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CHINA CERTIFICATION ICT CO.,LTD (DONGGUAN)

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 6356.01

TEST REPORT

Applicant: **Shen Zhen AOBAO Communication Technology co., Ltd.**

Address: 1004, Building 136, Zhangkeng 1 Block Minzhi Sub-district, LonghuaDistric, Shenzhen, China

FCC ID: **2ALCGL70AVPLUS**

Product Name: **Cell Phone Signal Booster**

Standard(s): **FCC Part 20.21**
ANSI C63.26-2015
KDB 935210 D03 Signal Booster Measurements v04r04

The above equipment has been tested and found compliance with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: **PCR221103001-00AM1**
Date Of Issue: **2023/01/28**
Reviewed By: **Sun Zhong** Sun Zhong
Title: Manager
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Test Facility

The Test site used by *China Certification ICT Co., Ltd (Dongguan)* to collect test data is located on the No. 113, Pingkang Road, Dalang 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. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	PCR221103001-00A	Original Report	2022/12/06
1	PCR221103001-00AM1	Removed reference Information	2023/01/28

Note: In this report, the EUT's uplink output power and related test items have been verified according to the issues raised by the FCC.

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Product Name:	Cell Phone Signal Booster
Test Model:	AO-L70AV Plus
Rated Input Voltage:	DC 5V from adapter
Serial Number:	PCR221103001-S2
EUT Received Date:	2022.12.05
EUT Received Status:	Good

1.2 Technical Specification

Operation Frequency Range	**Uplink:**	Lower 700: 698-716 MHz Upper 700: 776-787 MHz
	Downlink:	Lower 700: 728-746 MHz Upper 700: 746-757 MHz

1.3 Antenna & Coaxial Cable Information▲

Name		Model	Gain/Loss
Indoor Antenna	Rubber Antenna	PTE-RB-800-2100	3dBi @698-787 MHz
	Ceiling Antenna	PTE-CI-800-2500	3dBi @698-787 MHz
	Indoor Panel Antenna	PTE-PN-800-2500	7dBi @698-787 MHz
Outdoor Antenna	YAgi Antenna	PTE-YG-800/1900	8dBi @698-787 MHz
	LPDA Antenna	PTE-LO-700-2500	9dBi @698-787 MHz
	Omni directional glass fiber Antenna	PTE-GF-700-2500	3dBi @746-787 MHz
Indoor Cable	20 feet 3D-FB Coaxial cable with N male connector	PTE-3D-FB-5NB	2.19dB @698-787 MHz
Outdoor Cable	50 feet 3D-FB Coaxial cable with N male connector	PTE-3D-FB-10NB	5.21dB @698-894 MHz

Note:
Antenna and coaxial cable information are provided by manufacturer, please refer to the Antenna and Cables information in the User Manual.

1.4 Description of Test Configuration

1.4.1 EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in Engineering Mode, which was provided by the manufacturer▲.
Equipment Modifications:	No
EUT Exercise Software:	No

1.4.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Fenfei Election	Termination	N-J-10W	N/A
Agilent	MXG Vector Signal Generator	N5182B	MY51350144

1.4.3 Support Cable List and Details

Cable Description	Shielding Cable	Ferrite Core	Length (m)	From Port	To
Coaxial Cable	Yes	No	2	MXG Vector Signal Generator	EUT
Coaxial Cable	Yes	No	0.5	EUT	Termination
Adapter Cable	No	No	1	Adapter	EUT

1.5 Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61 dB
Unwanted Emissions, radiated	30~200 MHz: 4.15 dB, 200 MHz~1 GHz: 5.61 dB, 1~6 GHz: 5.14 dB, 6~18 GHz: 5.93 dB, 18~26.5 GHz: 5.47 dB, 26.5~40 GHz: 5.63 dB
Unwanted Emissions, conducted	±1.26 dB
Temperature	±1℃
Humidity	±5%

Note: 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.

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§ 20.21(e)(3)	7.1 Authorized Frequency Band Verification	Compliance
§ 20.21(e)(8)(i)(D) § 20.21(e)(8)(i)(B)	7.2 Maximum Power Measurement	Compliance
§ 20.21(e)(8)(i)(C)(2) § 20.21(e)(8)(i)(B)	7.3 Maximum Booster Gain Computation	Compliance
§ 20.21(e)(8)(i)(F)	7.4 Intermodulation Product	Compliance
§ 20.21(e)(8)(i)(E)	7.5 Out of Band Emissions	Compliance
§ 2.1051 § 20.21(e)(8)(i)(E)	7.6 Spurious Emissions at Antenna Terminals	Compliance

3. REQUIREMENTS AND TEST PROCEDURES

3.1 Authorized Frequency Band Verification

Applicable Standard

According to§ 20.21(e)(3) *Frequency Bands*.

This test is intended to confirm that the signal booster only operates on the CMRS frequency bands authorized for use by the NPS. In other words, the signal booster shall reject amplification of other signals outside of its passband. In addition, this test will identify the frequency at which the maximum gain is realized within each CMRS operational band, which then serves as a basis for subsequent tests.

Test Procedure

a) Connect the EUT to the test equipment as shown in **Figure 1**. Begin with the uplink output (donor) port connected to the spectrum analyzer.
b) Set the spectrum analyzer resolution bandwidth (RBW) for 100 kHz with the video bandwidth (VBW) ≥ 3 x the RBW, using a PEAK detector with the MAX HOLD function.
c) Set the center frequency of the spectrum analyzer to the center of the operational band under test with a span of 1 MHz.
d) Set the signal generator for CW mode and tune to the center frequency of the operational band under test.
e) Set the initial signal generator power to a level that is at least 6 dB below the AGC level specified by the manufacturer.
f) Slowly increase the signal generator power level until the output signal reaches the AGC operational level.
g) Reduce the signal generator power to a level that is 3 dB below the level noted above, then manually reset the EUT (e.g., cycle ac/dc power).
h) Reset the spectrum analyzer span to 2 x the width of the CMRS band under test. Adjust the tuned frequency of the signal generator to sweep 2 x the width of the CMRS band using the sweep function. The AGC must be deactivated throughout the entire sweep.
i) Using three markers, identify the CMRS band edges and the frequency with the highest power. Affirm that the values of all markers are visible on the display of the spectrum analyzer (e.g., marker table set to on).
j) Capture the spectrum analyzer trace for inclusion in the test report.
k) Repeat 7.1c) to 7.1j) for all operational uplink and downlink bands.

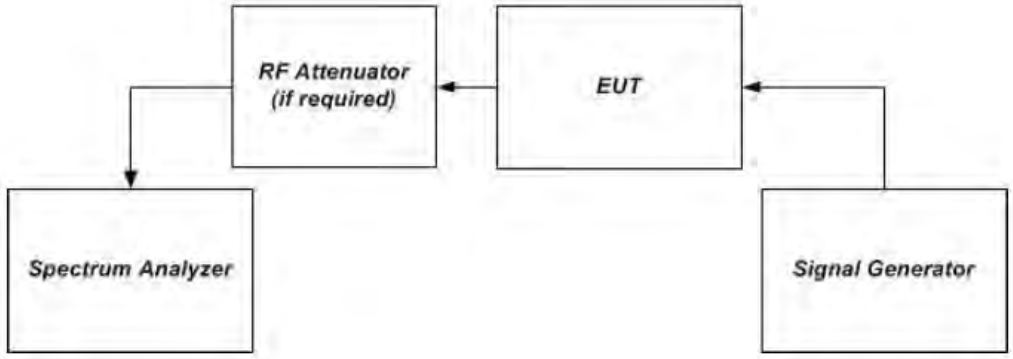


Figure 1 – Band verification test instrumentation setup

3.2 Maximum Power Measurement

Applicable Standard

According to§ 20.21(e)(8)(i)(D) *Power Limits*; § 20.21(e)(8)(i)(B) *Bidirectional Capability* (uplink minimum conducted power output); §20.21(e)(4)*Self-monitoring*.

This procedure shall be used to demonstrate compliance to the signal booster power limits and requirements as specified in Sections 20.21(e)(8)(i)(D) and 20.21(e)(8)(i)(B) for wideband consumer signal boosters.

a) Compliance to applicable EIRP limits must be shown using the highest gains from the list of antennas, cabling, and coupling devices declared by the manufacturer for use with the consumer booster.
b) In addition, the maximum power levels measured in this procedure will be used in calculating the maximum gain as described in the next subclause.
c) The frequency with the highest power level in each operational band as determined in 7.1 is to be measured discretely by applying the following procedure using the stated emission and power detector types independently.
d) Use a signal generator to create a pulsed CW or GSM signal with a pulse width of 570 μs and a duty cycle of 12.5% (i.e., one GSM timeslot), then measure using the burst power function of the measuring instrument.
e) Use a signal generator to create an AWGN signal with a 99% occupied bandwidth (OBW) of 4.1 MHz, then measure using the channel power or band power function of the measuring instrumentation.
f) All modes of operation must be verified to maintain operation within applicable limits at the maximum uplink and downlink test levels per device type as defined in 5.5, by increasing the power level in 2 dB steps from the AGC level to the maximum input level specified in 5.5.

Test Procedure

a) Connect the EUT to the test equipment as shown in **Figure 1**. Begin with the uplink output (donor) port connected to the spectrum analyzer.
b) Configure the signal generator and spectrum analyzer for operation on the frequency determined in 7.1 with the highest power level, but with the center frequency of the signal no closer than 2.5 MHz from the band edge. The spectrum analyzer span shall be set to at least 10 MHz.
c) Set the initial signal generator power to a level well below that which causes AGC activation.
d) Slowly increase the signal generator power level until the output signal reaches the AGC operational limit (from observation of signal behavior on the spectrum analyzer; i.e., no further increase in output power as input power is increased).
e) Reduce power sufficiently on the signal generator to ensure that the AGC is not controlling the power output.
f) Slowly increase the signal generator power to a level just below (and within 0.5 dB of) the AGC limit without triggering the AGC. Note the signal generator power level as Pin.
g) Measure the output power, Pout, with the spectrum analyzer as follows.
   1) Set RBW = 100 kHz for AWGN signal type, or 300 kHz for CW or GSM signal type.
   2) Set VBW ≥ 3*RBW.
   3) Select either the BURST POWER or CHANNEL POWER measurement mode, as required for each signal type. For AWGN, the channel power integration bandwidth shall be the 99% OBW of the 4.1 MHz signal.
   4) Select the power averaging (rms) detector.
   5) Affirm that the number of measurement points per sweep ≥ (2*span)/RBW.
   NOTE–This requirement does not apply for BURST power measurement mode.
   6) Set sweep time = auto couple, or as necessary (but no less than auto couple value).
   7) Trace average at least 100 traces in power averaging (i.e., rms) mode.
   8) Record the measured power level Pout, with one set of results for the GSM or CW input stimulus, and another set of results for the AWGN input stimulus.
h) Repeat step g) while increasing the signal generator amplitude in 2 dB steps until the maximum input level indicated in 5.5 is reached. If the booster has shut down at any point during the input power steps, it should be noted and step g) shall be repeated at an input level 1 dB less than that found to cause the shutdown. The test report shall include either a statement describing that the device complies at 10 dB above AGC or at the 5.5 power levels, or a table showing compliance at the additional input power(s) required.

i) Repeat the entire procedure for each operational uplink and downlink frequency band supported by the booster.
j) Provide tabulated results in the test report.

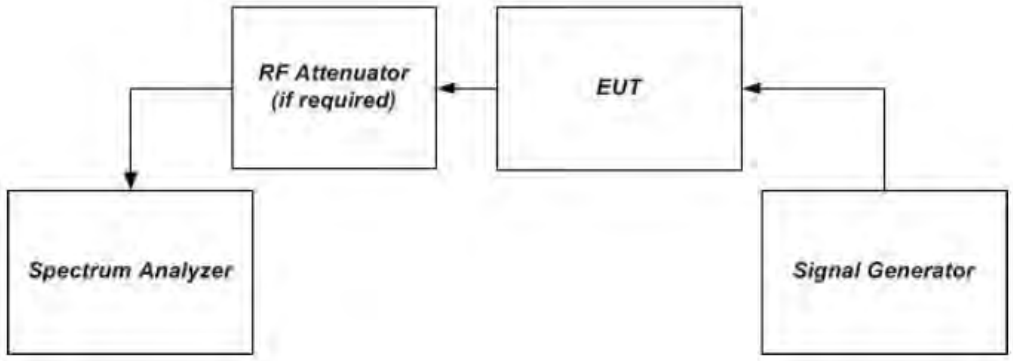


Figure 1 – Band verification test instrumentation setup

3.3 Maximum Booster Gain Computation

Applicable Standard

According to§ 20.21(e)(8)(i)(C)(2) *Booster Gain Limits* (maximum gain); § 20.21(e)(8)(i)(B) *Bidirectional Capability* (equivalent uplink and downlink gain); §20.21(e)(4)*Self-monitoring*.

