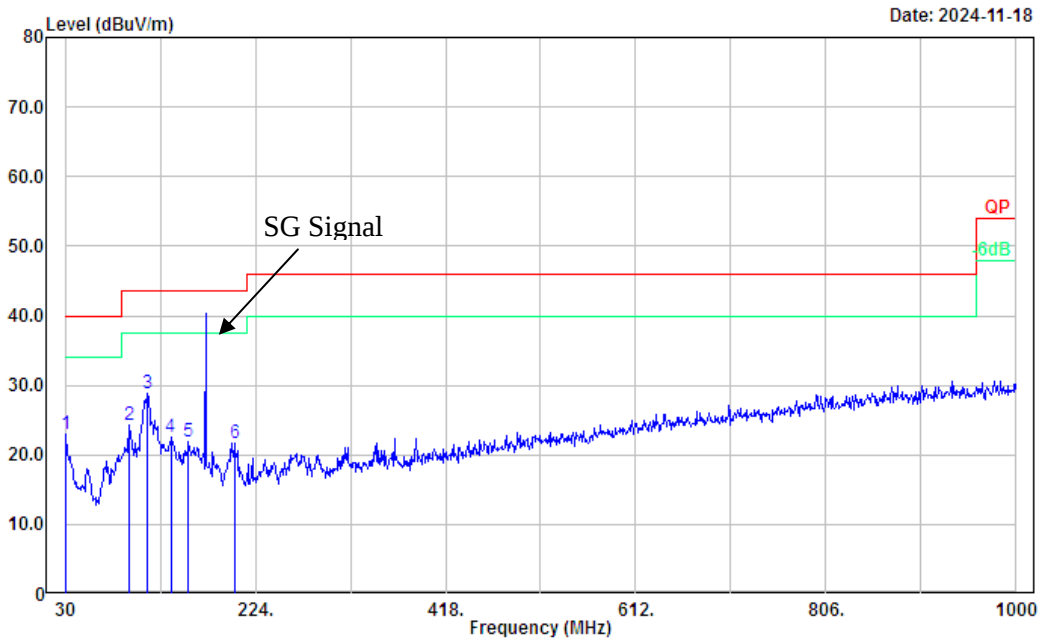


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.00	28.98	-3.71	25.27	40.00	14.73	Peak
2	52.31	49.80	-16.57	33.23	40.00	6.77	Peak
3	114.39	45.12	-10.58	34.54	43.50	8.96	Peak
4	214.30	36.02	-11.00	25.02	43.50	18.48	Peak
5	237.58	38.92	-11.25	27.67	46.00	18.33	Peak
6	946.65	26.30	4.33	30.63	46.00	15.37	Peak

173.9875 MHz

Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 173.9875MHz

Serial No.: 2TQW-1
Tester: Alan Xie



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.00	26.62	-3.71	22.91	40.00	17.09	Peak
2	94.99	39.41	-15.18	24.23	43.50	19.27	Peak
3	114.39	39.41	-10.58	28.83	43.50	14.67	Peak
4	137.67	33.20	-10.55	22.65	43.50	20.85	Peak
5	156.10	33.30	-11.47	21.83	43.50	21.67	Peak
6	202.66	32.83	-11.15	21.68	43.50	21.82	Peak

Project No.: 2402Y66907E-RF

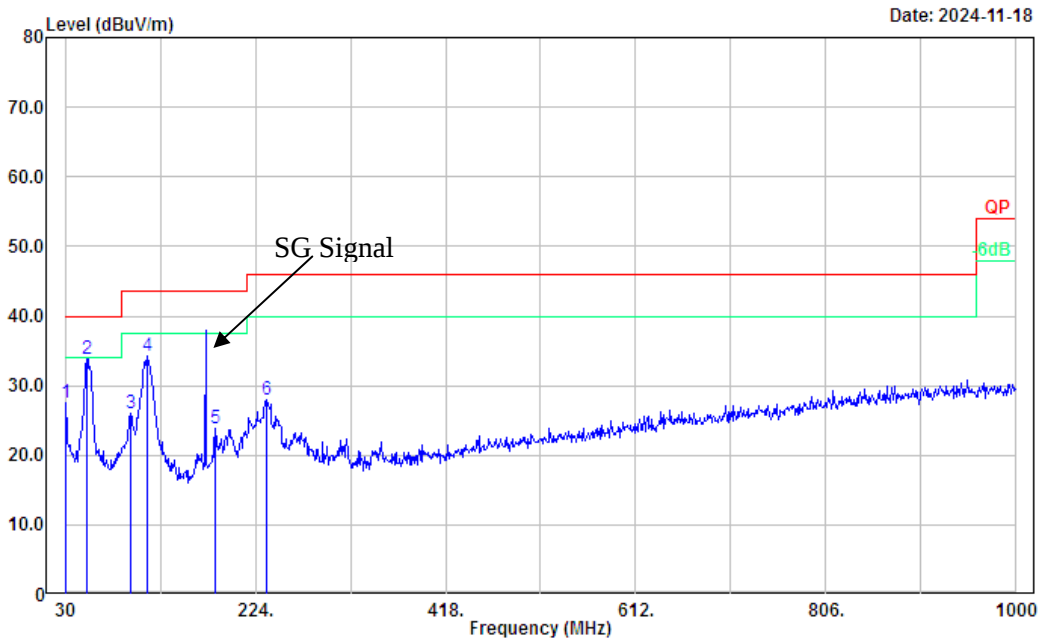
Serial No.: 2TQW-1

Polarization: Vertical

Tester: Alan Xie

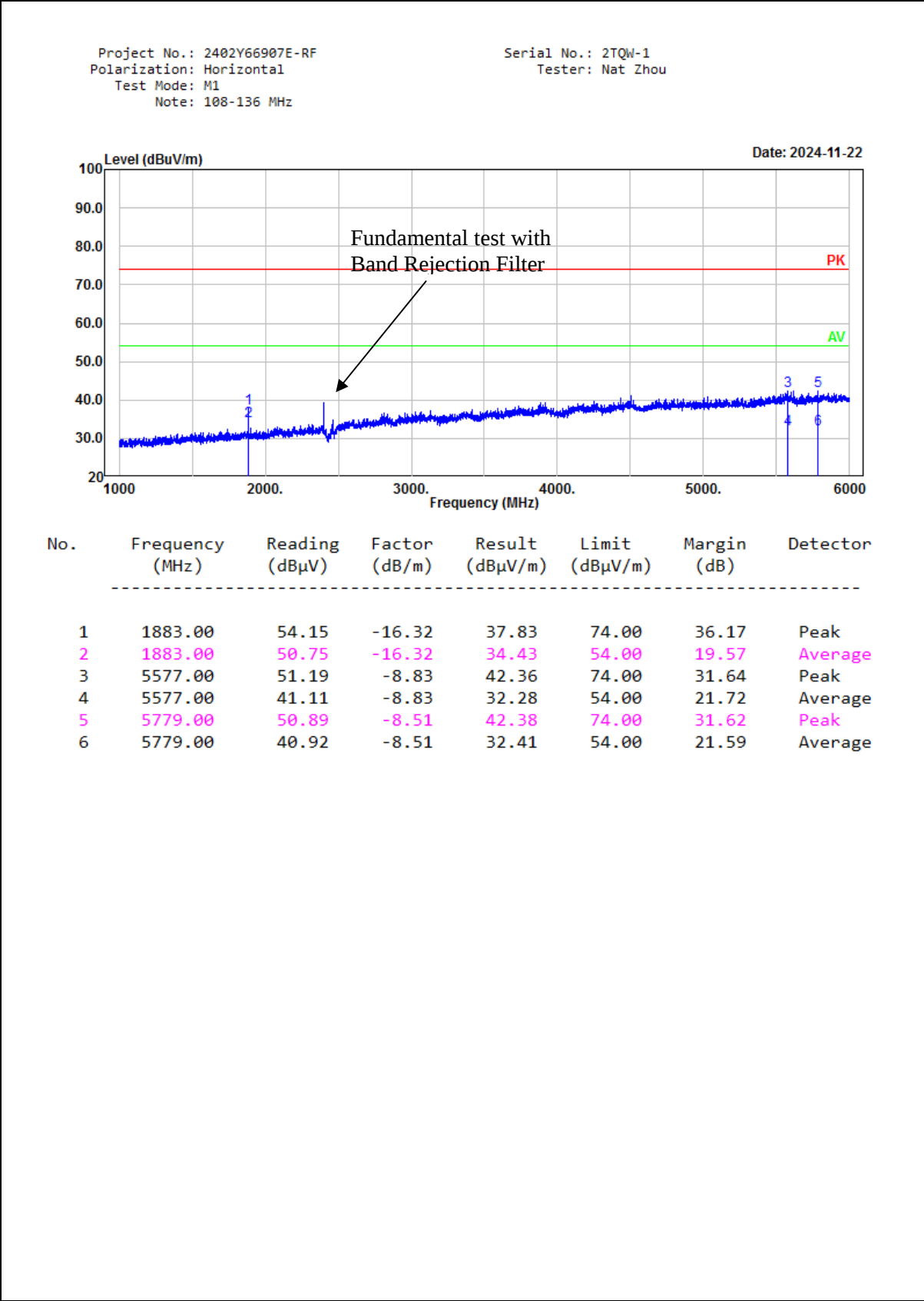
Test Mode: M2

Note: 173.9875MHz



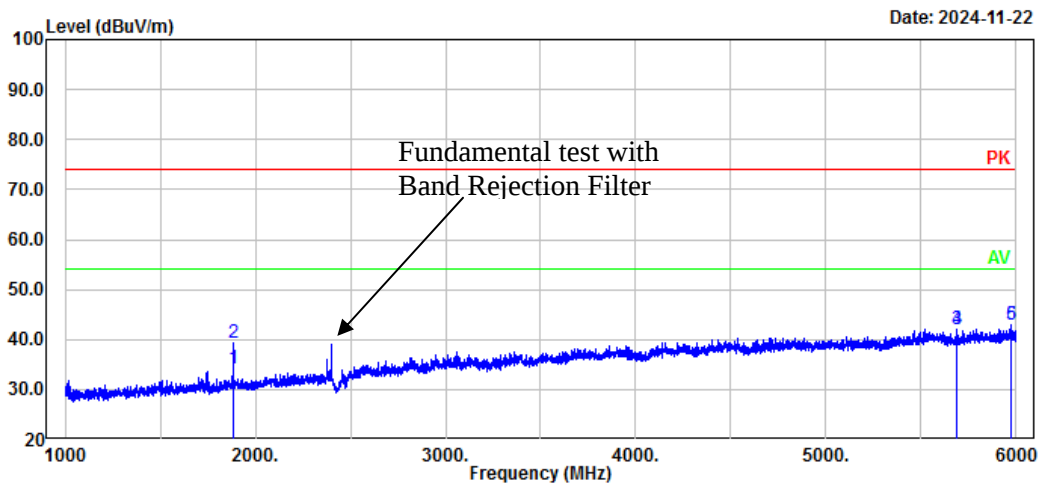
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.97	31.81	-4.37	27.44	40.00	12.56	Peak
2	52.31	50.47	-16.57	33.90	40.00	6.10	Peak
3	96.93	40.56	-14.60	25.96	43.50	17.54	Peak
4	113.42	44.86	-10.68	34.18	43.50	9.32	Peak
5	183.26	36.15	-12.21	23.94	43.50	19.56	Peak
6	235.64	39.19	-11.21	27.98	46.00	18.02	Peak

2) 1GHz-13GHz:
108-136 MHz



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M1
Note: 108-136 MHz

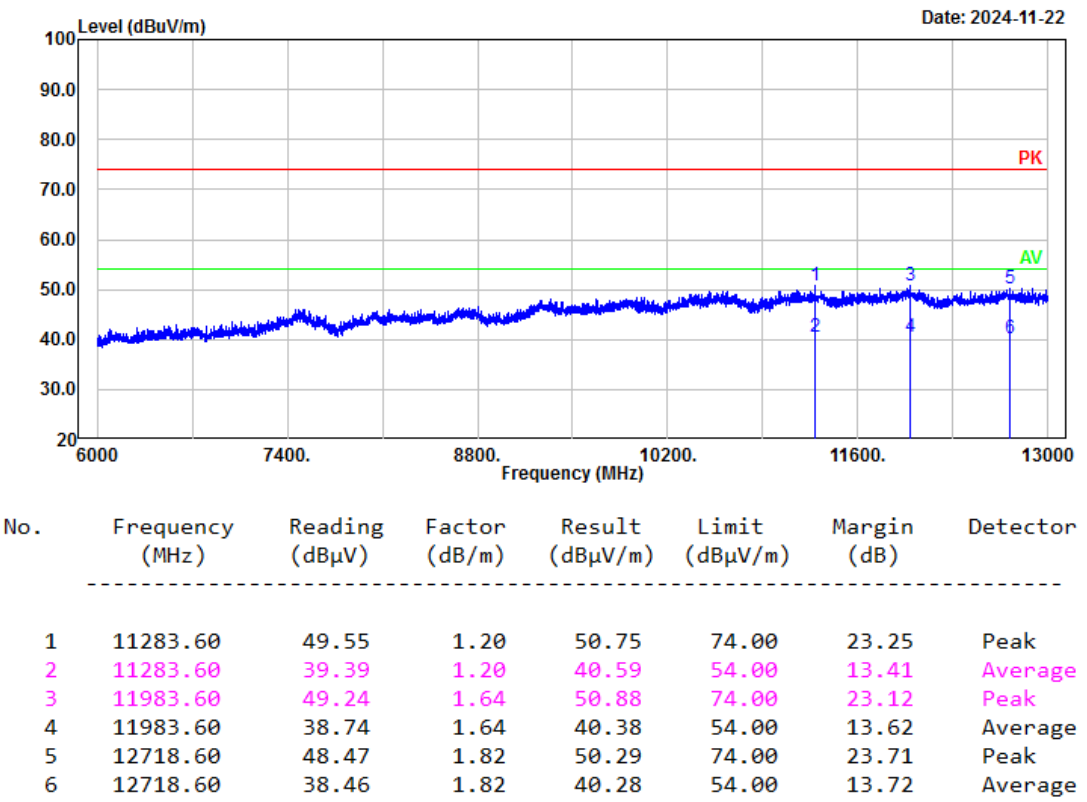
Serial No.: 2TQM-1
Tester: Nat Zhou



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1883.00	50.46	-16.32	34.14	74.00	39.86	Peak
2	1883.00	55.65	-16.32	39.33	54.00	14.67	Average
3	5686.00	50.72	-8.55	42.17	74.00	31.83	Peak
4	5686.00	50.72	-8.55	42.17	54.00	11.83	Average
5	5975.00	51.01	-8.21	42.80	74.00	31.20	Peak
6	5975.00	51.01	-8.21	42.80	54.00	11.20	Average

