TEST REPORT

Applicant Name :	NOVISOLUTIONS CIA LTDA
Address :	Ponceano N73 y Mariano Paredes QUITO ECUADOR Ecuador
Report Number :	2504U66845E-RF-00E
FCC ID:	2BO97TABPROMAX

Test Standard (s)

FCC PART 22H; FCC PART 24E; FCC PART 27

Sample Description

Product Type:	Tablet PC
Model No.:	ENV TAB PRO MAX
Trade Mark:	ENV
Date Received:	2025-07-22
Date of Test:	2025-07-25 to 2025-08-06
Report Date:	2025-08-08

Test Result:	The EUT complied with the standards above.

Prepared and Checked By:

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EMC Engineer

Approved By:

Bob. Liao

Bob.Liao
EMC Engineer

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
Rev.00	2504U66845E-RF-00E	Original Report	2025-08-08

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Tablet PC
Tested Model	ENV TAB PRO MAX
Voltage Range#	DC 5V/9V/12V from adapter DC 3.89V from rechargeable battery
Adapter Information#	MODEL: M20-C020AUS INPUT: 100-240VAC 50/60Hz 0.6A OUTPUT: 5V ⎓3.0A/ 9V ⎓2.22A/ 12V ⎓1.67A 20.0W MAX

Radio	GSM, WCDMA, LTE	
Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX)	
Maximum Average Conducted Output Power	GSM850:32.92dBm(GMSK), 30.53dBm(8PSK)	
	PCS1900:29.4dBm(GMSK), 29.26dBm(8PSK)	
	WCDMA B2: 23.87dBm	WCDMA B5: 23.88dBm
	LTE B2:24.92dBm	LTE B4:24.63dBm
	LTE B7:24.55dBm	/
Modulation Technique	GSM: GMSK, 8PSK WCDMA: BPSK, QPSK, 16QAM , 64QAM LTE: QPSK, 16QAM	
Antenna Specification#	Internal Antenna (Antenna Gain provided by the applicant)	
	GSM850/WCDMA B5: -12.09dBi	
	PCS1900/WCDMA B2/LTE B2: -8.08dBi	
	LTE B4: -10.75dBi	
	LTE B7: -11.09dBi	
Sample Serial Number	372R-1 (For CE&RE Test), 372Q-1 (RF Conducted Test) (Assigned by ATC, Shenzhen)	
Sample/EUT Status	Good condition	
Normal/Extreme Condition#	L.V.: Low Voltage 3.5 V_{DC} N.V.: Normal Voltage 3.89 V_{DC} H.V.: High Voltage 4.3 V_{DC} (Note: the extreme test condition was declared by manufacturer.)	

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part24-Subpart E, and Part 27 of the Federal Communication Commission's rules.

The objective is to determine the compliance of the EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability and band edge.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services
Part 27 - Miscellaneous Wireless Communications Services

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Unless otherwise stated there are no any additions to, deviations, or exclusions from the method.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

Accredited by American Association for Laboratory Accreditation (A2LA).The Certificate Number is 4297.01.

Measurement Uncertainty

<table>
<tr><th colspan="2">Parameter</th><th>Uncertainty</th></tr>
<tr><td colspan="2">Occupied Channel Bandwidth</td><td>5%</td></tr>
<tr><td colspan="2">RF Frequency</td><td>$0.064*10^{-7}$</td></tr>
<tr><td colspan="2">RF output power, conducted</td><td>0.3 dB</td></tr>
<tr><td colspan="2">Unwanted Emission, conducted</td><td>1.2 dB</td></tr>
<tr><td rowspan="5">Emissions, Radiated</td><td>9kHz - 30MHz</td><td>2.1 dB</td></tr>
<tr><td>30MHz - 1GHz</td><td>4.3 dB</td></tr>
<tr><td>1GHz - 18GHz</td><td>4.9 dB</td></tr>
<tr><td>18GHz - 26.5GHz</td><td>5.2 dB</td></tr>
<tr><td>26.5GHz - 40GHz</td><td>4.6 dB</td></tr>
<tr><td colspan="2">Temperature</td><td>1℃</td></tr>
<tr><td colspan="2">Humidity</td><td>7%</td></tr>
<tr><td colspan="2">Supply voltages</td><td>0.4%</td></tr>
</table>

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.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The final qualification test was performed with the EUT operating at normal mode.