This subclause provides guidance for the calculation of the maximum gain, based on the results obtained from the 7.1 and 7.2 measurements. The NPS limits on maximum gain for fixed and mobile wideband consumer signal boosters are provided in Section 20.21(e)(8)(i)(C)(2). Additionally, Section 20.21(e)(8)(i)(B) requires that wideband consumer signal boosters be able to provide equivalent uplink and downlink gain, i.e., within 9 dB.

Test Procedure

a) Calculate the maximum gain of the booster as follows to demonstrate compliance to the applicable gain limits as specified.
b) For both the uplink and downlink in each supported frequency band, use each of the P_{OUT} and P_{IN} result pairs for all signal types used in 7.2 in the following equation to obtain the maximum gain, G:
$G\ (dB) = P_{OUT}(dBm) - P_{IN}(dBm)$.
c) Record the maximum gain of the uplink and downlink paths for each supported frequency band, and verify that the each gain value complies with the applicable limit.
d) Provide tabulated results in the test report.

3.4 Intermodulation Product

Applicable Standard

According to§ 20.21(e)(8)(i)(F) *Intermodulation Limits*.

The transmitted intermodulation products of a consumer booster at its uplink and downlink ports shall not exceed the power level of −19 dBm for the supported bands of operation. Compliance with intermodulation limits will use boosters operating at maximum gain and maximum rated output power, with two continuous wave (CW) input signals spaced 600 kHz apart and centered in the pass band of the booster, and with a 3 kHz measurement bandwidth.

Test Procedure

The following procedures shall be used to demonstrate compliance to the intermodulation limit specified in Section 20.21(e)(8)(i)(F) for wideband consumer signal boosters.

a) Connect the signal booster to the test equipment as shown in **Figure 2**. Begin with the uplink output (donor) port connected to the spectrum analyzer.
b) Set the spectrum analyzer RBW = 3 kHz.
c) Set the VBW ≥ 3*RBW.
d) Select the rms detector.
e) Set the spectrum analyzer center frequency to the center of the supported operational band under test.
f) Set the span to 5 MHz. Affirm that the number of measurement points per sweep ≥ (2 × span)/RBW.
g) Configure the two signal generators for CW operation with generator #1 tuned 300 kHz below the operational band center frequency and generator #2 tuned 300 kHz above the operational band center frequency. If the maximum output power is not at the operational-band (booster pass band) center frequency, configure the test signal pair around the frequency with maximum output power as determined per 7.2.
h) Set the signal generator amplitudes so that the power from each into the EUT is equivalent, then turn on the RF output.
i) Simultaneously increase each signal generators' amplitude equally until just before the EUT begins AGC, then affirm that all intermodulation-product emissions (if any occur) are below the specified limit of −19 dBm.
j) Use the trace averaging function of the spectrum analyzer, and wait for the trace to stabilize. Place a marker at the highest amplitude intermodulation-product emission.
k) Record the maximum intermodulation product amplitude level that is observed.
l) Capture the spectrum analyzer trace for inclusion in the test report.
m) Repeat 7.4e) to 7.4l) for all uplink and downlink operational bands.
NOTE–If using a single signal generator with dual outputs, affirm that intermodulation products are not the result of the generator.
n) Increase the signal generator amplitude in 2 dB steps to 10 dB above the AGC threshold determined in 7.4i), but not exceeding the maximum input level of 5.5, to affirm that the EUT maintains compliance with the intermodulation limit. The test report shall include either a statement describing that the device complies at 10 dB above AGC or at the 5.5 power levels, or a table showing compliance at the additional input power(s) required.

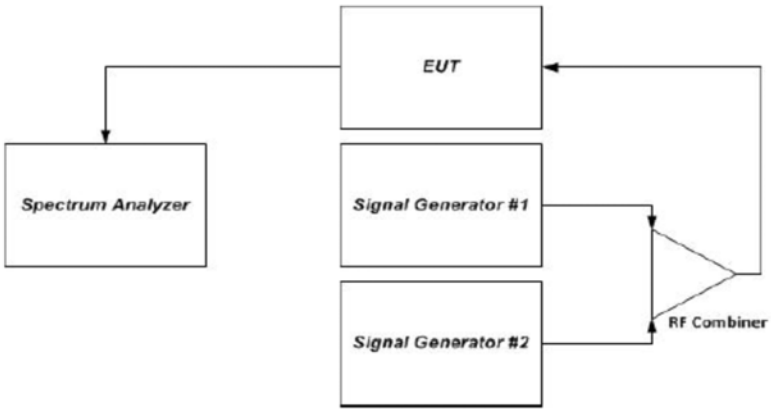


Figure 2 – Intermodulation product instrumentation test setup

3.5 Out of Band Emissions

Applicable Standard

According to§ 20.21(e)(8)(i)(E) *Out of Band Emission Limits*.

Test Procedure

This measurement is intended to demonstrate compliance to the limit specified in Section 20.21(e)(8)(i)(E). The mobile-station emission limit is listed in Appendix A for each applicable operating band and rule part.

a) Connect the EUT to the test equipment as shown in **Figure 1**. Begin with the uplink output (donor) port connected to the spectrum analyzer.
b) Configure the signal generator for the appropriate operation for all uplink and downlink bands:

1) GSM: 0.2 MHz from upper and lower band edges.
2) LTE (5 MHz): 2.5 MHz from upper and lower band edges.
3) CDMA: 1.25 MHz from upper and lower band edges, except for cellular band as follows (only the upper and lower frequencies need to be tested):
824.88 MHz, 845.73 MHz, 836.52 MHz, 848.10 MHz,
869.88 MHz, 890.73 MHz, 881.52 MHz, 893.10 MHz.

NOTE 1–Alternative test modulation types:
• CDMA (alternative 1.25 MHz AWGN)
• LTE 5 MHz (alternative W-CDMA or 4.1 MHz AWGN)
NOTE 2–For LTE, the signal generator should use the uplink and downlink signal types for these modulations in uplink and downlink tests, respectively. LTE shall use 5 MHz signal, 25 resource blocks transmitting.
NOTE 3–When using an AWGN test signal, the bandwidth shall be the measured 99% OBW.

c) Set the signal generator amplitude to the maximum power level prior to AGC similar to 7.2.2e) to 7.2.2f) of the power measurement procedures for the appropriate modulations.
d) Set RBW = measurement bandwidth specified in the applicable rule section for the supported frequency band (see Appendix A for cross-reference to applicable rule section).
NOTE 3–Within 300 kHz and 3 MHz away from band edge, if smaller RBW is used (i.e., RBW < 100 kHz or 1 MHz, for above and below 1 GHz, respectively), per Parts 24 and 27 the smaller RBW is applicable only for frequencies within 100 kHz or 1 MHz (for above and below 1 GHz, respectively) away from the band edge.
e) Set VBW = 3* RBW.
f) Select the power averaging (rms) detector.
g) Sweep time = auto-couple.

h) Set the analyzer start frequency to the upper band/block edge frequency and the stop frequency to the upper band/block edge frequency plus: 300 kHz (when operational frequency is < 1 GHz), or 3 MHz (when operational frequency is ≥ 1 GHz).
i) Trace average at least 100 traces in power averaging (i.e., rms) mode.
j) Use peak marker function to find the maximum power level.
k) Capture the spectrum analyzer trace of the power level for inclusion in the test report.
l) Increase the signal generator amplitude in 2 dB steps until the maximum input level per 5.5 is reached. Affirm that the EUT maintains compliance with the OOBE limits. The test report shall include either a statement describing that the device complies at 10 dB above AGC or at the 5.5 power levels, or a table showing compliance at the additional input power(s) required.
m) Reset the analyzer start frequency to the lower band/block edge frequency minus: 300 kHz (when operational frequency is < 1 GHz), or 3 MHz (when operational frequency is ≥ 1 GHz), and the stop frequency to the lower band/block edge frequency, then repeat 7.5i) to 7.5l).
n) Repeat 7.5b) through 7.5m) for each uplink and downlink operational band.

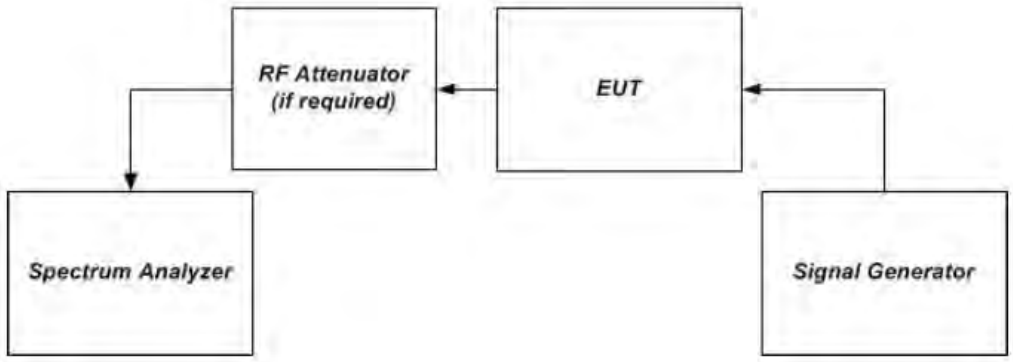


Figure 1 – Band verification test instrumentation setup

3.6 Spurious Emissions at Antenna Terminals

Applicable Standard

According to §2.1051 *Measurements required: Spurious emissions at antenna terminals.*

§20.21(e)(8)(i)(E): Booster out of band emissions (OOBE) shall be at least 6 dB below the FCC's mobile emission limits for the supported bands of operation. Compliance to OOBE limits will utilize high peak-to-average CMRS signal types.

§22.917 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

§24.238 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

§27.53: the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

Test Procedure

The following procedures shall be used to demonstrate compliance to the applicable conducted spurious emissions limits as per Section 2.1051.

NOTE–For frequencies below 1 GHz, an RBW of 1 MHz may be used in a preliminary measurement. If non-compliant emissions are detected, a final measurement shall be made with a 100 kHz RBW. Additionally, a peak detector may also be used for the preliminary measurement. If non-compliant emissions are detected then a final measurement of these emissions shall be made with the power averaging (rms) detector.

a) Connect the EUT to the test equipment as shown in **Figure 1**. Begin with the uplink output (donor) port connected to the spectrum analyzer.
b) Configure the signal generator for AWGN with a 99% OBW of 4.1 MHz, with a center frequency corresponding to the center of the CMRS band under test.
c) Set the signal generator amplitude to the level determined in the power measurement procedure in 7.2.
d) Turn on the signal generator RF output and measure the spurious emission power levels with an appropriate measuring instrument as follows.
   1) Set RBW = measurement bandwidth specified in the applicable rule section for the operational frequency band under consideration (see Appendix A for relevant cross-references). Note that many of the individual rule sections permit the use of a narrower RBW [typically ≥ 1% of the emission bandwidth (EBW)] to enhance measurement accuracy, but the result must then be integrated over the specified measurement bandwidth.
   2) Set VBW = 3* RBW.
   3) Select the power averaging (rms) detector. (See above note regarding the use of a peak detector for preliminary measurements.)
   4) Sweep time = auto-couple.
   5) Set the analyzer start frequency to the lowest radio frequency signal generated in the equipment, without going below 9 kHz, and the stop frequency to the lower band/block edge frequency minus 100 kHz or 1 MHz, as specified in the applicable rule part. Note that the number of measurement points in each sweep must be ≥ (2 □ span/RBW), which may require that the measurement range defined by the preceding start and stop frequencies be subdivided, depending on the available number of measurement points of the spectrum analyzer. Trace average at least 10 traces in power averaging (i.e., rms) mode.
   6) Sweep time = auto-couple.
   7) Use the peak marker function to identify the highest amplitude level over each measured frequency range. Record the frequency and amplitude and capture a plot for inclusion in the test report.
   8) Reset the analyzer start frequency to the upper band/block edge frequency plus 100 kHz or 1 MHz, as specified in the applicable rule part, and the analyzer stop frequency to 10 times the highest frequency of the fundamental emission. Note that the number of measurement points in each sweep must be ≥ (2*span/RBW) which may require that the measurement range defined by the start and stop frequencies above be subdivided, depending on the available number of measurement points provided by the spectrum analyzer.
   9) Use the peak marker function to identify the highest amplitude level over each of the measured frequency ranges. Record the frequency and amplitude and capture a plot for inclusion in the test report.
e) Repeat 7.6b) through 7.6d) for each supported frequency band of operation.