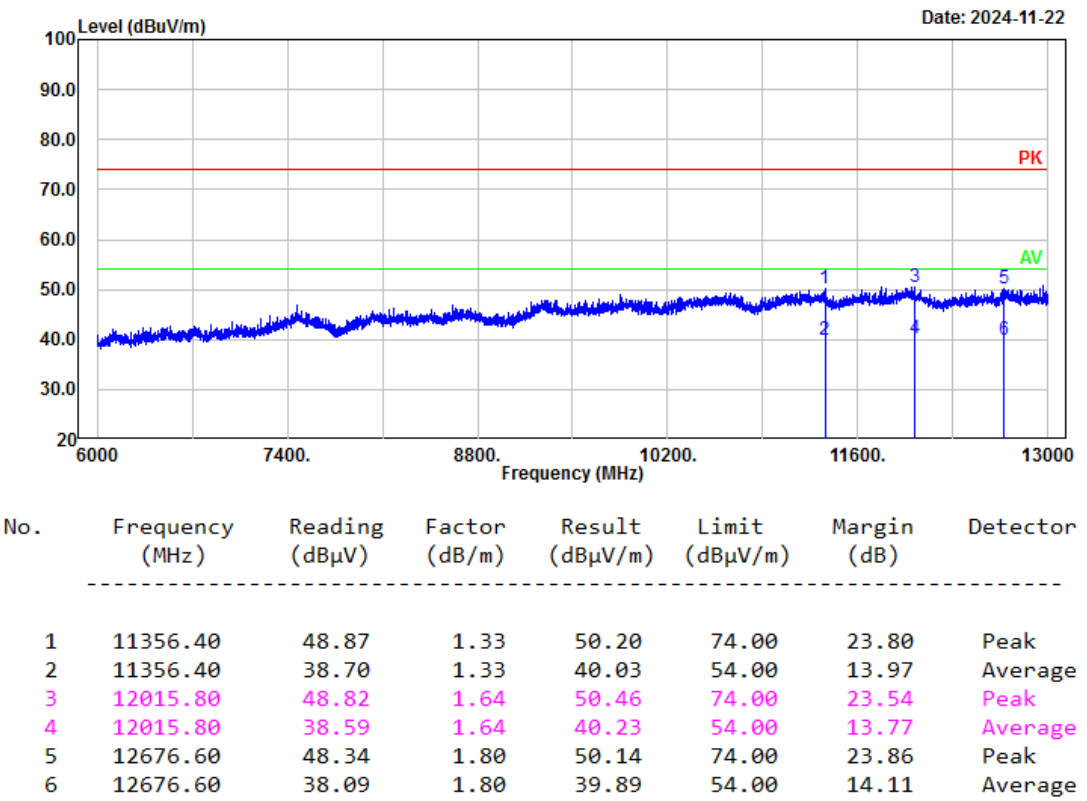
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M1
Note: 108-136 MHz

Serial No.: 2TQW-1
Tester: Nat Zhou



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M1
Note: 108-136 MHz

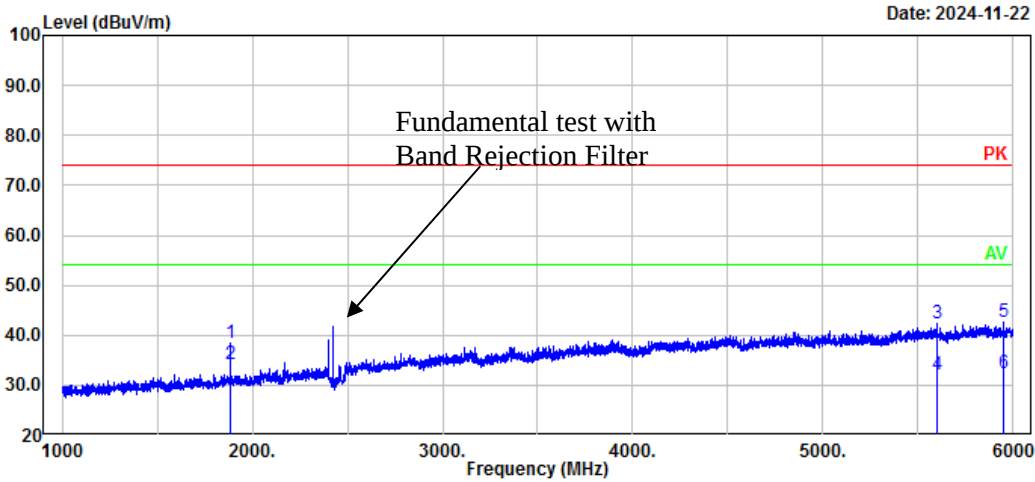
Serial No.: 2TQM-1
Tester: Nat Zhou



136-174 MHz

Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M1
Note: 136-174 MHz

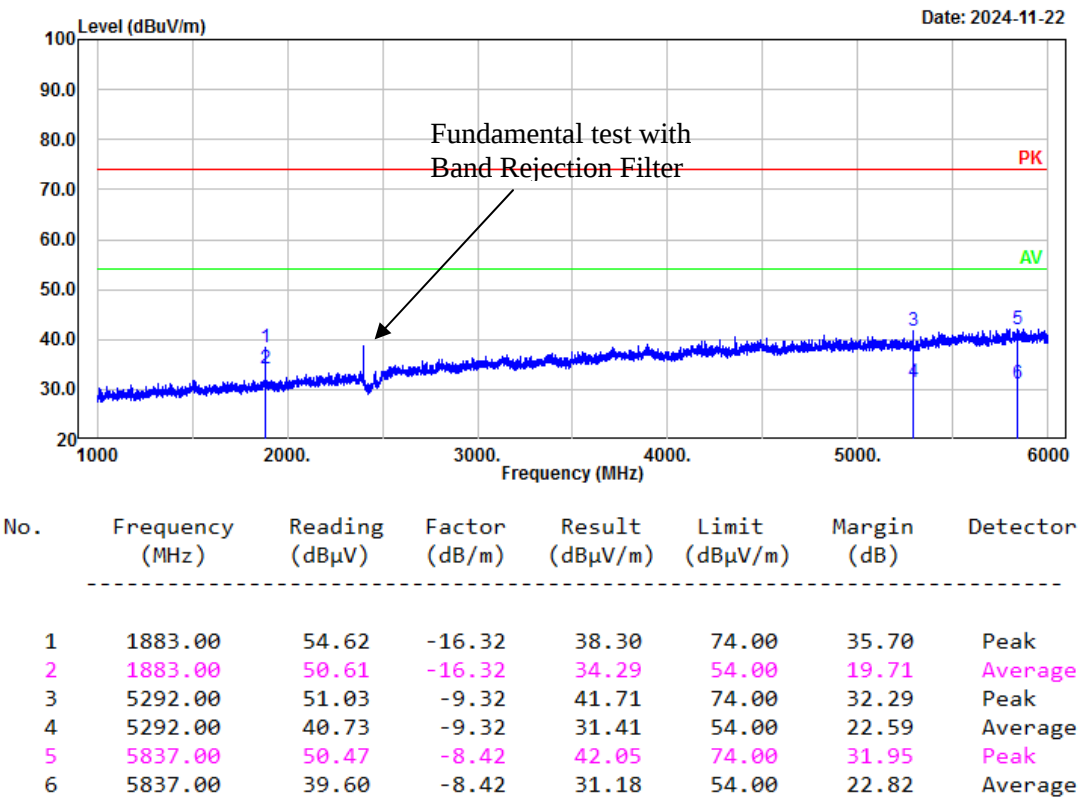
Serial No.: 2TQW-1
Tester: Nat Zhou



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1883.00	54.75	-16.32	38.43	74.00	35.57	Peak
2	1883.00	50.45	-16.32	34.13	54.00	19.87	Average
3	5598.00	51.18	-8.78	42.40	74.00	31.60	Peak
4	5598.00	40.89	-8.78	32.11	54.00	21.89	Average
5	5949.00	50.78	-8.23	42.55	74.00	31.45	Peak
6	5949.00	40.60	-8.23	32.37	54.00	21.63	Average

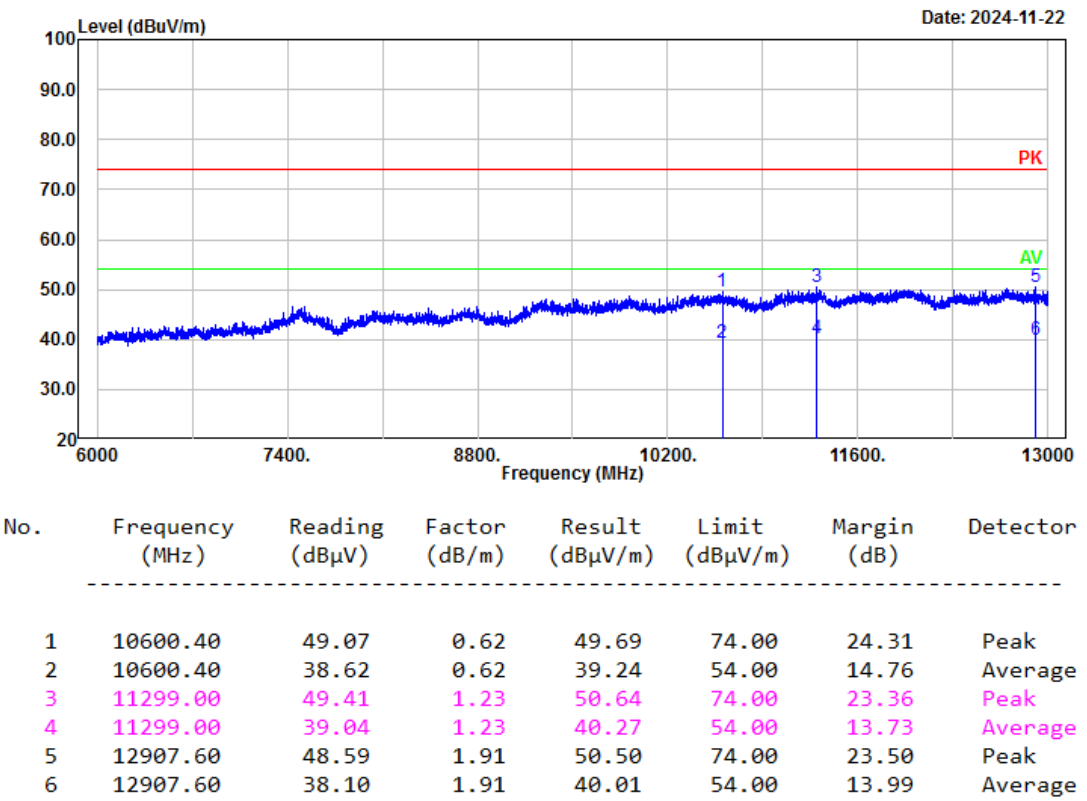
Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M1
Note: 136-174 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



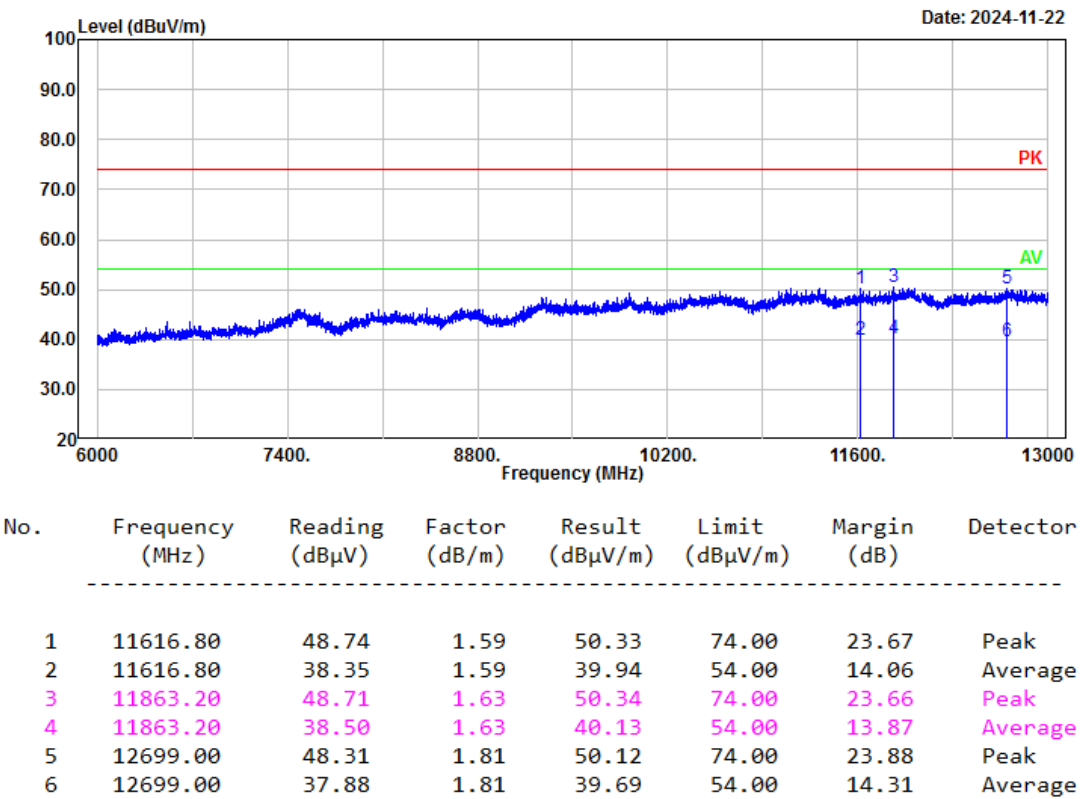
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M1
Note: 136-174 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M1
Note: 136-174 MHz

