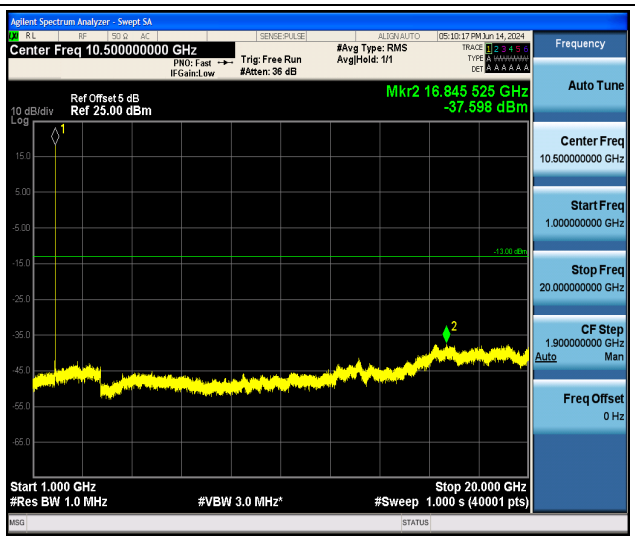
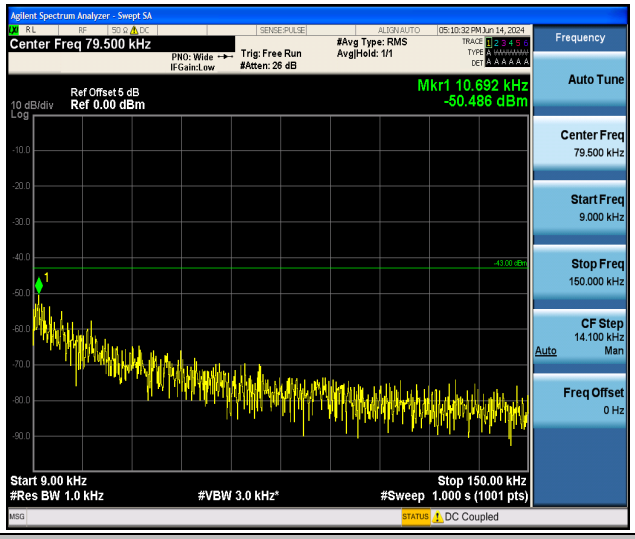
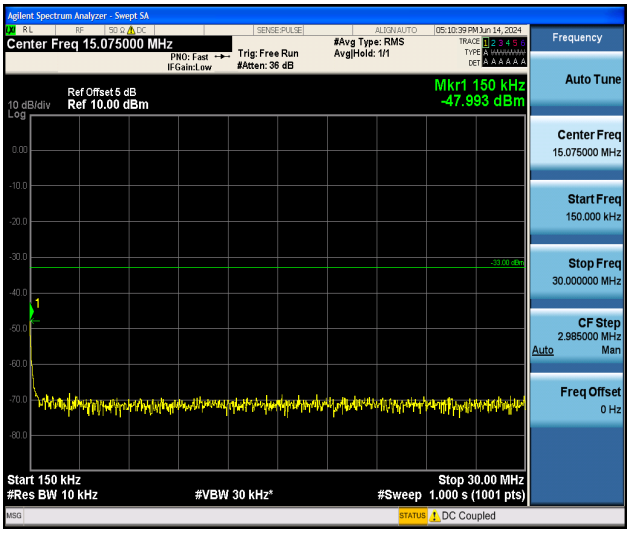


