

TEST REPORT

Applicant Name: Dongguan Weisheng Communication Technology Co., Ltd
Address: Room 601, Building 1, No. 8 Qingfeng South Road, Tangxia Town, Dongguan City, Guangdong Province, China
Report Number: 2501Q33242E-EM-00
FCC ID: 2BGMW-G90

Test Standard (s)

FCC Part 15, Subpart B (Class B)

Sample Description

Product Type: Hf transceiver
Model No.: G90
Multiple Model(s) No.: N/A
Trade Mark: XIEGU
Date Received: 2025/02/28
Issue Date: 2025/03/31

Test Result:	Pass▲
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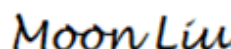
▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:



Haiguo Li
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Approved By:



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EMC Supervisor

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501Q33242E-EM-00	Original Report	2025/03/31

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Hf transceiver
Tested Model	G90
Multiple Model(s)	N/A
Voltage Range	DC 10.5V-16.5V
Highest operating frequency [#]	30 MHz (Provided by the applicant)
Equipment Class	Class B
Sample number	2Z42-1 (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A

Objective

This test report is in accordance with Part 2-Subpart J, Part 15B Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of the EUT with FCC Part 15B.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters. Each test item follows test standards and with no deviation.

Measurement Uncertainty

Item	Frequency Range		Expanded Measurement uncertainty
Conducted Emissions	AC Mains	150 kHz ~30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Disturbance	30MHz~200MHz	Horizontal	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz	Vertical	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz	Horizontal	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz	Vertical	5.73dB(k=2, 95% level of confidence)
	1GHz~6GHz	/	5.34dB(k=2, 95% level of confidence)
	6GHz~18GHz	/	5.40dB(k=2, 95% level of confidence)
	18GHz~40GHz	/	5.64dB(k=2, 95% level of confidence)

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, 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. : 715558, the FCC Designation No. : CN5045.

Each test item follows test standards and with no deviation.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in worst case condition.

Test Mode 1: Receiving (mode: SSB; controlled through DE-19)

Test Mode 2: Receiving (mode: CW; controlled through DE-19)

Test Mode 3: Receiving (mode: AM; controlled through DE-19)

Test Mode 4: Receiving (mode: SSB; controlled through CE-19)

Test Mode 5: Scanning

Note: For receiving mode, pre-scan 0.5MHz-30 MHz, only the worst-case data was shown in the test report, and the worst case is 1.8 MHz

EUT exercise software

No exercise software was used.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

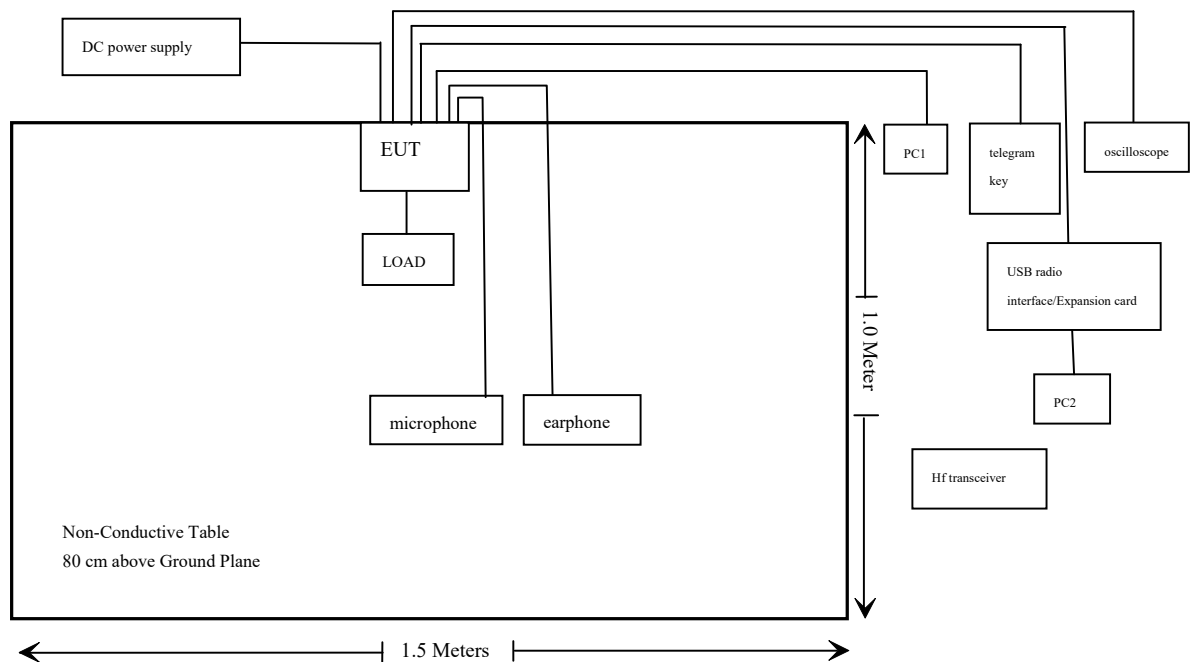
Manufacturer	Description	Model	Serial Number
GUWEI	DC power supply	GPS-3030DD	EM832096
XIEGU	Hf transceiver	G90	/
N/A	LOAD	N/A	/
N/A	telegram key	N/A	/
SIGLENT	oscilloscope	SDS6208 H12 Pro	/
XIEGU	USB radio interface	DE-19	/
XIEGU	Expansion card	CE-19	/
DELL	PC1	Latitude E7270	1JH13G2
DELL	PC2	Latitude E7280	9RVYFH2
N/A	earphone	N/A	/