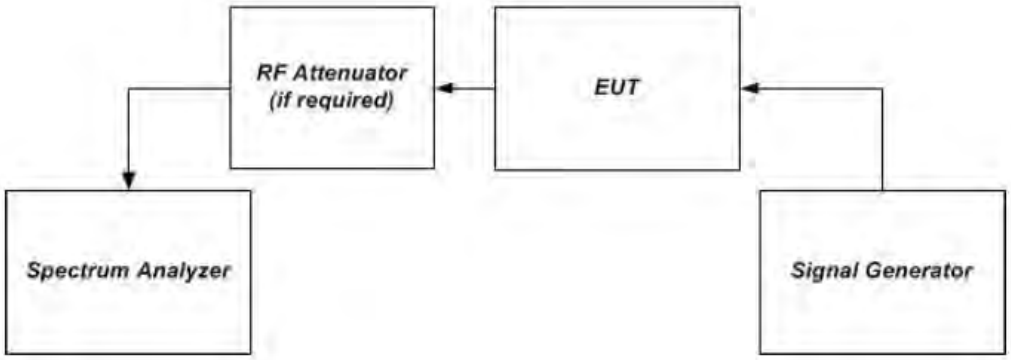


Figure 1 – Band verification test instrumentation setup

4. TEST DATA AND RESULTS

4.1 Test Environmental Conditions & Test Equipment List and Details

4.1.1 RF Conducted Test

Test Date:	2022/12/5~2022/12/6				
Tester:	Sern Shen				
Environmental Conditions:					
Temperature: (℃)	21.4~22.1	Relative Humidity: (%)	46~49	ATM Pressure: (kPa)	101.1~101.2

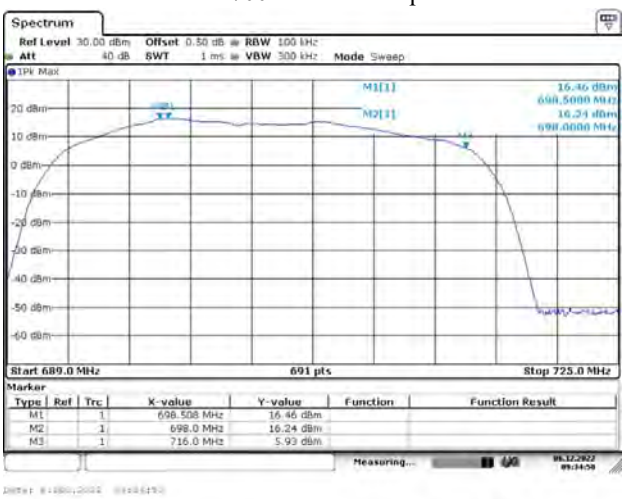
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022/7/15	2023/7/14
YINSAIGE	Coaxial Cable	SS402	SJ0100003	2022/8/7	2023/8/6
YINSAIGE	Coaxial Cable	SS402	SJ0100004	2022/8/7	2023/8/6
Mini-Circuits	DC Block	BLK-18-S+	1554404	2022/8/7	2023/8/6
Agilent	MXG Vector Signal Generator	N5182B	MY51350144	2022/7/15	2023/7/14
R&S	Wideband Radio Communication Tester	CMW500	149218	2022/7/15	2023/7/14

Statement of Traceability: *China Certification ICT Co., Ltd (Dongguan)attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

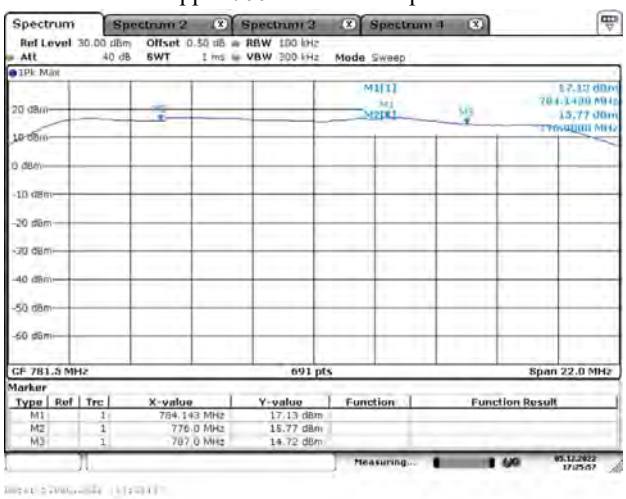
4.2 Authorized Frequency Band Verification

Test Result: Compliance. Please refer to following plots.

Lower 700 MHz Band Uplink



Upper 700 MHz Band Uplink



4.3 Maximum Power Measurement

Test Result: Compliance. Please refer to following tables.

Maximum Output Power:

Mode	Operation Band	Signal Type	Pre AGC Input Level dBm	Conducted Output Power (dBm)		Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
				Test Value	Limit				
Uplink	Lower 700 MHz	AWGN	-41.2	19.23	≥ 17 & ≤ 30	9	5.21	23.02	≤ 30
		GSM	-41.8	19.16		9	5.21	22.95	
	Upper 700 MHz	AWGN	-41.6	19.67		9	5.21	**23.46**	
		GSM	-41.3	19.22		9	5.21	23.01	

Note: Compliance to applicable EIRP limits used highest gains from the list of antennas, cabling, and coupling devices declared by the manufacturer for use with the consumer booster.

Maximum Input Level:

Mode	Operation Band	Signal Type	Maximum Input Level (dBm)	Maximum Input Level Limit (dBm)	Conducted Output Level (dBm)
Uplink	Lower 700 MHz	AWGN	-30	≤ 27	17.13
		GSM	-30		18.08
	Upper 700 MHz	AWGN	-30		20.21
		GSM	-30		20.97

4.4 Maximum Booster Gain Computation

Test Result: Compliance. Please refer to the following tables.

Maximum Gain:

Mode	Operation Band	Signal Type	Pre AGC Input level (dBm)	Conducted Output level (dBm)	Gain (dB)	Limit (dB)
Uplink	Lower 700 MHz	AWGN	-41.2	19.23	60.43	≤ 63.49
		GSM	-41.8	19.16	60.96	
	Upper 700 MHz	AWGN	-41.6	19.67	61.27	≤ 64.36
		GSM	-41.3	19.22	60.52	

Note: Fixed Booster maximum gain shall not exceed 6.5 dB + 20 Log10 (Frequency), Where, Frequency is the uplink mid-band frequency of the supported spectrum bands in MHz.

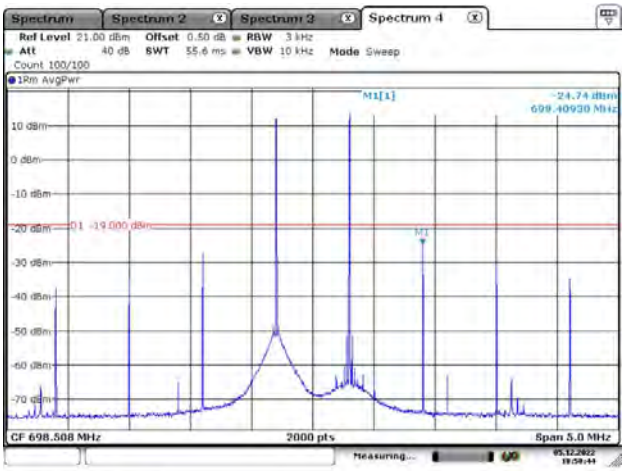
Equivalent Uplink and Downlink Gain:

Operating Band	Signal Type	Uplink Gain (dB)	Downlink Gain (dB)	Calculated Value (dB)	Limit (dB)
Lower 700 MHz	AWGN	60.43	56.17	-4.26	± 9
	GSM	60.96	58.51	-2.45	
Upper 700 MHz	AWGN	61.27	53.85	-7.42	
	GSM	60.52	55.47	-5.05	

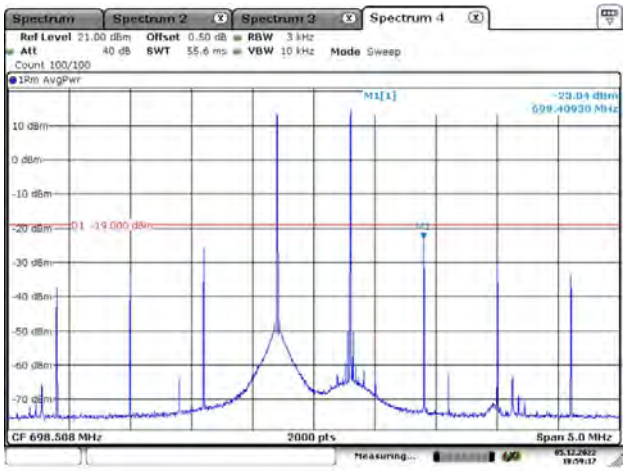
4.5 Intermodulation Product

Test Result: Compliance. Please refer to following plots.

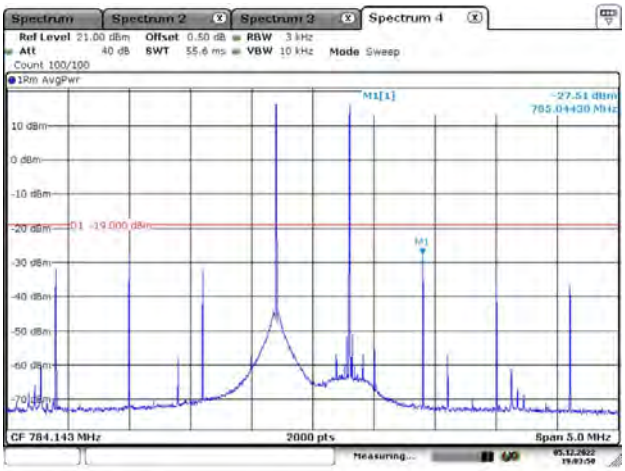
Lower 700 MHz Band Uplink-Pre AGC



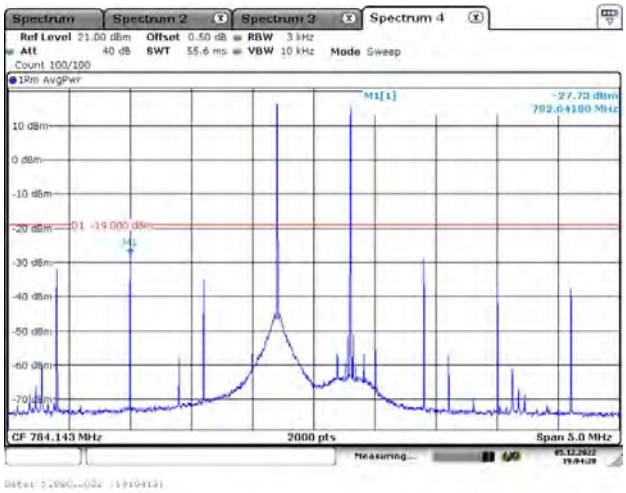
Lower 700 MHz Band Uplink-Above AGC



Upper 700 MHz Band Uplink-Pre AGC



Upper 700 MHz Band Uplink-Above AGC

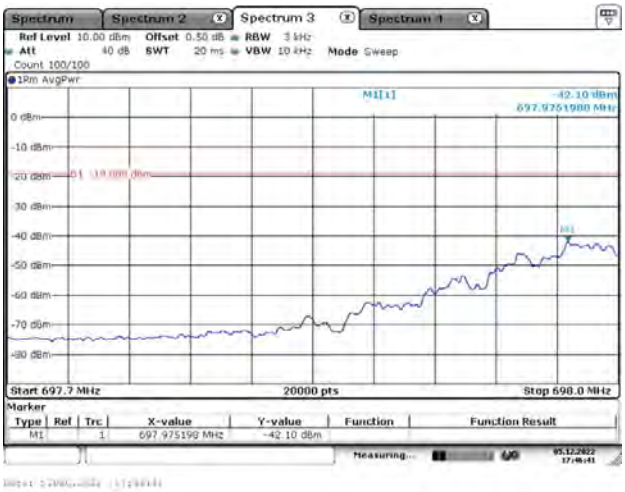


4.6 Out of Band Emissions

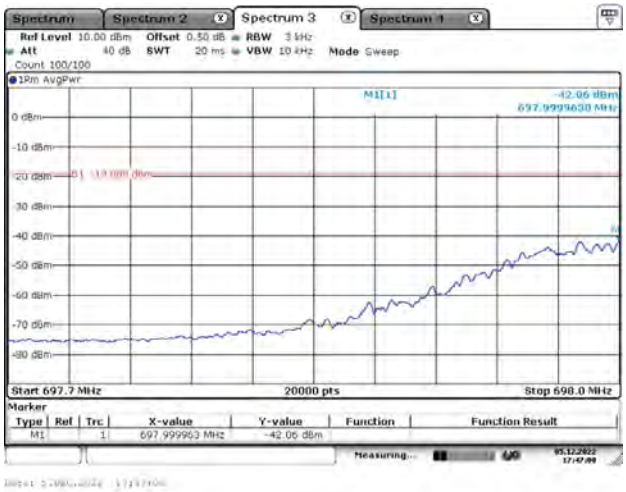
Test Result: Compliance. Please refer to following plots.