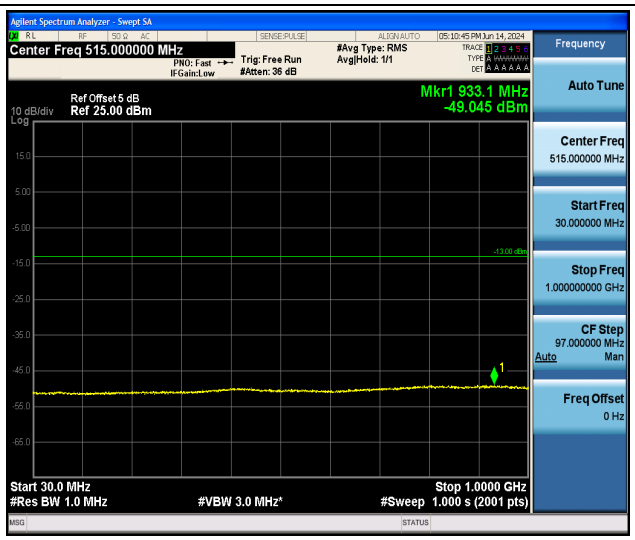
Band2-9262-1000~20000MHz-PASS



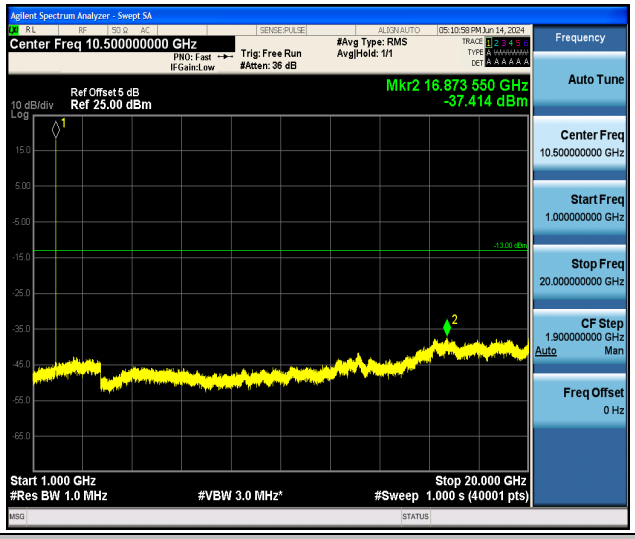
Band2-9400-0.009~0.15MHz-PASS



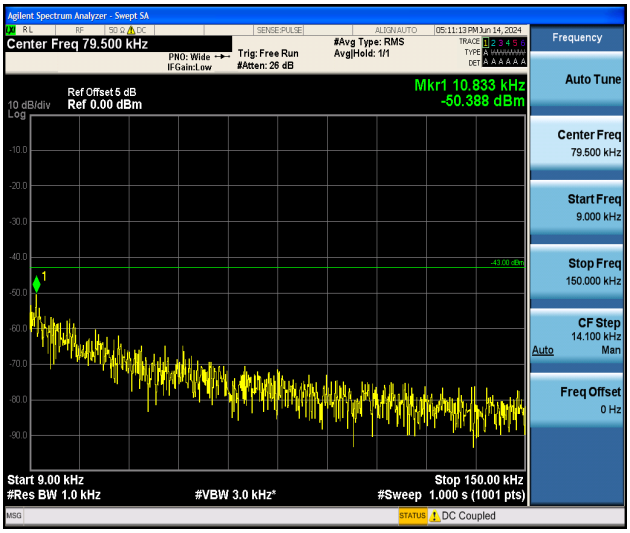
Band2-9400-0.15~30MHz-PASS



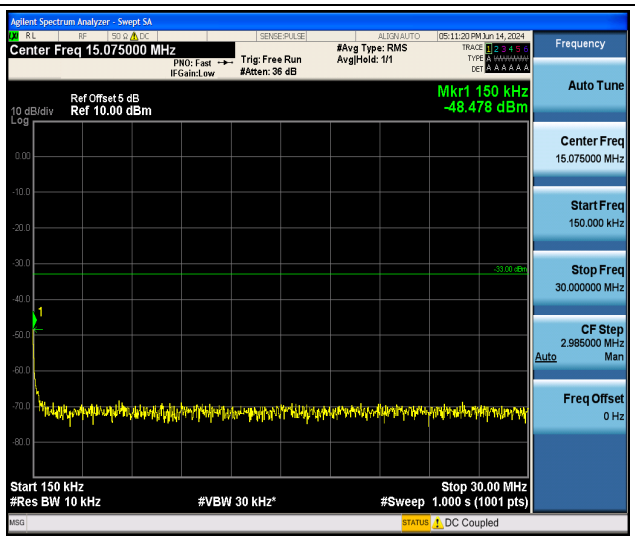
Band2-9400-30~1000MHz-PASS



Band2-9400-1000~20000MHz-PASS

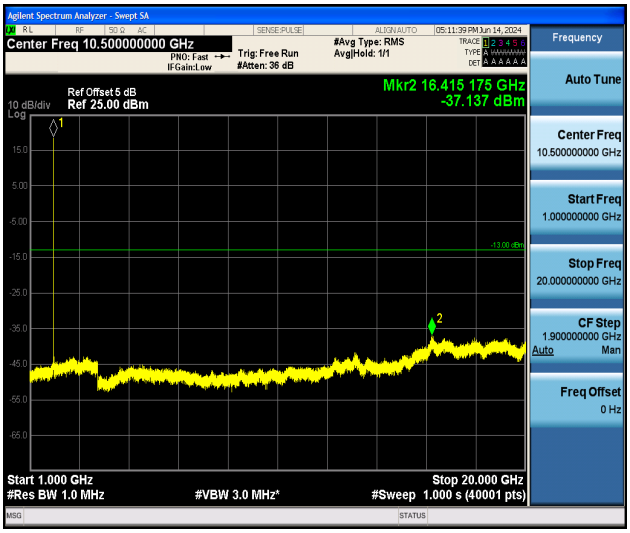


Band2-9538-0.009~0.15MHz-PASS



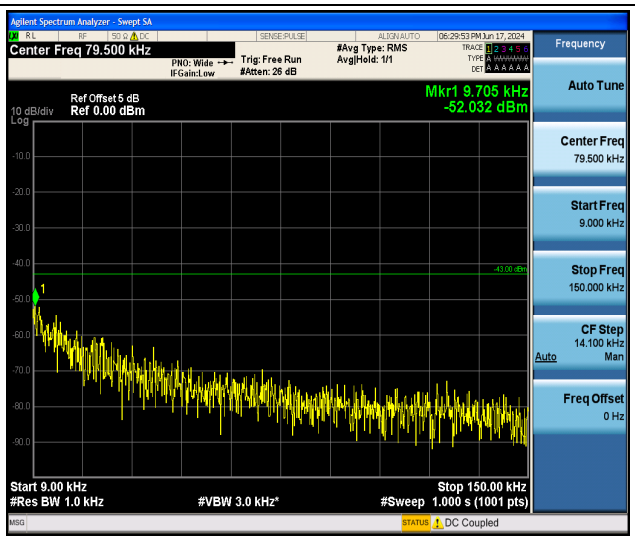
Band2-9538-0.15~30MHz-PASS

Band2-9538-30~1000MHz-PASS

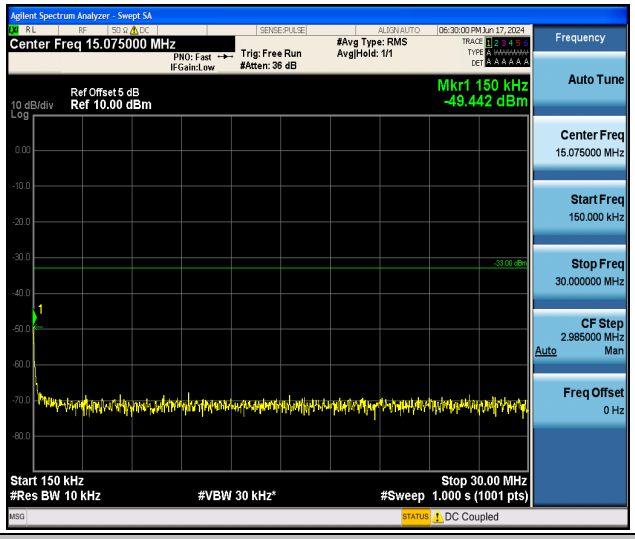


Band2-9538-1000~20000MHz-PASS

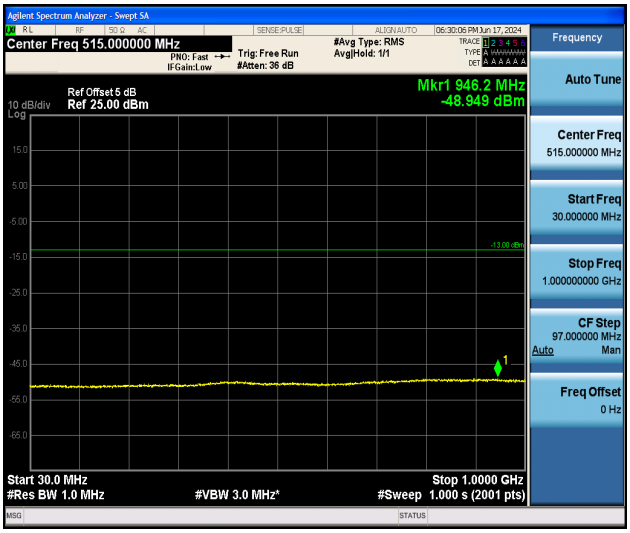
中国国家认证认可监督管理委员会
Certification and Accreditation Administration of the People's Republic of China
For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