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
PCS1900	0.25	1850.2	1880.0	1909.8
WCDMA B2	4.2	1852.4	1880.0	1907.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880.0	1909.3
	3	1851.5	1880.0	1908.5
	5	1852.5	1880.0	1907.5
	10	1855	1880.0	1905.0
	15	1857.5	1880.0	1902.5
	20	1860.0	1880.0	1900.0
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715.0	1732.5	1750.0
	15	1717.5	1732.5	1747.5
	20	1720.0	1732.5	1745.0
LTE B7	5	2502.5	2535.0	2567.5
	10	2505.0	2535.0	2565.0
	15	2507.5	2535.0	2562.5
	20	2510.0	2535.0	2560.0

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

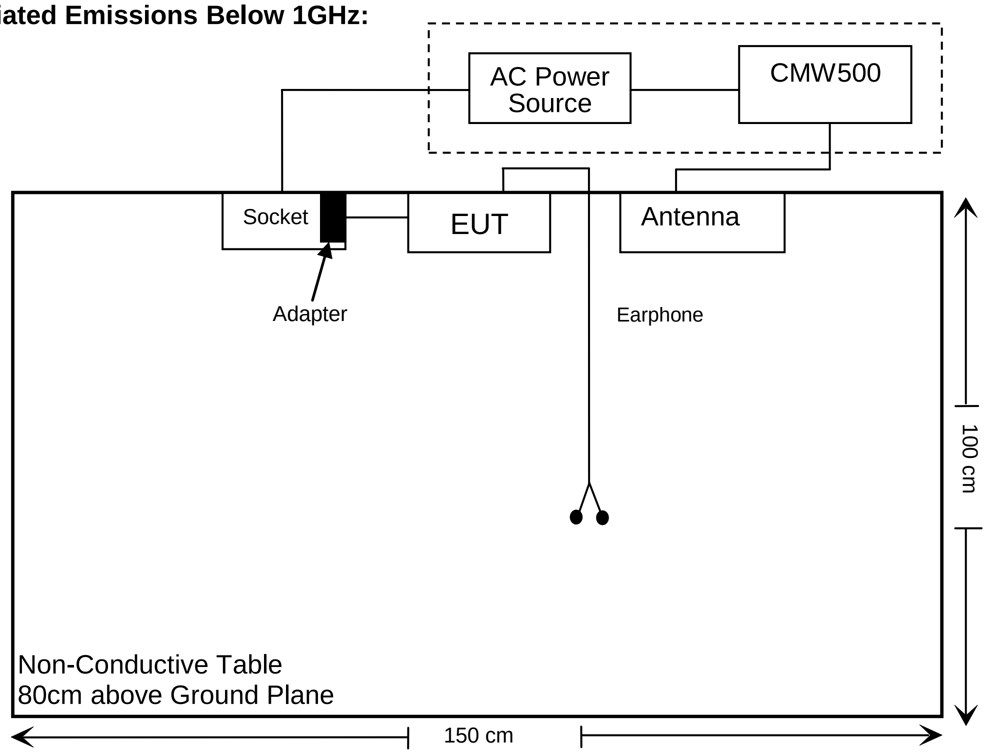
Manufacturer	Description	Model	Serial Number
Unknown	Earphone	Unknown	Unknown

External I/O Cable

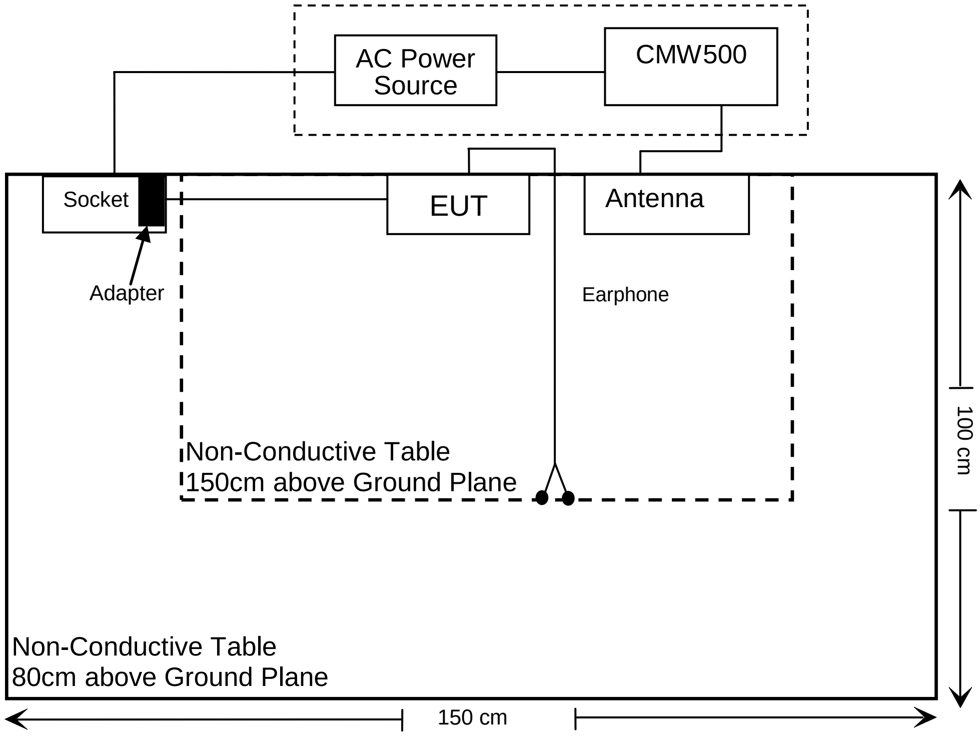
Cable Description	Shielding Type	Length (m)	From Port	To
USB Cable	NO	1.0	Adapter	EUT
Earphone cable	NO	1.2	EUT	Earphone