External I/O Cable

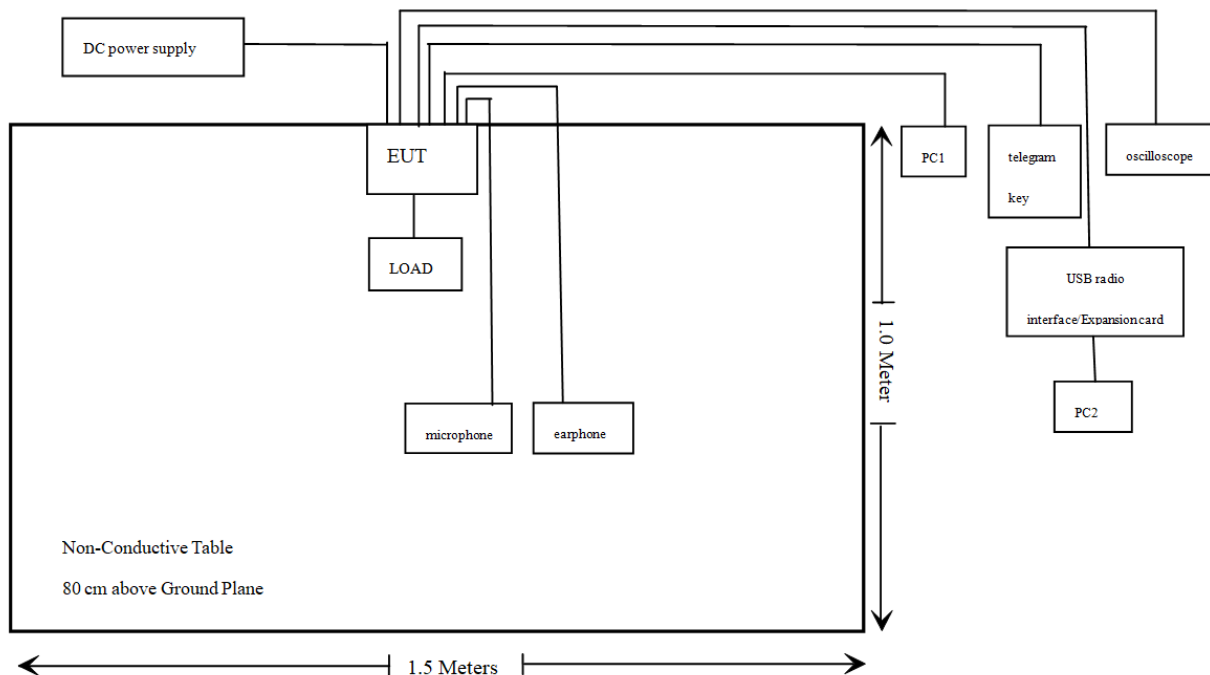
Cable Description	Length (m)	From/Port	To
Un-shielding un-Detachable AC Cable	1.0	LISN	SOCKET
Un-shielding Detachable DCCable	8.0	DC power supply	EUT
Un-shielding Detachable Cable	0.2	EUT	LOAD
Un-shielding un-Detachable audio Cable	1.2	EUT	earphone
Un-shielding un-Detachable audio Cable	1.2	EUT	microphone
Un-shielding un-Detachable USB Cable	2.0	EUT	PC1
Un-shielding un-Detachable Cable	2.0	EUT	oscilloscope
Un-shielding un-Detachable Cable	2.0	EUT	telegram key
Un-shielding un-Detachable Cable	2.0	EUT	USB radio interface/Expansion card

Block Diagram of Test Setup

Test Mode 1&2&3&4



Test Mode5



Note:

1: KEY interface

It is a 3.5mm stereo interface used to connect manual/auto telegram keys.

2: I/Q signal output port

It is a 3.5mm interface (3 wires) used for IQ signal output. It is connected to oscilloscope.

3: ACC interface

The interface is an 8-core mini-type DIN interface.

It is connected to USB radio interface or Expansion card, and USB radio interface or Expansion card is connected to PC2.

4: MIC interface

It is used to connect attached multi-function handheld microphone.

5: Headphone interface

It is used to connect earphone.

6: Communication interface

It is used for hardware updating of head unit and the on-line control with Computer PC1.