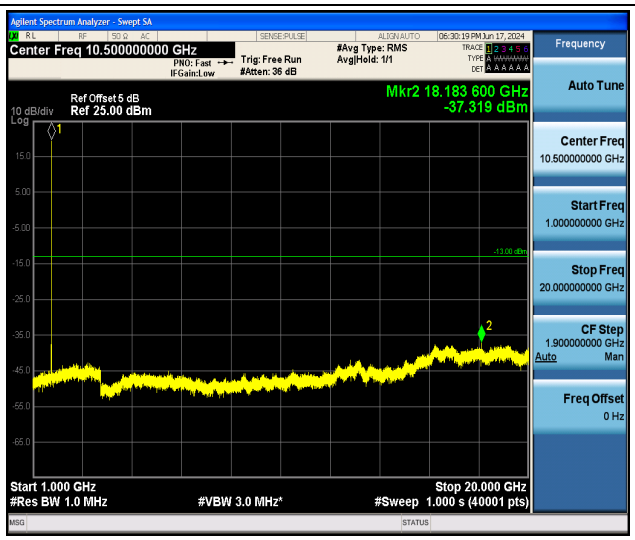
Band4-1312-0.009~0.15MHz-PASS



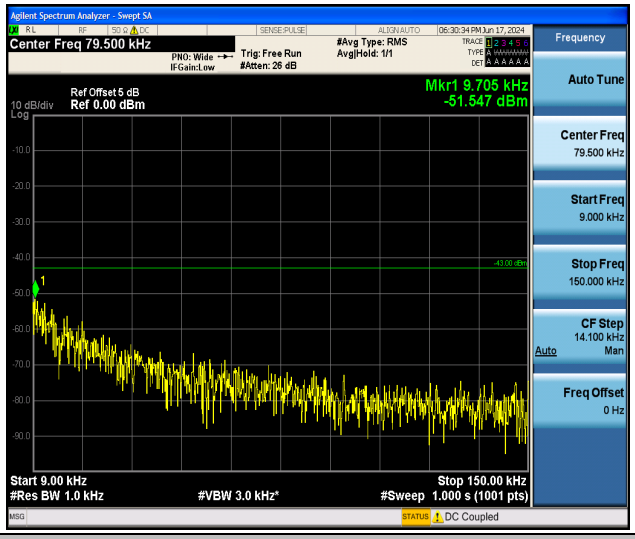
Band4-1312-0.15~30MHz-PASS



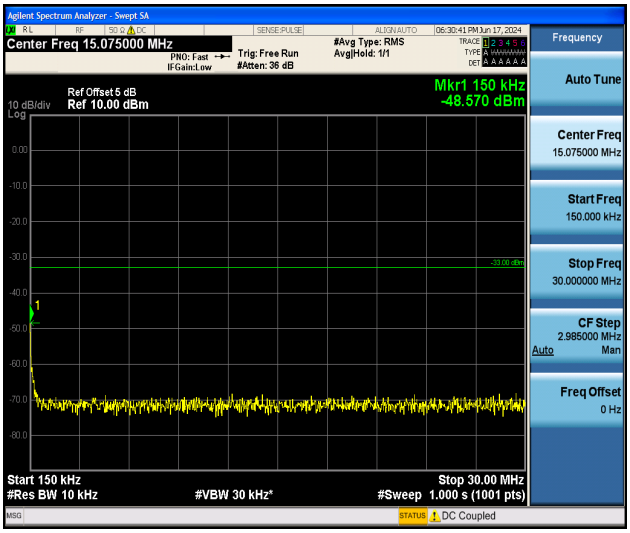
Band4-1312-30~1000MHz-PASS



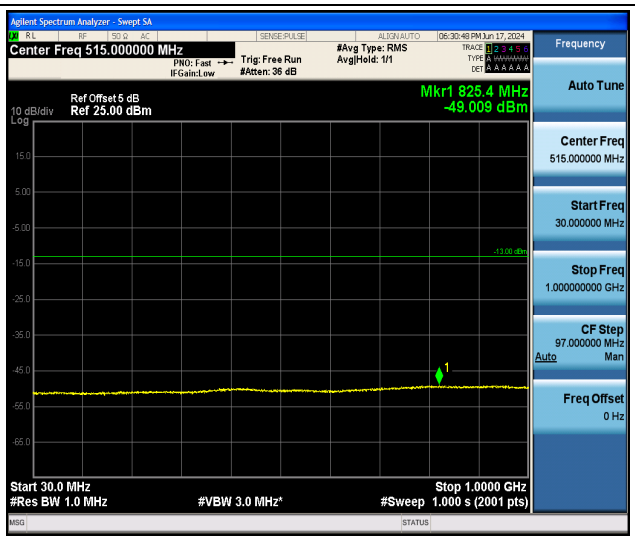
Band4-1312-1000~20000MHz-PASS



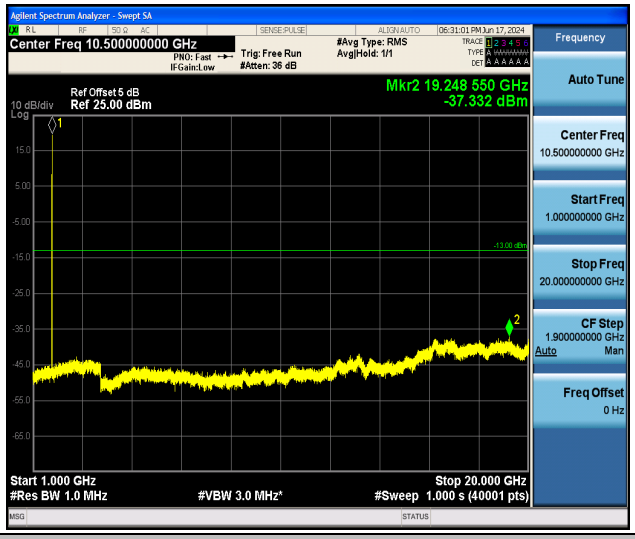
Band4-1413-0.009~0.15MHz-PASS



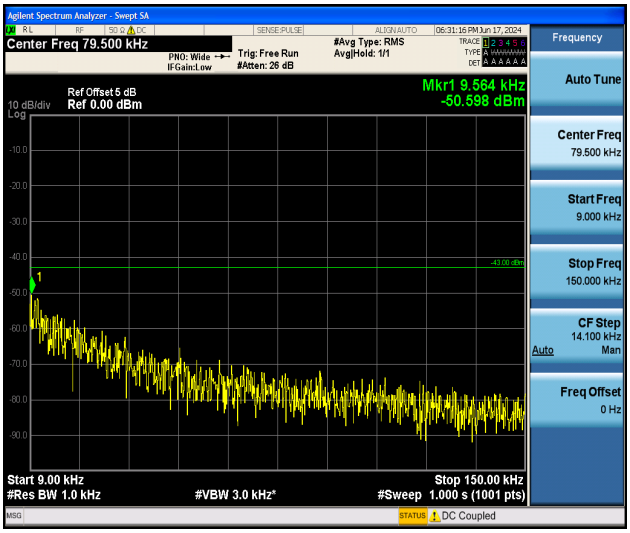
Band4-1413-0.15~30MHz-PASS



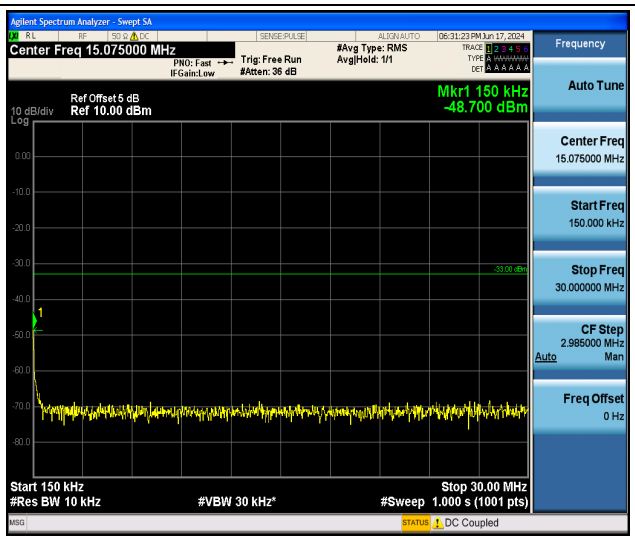
Band4-1413-30~1000MHz-PASS



Band4-1413-1000~20000MHz-PASS

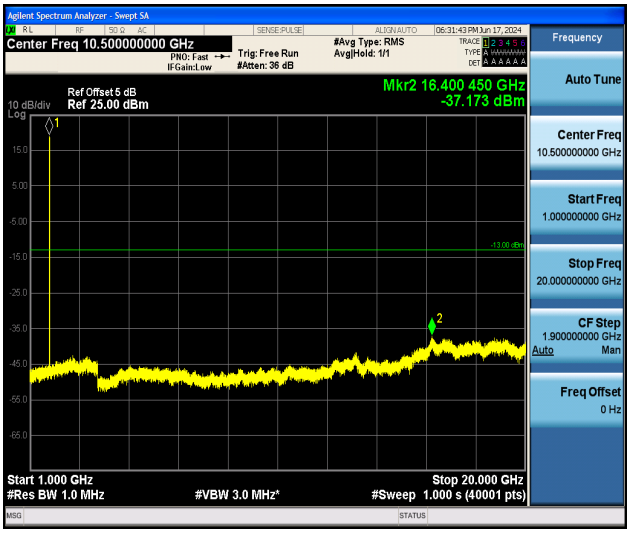


Band4-1513-0.009~0.15MHz-PASS

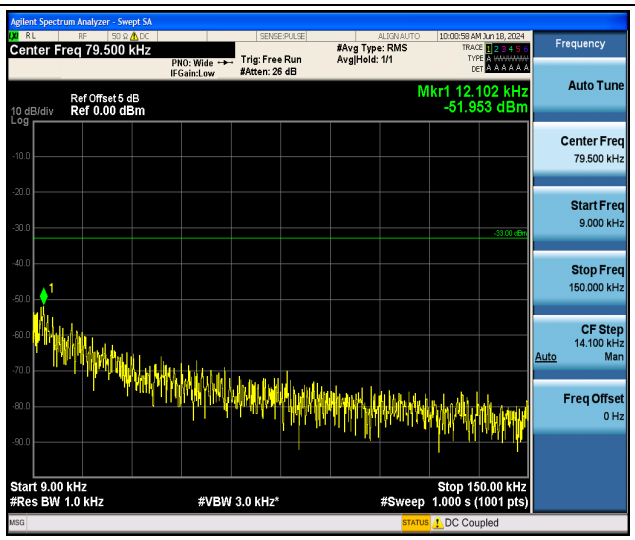


Band4-1513-0.15~30MHz-PASS

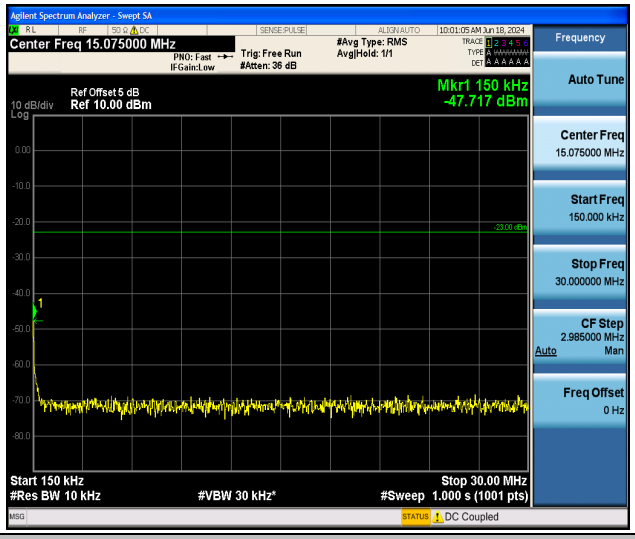
Band4-1513-30~1000MHz-PASS



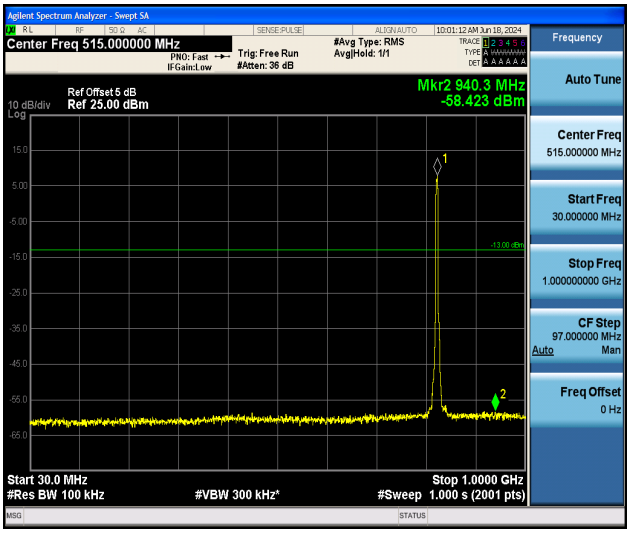
Band4-1513-1000~20000MHz-PASS



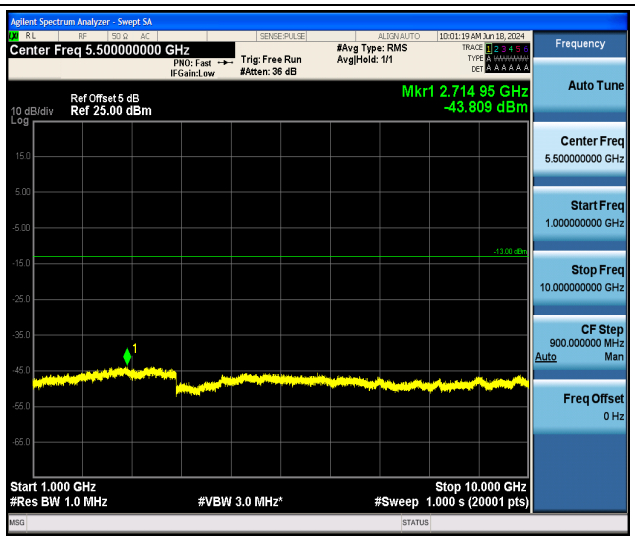