Lower 700 MHz Band Uplink

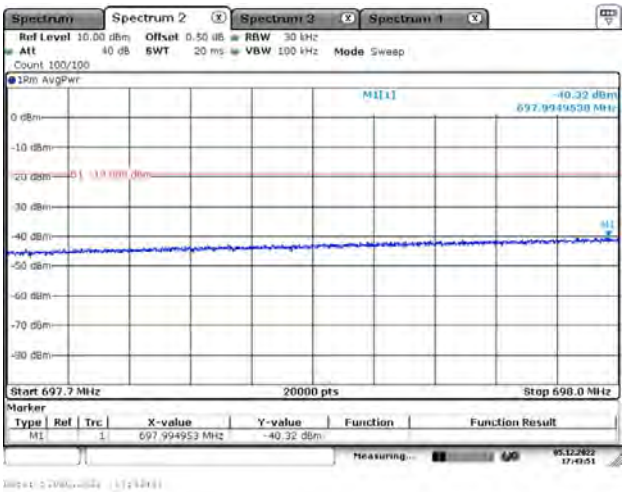
Left Side-GSM-Pre AGC



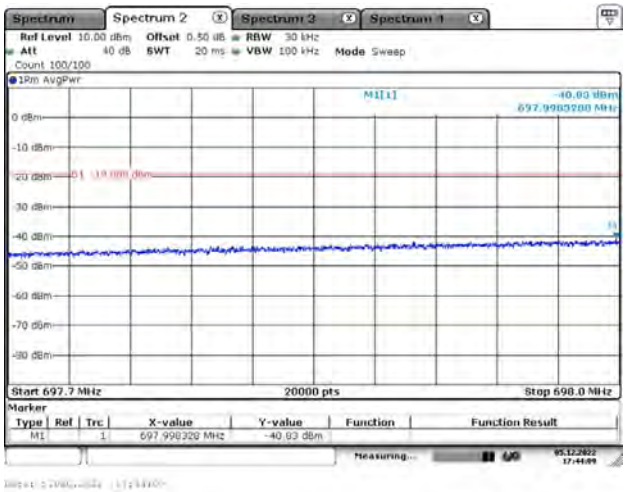
Left Side-GSM-Above AGC



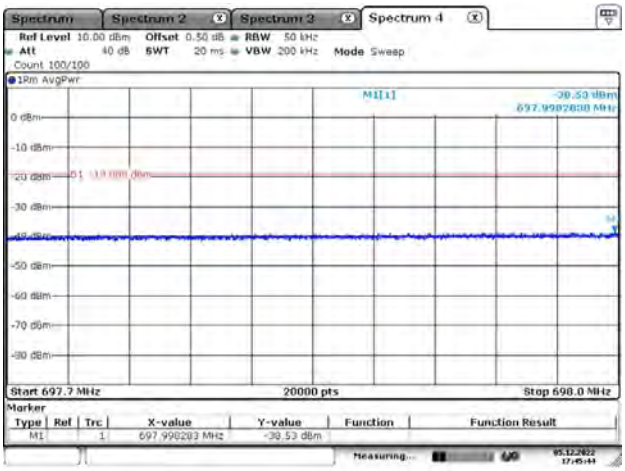
Left Side-CDMA-Pre AGC



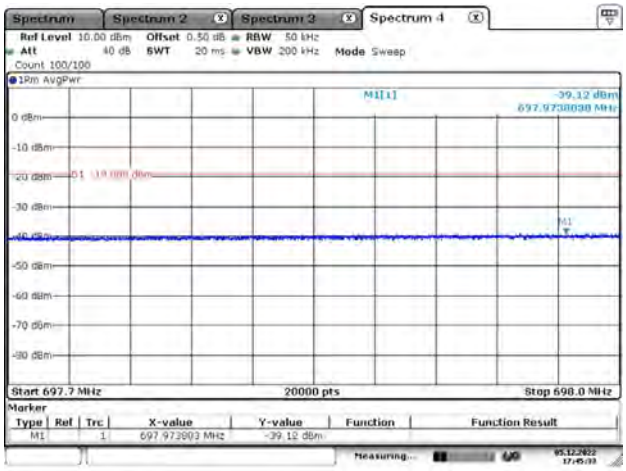
Left Side-CDMA-Above AGC



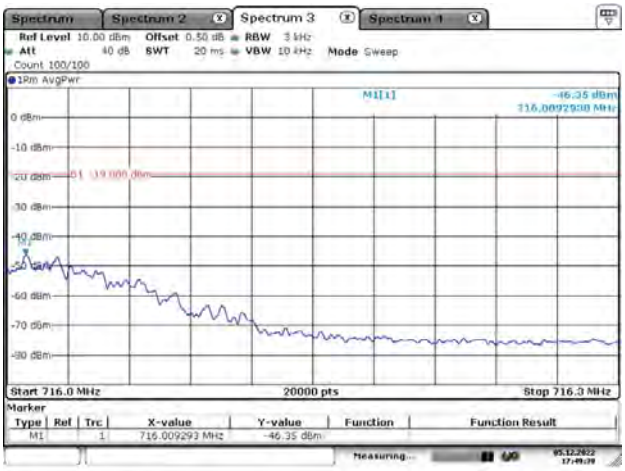
Left Side-WCDMA-Pre AGC



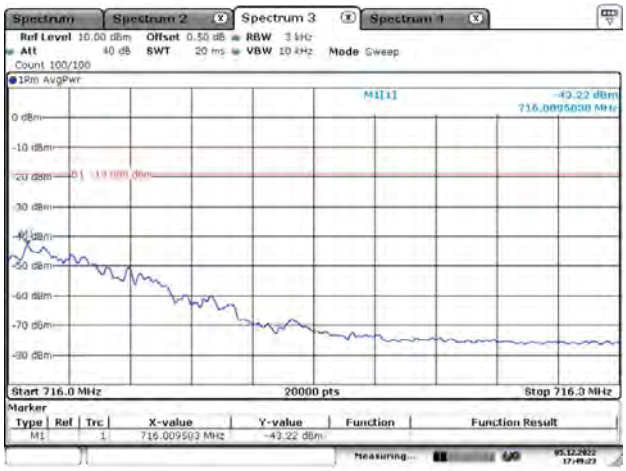
Left Side-WCDMA-Above AGC



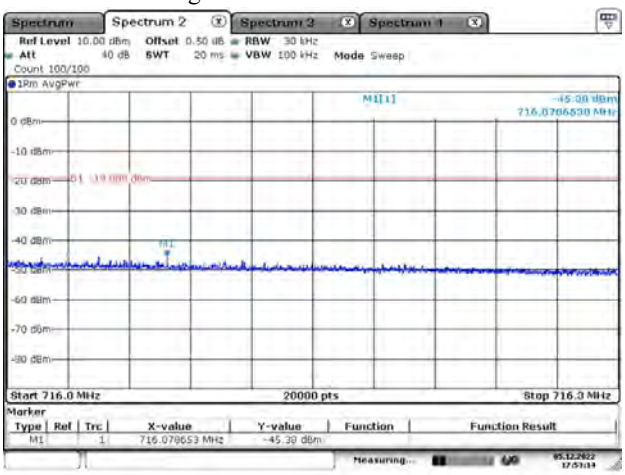
Right Side-GSM-Pre AGC



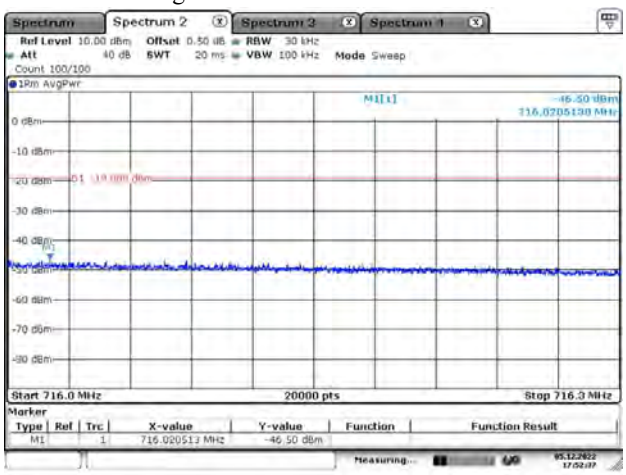
Right Side-GSM-Above AGC



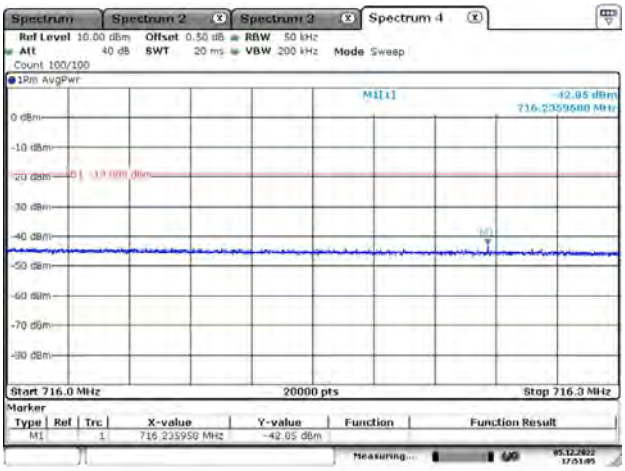
Right Side-CDMA-Pre AGC



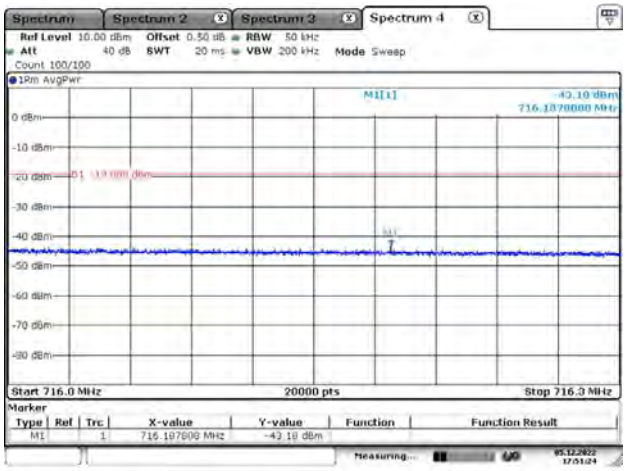
Right Side-CDMA-Above AGC



Right Side-WCDMA-Pre AGC



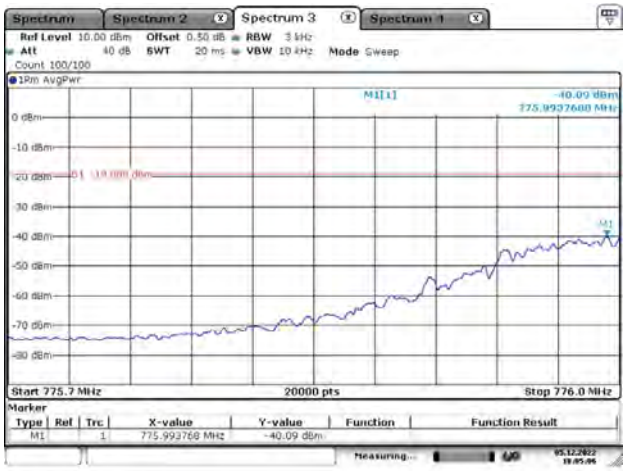
Right Side-WCDMA-Above AGC



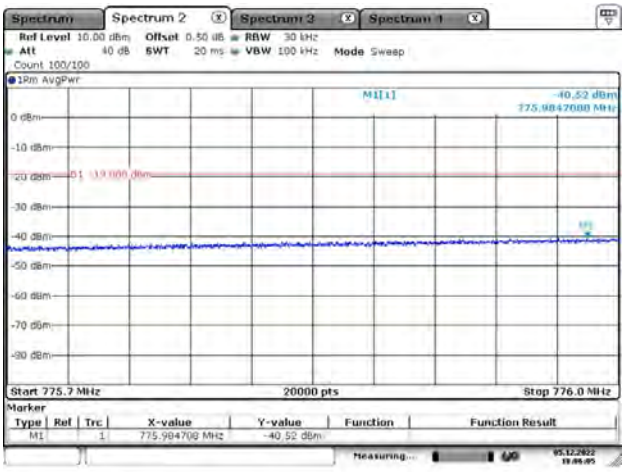
Upper 700 MHz Band Uplink