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Not Applicable
§15.109	Radiated Emissions	Compliant
§15.121(b)	Scanning receivers and frequency converters used with scanning receivers	Compliant

Not Applicable: The EUT cannot connect directly to the public power network.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310 N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2024/06/18	2025/06/17
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Scanning Receivers					
Micro-Tronics	RF Cable	8082135	W1113	2024/06/27	2025/06/26
Micro-Tronics	RF Cable	8082176	W6102	2024/06/27	2025/06/26
Micro-Tronics	RF Cable	8082176	W6111	2024/06/27	2025/06/26
Keysight	MXG Vector Signal Generator	N5182B	MY53051503	2024/12/04	2025/12/03
HP	RF Communication test set	8920B	US36141849	2024/12/04	2025/12/03
WEINSCHTEL	Power Splitter	1515	RH476	2024/06/27	2025/06/26

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

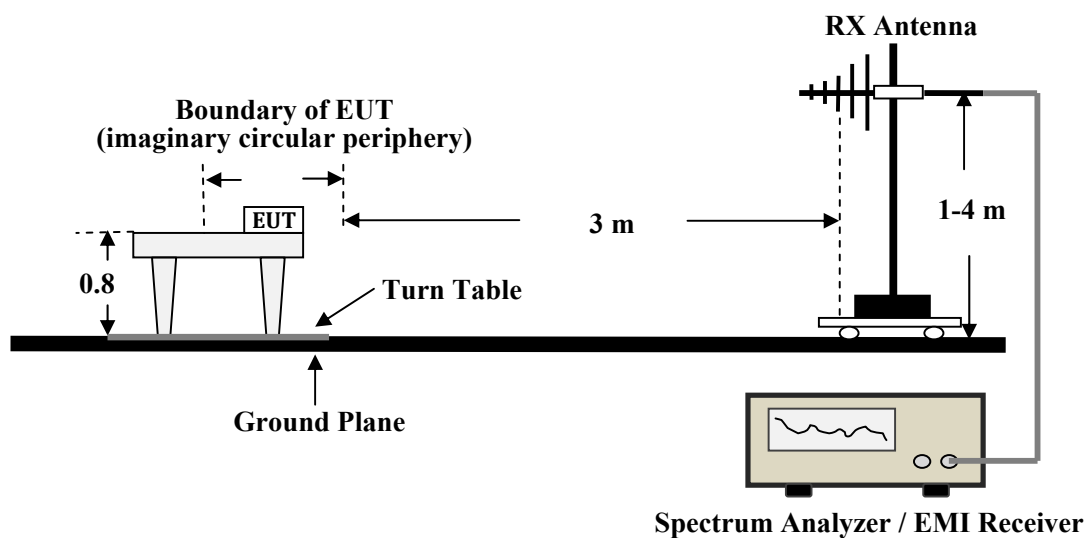
FCC §15.109 - RADIATED EMISSIONS

Applicable Standard

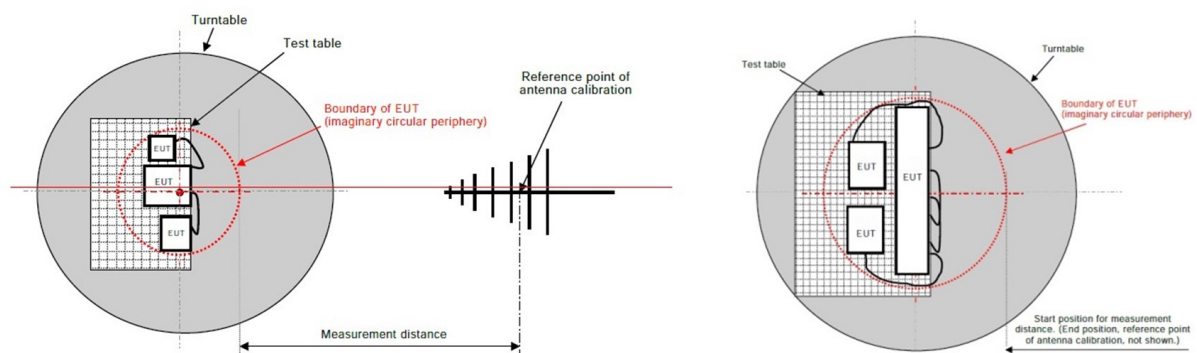
FCC §15.109

EUT Setup

Below 1GHz for Radiated Emissions



Radiated Emissions Setup Configuration



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The related limit was specified in FCC Part 15B.

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

The spacing between the peripherals was 10 cm.

EMI Test Receiver and Spectrum analyzer Setup

During the radiated emission test, the EMI test receiver and spectrum analyzer setup was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP

Test Procedure

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

If emission level of the EUT in Peak measurement mode is 20dB lower than peak limit line (that means the emission level in Peak measurement mode complies with both Peak and average limit lines) then only Peak measurement result is reported .Otherwise, Emission in average measurement mode shall be measured, and reported for frequency range above 1GHz.