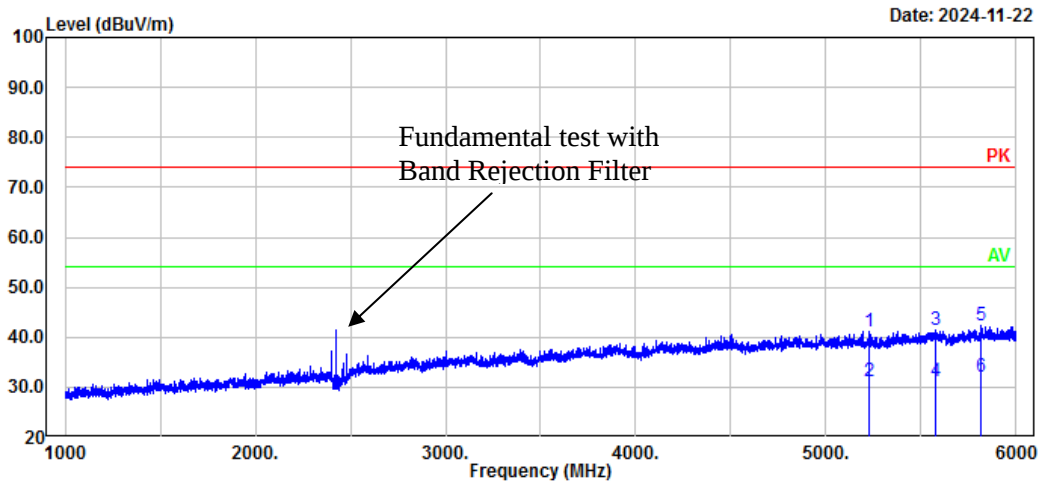
Serial No.: 2TQM-1
Tester: Nat Zhou



108.0125 MHz

Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 108.0125 MHz

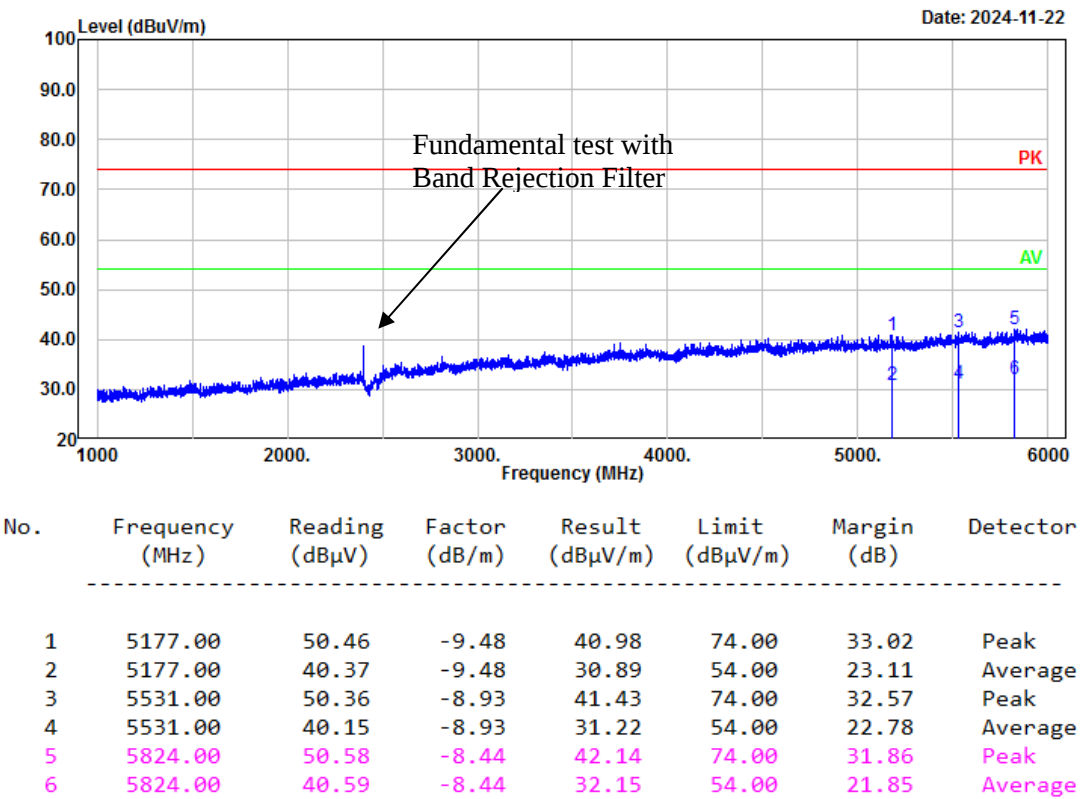
Serial No.: 2TQW-1
Tester: Nat Zhou



No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	5230.00	50.55	-9.38	41.17	74.00	32.83	Peak
2	5230.00	40.61	-9.38	31.23	54.00	22.77	Average
3	5579.00	50.14	-8.83	41.31	74.00	32.69	Peak
4	5579.00	40.11	-8.83	31.28	54.00	22.72	Average
5	5813.00	50.69	-8.46	42.23	74.00	31.77	Peak
6	5813.00	40.49	-8.46	32.03	54.00	21.97	Average

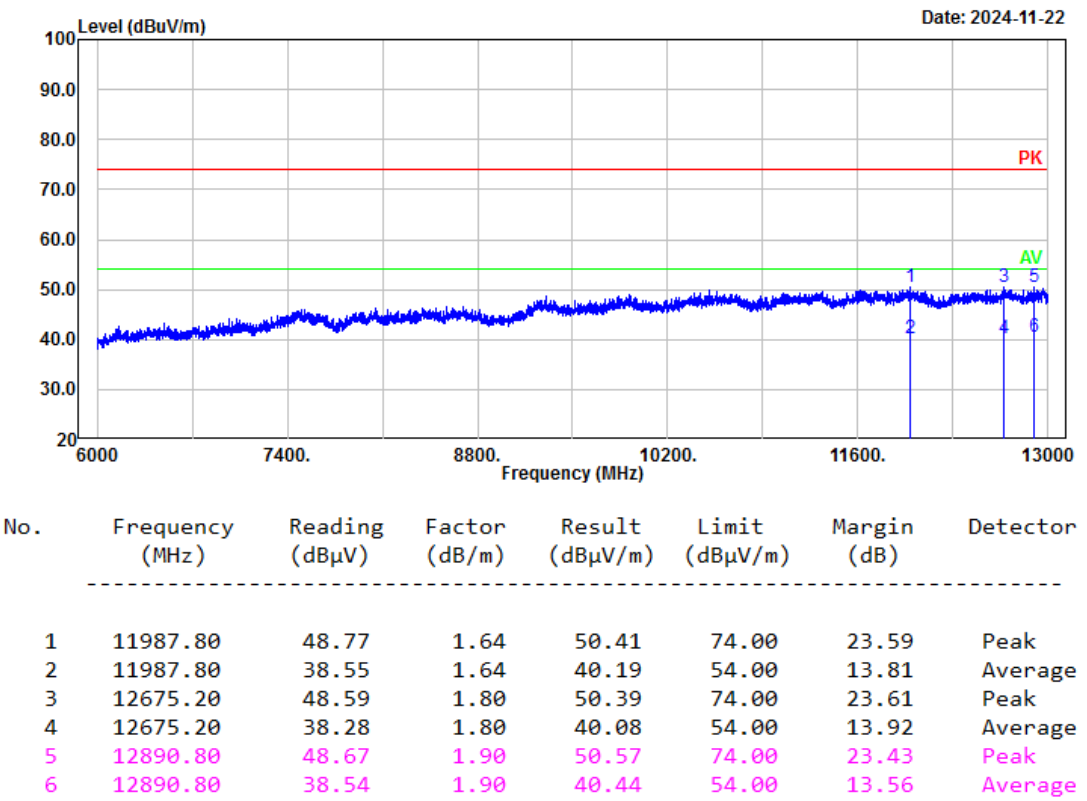
Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 108.0125 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



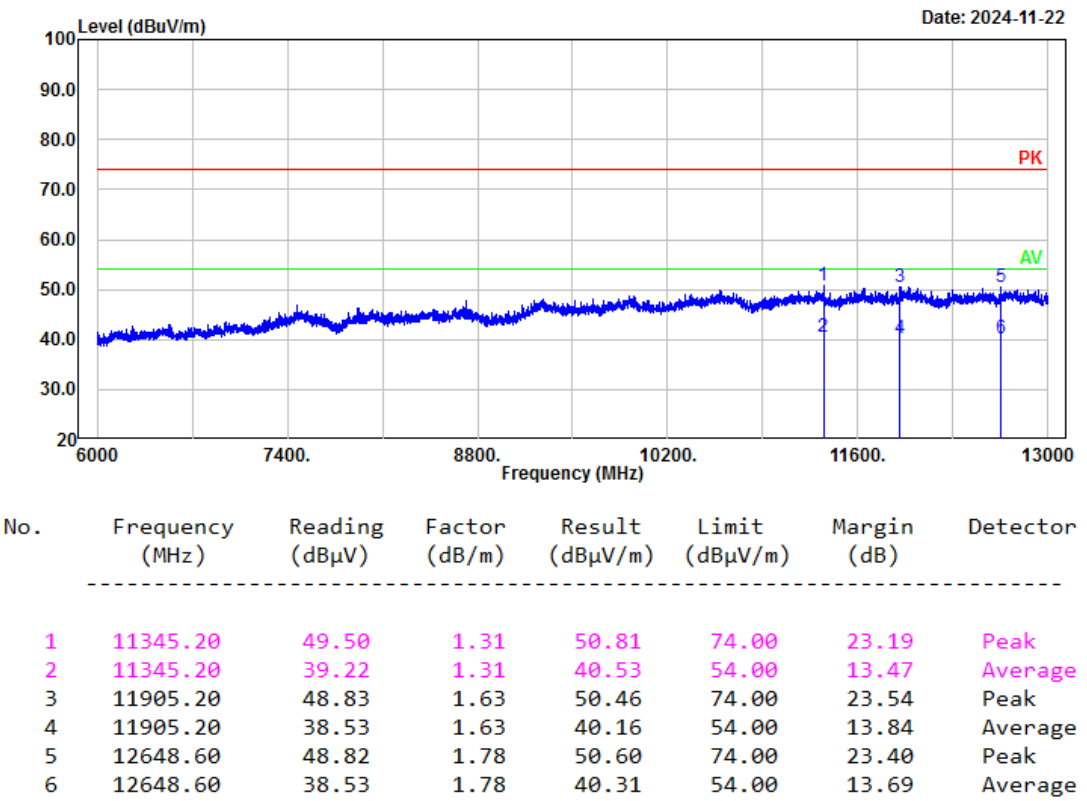
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 108.0125 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 108.0125 MHz

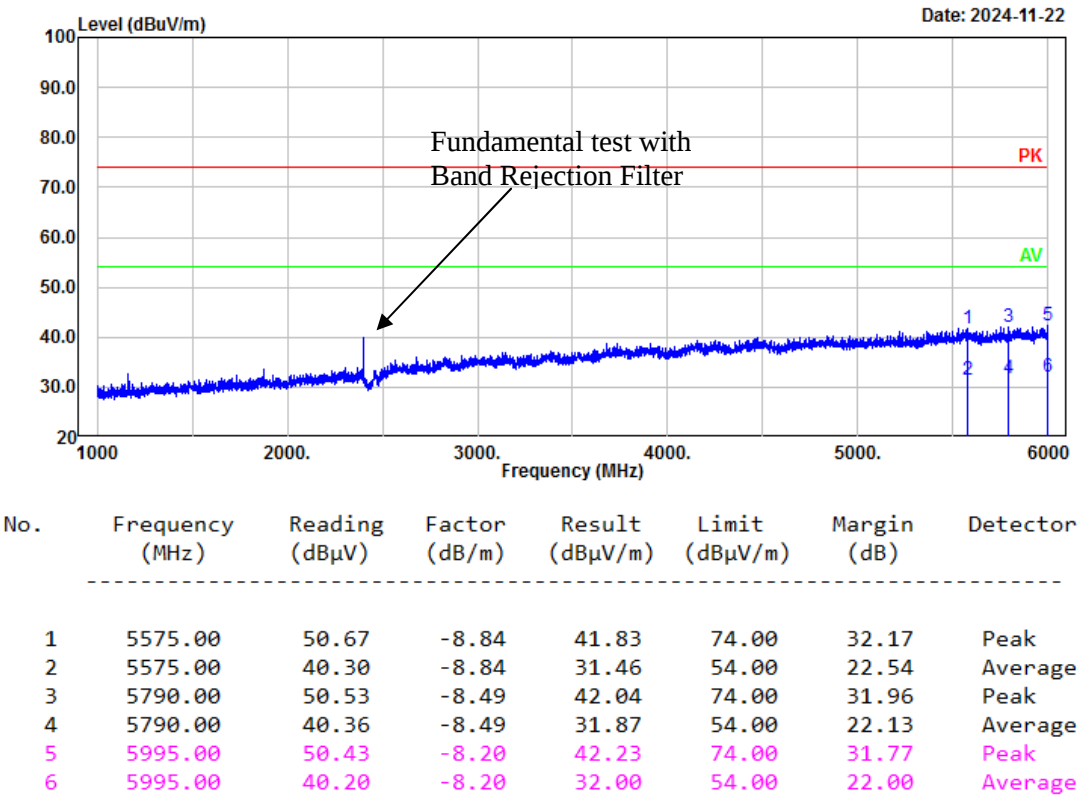
Serial No.: 2TQM-1
Tester: Nat Zhou



122MHz

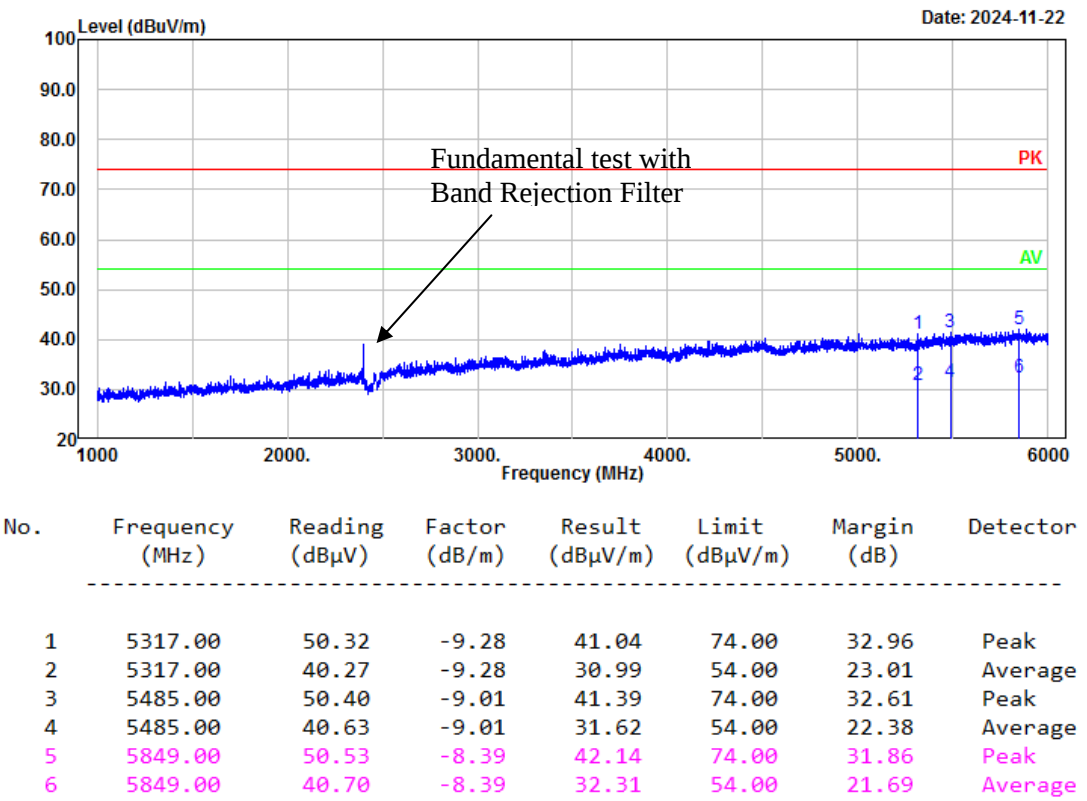
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 122 MHz