Left Side-GSM-Pre AGC

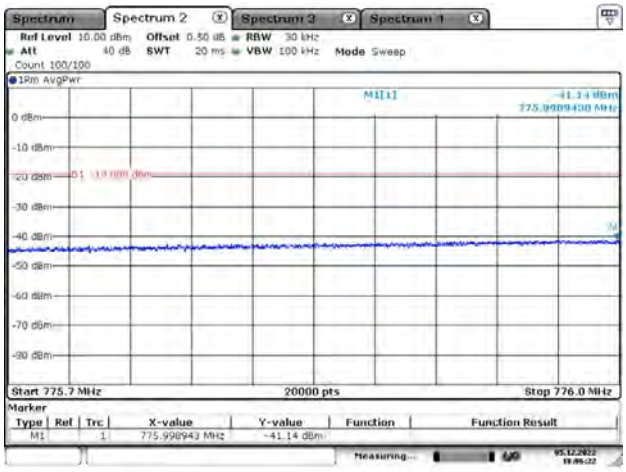
Left Side-GSM-Above AGC



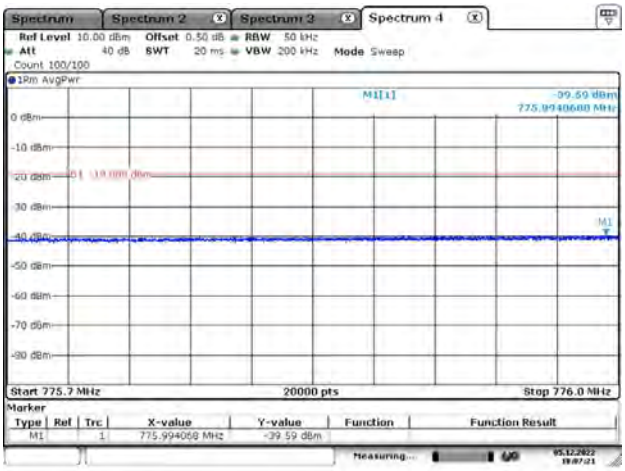
Left Side-CDMA-Pre AGC



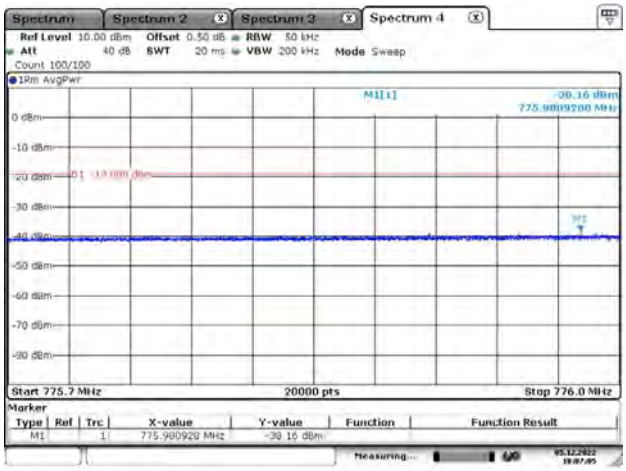
Left Side-CDMA-Above AGC



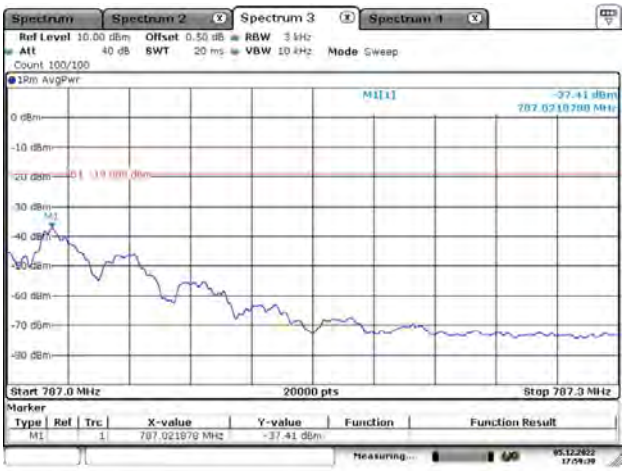
Left Side-WCDMA-Pre AGC



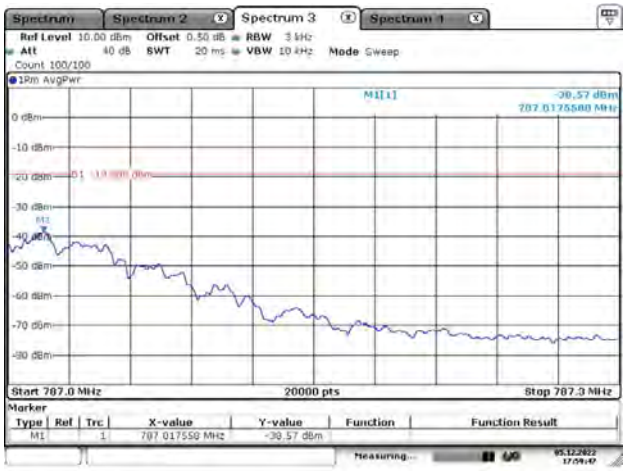
Left Side-WCDMA-Above AGC



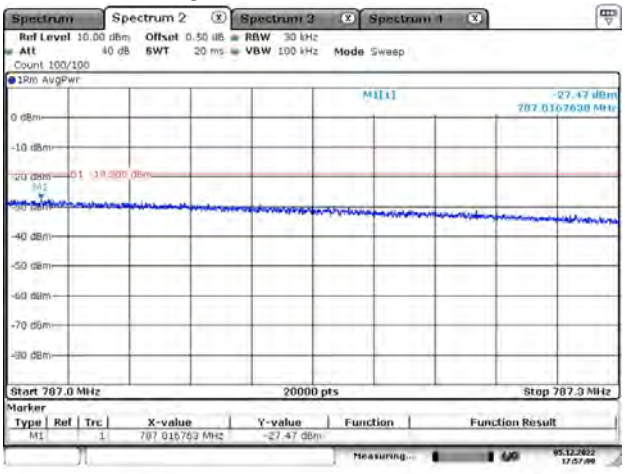
Right Side-GSM-Pre AGC



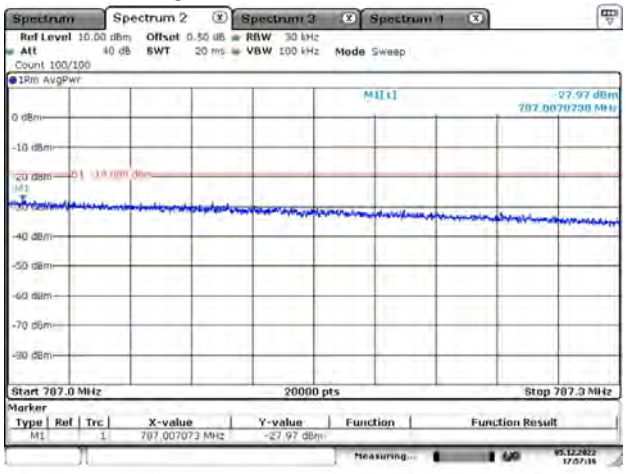
Right Side-GSM-Above AGC



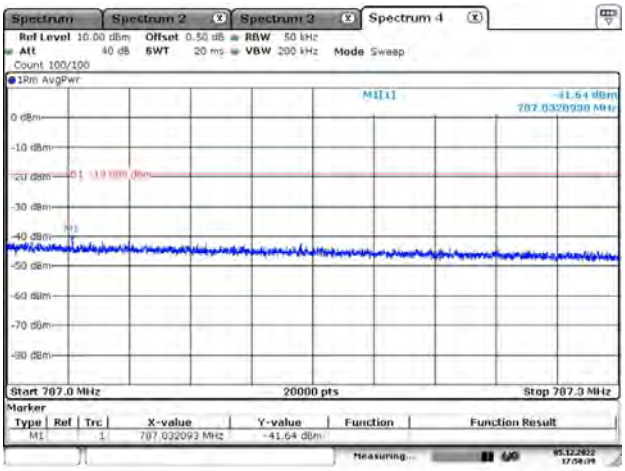
Right Side-CDMA-Pre AGC



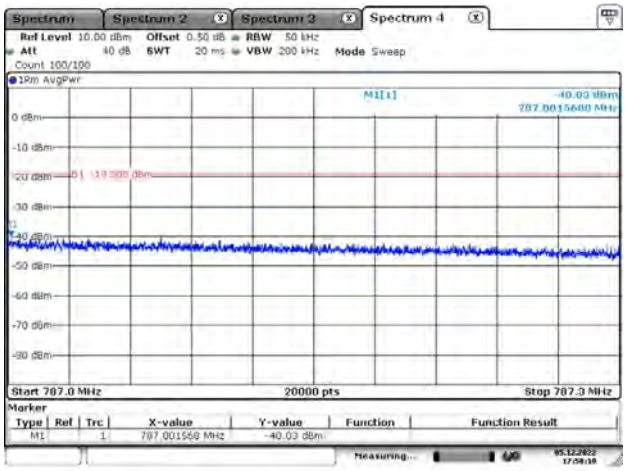
Right Side-CDMA-Above AGC



Right Side-WCDMA-Pre AGC



Right Side-WCDMA-Above AGC

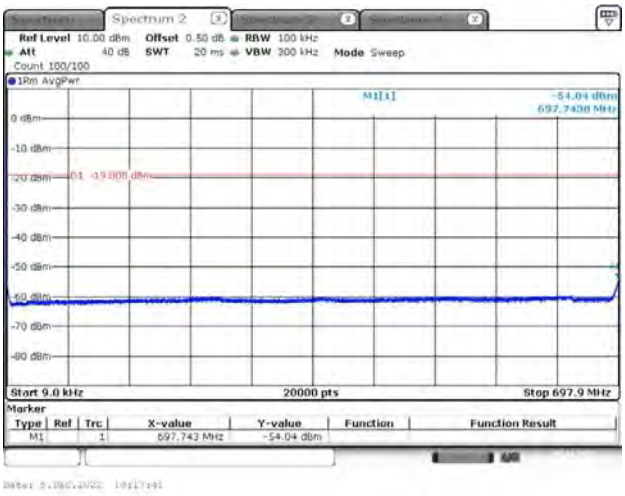


4.7 Spurious Emissions at Antenna Terminals

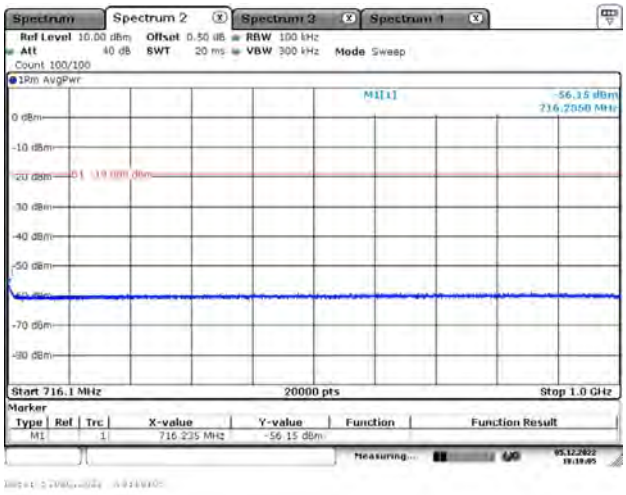
Test Result: Compliance. Please refer to following plots.