Level & Over Limit Calculation

The Level is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Read Level. The basic equation is as follows:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

$$\text{Level} = \text{Read Level} + \text{Factor}$$

The “**Over limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -6 dB means the emission is 6dB below the limit for Class B. The equation for Over Limit calculation is as follows:

$$\text{Over limit} = \text{Level} - \text{Limit}$$

Test Data

Environmental Conditions

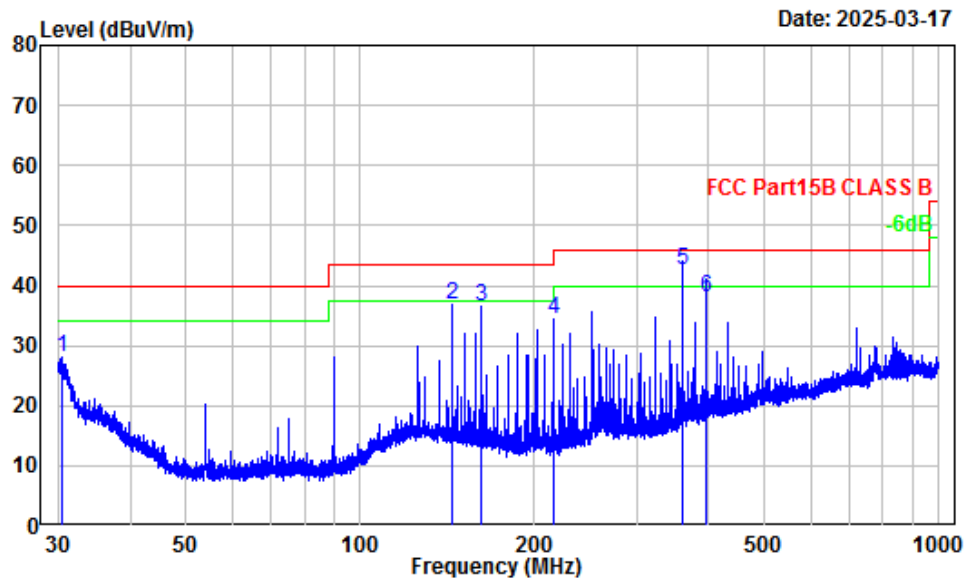
Temperature:	23.6 °C
Relative Humidity:	51 %
ATM Pressure:	101.2 kPa

The testing was performed by Alex Yan on 2025-03-17 for below 1GHz.

Test Mode 1

30 MHz~1 GHz

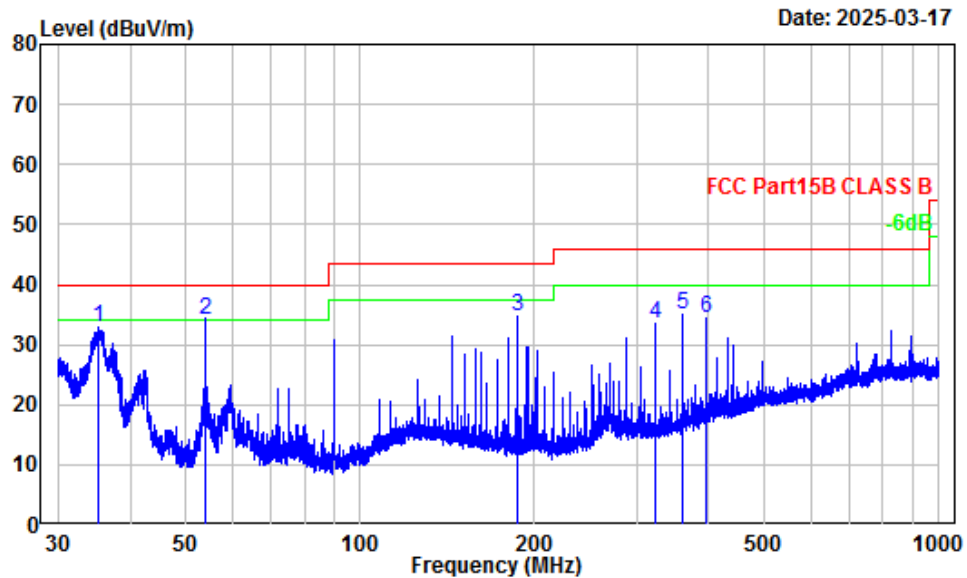
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501Q33242E-EM
Test Mode : Mode1
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Limit Level	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dB	
1	30.60	-6.27	34.28	40.00	-11.99	Peak
2	144.02	-12.18	49.06	43.50	-6.62	Peak
3	161.97	-12.72	49.17	43.50	-7.05	Peak
4	216.02	-14.20	48.71	46.00	-11.49	Peak
5	359.97	-9.89	52.60	46.00	-3.29	QP
6	396.07	-8.60	46.77	46.00	-7.83	QP