Serial No.: 2TQW-1
Tester: Nat Zhou



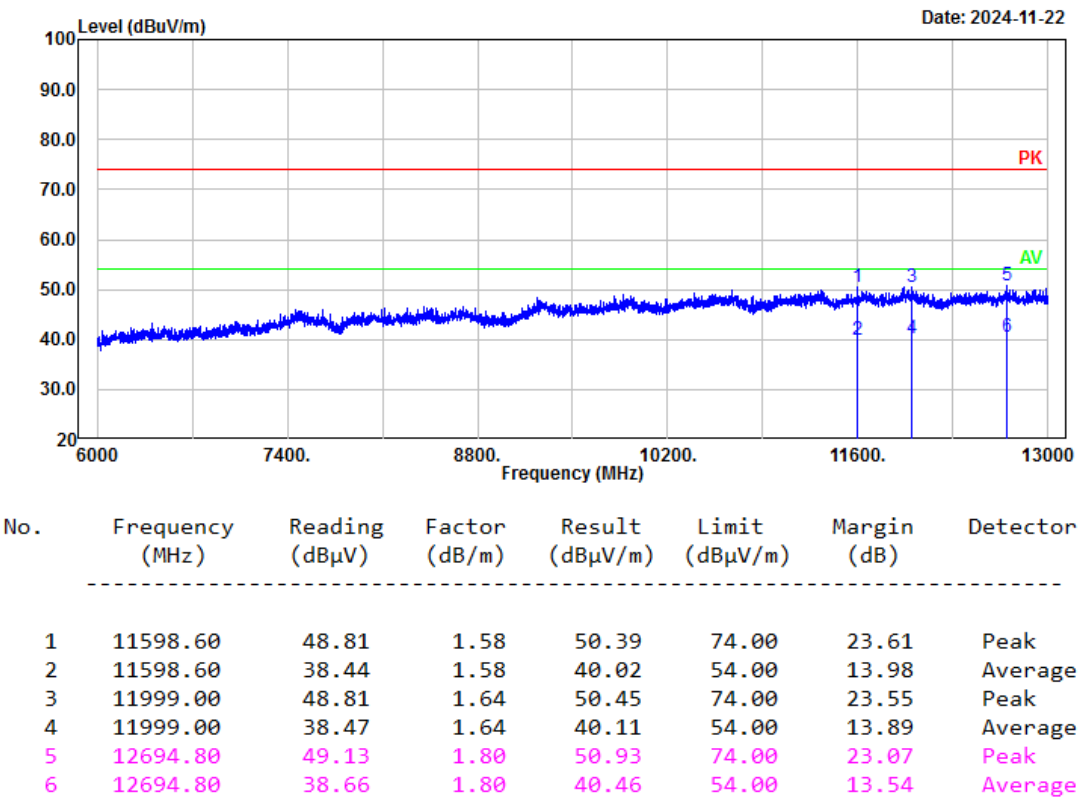
Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 122 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



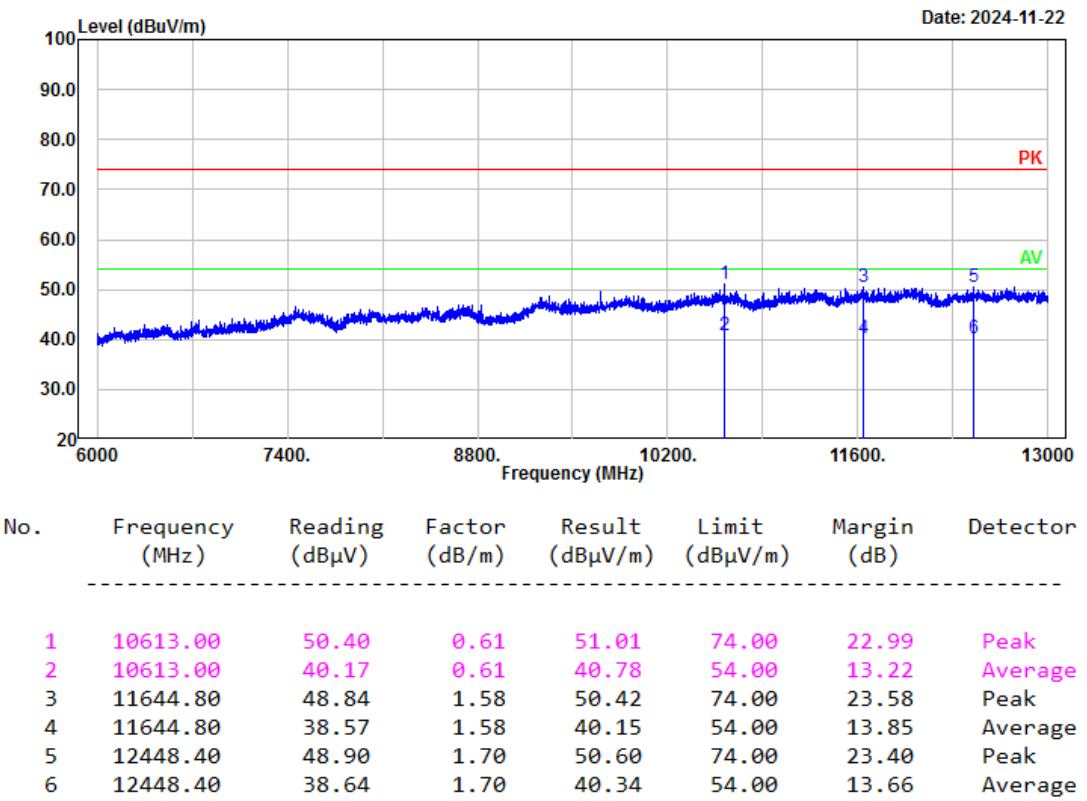
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 122 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou

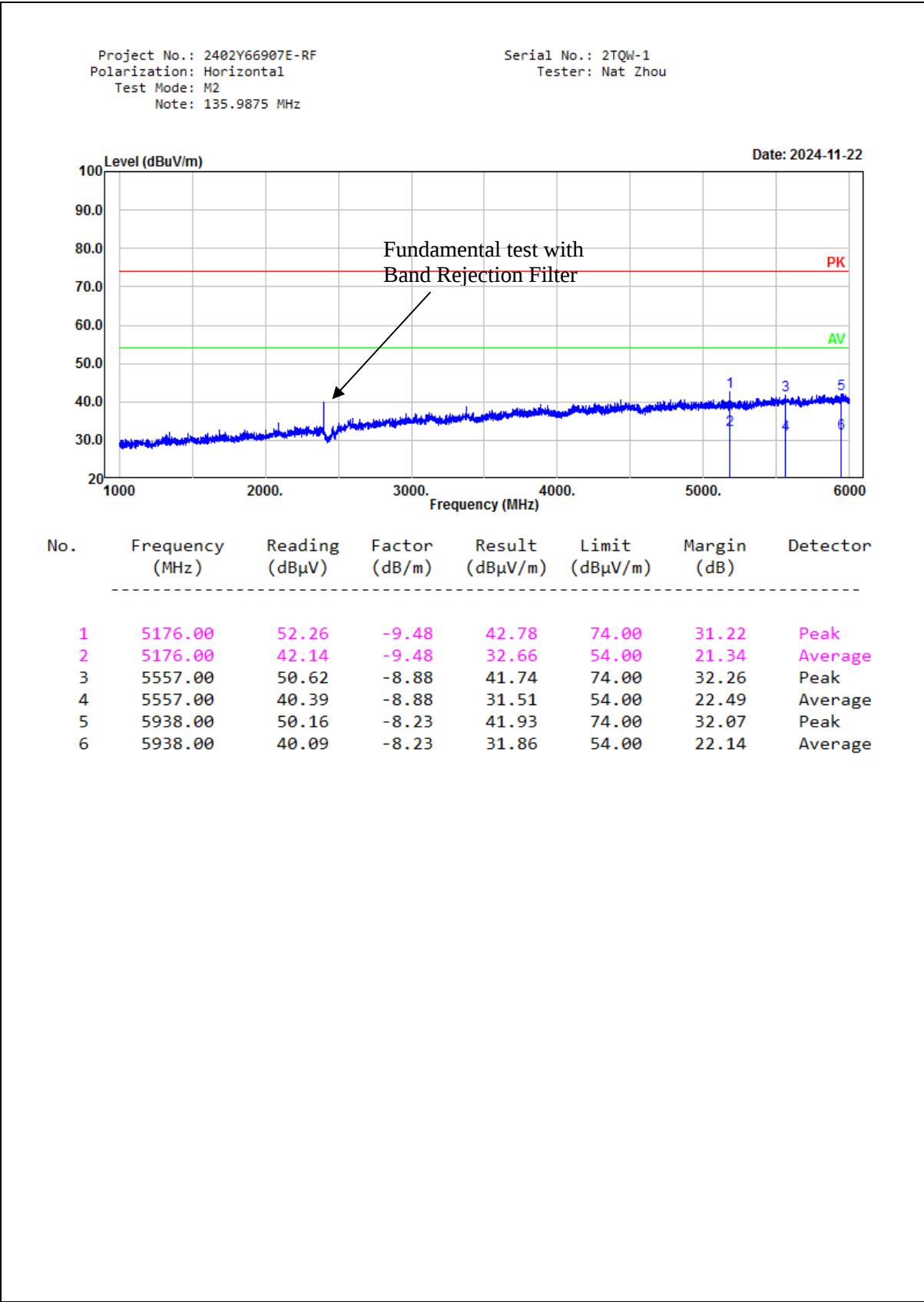


Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 122 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou

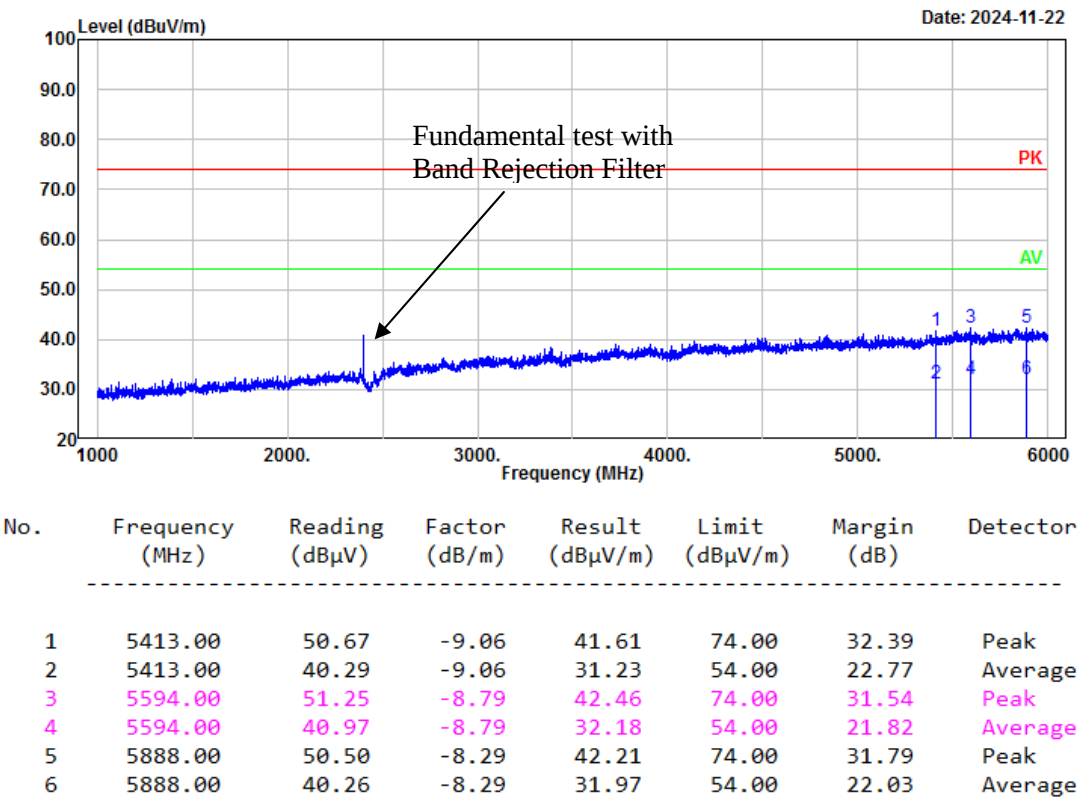


135.9875 MHz



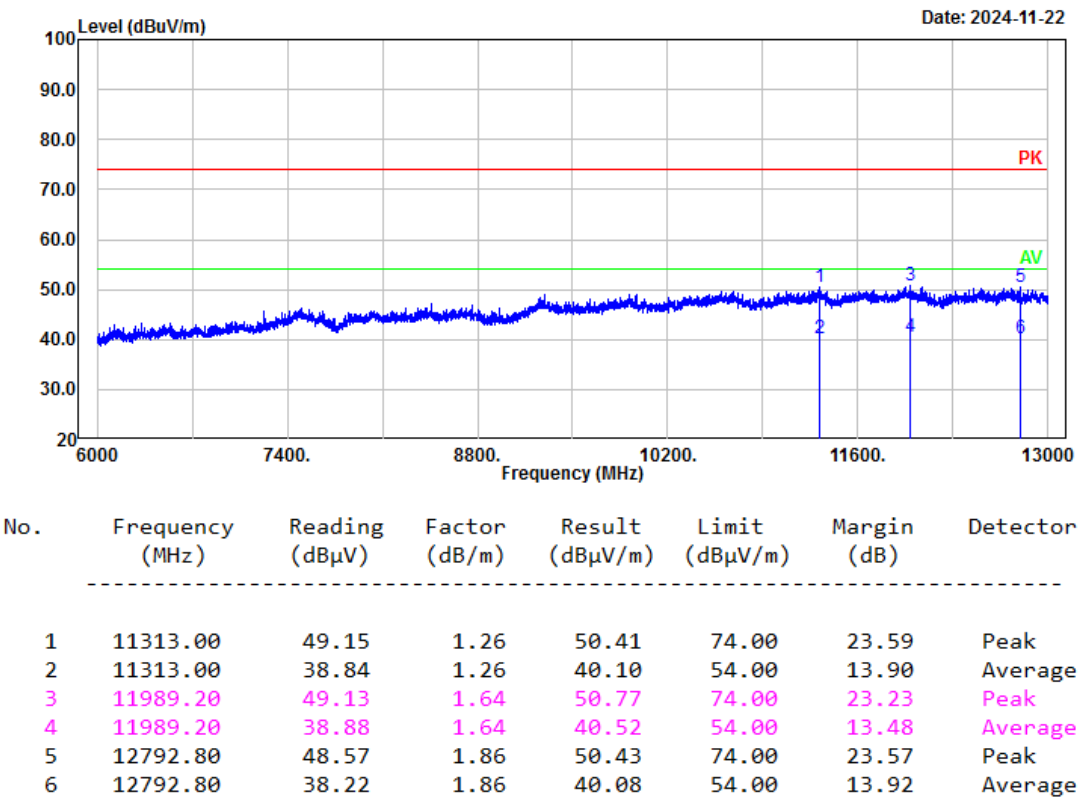
Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 135.9875 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