Block Diagram of Test Setup

For Radiated Emissions Below 1GHz:



For Radiated Emissions Above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310; §2.1093	RF Exposure(SAR)	Compliance
§2.1046; § 22.913 (a)(d); §24.232(c)(d); §27.50(d)(h)	RF Output Power	Compliance
§2.1047	Modulation Characteristics	Not Applicable
§2.1049; §22.905; §22.917; §24.238; §27.53	Occupied Bandwidth	Compliance
§2.1051; §22.917(a); §24.238(a); §27.53;	Spurious Emissions at Antenna Terminal	Compliance
§2.1053; §22.917(a); §24.238(a); §27.53	Field Strength of Spurious Radiation	Compliance
§22.917(a); §24.238(a); §27.53	Band Edge	Compliance
§2.1055; §22.355; §24.235; §27.54;	Frequency stability	Compliance

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Spurious Emission Test (Below 1GHz)					
Rohde & Schwarz	Test Receiver	ESR	102725	2024/11/08	2025/11/07
SONOMA INSTRUMENT	Amplifier	310N	186131	2025/03/26	2026/03/25
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2024/08/08	2027/08/07
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2023/02/14	2026/02/13
Agilent	Signal Generator	N5183A	MY47420360	2024/09/02	2025/09/01
Unknown	RF Coaxial Cable	No.12	N040	2024/10/08	2025/10/07
Unknown	RF Coaxial Cable	No.13	N300	2024/10/08	2025/10/07
Unknown	RF Coaxial Cable	No.14	N800	2024/10/08	2025/10/07
Test Software: e3 191218 (V9)					
Radiated Spurious Emission Test (Above 1GHz)					
Rohde & Schwarz	Spectrum Analyzer	FSV40	101949	2024/10/08	2025/10/07
A.H. Systems, inc.	Preamplifier	PAM-0118	226	2025/03/20	2026/03/19
Schwarzbeck	Horn Antenna	BBHA9120D	837	2023/02/22	2026/02/21
Unknown	RF Coaxial Cable	No.10	N050	2024/10/08	2025/10/07
Unknown	RF Coaxial Cable	No.11	N1000	2024/10/08	2025/10/07
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2023/12/12	2026/12/11
BACL	Amplifier	BACL-1313-A18 40	4012521	2025/05/30	2026/05/29
Agilent	Signal Generator	N5183A	MY47420360	2024/09/02	2025/09/01
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2022/12/26	2025/12/25
PASTERNACK	Horn Antenna	PE9852/2F-20	1120 (ATC-BA-024-1)	2023/01/04	2026/01/03
Unknown	RF Coaxial Cable	No.15	N600	2024/10/08	2025/10/07
Unknown	RF Coaxial Cable	No.16	N650	2024/10/08	2025/10/07
Test Software: e3 191218 (V9)					

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40-N	101378	2024/10/25	2025/10/24
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2024/10/08	2025/10/07
BACL	Temp. & Humid. Chamber	BTH-150-40	30192	2024/10/08	2025/10/07
Mini-Circuits	Power Splitter	ZFRSC-183-S+	SF10944151S	2025/03/26	2026/03/25
UNI-T	DC Power Supply	UTP1306S	2109D0903324	2025/03/26	2026/03/25
Test Software: JDAutoTestSystem V1.0.0					

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1310-RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Please refer to the SAR report number: 2504U66845E-SA.

FCC§2.1047-MODULATION CHARACTERISTIC

According to FCC §2.1047(d), Part 22H,24E&27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC §2.1046, §22.913(a), §24.232(c)(d), §27.50(d)(h)-RF OUTPUT POWER

Applicable Standard

According to FCC §2.1046 and §22.913(a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232(c)(d),mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2496-2690MHz.

Test Procedure

According to ANSI C63.26-2015 Section 5.2.5.5:

In many cases, RF output power limits are specified in terms of the ERP or the EIRP. Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are defined as the product of the power supplied to the antenna and its gain (relative to a dipole antenna in the case of ERP, and relative to an isotropic antenna in the case of EIRP); however, when working in decibels (i.e., logarithmic scale), the ERP and EIRP represent the sum of the transmit antenna gain (in dBd or dBi, respectively) and the conducted RF output power (expressed in dB relative to watts or milliwatts).