Vertical



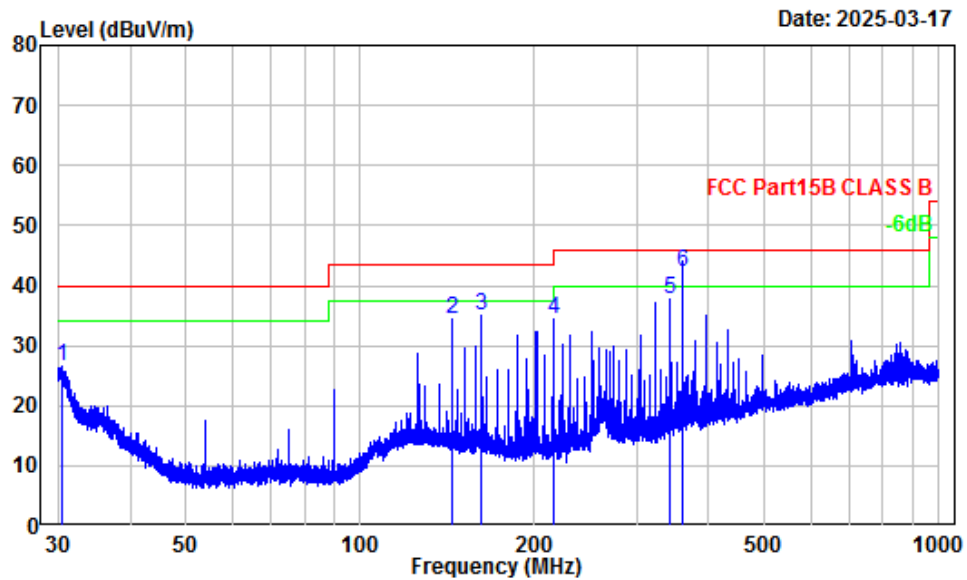
Site : Chamber A
Condition : 3m Vertical
Project Number : 2501Q33242E-EM
Test Mode : Mode1
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	35.16	-8.99	42.03	33.04	40.00	-6.96	Peak
2	53.98	-18.32	52.40	34.08	40.00	-5.92	QP
3	187.18	-14.18	48.93	34.75	43.50	-8.75	Peak
4	324.03	-10.70	44.34	33.64	46.00	-12.36	Peak
5	359.97	-9.89	44.80	34.91	46.00	-11.09	Peak
6	396.07	-8.60	43.07	34.47	46.00	-11.53	Peak

Test Mode 2

30 MHz~1 GHz

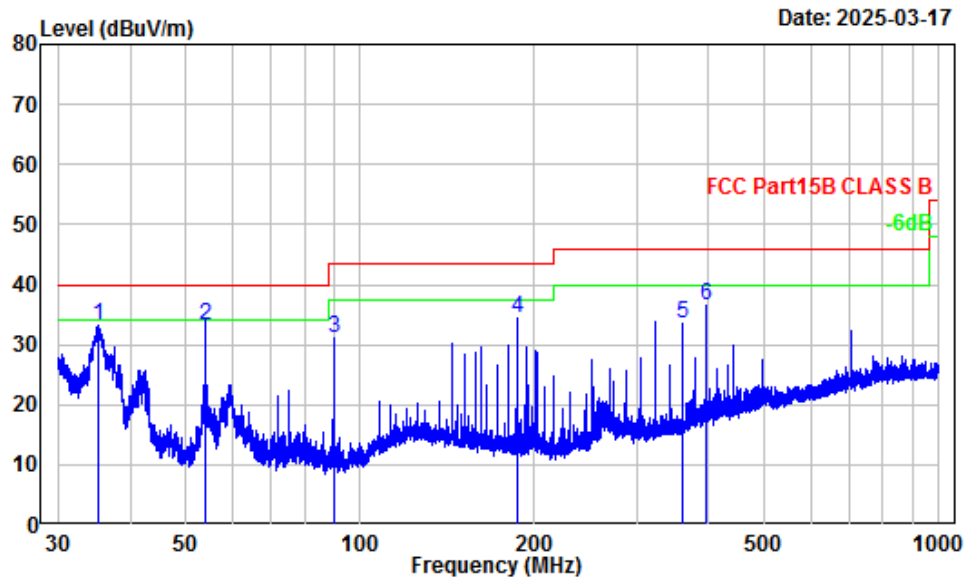
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501Q33242E-EM
Test Mode : Mode2
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

Freq Factor		Read Level	Limit Level	Over Limit	Remark
MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1	30.46	-6.19	32.64	26.45	40.00 -13.55 Peak
2	144.02	-12.18	46.48	34.30	43.50 -9.20 Peak
3	162.04	-12.72	47.68	34.96	43.50 -8.54 Peak
4	215.93	-14.20	48.56	34.36	43.50 -9.14 Peak
5	341.98	-10.36	48.22	37.86	46.00 -8.14 Peak
6	359.97	-9.89	52.20	42.31	46.00 -3.69 QP