Band5-4132-0.009~0.15MHz-PASS



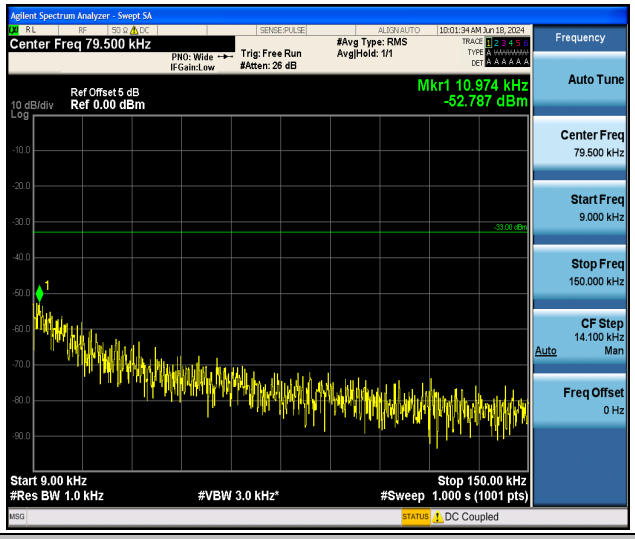
Band5-4132-0.15~30MHz-PASS



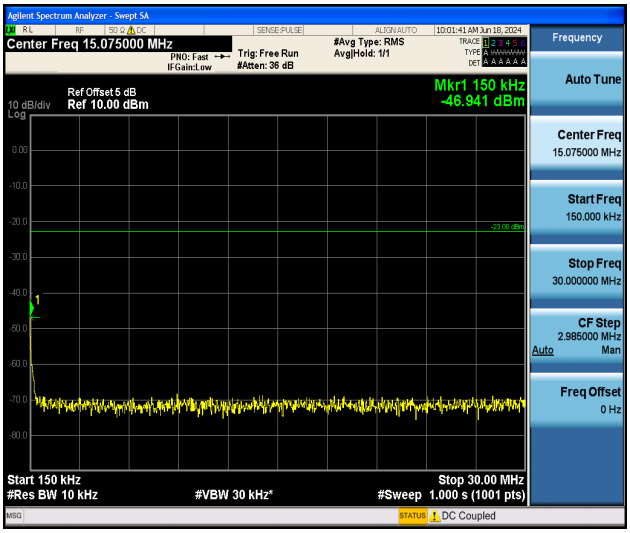
Band5-4132-30~1000MHz-PASS



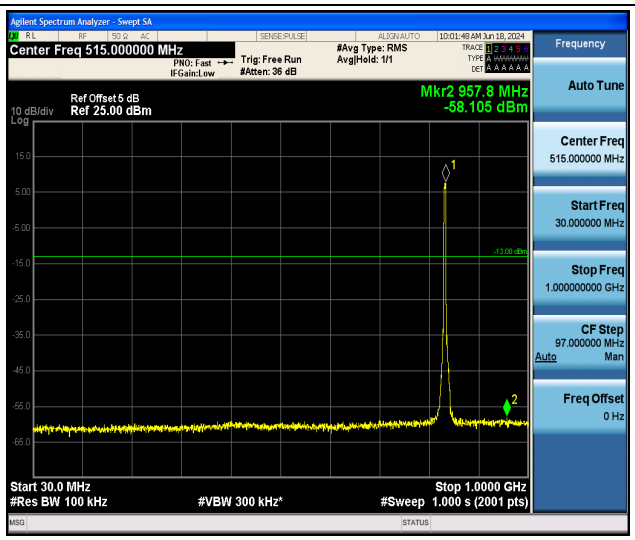
Band5-4132-1000~10000MHz-PASS



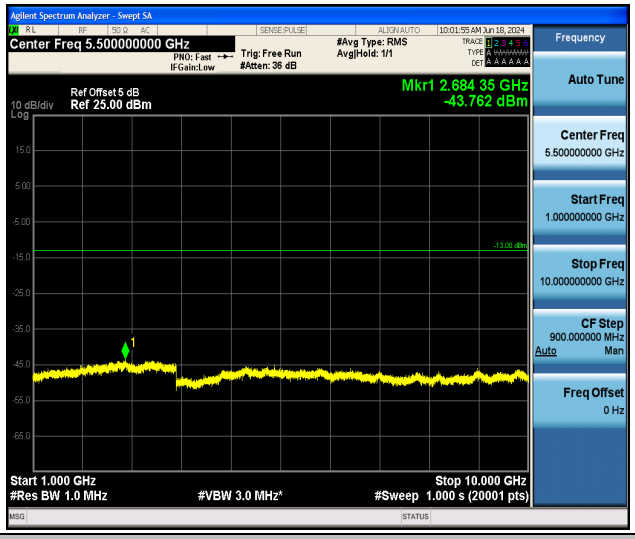
Band5-4182-0.009~0.15MHz-PASS



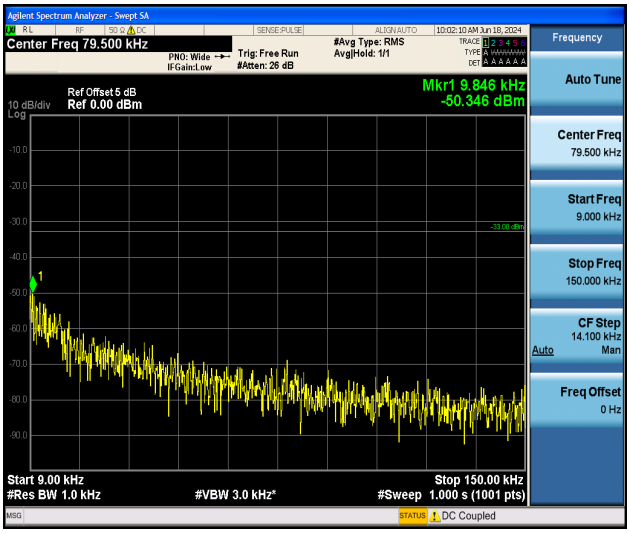
Band5-4182-0.15~30MHz-PASS



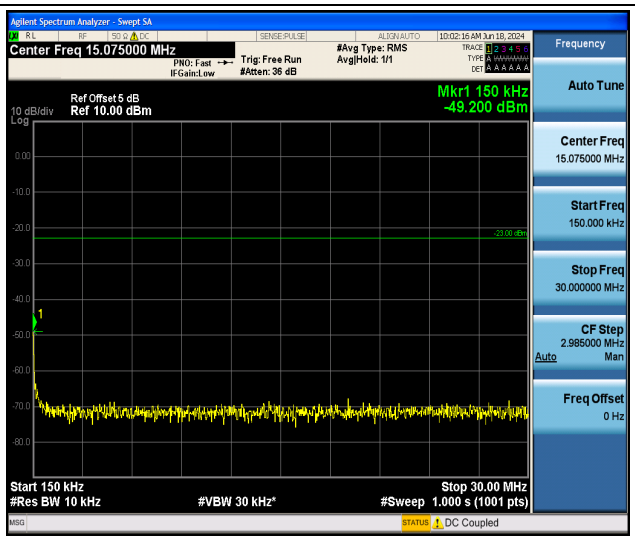
Band5-4182-30~1000MHz-PASS



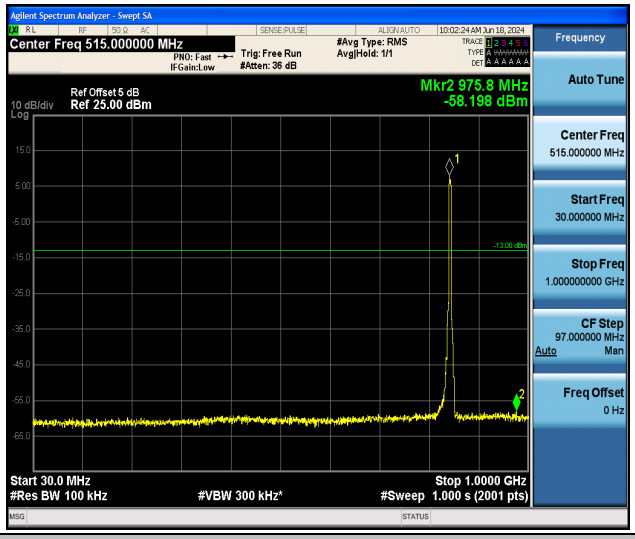
Band5-4182-1000~10000MHz-PASS



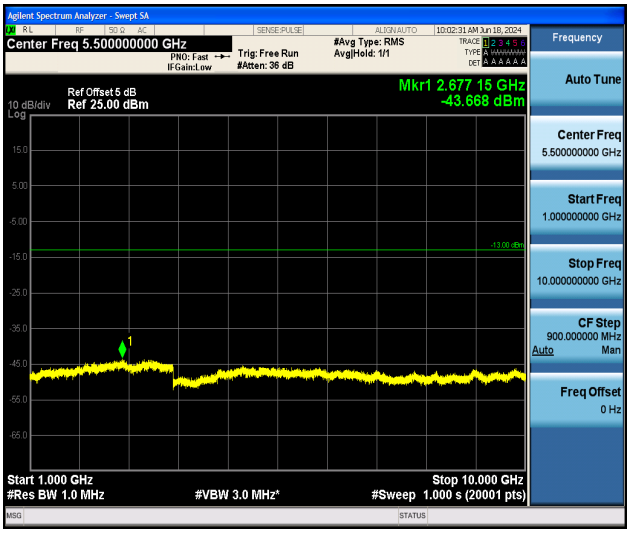
Band5-4233-0.009~0.15MHz-PASS



Band5-4233-0.15~30MHz-PASS



Band5-4233-30~1000MHz-PASS



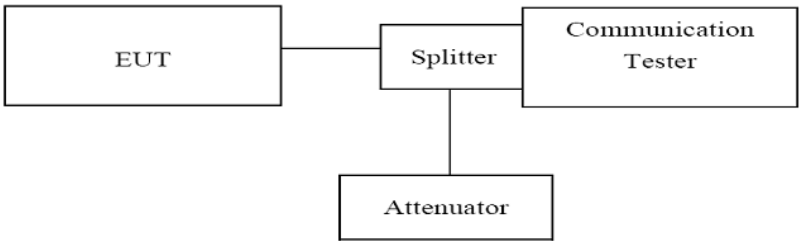
Band5-4233-1000~10000MHz-PASS

3.5. Receiver Spurious Emissions at Antenna Terminal

LIMIT

RSS-GEN7.1.3, Receiver-spurious emissions at any discrete frequency shall not exceed 2 nW in the band 30-1000 MHz, nor 5 nW above 1000 MHz.

TEST CONFIGURATION



TEST PROCEDURE

1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.
3. Set the RBW= 100kHz, VBW =300kHz, Below 1GHz
4. Set the RBW= 1MHz, VBW = 3MHz, Above1GHz,
5. Start=30MHz, Stop= 10th harmonic.

TEST RESULTS

Note: This test item is not applicable.

3.6. Band Edge compliance

LIMIT

FCC: §22.917, §24.238, §27.53 (h)

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.

FCC: §90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

RSS132§5.5

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1,the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least43 +10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

RSS133§6.5

Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment’s operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).