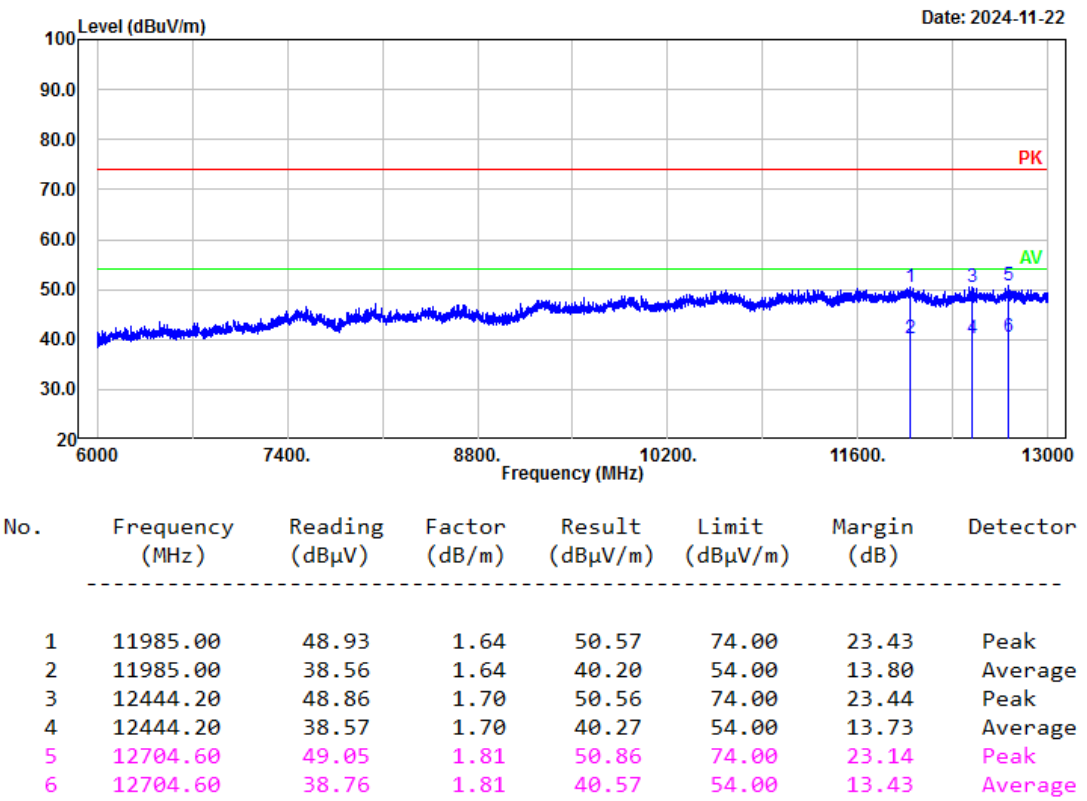
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 135.9875 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou

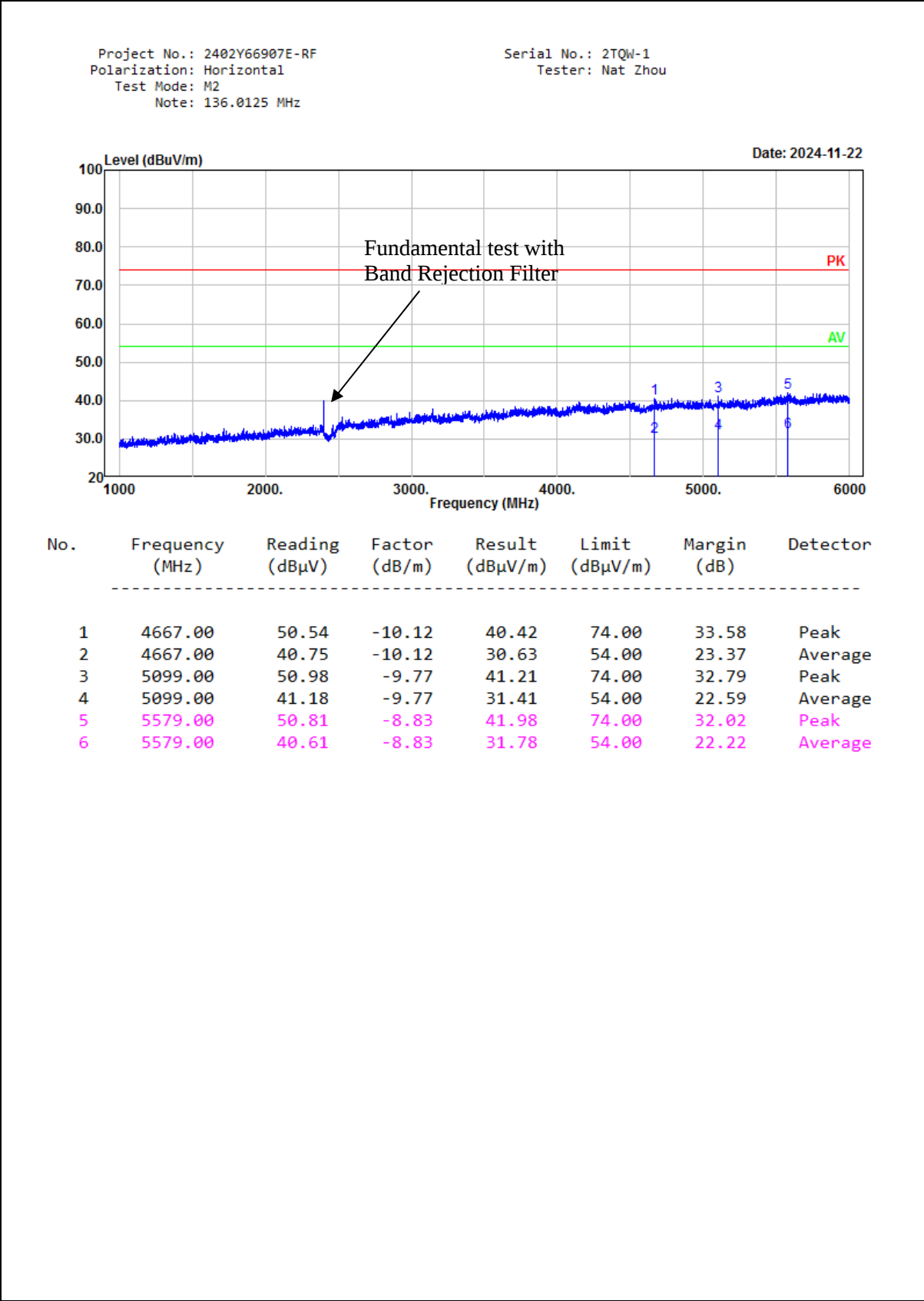


Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 135.9875 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou

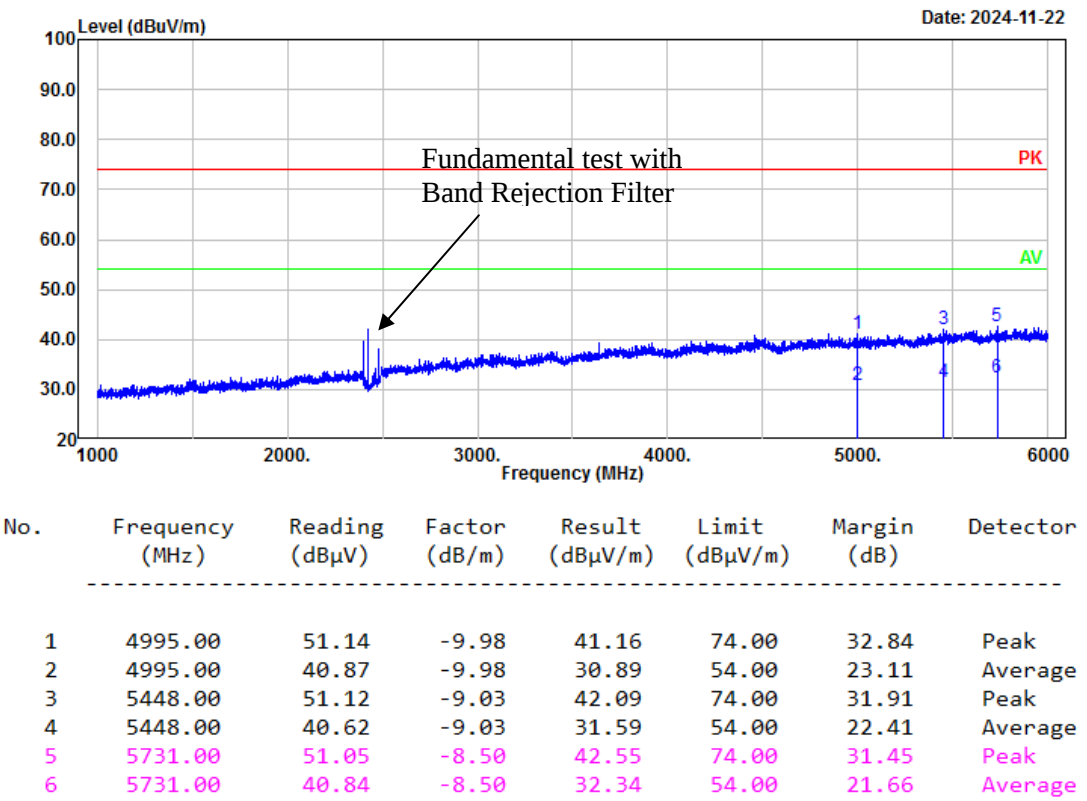


136.0125 MHz



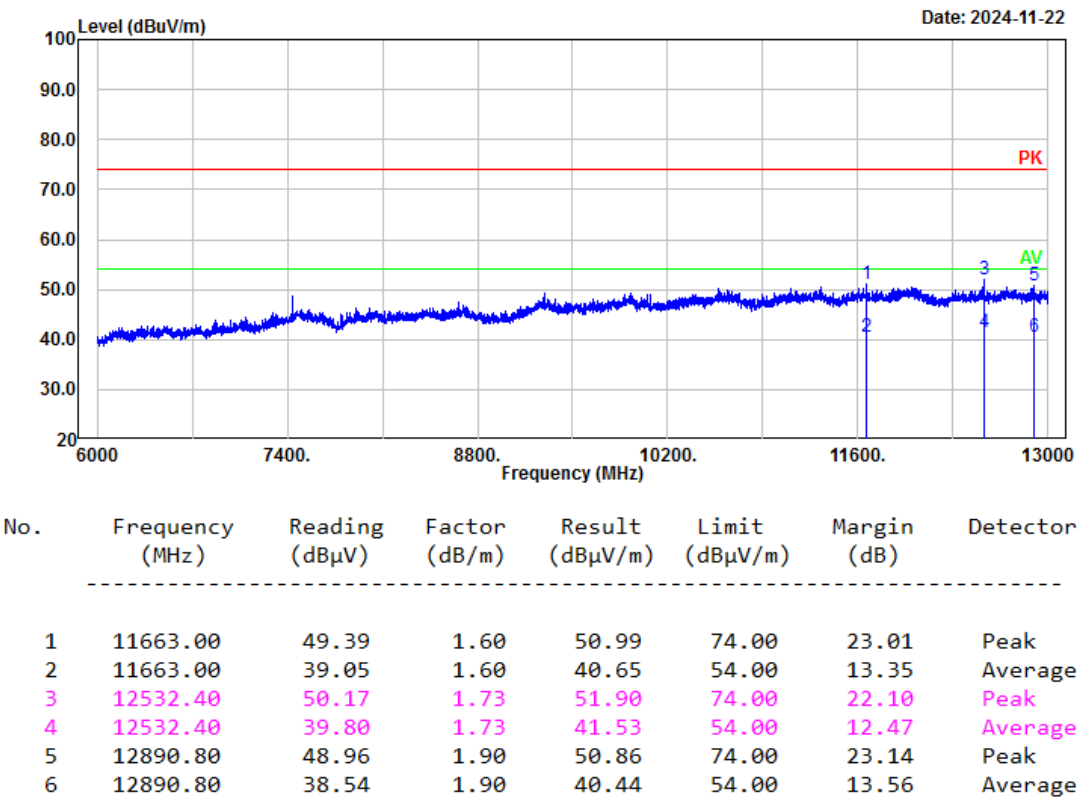
Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 136.0125 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



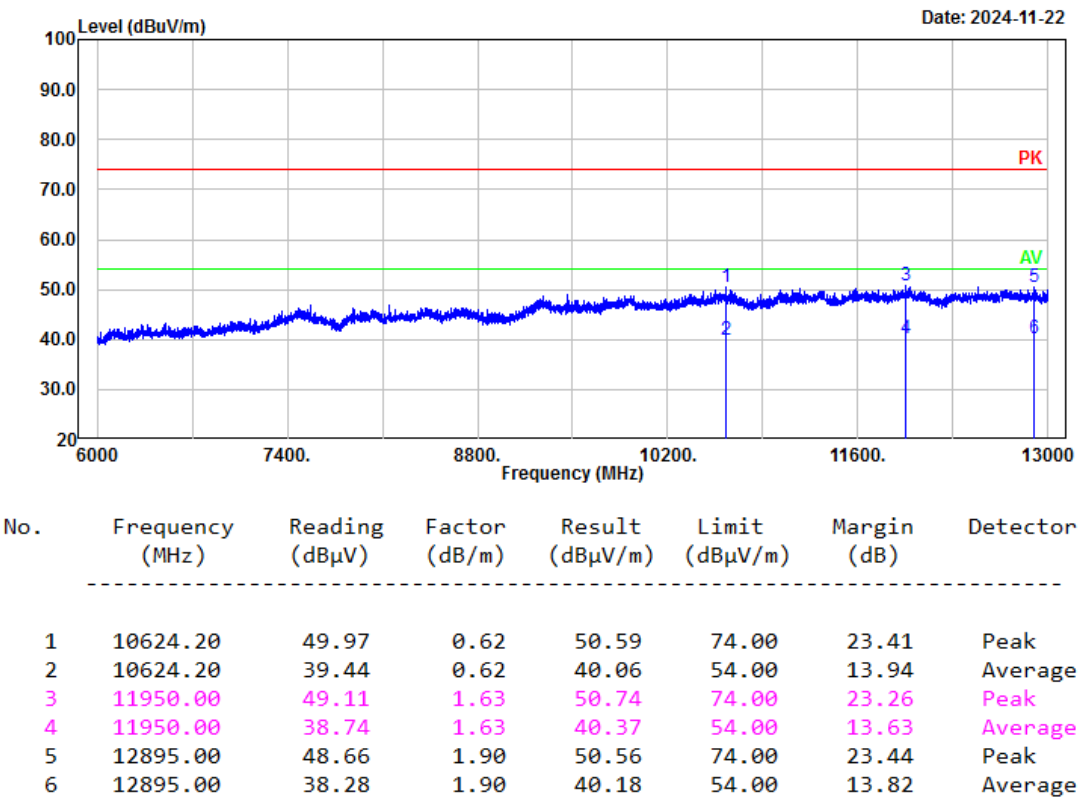
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 136.0125 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou