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

ERP or EIRP = $P_{Meas} + G_T$

Where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)

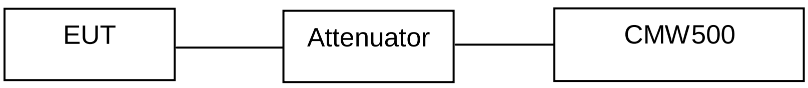
P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

According to ANSI C63.26-2015 Section 5.2

Conducted method:

The RF output of the transmitter was connected to the CMW500 through sufficient attenuation.



Note: the path loss (cable loss and attenuator) has including in result.

Test Data

Please refer to the Appendix.

FCC §2.1049, §22.917, §22.905, §24.238, §27.53-OCCUPIED BANDWIDTH

Applicable Standard

FCC §2.1049, §22.917, §22.905, §24.238, §27.53.

Test Procedure

According to ANSI C63.26-2015 Section 5.4.3

Occupied bandwidth—Relative measurement procedure

The OBW is measured as the width of the spectral envelope of the modulated signal, at an amplitude level reduced from a reference value by a specified ratio (or in decibels, a specified number of dB down from the reference value). The typical ratio for transmitters is −26 dB, corresponding to the 26 dB BW; however, other ratios can be specified. In this subclause, the ratio is designated by "−X dB."

NOTE—This parameter, when expressed in relative terms, is often referred to in regulations as the EBW.

The reference level is either the amplitude of the unmodulated carrier, or the highest amplitude of the spectral envelope of the modulated signal, as stated by the applicable requirement. Some requirements can specify a particular maximum or minimum value for the "−X dB" bandwidth; other requirements can specify that the "−X dB" bandwidth be entirely contained within the authorized or designated frequency band.

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.

b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.

c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.

NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.

d) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.

e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.

f) Determine the reference value by either of the following:

1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.

g) Determine the "−X dB amplitude" as equal to (Reference Value − X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.

h) If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).

i) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the "−X dB amplitude" determined in step f). If a marker is below this "−X dB amplitude" value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.

The spectral envelope can cross the "−X dB amplitude" at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the "−X dB amplitude."

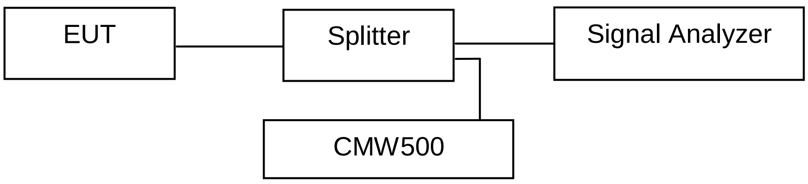
j) The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

According to ANSI C63.26-2015 Section 5.4.4

The OBW is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring (99%) power bandwidth:

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of 1.5 × OBW is sufficient).
b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.
d) Set the detection mode to peak, and the trace mode to max-hold.
e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.
f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).



Note: the path loss (cable loss and splitter inset loss) among the test frequency range has including in test plot.

Test Data

Please refer to the Appendix.

FCC §2.1051, §22.917(a), §24.238(a), §27.53-SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard

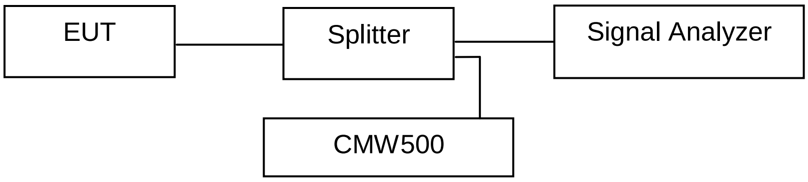
FCC §2.1051, §22.917(a), §24.238(a), §27.53.

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

According to ANSI C63.26-2015 Section 5.7.4:

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10^{th} harmonic.



Note 1: the path loss (cable loss and splitter inset loss) among the test frequency range has including in test plot.
Note 2: For 30MHz-1GHz test of FCC Part 24 and Part 27, RBW is set to 100 kHz because the margin is much greater than 10 dB.

Offset=10*Log (Reference RBW/Measure RBW)=10*(1MHz/100kHz)=10dB

Test Data

Please refer to the Appendix.

FCC §2.1053, §22.917(a), §24.238(a), §27.53-SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917(a), §24.238(a), §27.53.