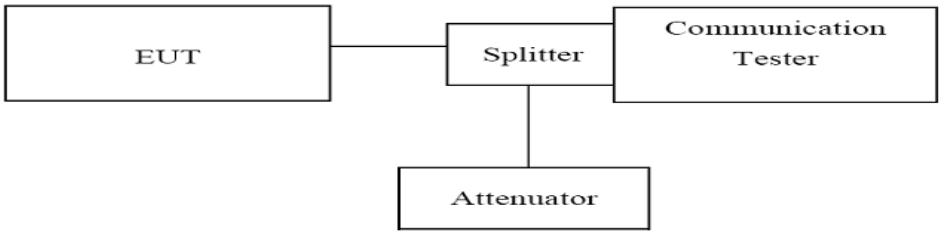
(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS139§6.6

(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment’s smallest operating frequency block,Footnote2 which can contain the equipment’s occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least43 + 10 log10 p (watts) dB.

(ii) After the first 1.0 MHz outside the equipment’s smallest operating frequency block, which can contain the equipment’s occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.

TEST CONFIGURATION



TEST PROCEDURE

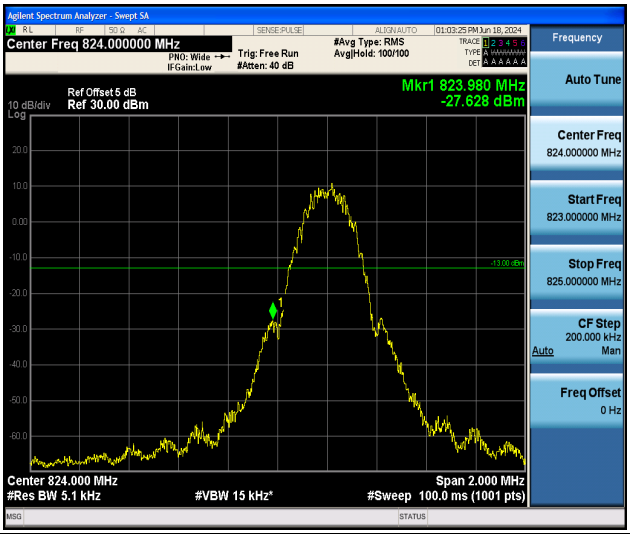
The transmitter output was connected to a R&S CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

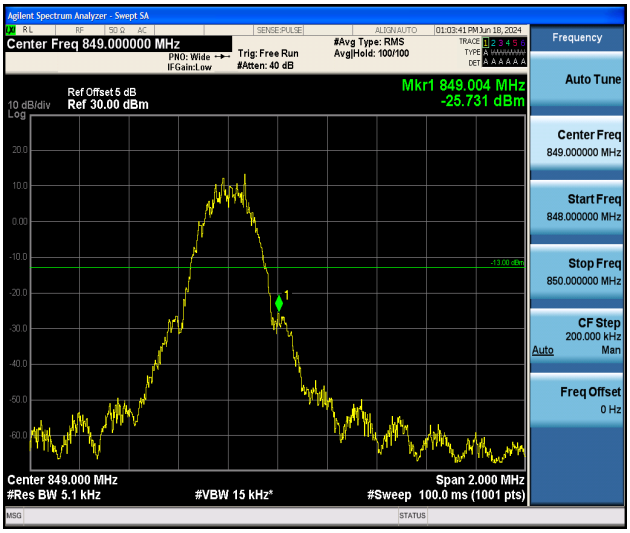
- Set the spectrum analyzer span to include the block edge frequency.
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

TEST RESULTS

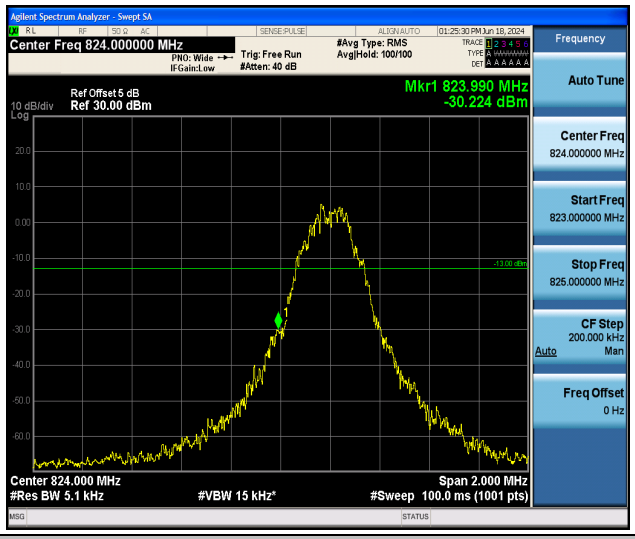
Band	Channel	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GPRS850	128	823.98	-27.63	-13	PASS
GPRS850	251	849.00	-25.73	-13	PASS
EGPRS850	128	823.99	-30.22	-13	PASS
EGPRS850	251	849.00	-28.61	-13	PASS
GPRS1900	512	1849.98	-26.91	-13	PASS
GPRS1900	810	1910.02	-28.06	-13	PASS
EGPRS1900	512	1850.00	-33.38	-13	PASS
EGPRS1900	810	1910.02	-34.60	-13	PASS
Band2	9262	1849.93	-33.37	-13	PASS
Band2	9538	1910.06	-34.02	-13	PASS
Band4	1312	1709.94	-32.65	-13	PASS
Band4	1513	1755.07	-32.44	-13	PASS
Band5	4132	824.00	-31.77	-13	PASS
Band5	4233	849.00	-31.13	-13	PASS