Vertical



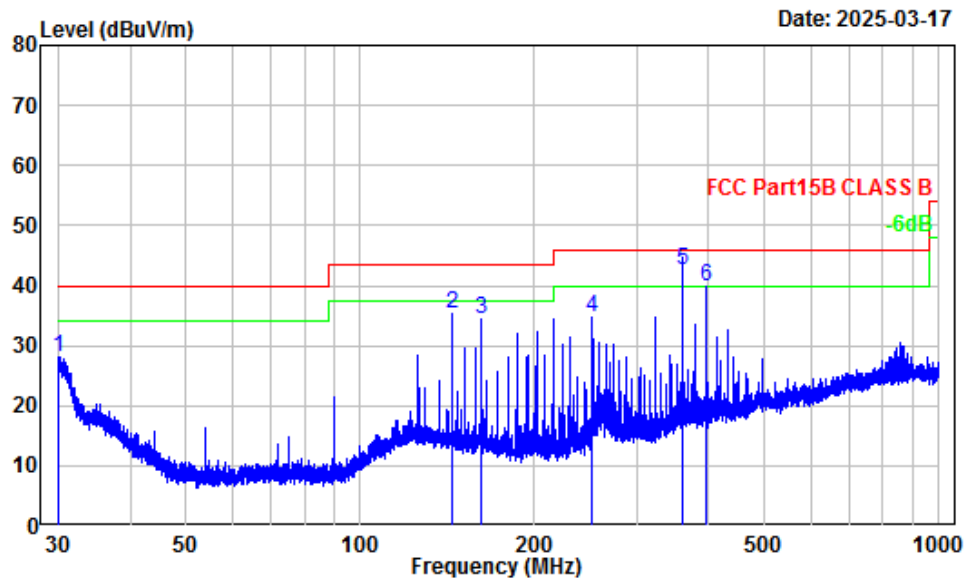
Site : Chamber A
Condition : 3m Vertical
Project Number : 2501Q33242E-EM
Test Mode : Mode2
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	35.33	-9.09	42.20	33.11	40.00	-6.89	Peak
2	54.00	-18.32	51.41	33.09	40.00	-6.91	QP
3	89.98	-17.97	49.17	31.20	43.50	-12.30	Peak
4	187.10	-14.18	48.58	34.40	43.50	-9.10	Peak
5	359.97	-9.89	43.43	33.54	46.00	-12.46	Peak
6	396.07	-8.60	45.08	36.48	46.00	-9.52	Peak

Test Mode 3

30 MHz~1 GHz

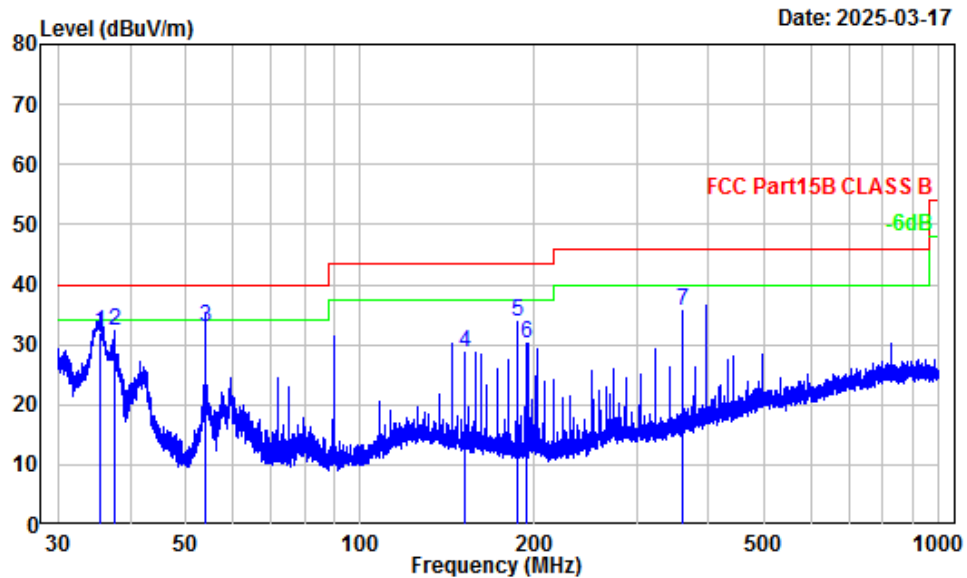
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501Q33242E-EM
Test Mode : Mode3
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	30.09	-6.01	34.05	28.04	40.00	-11.96	Peak
2	143.96	-12.18	47.52	35.34	43.50	-8.16	Peak
3	161.97	-12.72	47.00	34.28	43.50	-9.22	Peak
4	251.95	-13.08	47.81	34.73	46.00	-11.27	Peak
5	359.97	-9.89	52.40	42.51	46.00	-3.49	QP
6	396.07	-8.60	48.54	39.94	46.00	-6.06	Peak

Vertical



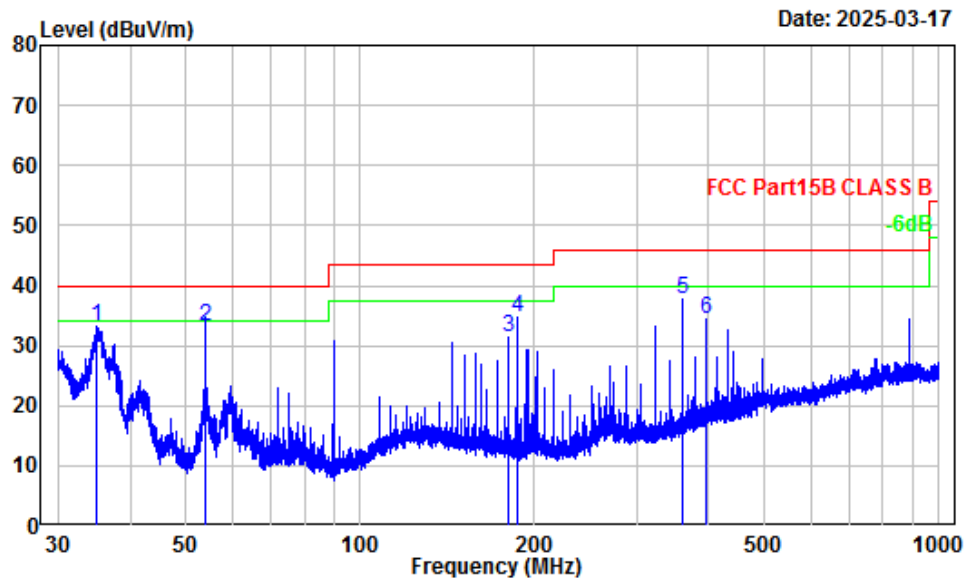
Site : Chamber A
Condition : 3m Vertical
Project Number : 2501Q33242E-EM
Test Mode : Mode3
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	35.41	-9.13	41.05	31.92	40.00	-8.08	QP
2	37.63	-10.72	43.06	32.34	40.00	-7.66	Peak
3	54.00	-18.32	51.37	33.05	40.00	-6.95	QP
4	151.20	-12.48	41.29	28.81	43.50	-14.69	Peak
5	187.18	-14.18	47.88	33.70	43.50	-9.80	Peak
6	194.37	-13.74	44.06	30.32	43.50	-13.18	Peak
7	360.13	-9.88	45.63	35.75	46.00	-10.25	Peak