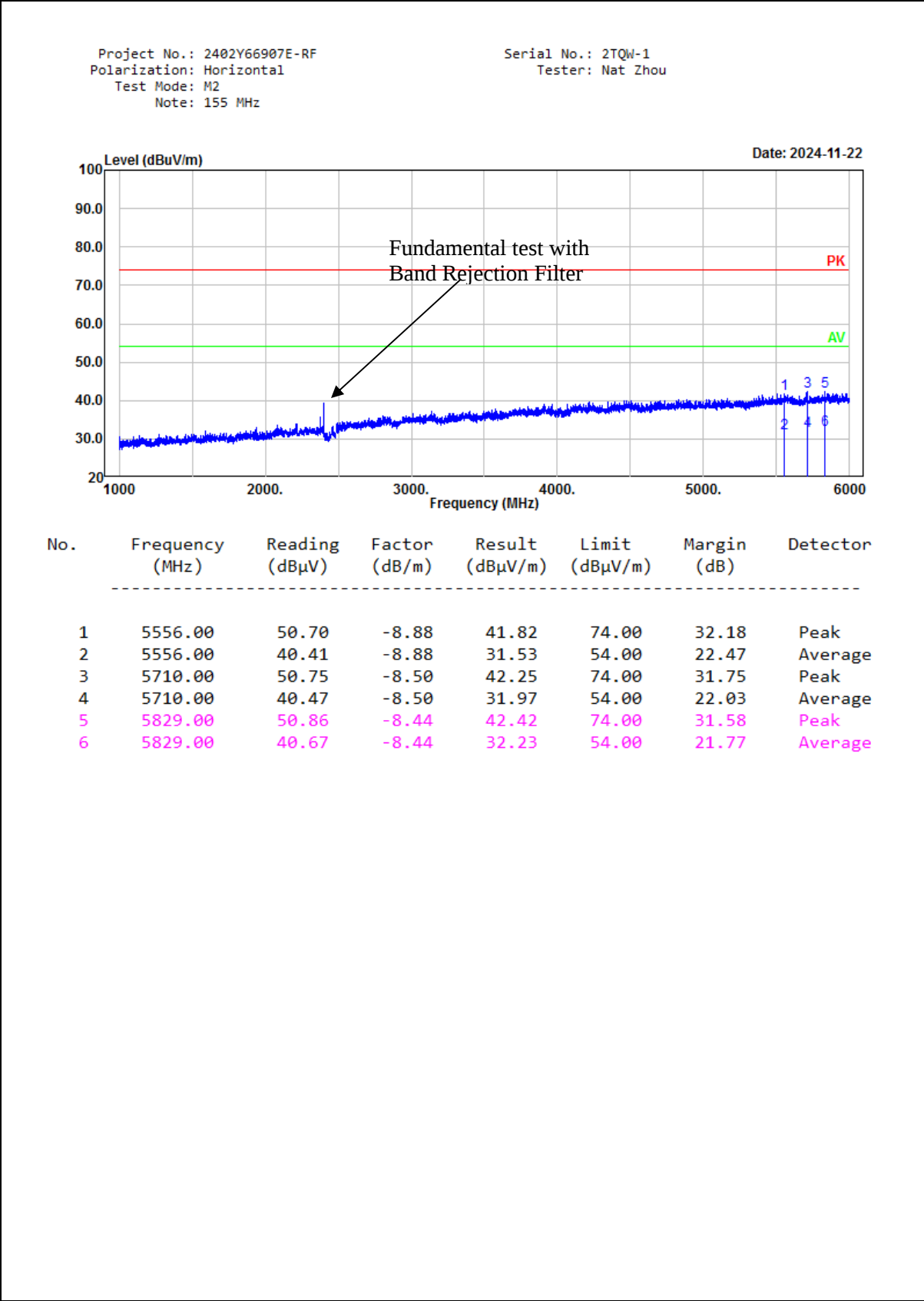


Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 136.0125 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou

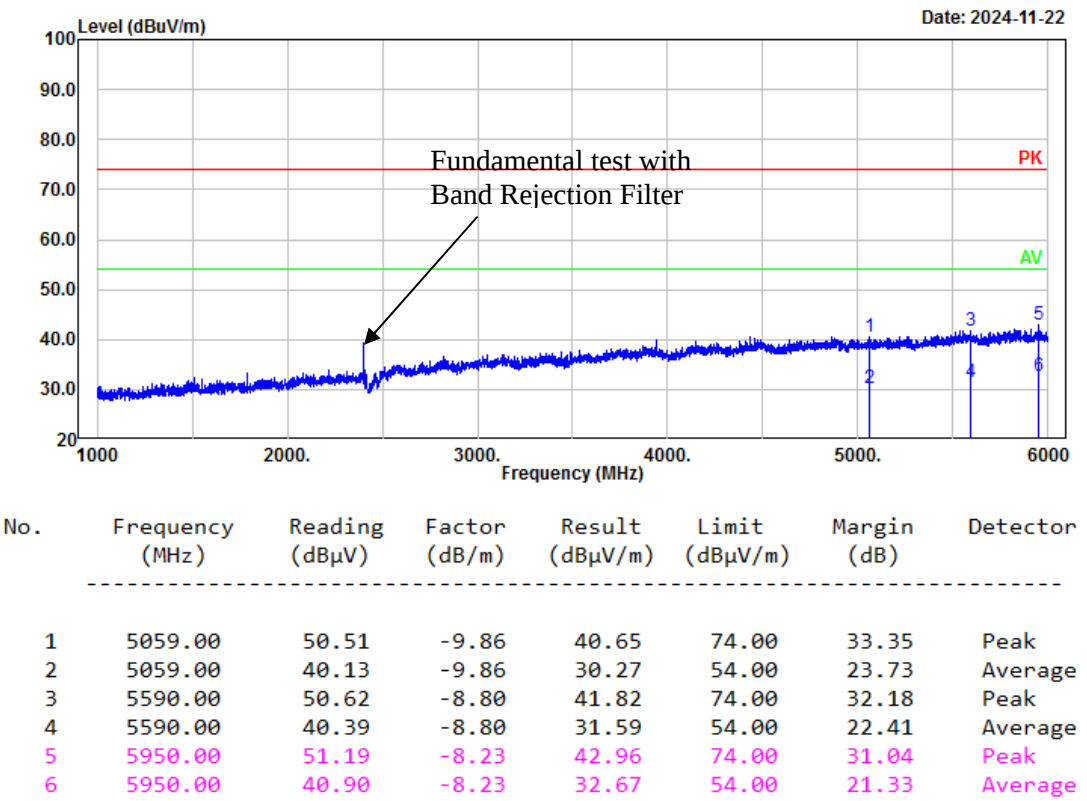


155 MHz



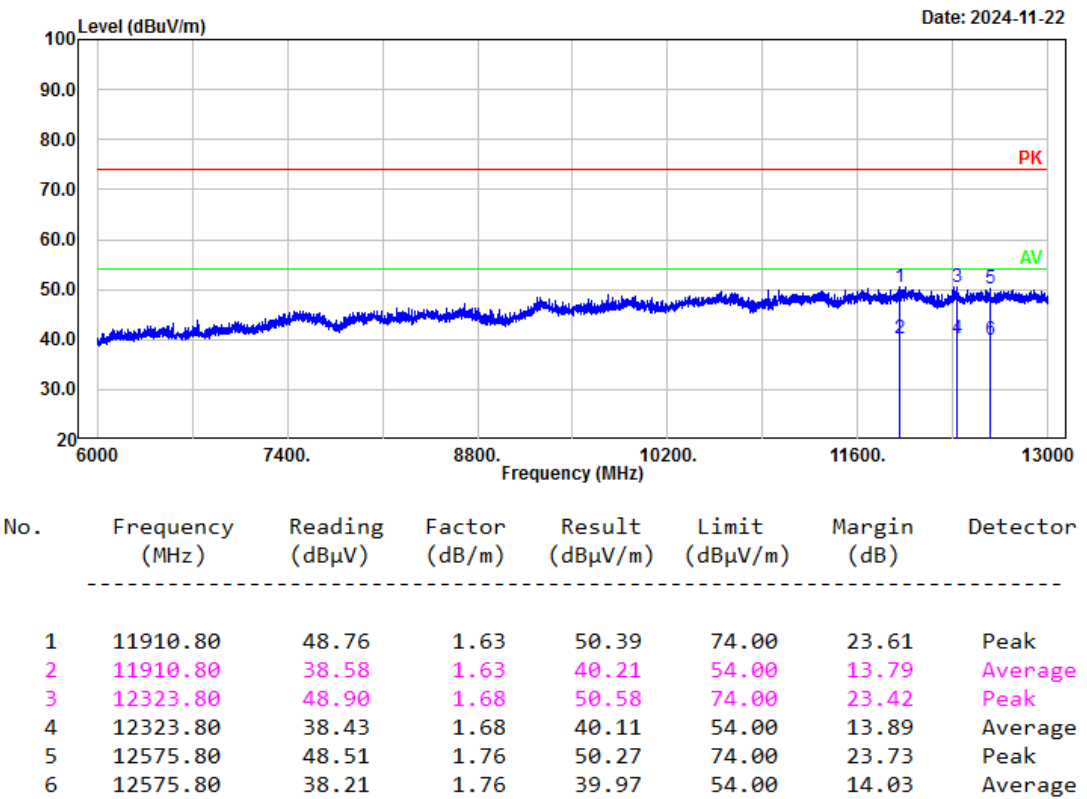
Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 155 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



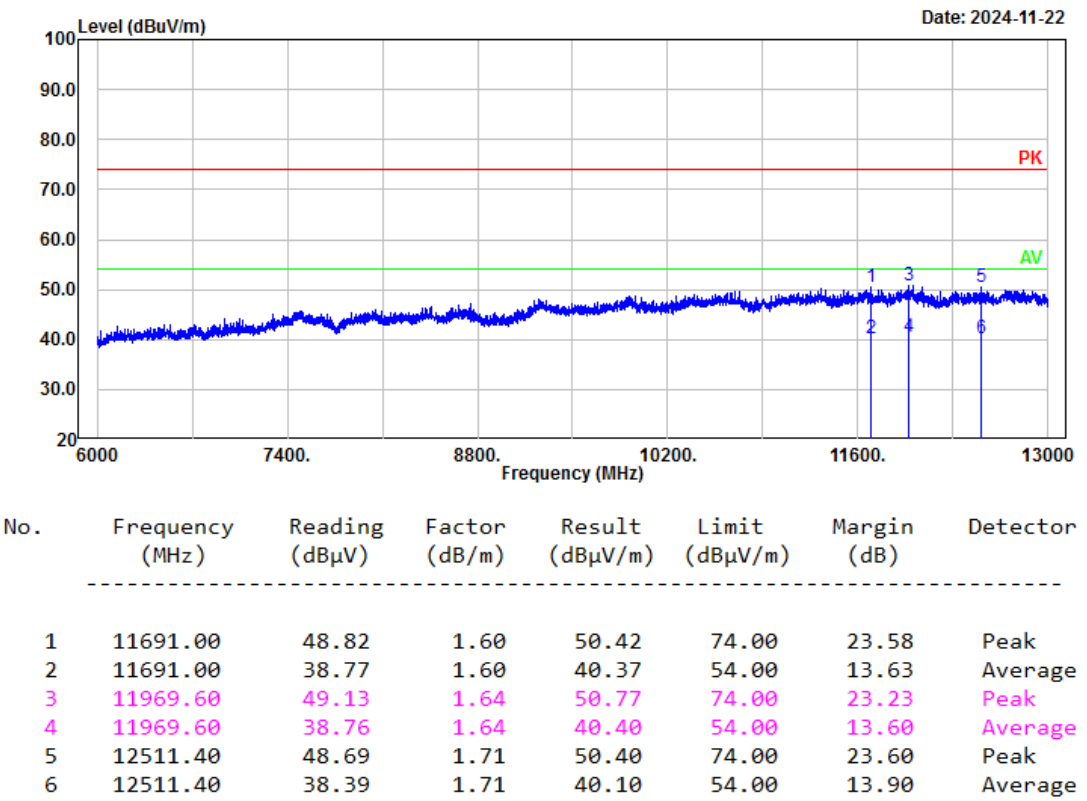
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 155 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 155 MHz

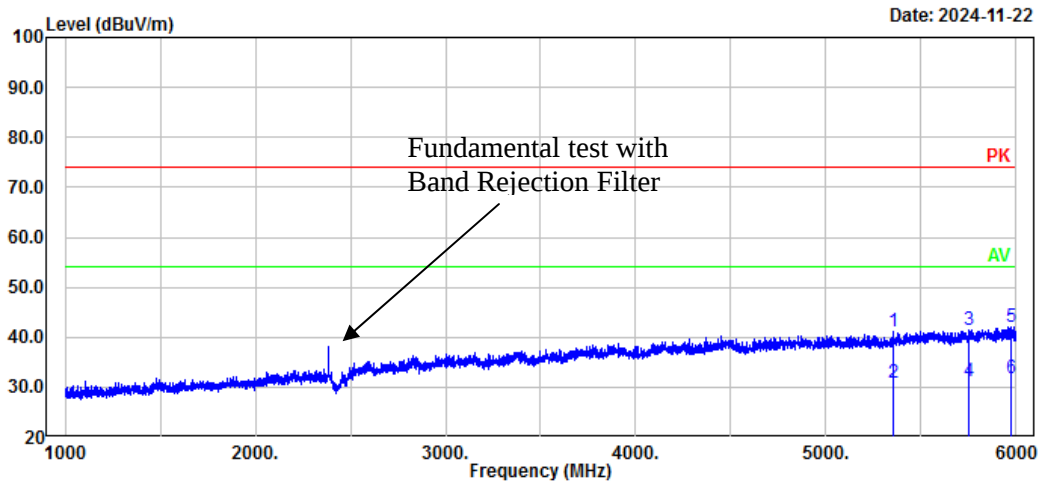
Serial No.: 2TQM-1
Tester: Nat Zhou



173.9875 MHz

Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 173.9875 MHz

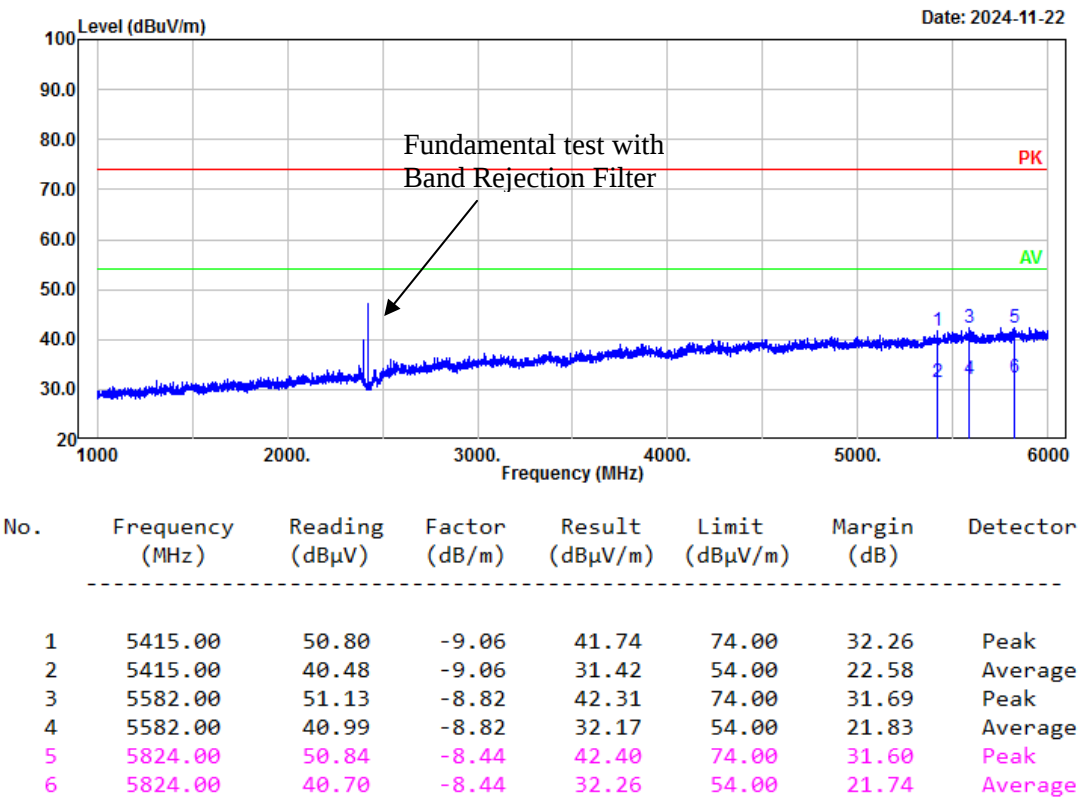
Serial No.: 2TQW-1
Tester: Nat Zhou



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	5352.00	50.32	-9.19	41.13	74.00	32.87	Peak
2	5352.00	40.08	-9.19	30.89	54.00	23.11	Average
3	5752.00	49.95	-8.50	41.45	74.00	32.55	Peak
4	5752.00	39.69	-8.50	31.19	54.00	22.81	Average
5	5973.00	50.35	-8.21	42.14	74.00	31.86	Peak
6	5973.00	40.08	-8.21	31.87	54.00	22.13	Average