Uplink

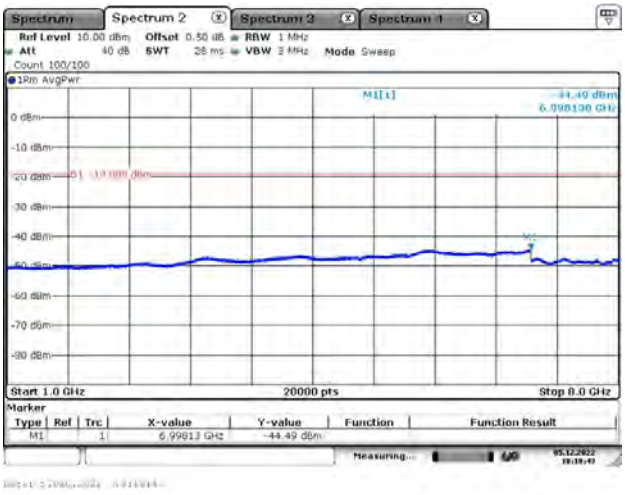
Lower 700 MHz Band-1



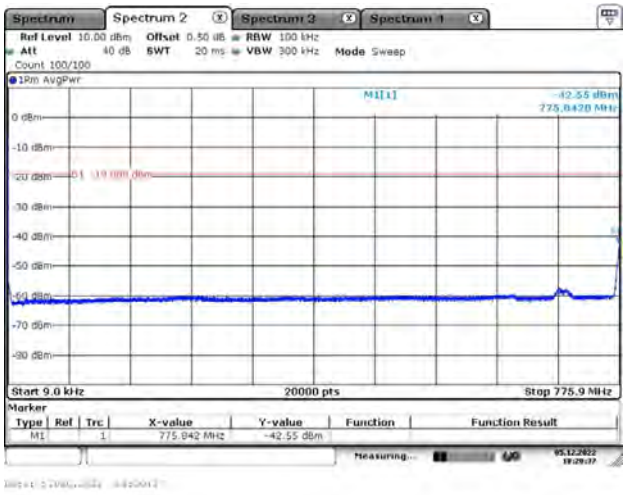
Lower 700 MHz Band-2



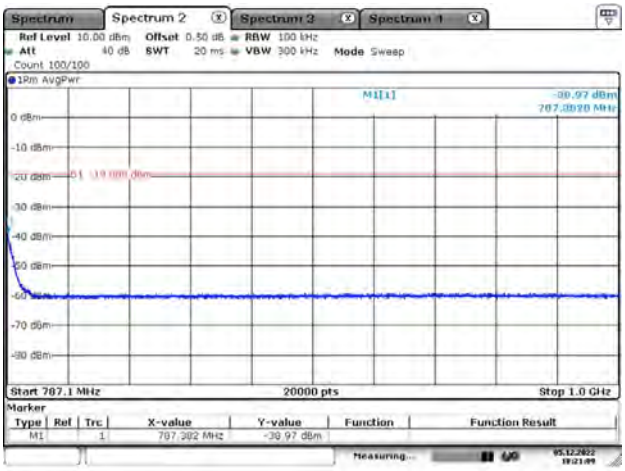
Lower 700 MHz Band-3



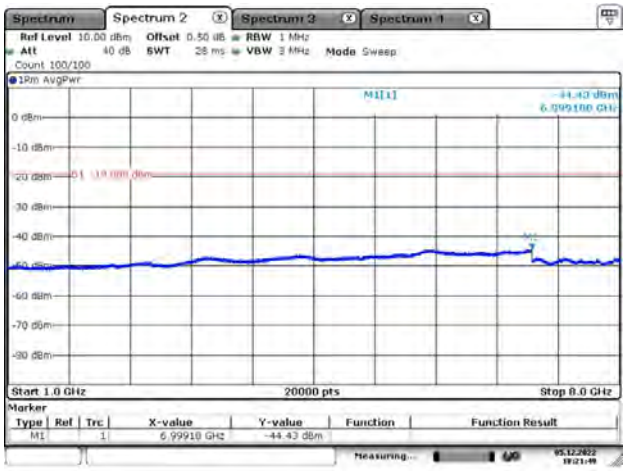
Upper 700 MHz Band-1



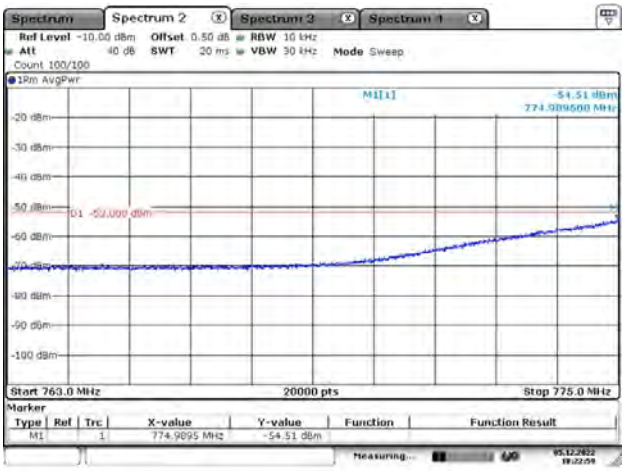
Upper 700 MHz Band-2



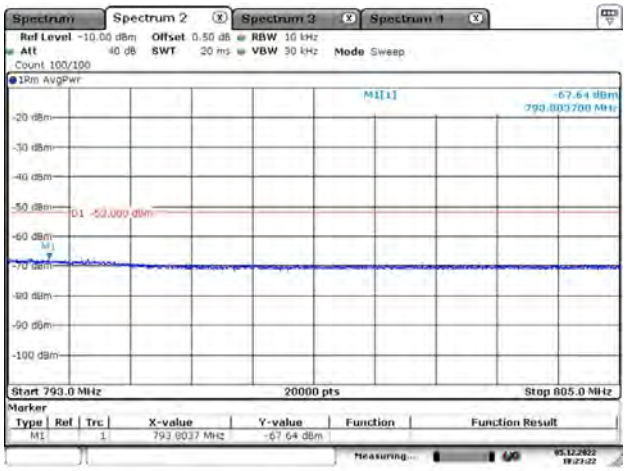
Upper 700 MHz Band-3



Upper 700 MHz Band-4



Upper 700 MHz Band-5



Upper 700 MHz Band-6

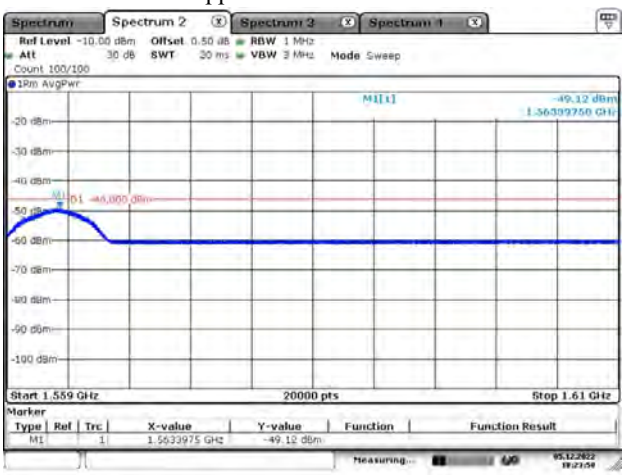
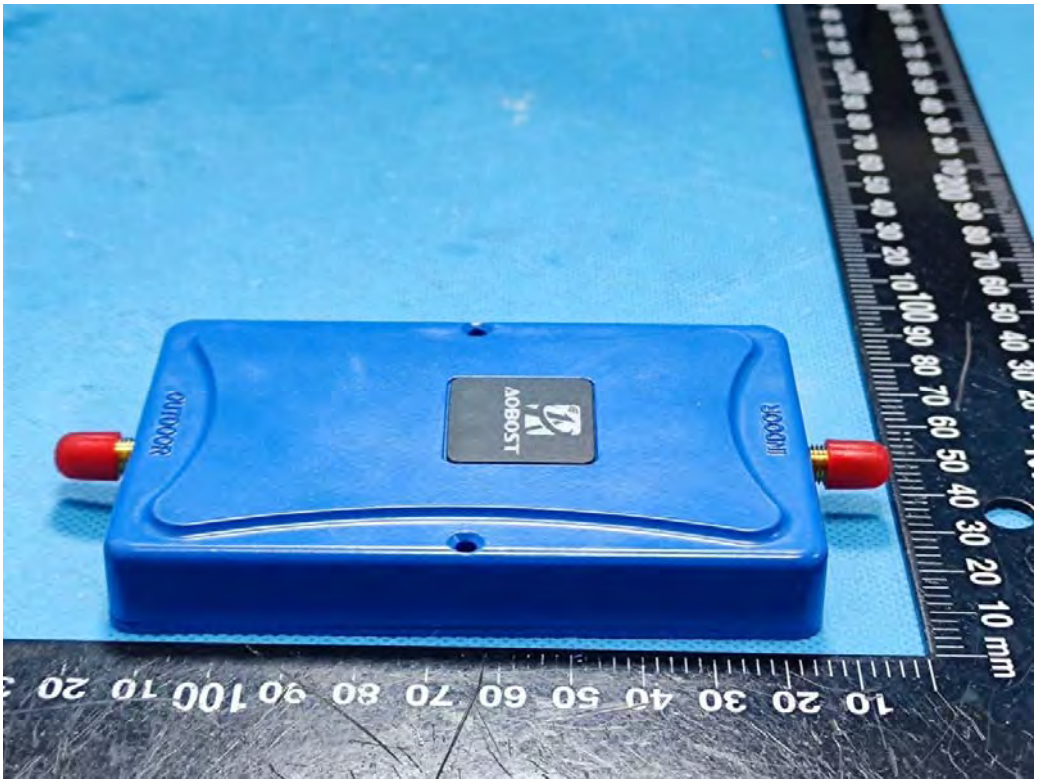
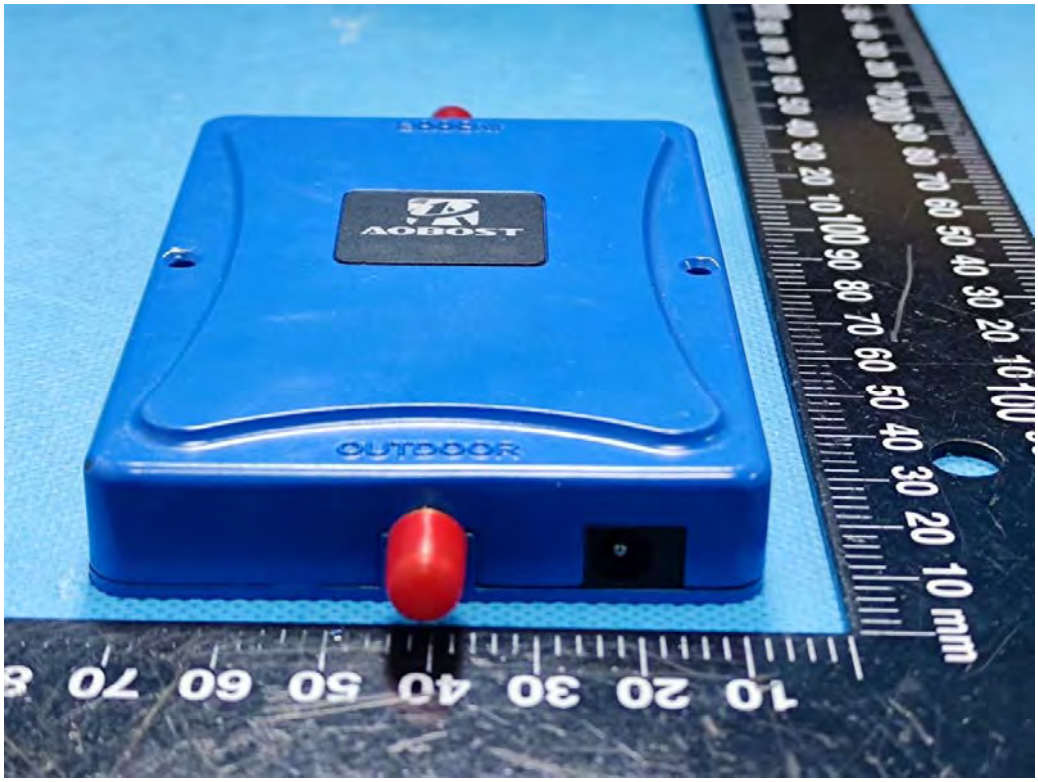
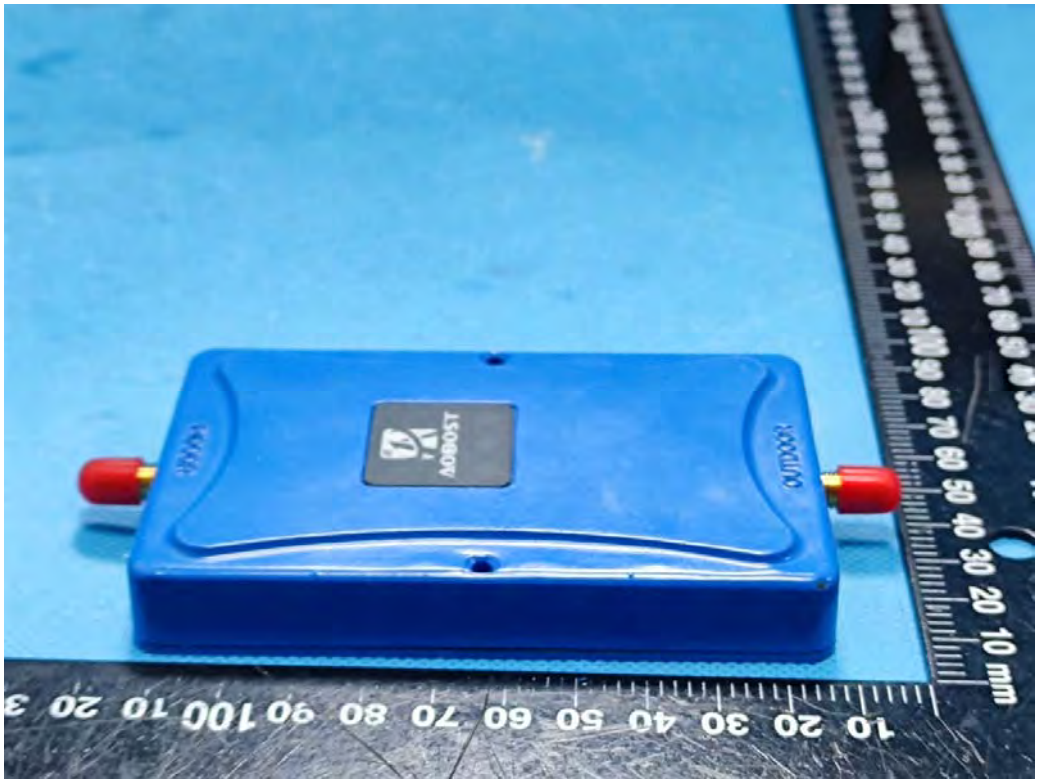
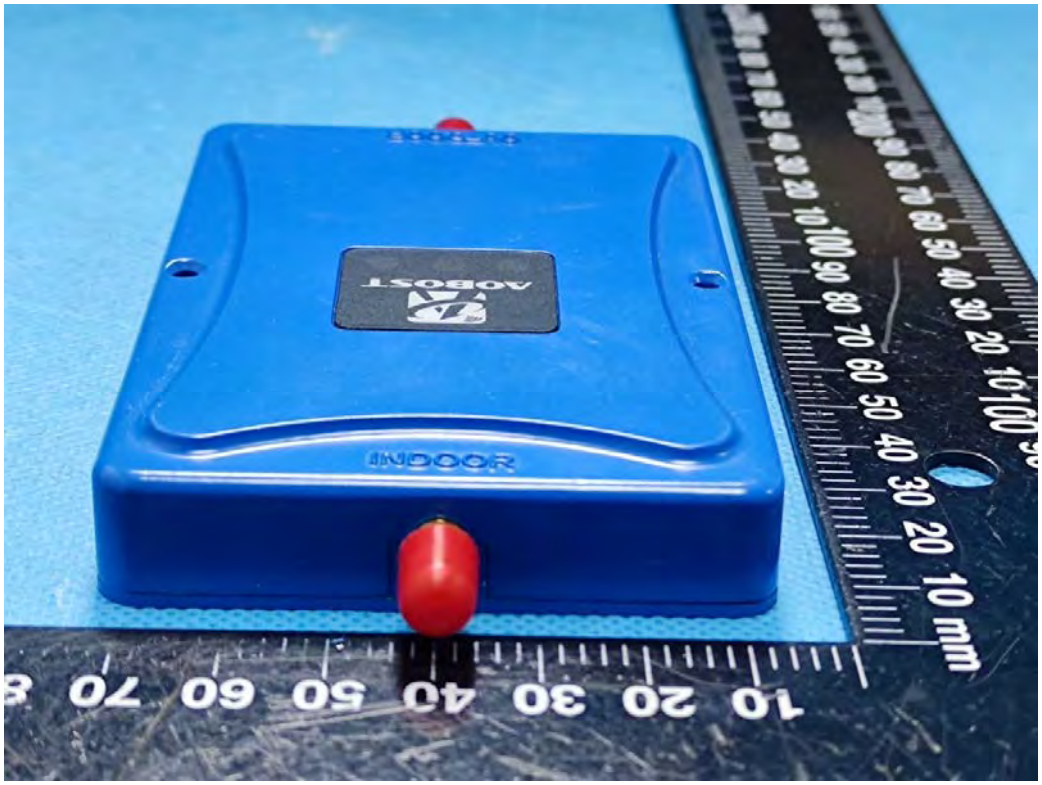