Test Procedure

According to ANSI C63.26-2015 Section 5.5.3:

●**Test setup:**

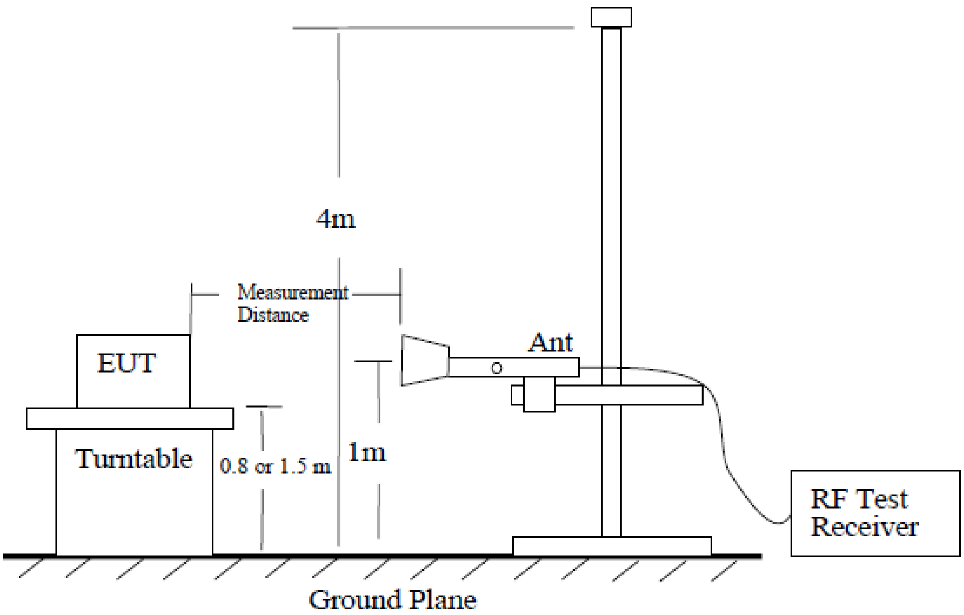


Figure 6 —Test site-up for radiated ERP and/or EIRP measurements

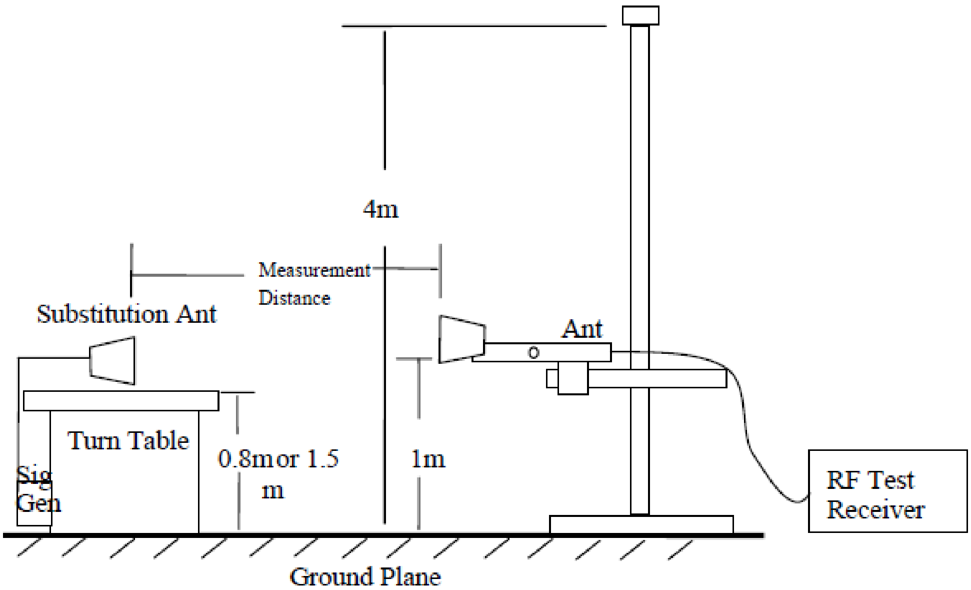


Figure 7 —Substitution method set-up for radiated emission

● **Final radiated emissions testing**

a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.

b) Each emission under consideration shall be evaluated:

   1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
   2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
   3) Return the turntable to the azimuth where the highest emission amplitude level was observed.
   4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
   5) Record the measured emission amplitude level and frequency using the appropriate RBW.

c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.

d) Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.

e) Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.

f) Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.

g) For each emission that was detected and measured in the initial test [i.e., in step b) and step c)]:

   1) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
   2) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step b) and step c).
   3) Record the output power level of the signal generator when equivalence is achieved in step 2).

h) Repeat step e) through step g) with the measurement antenna oriented in the opposite polarization.

i) Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

   Pe = Ps(dBm) − cable loss (dB) + antenna gain (dBd)

   where

   Pe = equivalent emission power in dBm

   Ps = source (signal generator) power in dBm

   NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.

j) Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from: gain (dBd) = gain (dBi) − 2.15 dB. If necessary, the antenna gain can be calculated from calibrated antenna factor information

k) Provide the complete measurement results as a part of the test report.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the receiving antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Test Data

Environmental Conditions

Test Item:	RSE Below 1GHz	RSE Above1GHz
Temperature:	24 ℃	23.7 ℃
Relative Humidity:	57 %	54 %
ATM Pressure:	100.1 kPa	100.1 kPa
Test Engineer:	Colin,lin	Kevin,lv
Test Date:	2025-07-28	2025-07-28
EUT Operation Mode:	Transmitting	Transmitting

Test Result: Compliance, please refer to the below data.