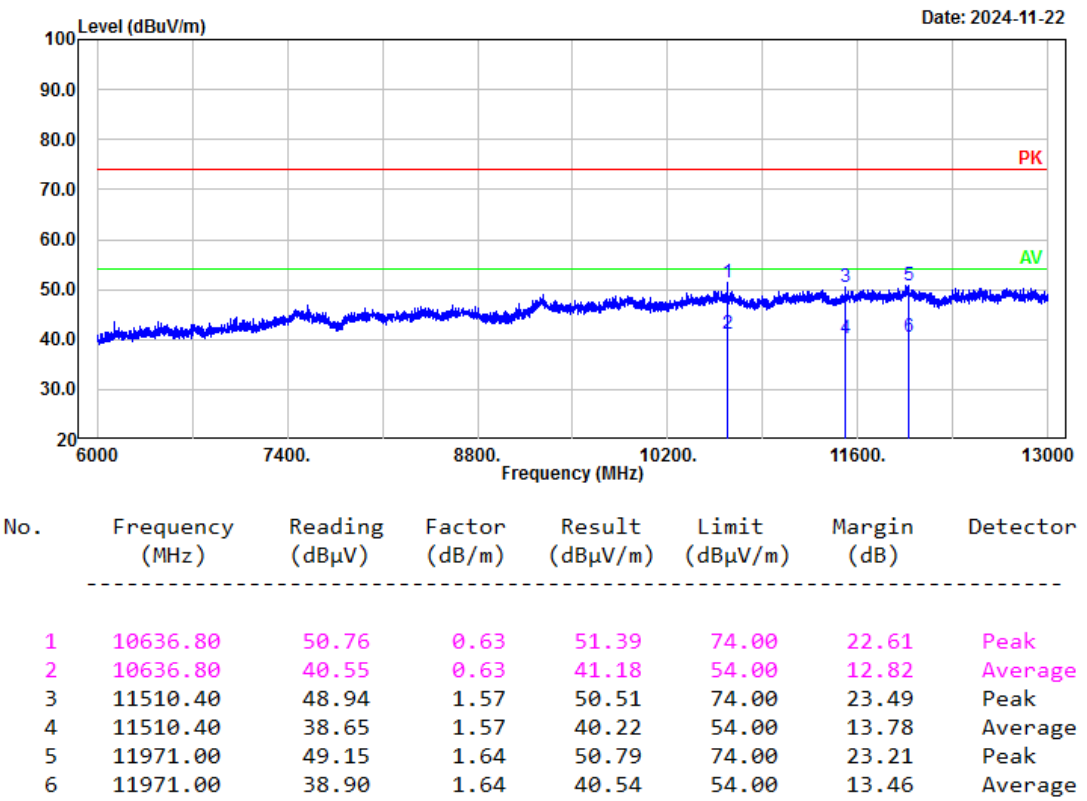
Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 173.9875 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



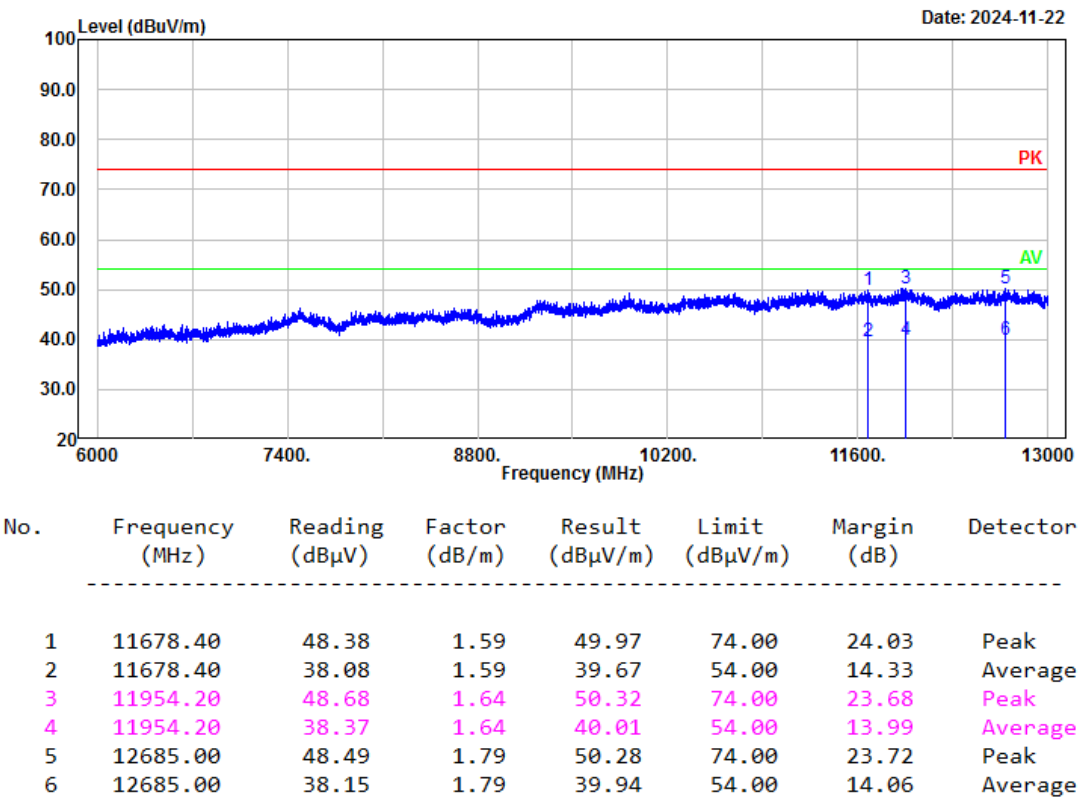
Project No.: 2402Y66907E-RF
Polarization: Horizontal
Test Mode: M2
Note: 173.9875 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



Project No.: 2402Y66907E-RF
Polarization: Vertical
Test Mode: M2
Note: 173.9875 MHz

Serial No.: 2TQM-1
Tester: Nat Zhou



4.3 Scanning Receivers and Frequency Converters Used with Scanning Receivers

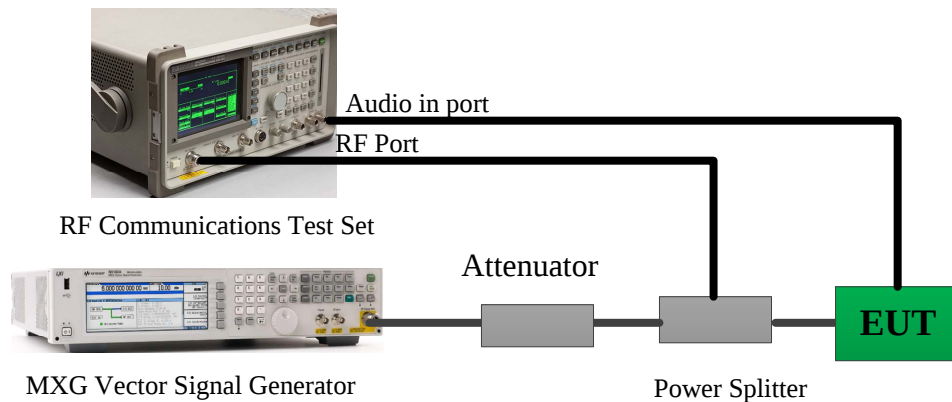
4.3.1 Applicable Standard

FCC §15.121(b).

(b) Except as provided in paragraph (c) of this section, scanning receivers shall reject any signals from the Cellular Radiotelephone Service frequency bands that are 38 dB or lower based upon a 12 dB SINAD measurement, which is considered the threshold where a signal can be clearly discerned from any interference that may be present.

4.3.2 Test Procedure

1. Connected the EUT as the below block diagram;



2. Apply a signal to the EUT antenna port at lowest, middle, highest channel frequencies of the operating band;
3. Adjust the audio output level of the EUT to its rated value with the distortion less than 10%;
4. Adjust the 8920 output power to produce 12 dB SINAD without the audio output power dropping by more than 3 dB; These output level of the 8920 at each channel frequency is the sensitivity of the EUT;
5. Select the lowest or worst case sensitivity level for all of the bands as the reference sensitivity;
6. Adjust the Signal Generator output to a level of +60 dB above the reference sensitivity obtained in step 5 and its frequency to the frequency point in the Cellular Band;
7. Set the EUT squelch to threshold, the signal required to open the squelch must be lower than the reference sensitivity level;
8. Set the EUT in a scanning mode and allow it to scan through its complete receiving range;
9. If the EUT un-squelched or stopped on any frequency, receiving at this frequency, then adjust the signal generator output level until 12 dB SINAD is produced, this level is the spurious value and the difference between the reference sensitivity and the spurious value is the rejection ratio and must be at least 38 dB;
10. Repeat above procedure at the frequencies 824, 836, 849 MHz for the mobile band, and 869, 881.5 and 894 MHz for the Cellular Base Band.

4.3.3 Scanning Receivers and Frequency Converters Used with Scanning Receivers

Serial Number:	2TQW-1	Test Date:	2024/11/26
Test Site:	RF	Test Mode:	Scanning
Tester:	JOJO Zhou	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	24.6	Relative Humidity: (%)	35	ATM Pressure: (kPa)	102.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-SJSJ-50	C-0060-03	2024/6/1	2025/5/31
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Unknown	Coaxial Cable	C-NJNJ-50	4221000000500(DS)	2024/1/2	2025/1/1
HP	RF Communications Test Set	8920A	3438A05201	2024/10/17	2025/10/16
Agilent	MXG Vector Signal Generator	N5182B	MY51350142	2024/8/26	2025/8/25
Mini-Circuits	Coaxial Power Splitters & Combiner	ZFRSC-183-S+	SF448201614	2024/2/25	2025/2/24

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

Scanning Frequency Range (MHz)	Test Frequency (MHz)	Measurement Result (dB)	Limit (dB)
108-136	824, 836, 849, 869, 881.5, 894	46	>38
136-174	824, 836, 849, 869, 881.5, 894	45	>38

4.4 Antenna Power Conduction Limits for Receivers

4.4.1 Applicable Standard

FCC§15.111.

(a) In addition to the radiated emission limits, receivers that operate (tune) in the frequency range 30 to 960 MHz and CB receivers that provide terminals for the connection of an external receiving antenna may be tested to demonstrate compliance with the provisions of § 15.109 with the antenna terminals shielded and terminated with a resistive termination equal to the impedance specified for the antenna, provided these receivers also comply with the following: With the receiver antenna terminal connected to a resistive termination equal to the impedance specified or employed for the antenna, the power at the antenna terminal at any frequency within the range of measurements specified in § 15.33 shall not exceed 2.0 nanowatts.

Test Procedure

EUT antenna port connected to a spectrum analyzer, the traces were recorded as shown on the data pages.

4.4.2 Antenna Power Conduction Limits for Receivers

Serial Number:	2TQW-1	Test Date:	2025/1/15
Test Site:	RF	Test Mode:	Scanning, Receiving
Tester:	Stu Song	Test Result:	Pass

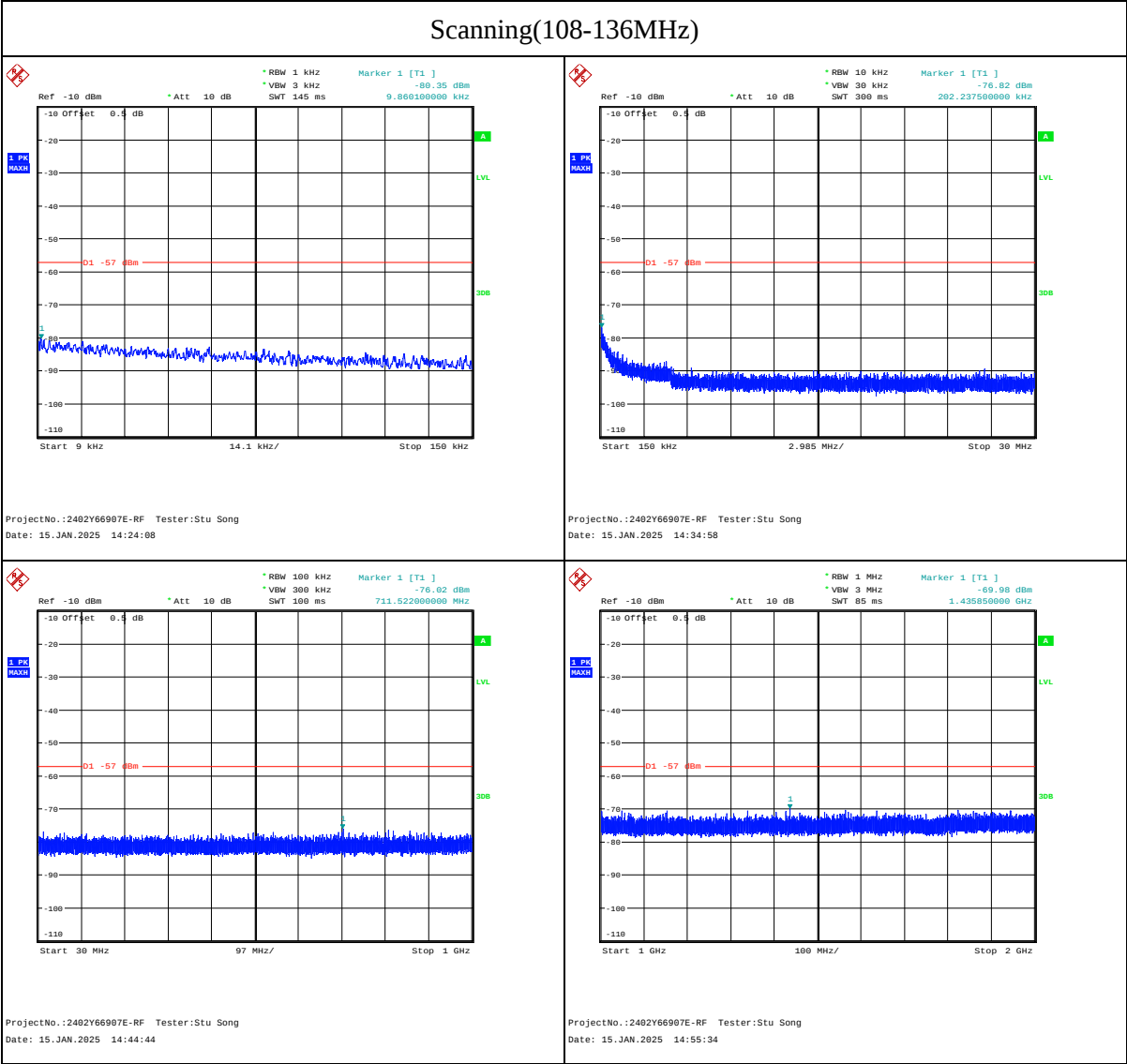
Environmental Conditions:					
Temperature: (°C)	21.7	Relative Humidity: (%)	39	ATM Pressure: (kPa)	101.7