Test Mode 4

30 MHz~1 GHz

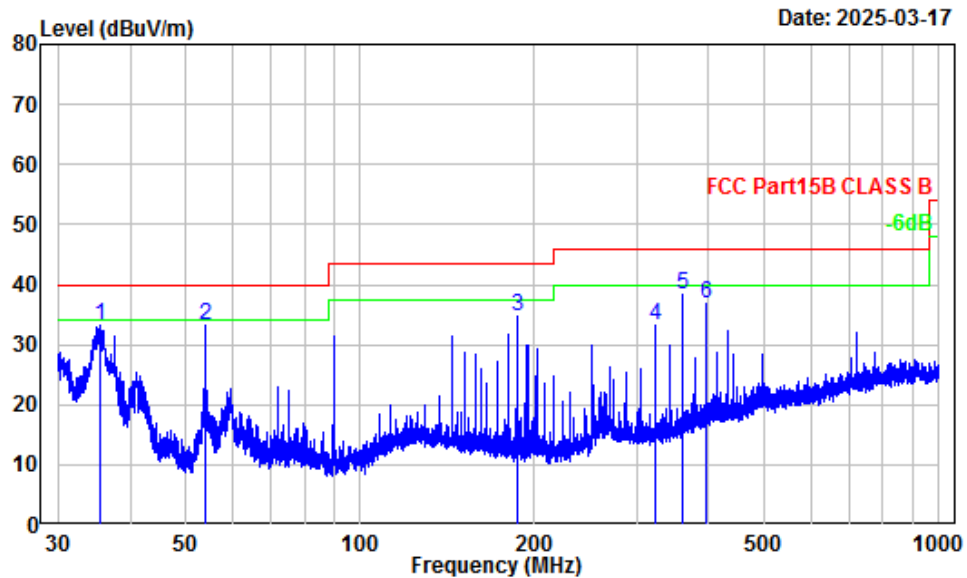
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501Q33242E-EM
Test Mode : Mode4
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq Factor		Read Level		Limit	Over	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	35.10	-8.95	42.08	33.13	40.00	-6.87	Peak
2	54.00	-18.32	51.52	33.20	40.00	-6.80	QP
3	180.02	-13.65	45.07	31.42	43.50	-12.08	Peak
4	187.18	-14.18	48.76	34.58	43.50	-8.92	Peak
5	359.97	-9.89	47.59	37.70	46.00	-8.30	Peak
6	396.07	-8.60	42.92	34.32	46.00	-11.68	Peak

Vertical



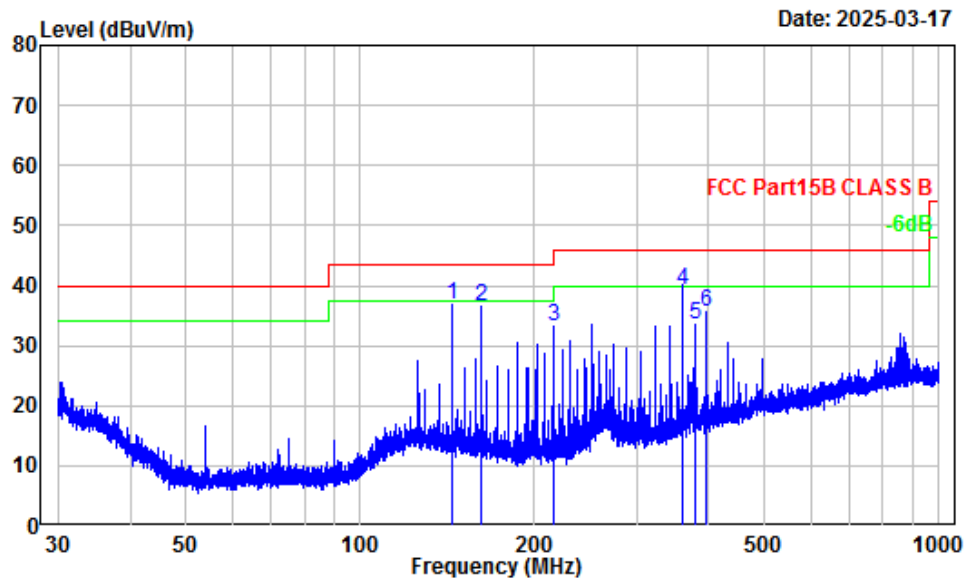
Site : Chamber A
Condition : 3m Vertical
Project Number : 2501Q33242E-EM
Test Mode : Mode4
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	35.59	-9.24	42.34	33.10	40.00	-6.90	Peak
2	53.98	-18.32	51.54	33.22	40.00	-6.78	Peak
3	187.18	-14.18	48.80	34.62	43.50	-8.88	Peak
4	324.03	-10.70	43.99	33.29	46.00	-12.71	Peak
5	360.13	-9.88	48.24	38.36	46.00	-7.64	Peak
6	396.07	-8.60	45.29	36.69	46.00	-9.31	Peak