Note: After pre-scan in the X, Y and Z axes of orientation, the worst case as setup photos was recorded.

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
GSM 850						
Test Frequency Rang: 30MHz~10GHz						
Low Channel						
399.91	-70.75	H	5.48	-65.27	-13	-52.27
73.71	-54.03	V	-5.52	-59.55	-13	-46.55
1648.4	-34.65	H	-1.20	-35.85	-13	-22.85
1648.4	-35.58	V	-1.55	-37.13	-13	-24.13
Middle Channel						
399.91	-70.37	H	5.48	-64.89	-13	-51.89
73.71	-53.93	V	-5.52	-59.45	-13	-46.45
1673.2	-31.63	H	-1.53	-33.16	-13	-20.16
1673.2	-34.72	V	-1.53	-36.25	-13	-23.25
High Channel						
399.91	-70.53	H	5.48	-65.05	-13	-52.05
73.71	-54.51	V	-5.52	-60.03	-13	-47.03
1697.6	-33.70	H	-1.88	-35.58	-13	-22.58
1697.6	-26.84	V	-1.50	-28.34	-13	-15.34
GSM 1900						
Test Frequency Rang: 30MHz~20GHz						
Low Channel						
399.91	-70.36	H	5.48	-64.88	-13	-51.88
73.71	-54.25	V	-5.52	-59.77	-13	-46.77
3700.4	-54.14	H	2.86	-51.28	-13	-38.28
3700.4	-50.65	V	3.34	-47.31	-13	-34.31
Middle Channel						
399.91	-70.52	H	5.48	-65.04	-13	-52.04
73.71	-54.50	V	-5.52	-60.02	-13	-47.02
3760	-56.28	H	3.33	-52.95	-13	-39.95
3760	-52.77	V	3.23	-49.54	-13	-36.54
High Channel						
399.91	-70.83	H	5.48	-65.35	-13	-52.35
73.71	-54.05	V	-5.52	-59.57	-13	-46.57
3819.6	-54.97	H	3.85	-51.12	-13	-38.12
3819.6	-53.44	V	3.67	-49.77	-13	-36.77

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
WCDMA Band2						
Test Frequency Rang: 30MHz~20GHz						
Low Channel						
394.16	-70.47	H	4.42	-66.05	-13	-53.05
73.49	-54.28	V	-5.50	-59.78	-13	-46.78
3704.8	-53.82	H	2.86	-50.96	-13	-37.96
3704.8	-55.07	V	3.31	-51.76	-13	-38.76
Middle Channel						
394.16	-70.76	H	4.42	-66.34	-13	-53.34
73.49	-54.54	V	-5.50	-60.04	-13	-47.04
3760	-51.21	H	3.38	-47.83	-13	-34.83
3760	-47.84	V	3.2	-44.64	-13	-31.64
High Channel						
394.16	-70.58	H	4.42	-66.16	-13	-53.16
73.49	-54.32	V	-5.50	-59.82	-13	-46.82
3815.2	-47.98	H	3.9	-44.08	-13	-31.08
3815.2	-51.22	V	3.72	-47.50	-13	-34.50
WCDMA Band5						
Test Frequency Rang: 30MHz~10GHz						
Low Channel						
394.16	-70.48	H	4.42	-66.06	-13	-53.06
73.49	-54.11	V	-5.50	-59.61	-13	-46.61
3305.60	-45.94	H	2.32	-43.62	-13	-30.62
3305.60	-42.99	V	2.58	-40.41	-13	-27.41
4132.00	-51.40	H	3.82	-47.58	-13	-34.58
4132.00	-49.82	V	4.16	-45.66	-13	-32.66
Middle Channel						
394.16	-70.75	H	4.42	-66.33	-13	-53.33
73.49	-54.19	V	-5.50	-59.69	-13	-46.69
3346.4	-48.75	H	1.97	-46.78	-13	-33.78
3346.4	-44.67	V	2.52	-42.15	-13	-29.15
High Channel						
394.16	-70.78	H	4.42	-66.36	-13	-53.36
73.49	-54.57	V	-5.50	-60.07	-13	-47.07
2539.8	-42.03	H	1.41	-40.62	-13	-27.62
2539.8	-36.85	V	1.27	-35.58	-13	-22.58
3386.4	-47.84	H	2.21	-45.63	-13	-32.63
3386.4	-44.50	V	2.46	-42.04	-13	-29.04