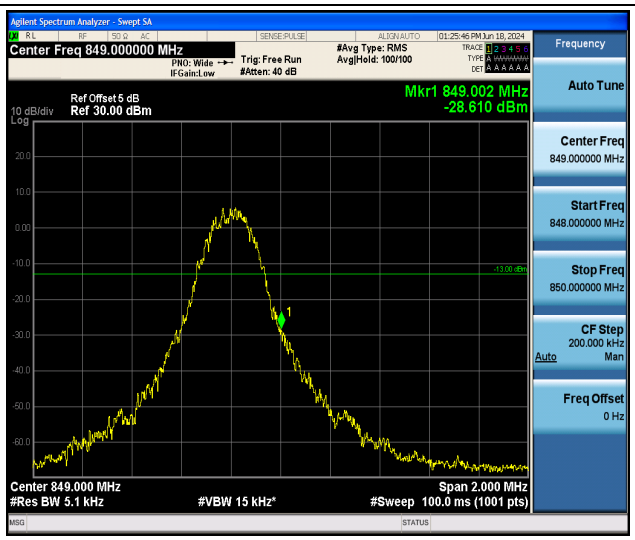
GPRS850-128-PASS



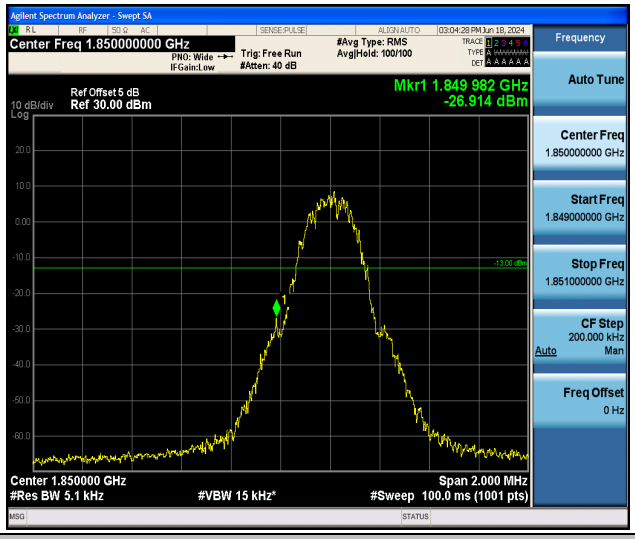
GPRS850-251-PASS



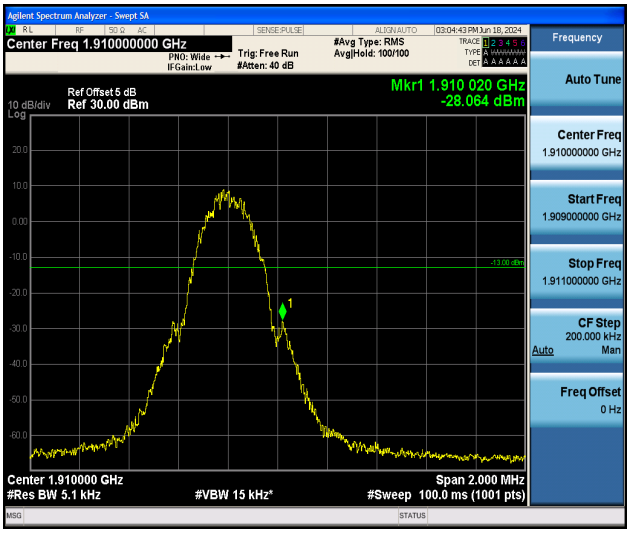
EGPRS850-128-PASS



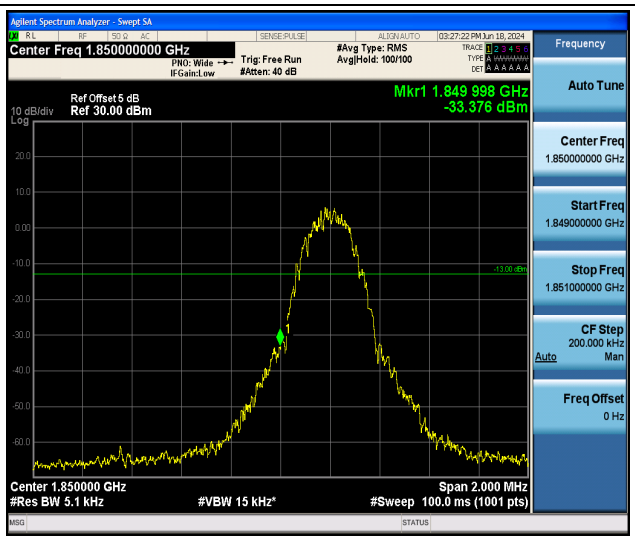
EGPRS850-251-PASS



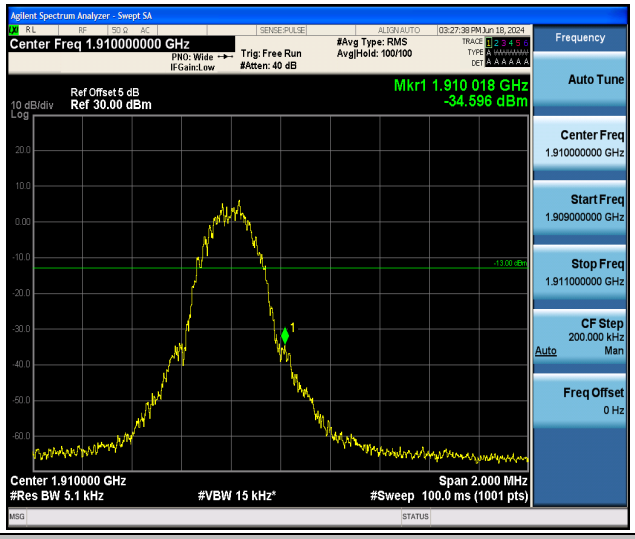
GPRS1900-512-PASS



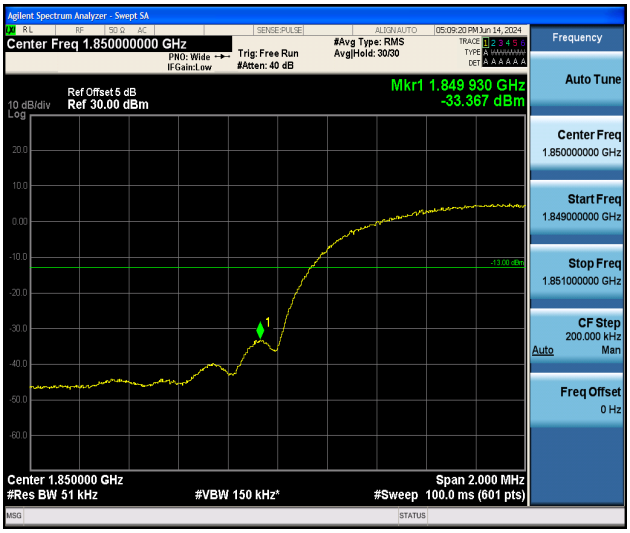
GPRS1900-810-PASS



EGPRS1900-512-PASS

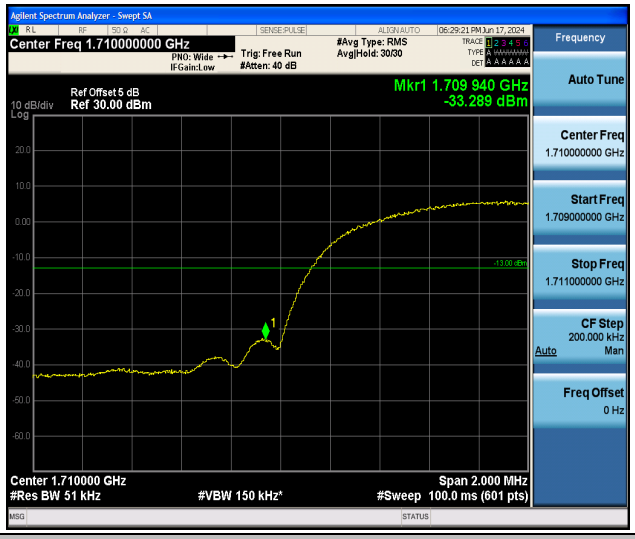


EGPRS1900-810-PASS

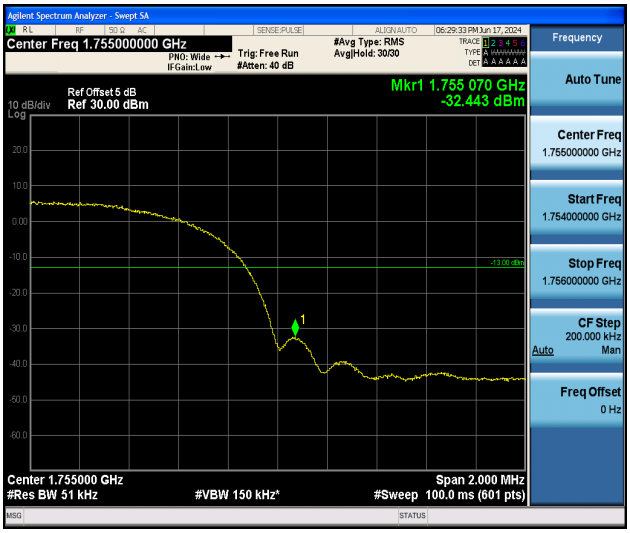


Band2-9262-PASS

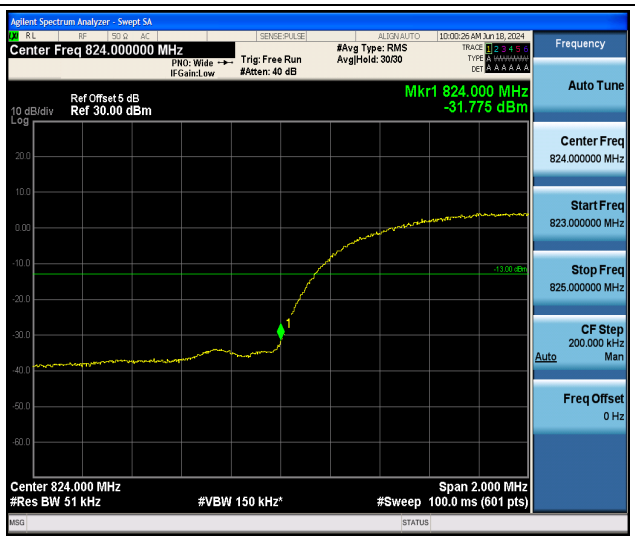
Band2-9538-PASS



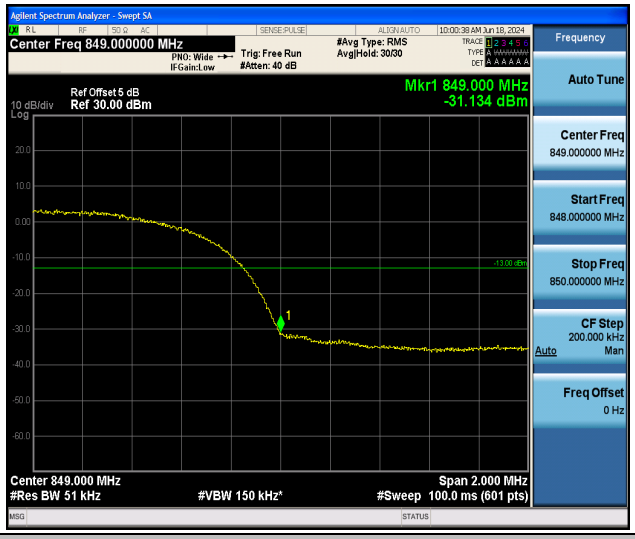
Band4-1312-PASS



Band4-1513-PASS



Band5-4132-PASS



Band5-4233-PASS

3.7. Radiated Power Measurement

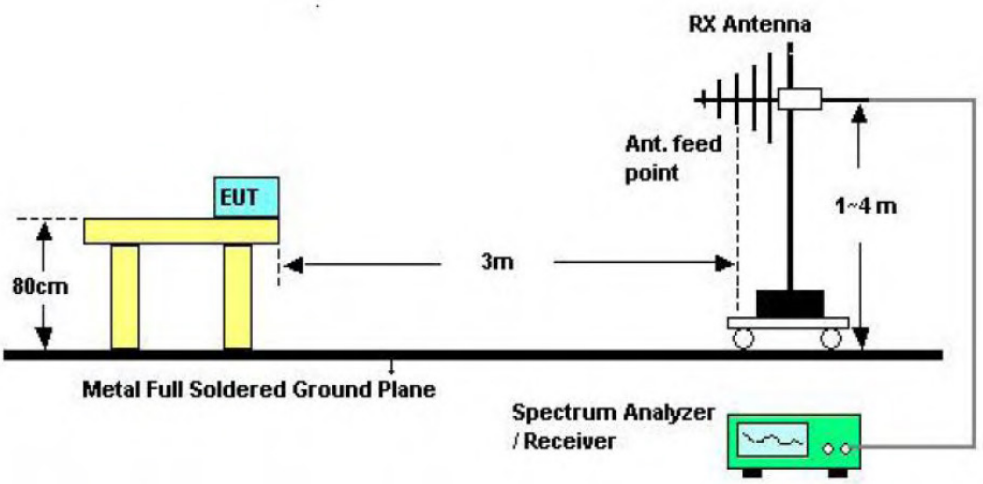
LIMIT

FCC: §2.1046, §22.913, §24.232, §27.50 and §90.635

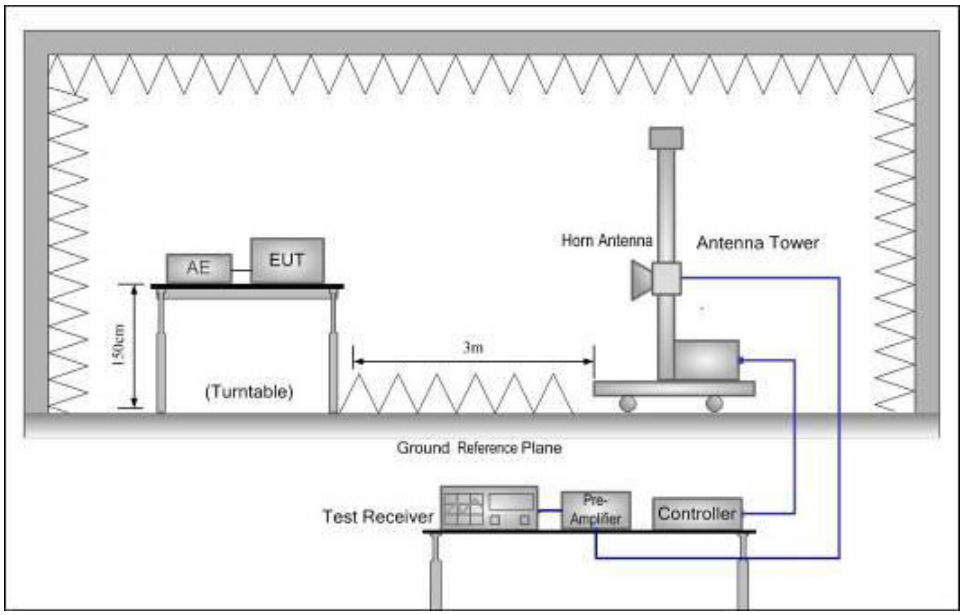
IC: RSS132§5.4; RSS133§6.4 and RSS139§6.5.

TEST CONFIGURATION

For the actual test configuration, please refer to the related Item – EUT Test Photos.



Below 1GHz



Above 1GHz

TEST PROCEDURE

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, and the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. An amplifier should be connected to the Signal Source output port. And the cable should be connecting between the Amplifier and the Substitution Antenna. The cable loss (Pcl), the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
6. The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl + Ga