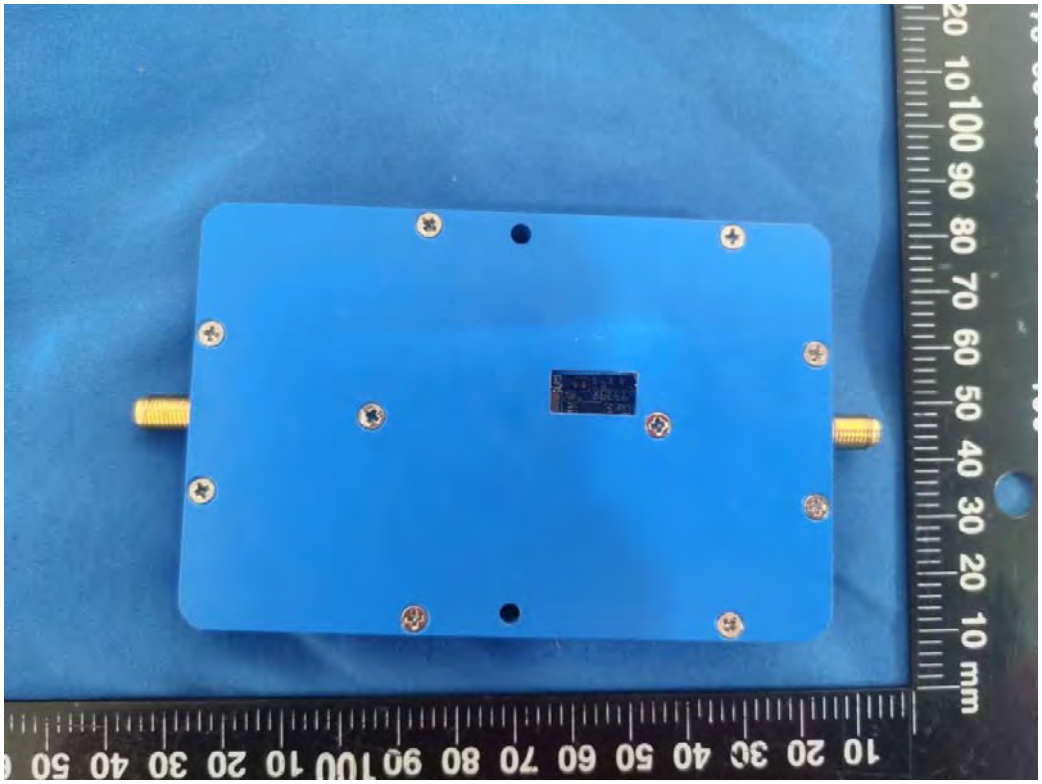
EXHIBIT A - EUT PHOTOGRAPHS

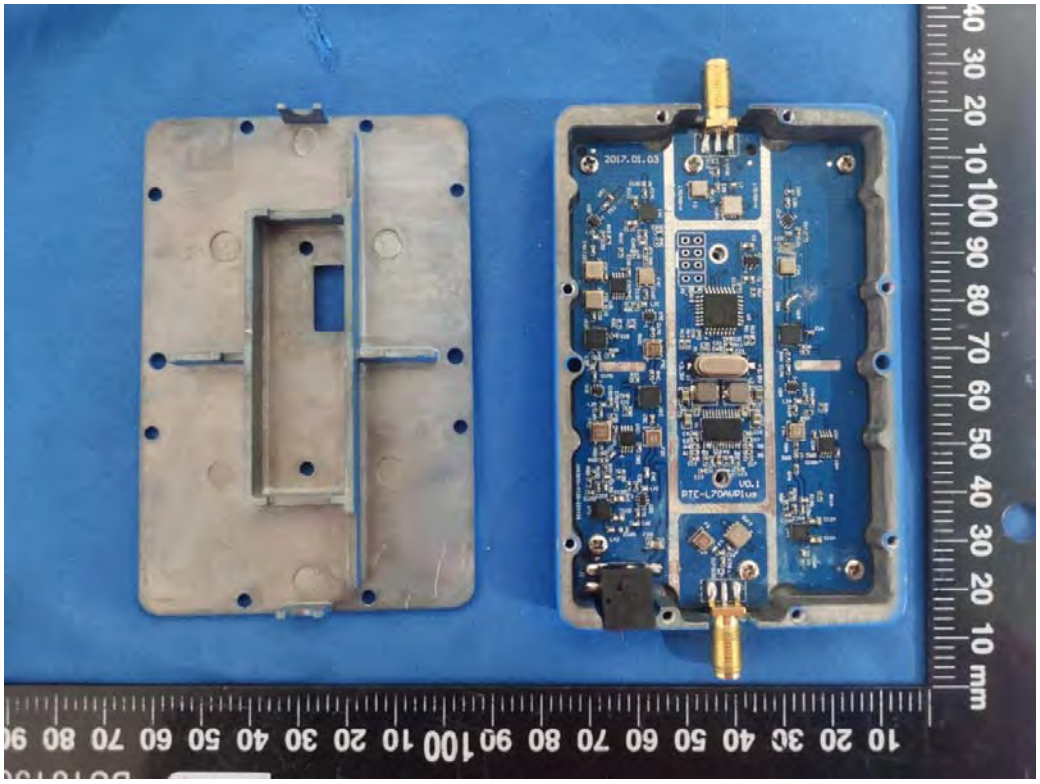


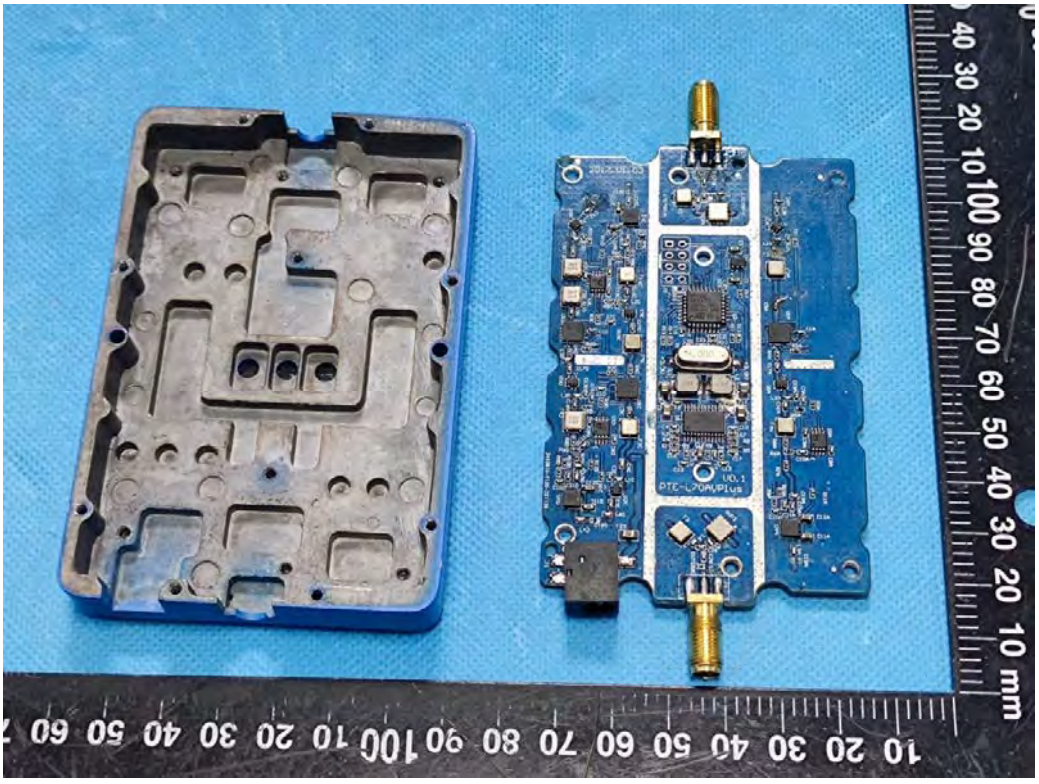

AOBOST
OUTDOOR

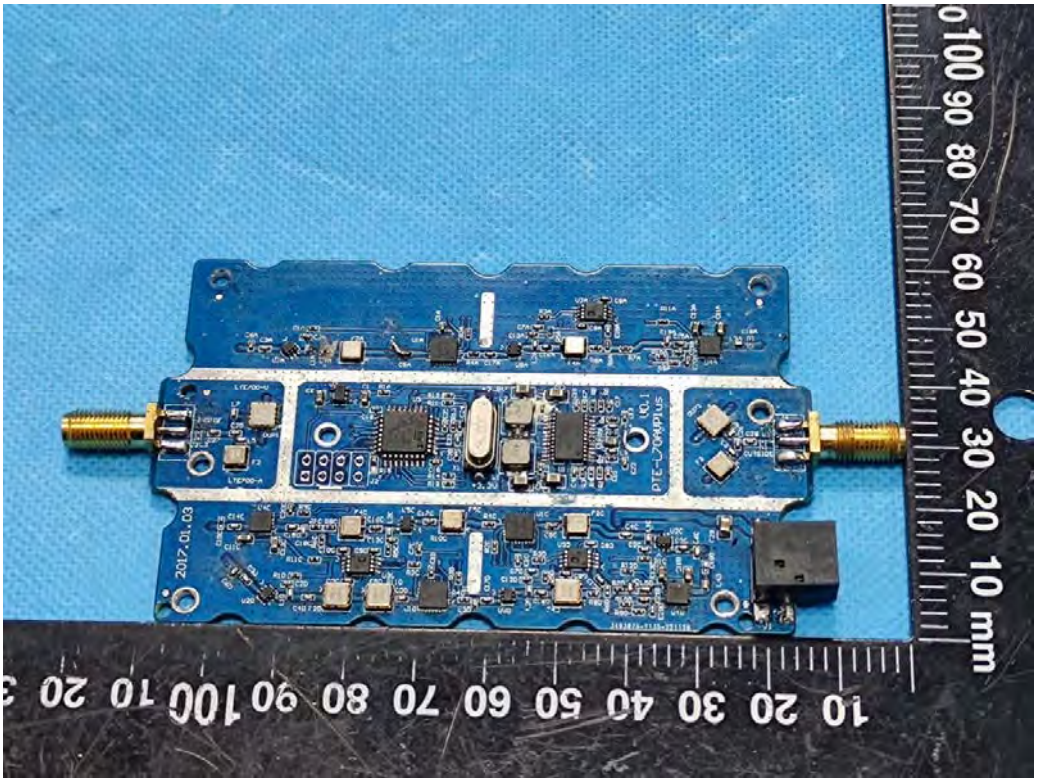

AOBOST

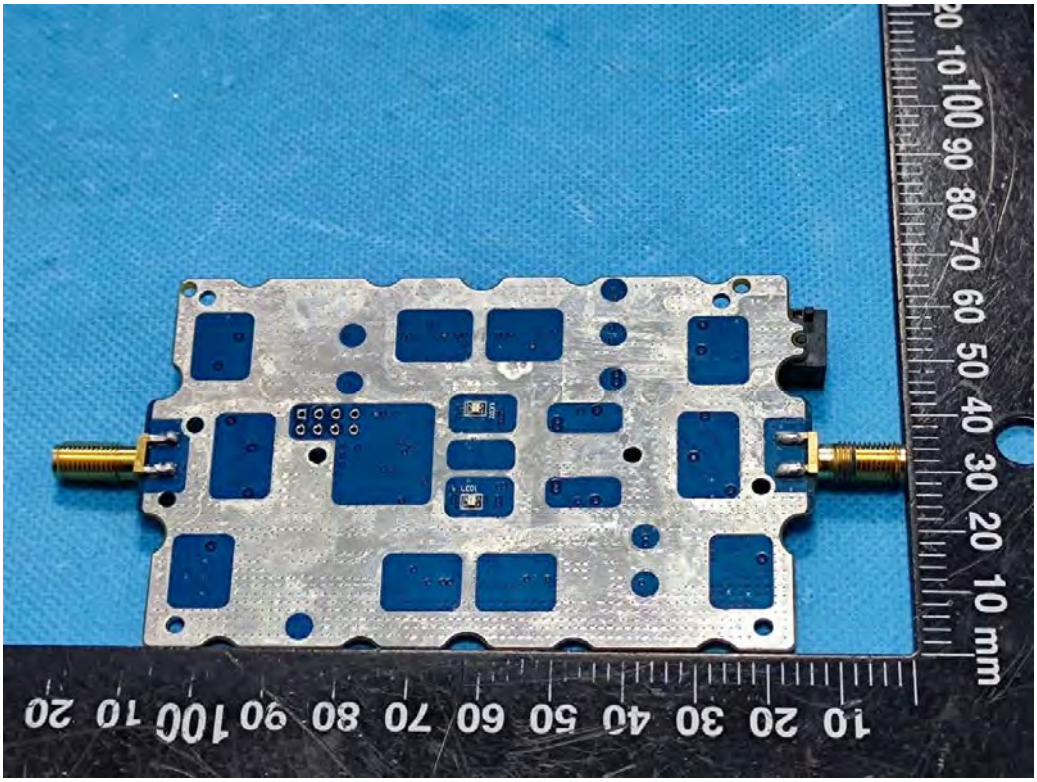

AOBOST
INDOOR