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Mode: Scanning



ProjectNo.:2402Y66907E-RF

Tester:Stu Song

Date: 15.JAN.2025 14:24:08

ProjectNo.:2402Y66907E-RF

Tester:Stu Song

Date: 15.JAN.2025 14:34:58

ProjectNo.:2402Y66907E-RF

Tester:Stu Song

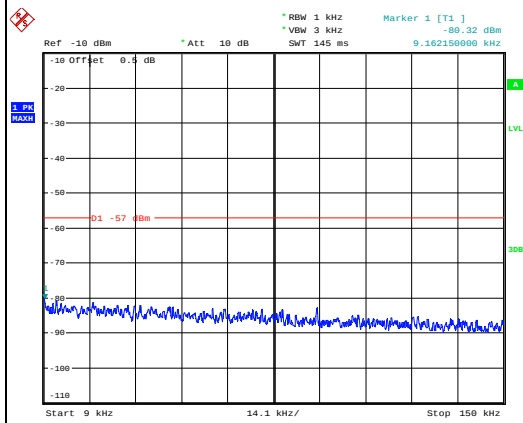
Date: 15.JAN.2025 14:44:44

ProjectNo.:2402Y66907E-RF

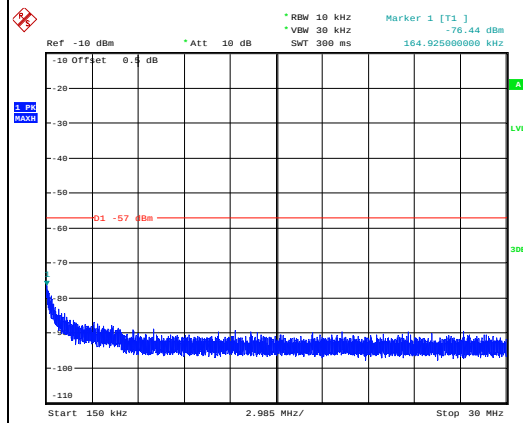
Tester:Stu Song

Date: 15.JAN.2025 14:55:34

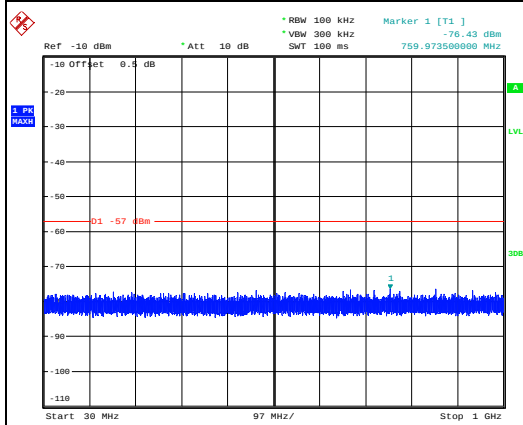
Scanning(136-174MHz)



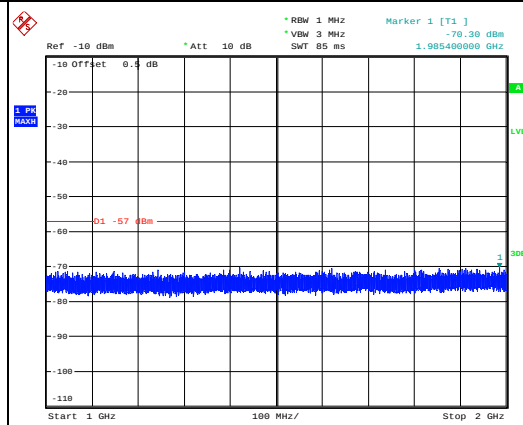
ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 14:25:13



ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 14:36:07

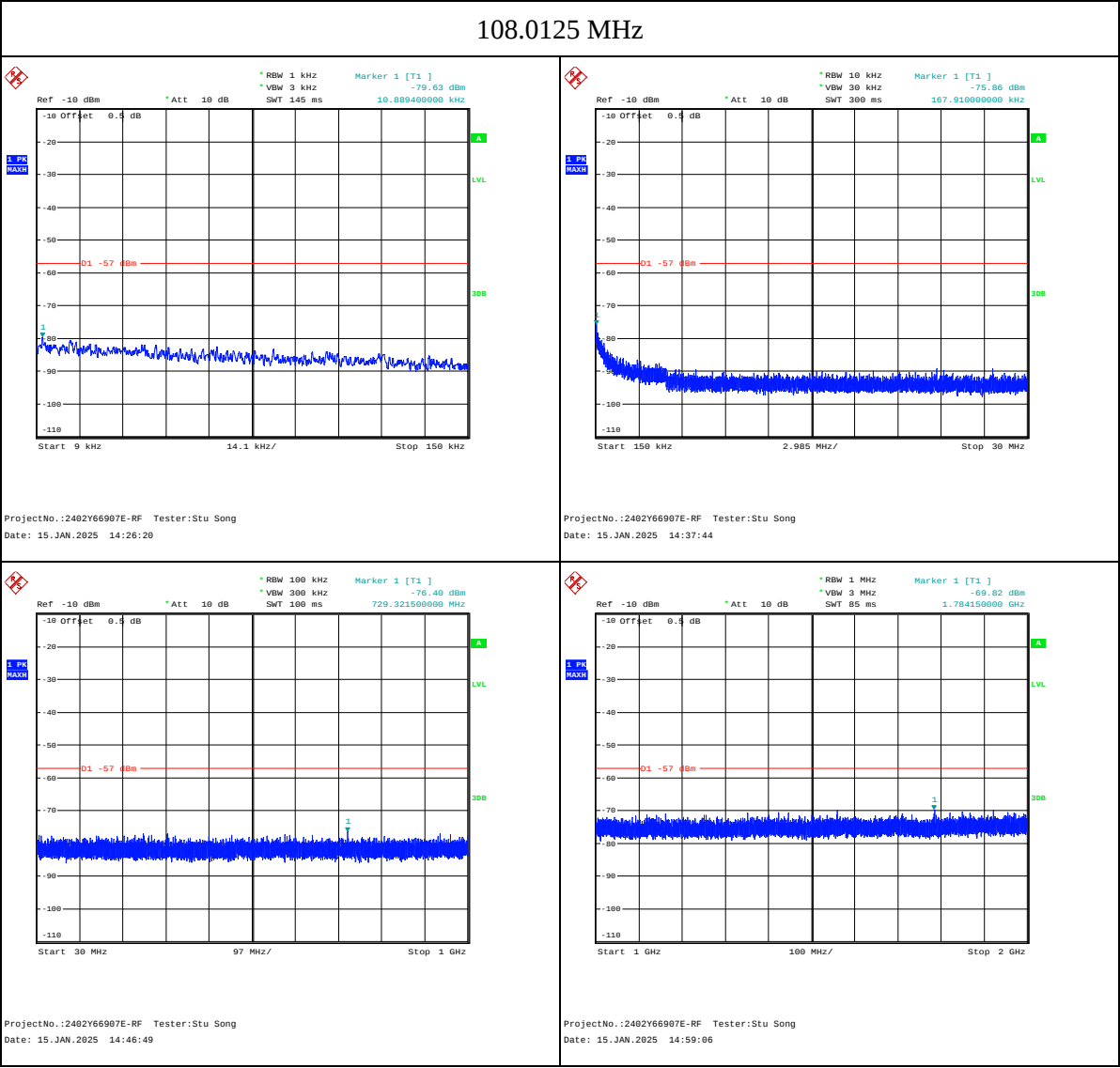


ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 14:45:28

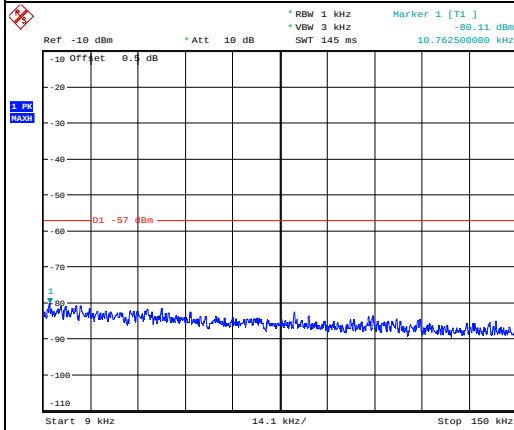


ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 14:57:53

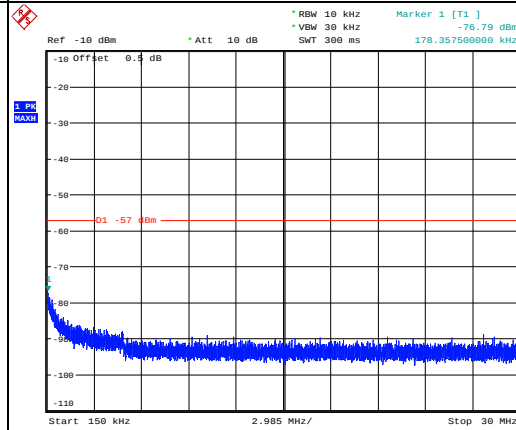
Test Mode: *Receiving*



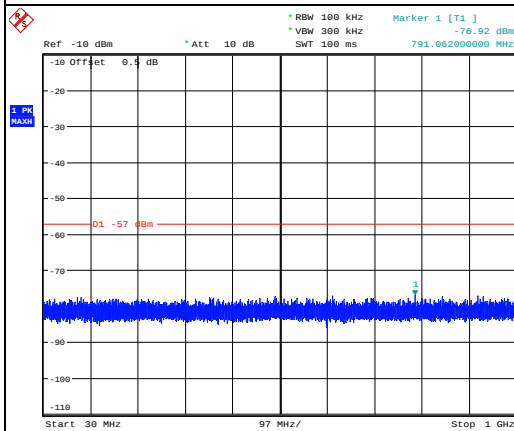
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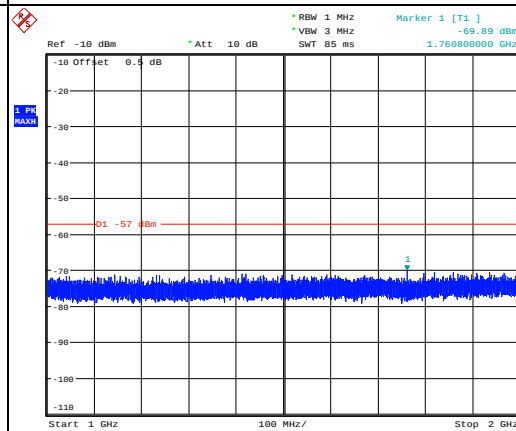
ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 14:29:50



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Date: 15.JAN.2025 14:42:01

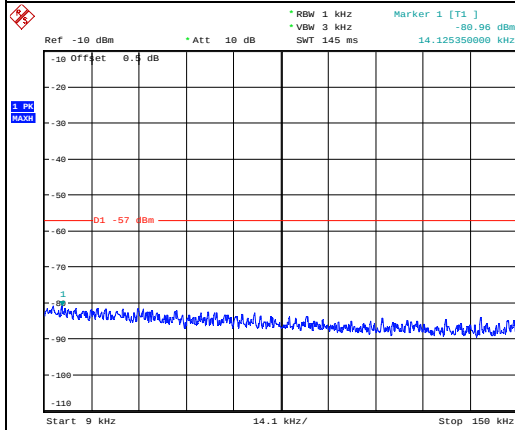


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Date: 15.JAN.2025 14:49:32

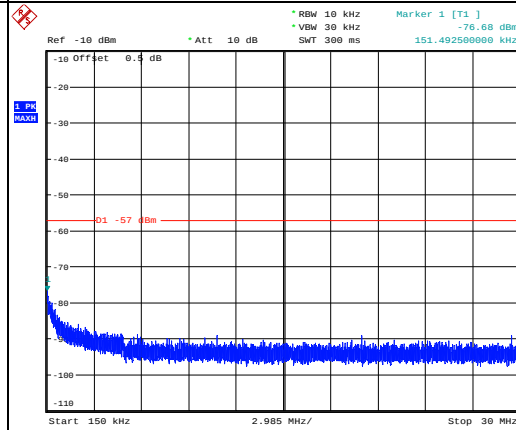


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Date: 15.JAN.2025 15:01:54

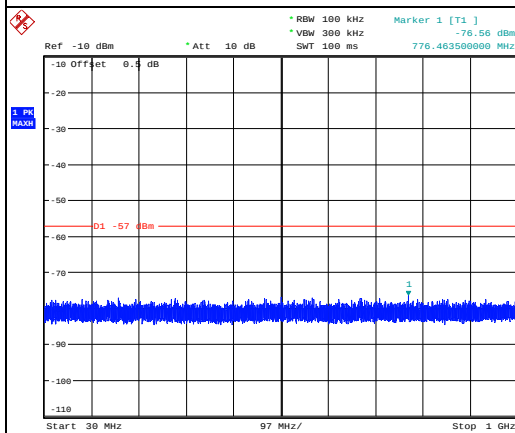
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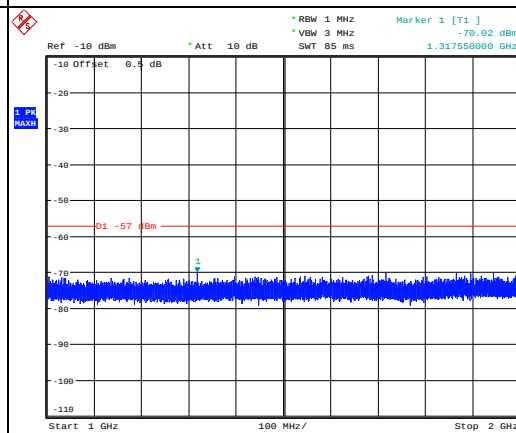
ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 14:33:27



ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 14:43:55



ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 14:51:02



ProjectNo.:2402Y66907E-RF Tester:Stu Song
Date: 15.JAN.2025 15:06:08

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the attachment 2402Y66907E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and
2402Y66907E-RF-INP EUT INTERNAL PHOTOGRAPHS

EXHIBIT B - TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2402Y66907E-RF-00C-TSP TEST SETUP PHOTOGRAPHS.

******* END OF REPORT *******