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
LTE Band2						
Test Frequency Rang: 30MHz~20GHz						
QPSK 1.4MHz Bandwidth_ RB1#0						
Low Channel						
398.51	-71.02	H	5.22	-65.80	-13	-52.80
73.84	-55.28	V	-5.54	-60.82	-13	-47.82
3701.4	-50.97	H	2.55	-48.42	-13	-35.42
3701.4	-49.31	V	2.64	-46.67	-13	-33.67
Middle Channel						
398.51	-71.19	H	5.22	-65.97	-13	-52.97
73.84	-55.15	V	-5.54	-60.69	-13	-47.69
3760	-51.60	H	3.32	-48.28	-13	-35.28
3760	-47.48	V	3.23	-44.25	-13	-31.25
High Channel						
398.51	-71.47	H	5.22	-66.25	-13	-53.25
73.84	-55.60	V	-5.54	-61.14	-13	-48.14
3818.6	-52.56	H	3.65	-48.91	-13	-35.91
3818.6	-51.22	V	3.71	-47.51	-13	-34.51
LTE Band4						
Test Frequency Rang: 30MHz~18GHz						
QPSK 1.4MHz Bandwidth_ RB1#0						
Low Channel						
398.51	-71.38	H	5.22	-66.16	-13	-53.16
73.84	-54.83	V	-5.54	-60.37	-13	-47.37
3421.4	-56.46	H	2.41	-54.05	-13	-41.05
3421.4	-53.59	V	2.36	-51.23	-13	-38.23
Middle Channel						
398.51	-71.37	H	5.22	-66.15	-13	-53.15
73.84	-55.69	V	-5.54	-61.23	-13	-48.23
3465	-53.95	H	2.73	-51.22	-13	-38.22
3465	-55.02	V	2.72	-52.30	-13	-39.30
High Channel						
398.51	-71.51	H	5.22	-66.29	-13	-53.29
73.84	-54.87	V	-5.54	-60.41	-13	-47.41
3508.6	-55.99	H	2.86	-53.13	-13	-40.13
3508.6	-55.64	V	2.82	-52.82	-13	-39.82

Frequency (MHz)	Receiver Reading (dBm)	Rx Antenna Polar (H/V)	Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
LTE Band7						
Test Frequency Rang: 30MHz~26GHz						
QPSK 5MHz Bandwidth_ RB1#0						
Low Channel						
398.51	-83.04	H	5.22	-77.82	-25	-52.82
73.84	-67.18	V	-5.54	-72.72	-25	-47.72
5020	-67.09	H	5.91	-61.18	-25	-36.18
5020	-69.12	V	5.88	-63.24	-25	-38.24
Middle Channel						
398.51	-82.93	H	5.22	-77.71	-25	-52.71
73.84	-67.12	V	-5.54	-72.66	-25	-47.66
5070	-66.03	H	6.1	-59.93	-25	-34.93
5070	-66.40	V	6.03	-60.37	-25	-35.37
High Channel						
398.51	-82.98	H	5.22	-77.76	-25	-52.76
73.84	-67.64	V	-5.54	-73.18	-25	-48.18
5120	-64.18	H	6.24	-57.94	-25	-32.94
5120	-67.72	V	6.39	-61.33	-25	-36.33

Note 1: Absolute Level = Reading Level + Substituted Factor
Note 2: Substituted Factor = Substituted Level - Cable loss+ Antenna Gain
Note 3: Margin = Absolute Level - Limit
Note 4: The data which below the 20 dB limit was not recorded.

FCC §22.917(a), §24.238(a), §27.53-BAND EDGES

Applicable Standard

According to §22.917(a), the power of any emissions 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.

According to §24.238(a), the power of any emissions 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.

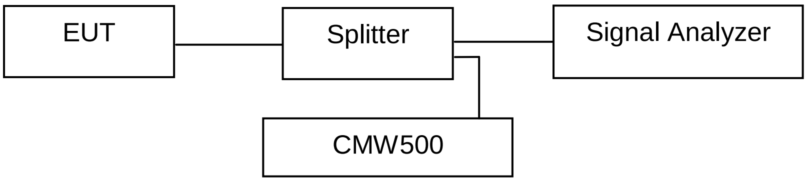
According to §27.53, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Test Procedure