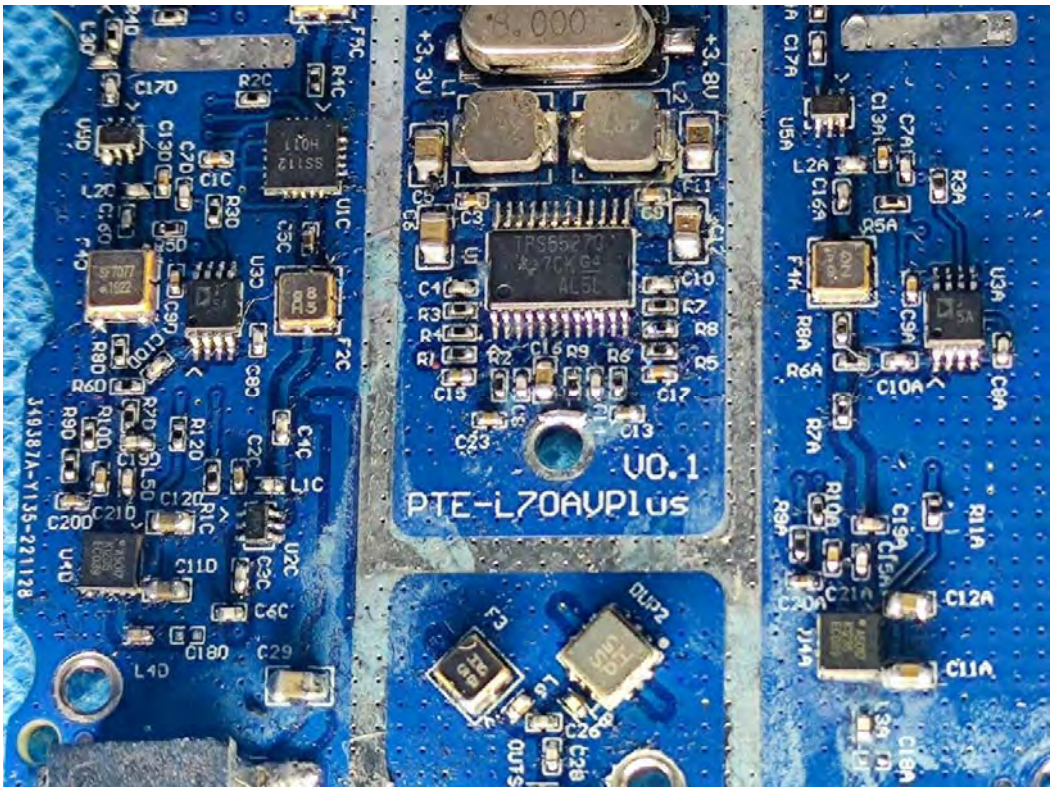











V0.1
PTE-L70AVPlus

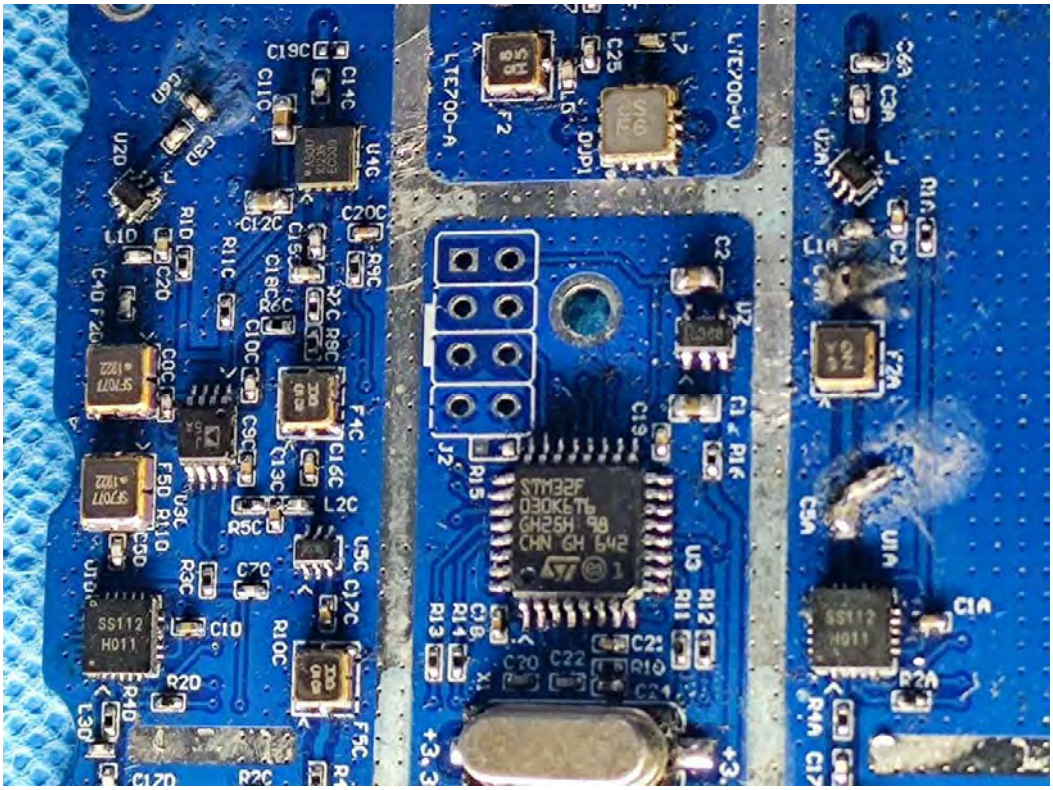
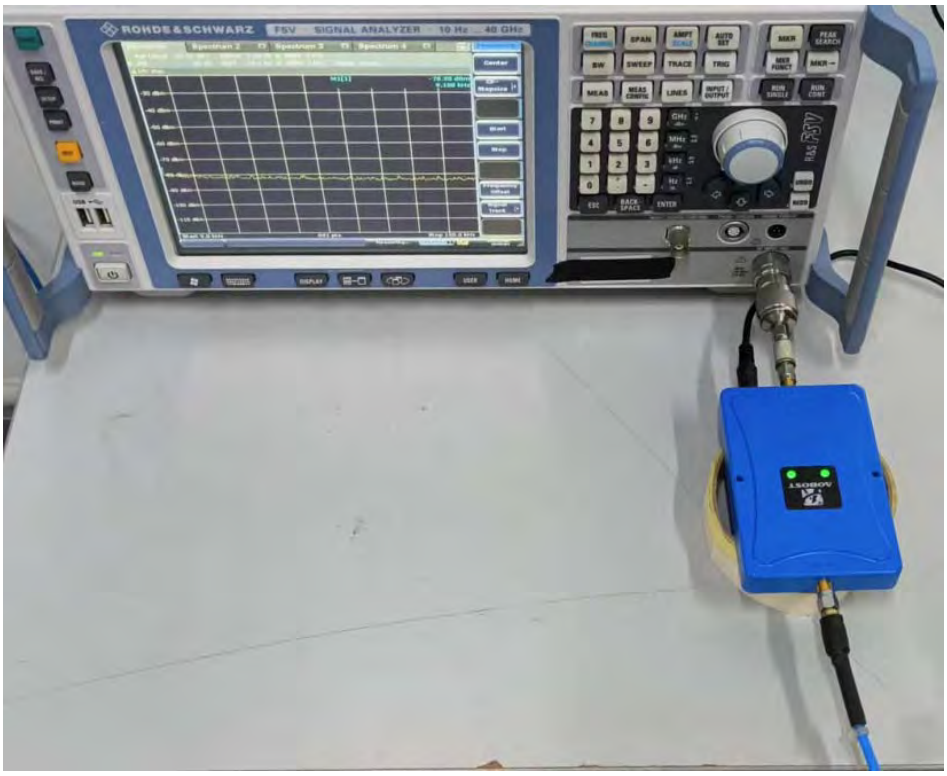

STM32F
030K6T6
LTE700-A
LTE700-V

EXHIBIT B - TEST SETUP PHOTOGRAPHS

RF Conducted Test View



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