Test Mode 5

30 MHz~1 GHz

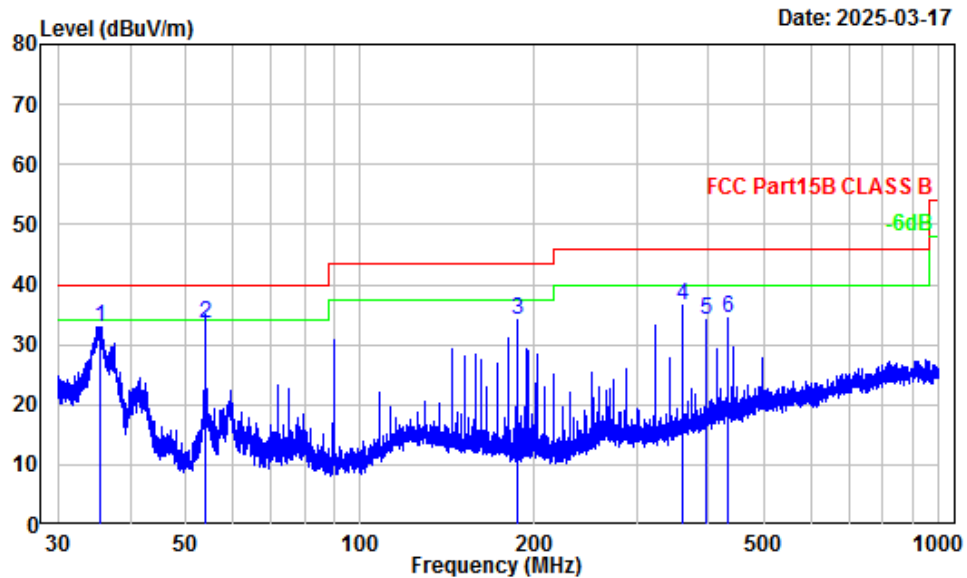
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501Q33242E-EM
Test Mode : Mode5
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	144.02	-12.18	49.11	36.93	43.50	-6.57	Peak
2	161.97	-12.72	49.30	36.58	43.50	-6.92	Peak
3	216.02	-14.20	47.43	33.23	46.00	-12.77	Peak
4	359.97	-9.89	49.21	39.32	46.00	-6.68	QP
5	378.09	-9.20	42.60	33.40	46.00	-12.60	Peak
6	396.07	-8.60	44.17	35.57	46.00	-10.43	Peak

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number : 2501Q33242E-EM
Test Mode : Mode5
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	35.51	-9.19	42.12	32.93	40.00	-7.07	Peak
2	54.00	-18.32	51.80	33.48	40.00	-6.52	QP
3	187.18	-14.18	48.30	34.12	43.50	-9.38	Peak
4	360.13	-9.88	46.37	36.49	46.00	-9.51	Peak
5	396.07	-8.60	42.67	34.07	46.00	-11.93	Peak
6	431.98	-7.78	42.27	34.49	46.00	-11.51	Peak

FCC §15.121(b) - SCANNING RECEIVERS AND FREQUENCY CONVERTERS USED WITH SCANNING RECEIVERS

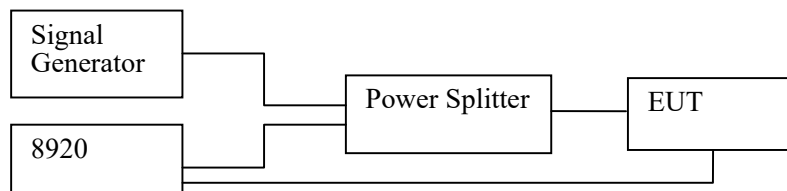
Applicable Standard

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.

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 it's 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 it's 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.

Test Data**Environmental Conditions**

Temperature:	23.6 °C
Relative Humidity:	51 %
ATM Pressure:	101.2 kPa

The testing was performed by Alex Yan on 2025-03-17.

Test Mode 5

Scanning Frequency Range (MHz)	Test Frequency (MHz)	Measurement Result (Worst Case) (dB)	Limit (dB)
0.5-30	824, 836, 849; 869,881.5, 894	40	>38

EUT PHOTOGRAPHS

Please refer to the attachment 2501Q33242E-EM External photo and 2501Q33242E-EM Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501Q33242E-EM Test Setup photo.

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