According to ANSI C63.26-2015 Section 5.7.3:

a) Set the spectrum analyzer center frequency to the block, band, or channel edge frequency.
b) Set the span wide enough to capture the fundamental emission closest to the authorized block or band edge, and to include all modulation products that spill into the immediately adjacent frequency band. In some cases, it may be possible to set the center frequency and span so as to encompass the fundamental emission and the unwanted out-of-band (band-edge) emissions on either side of the authorized block, band, or channel. This can be accomplished with a single (slow) sweep, if adequate overload protection and sufficient dynamic range can be maintained.
c) Set the number of points in sweep ≥ 2 × span / RBW.
d) Sweep time should be auto for peak detection. For rms detection the sweep time should be set as follows:
    1) If the device can be configured to transmit continuously (duty cycle ≥ 98%), set the (sweep time) > (number of points in sweep) × (symbol period) (e.g., by a factor of 10 × symbol period × number of points). Increasing the sweep time (i.e., slowing the sweep speed) will allow for averaging over multiple symbols
    2) If the device cannot transmit continuously (duty cycle < 98%), a gated sweep shall be used when possible (i.e., gate triggered such that the analyzer only sweeps when the device is transmitting at full power), set the sweep time > (number of points in sweep) × (symbol period) but the sweep time shall always be maintained at a value that is less than or equal to the minimum transmission time.
    3) If the device cannot be configured to transmit continuously (duty cycle < 98%) and a free-running sweep must be used, set the sweep time so that the averaging is performed over multiple on/off cycles by setting the sweep time > (number of points in sweep) × (transmitter period) (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by [10 log (1/duty cycle)]. This assumes that the transmission period and duty cycle is relatively constant (duty cycle variation ≤ ±2%).
    4) If the device cannot be configured to transmit continuously and a free-running sweep must be used, and if the transmissions exhibit a non-constant duty cycle (duty cycle variations > ±2%), set the sweep time so that the averaging is performed over the on-period by setting the sweep time > (symbol period) × (number of points), while also maintaining the sweep time < (transmitter on-time). The trace mode shall be set to max hold, since not every display point will be averaged only over just the on-time. Thus, multiple sweeps (e.g., 100) in maximum hold are necessary to ensure that the maximum power is measured.

e) The test report shall include the plots of the measuring instrument display and the measured data.
f) See Annex I for example emission mask plots.



Note: the path loss (cable loss and splitter inset loss) among the test frequency range has including in test plot.

Test Data

Please refer to the Appendix.

FCC §2.1055, §22.355, §24.235, §27.54-FREQUENCY STABILITY

Applicable Standard

FCC §2.1055, §22.355, §24.235, §27.54.

According to §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile > 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

According to ANSI C63.26-2015 Section 5.6:

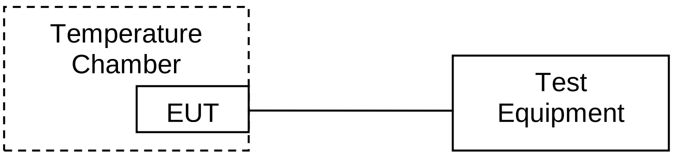
Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage.

The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency determining circuit element shall be made subsequent to this initial set-up. Frequency stability is tested:

a) At 10 °C intervals of temperatures between −30 °C and +50 °C at the manufacturer's rated supply voltage, and
b) At +20 °C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage then the −15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.

During the test all necessary settings, adjustments and control of the EUT have to be performed without disturbing the test environment, i.e., without opening the environmental chamber. The frequency stabilities can be maintained to a lesser temperature range provided that the transmitter is automatically inhibited from operating outside the lesser temperature range. For handheld equipment that is only capable of operating from internal batteries and the supply voltage cannot be varied, the frequency stability tests shall be performed at the nominal battery voltage and the battery end point voltage specified by the manufacturer. An external supply voltage can be used and set at the internal battery nominal voltage, and again at the battery operating end point voltage which shall be specified by the equipment manufacturer.

If an unmodulated carrier is not available, the mean frequency of a modulated carrier can be obtained by using a frequency counter with gating time set to an appropriately large multiple of bit periods (gating time depending on the required accuracy). Full details on the choice of values shall be included in the test report.



Test Data

Please refer to the Appendix.

APPENDIX

Frequency band	Remark
GSM	Refer to the 2504U66845E-RF-00E-Appendix A-GSM.
WCDMA	Refer to the 2504U66845E-RF-00E-Appendix B-WCDMA.
LTE	Refer to the 2504U66845E-RF-00E-Appendix C-LTE.

EXHIBIT A-EUT PHOTOGRAPHS

Please refer to the Attachment No.1 2504U66845E-RF EUT External Photos and Attachment No.2 2504U66845E-RF EUT Internal Photos.

EXHIBIT B-TEST SETUP PHOTOGRAPHS

Please refer to the Attachment No.4 2504U66845E-RFB Test Photos.

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