   We used N5182A microwave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substitution test; The measurement results are amend as described below:
   Power(EIRP)=PMea- Pcl + Ga
7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST RESULTS

Remark:
1. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “X axis” position was the worst, and test data recorded in this report.
2. Pre-scan all antenna, only show the test data for worse case antenna on the test report.

Measurement Data (worst case) :

Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
GPRS850	128	V	30.42	38.45	Pass
		H	27.93		
	190	V	30.31		
		H	25.41		
	251	V	30.86		
		H	25.01		
EGPRS850	128	V	30.84	38.45	Pass
		H	26.42		
	190	V	30.41		
		H	26.61		
	251	V	30.82		
		H	26.95		

Mode	Channel	Antenna Pol.	ERIP	Limit (dBm)	Result
GPRS1900	512	V	29.42	33.00	Pass
		H	27.93		
	661	V	29.31		
		H	25.41		
	810	V	29.86		
		H	25.01		
EGPRS1900	512	V	29.84	33.00	Pass
		H	26.42		
	661	V	29.41		
		H	26.61		
	810	V	29.82		
		H	26.95		

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
WCDMA Band II (QPSK)	9262	V	23.92	33.00	Pass
		H	20.53		
	9400	V	23.76		
		H	20.12		
	9538	V	23.22		
		H	20.02		

Mode	Channel	Antenna Pol.	EIRP	Limit (dBm)	Result
WCDMA Band IV (QPSK)	1312	V	23.04	33.00	Pass
		H	20.14		
	1413	V	23.03		
		H	20.66		
	1513	V	23.06		
		H	20.77		

Mode	Channel	Antenna Pol.	ERP	Limit (dBm)	Result
WCDMA Band V (QPSK)	4132	V	20.23	38.45	Pass
		H	17.33		
	4183	V	20.58		
		H	17.53		
	4233	V	20.23		
		H	17.94		

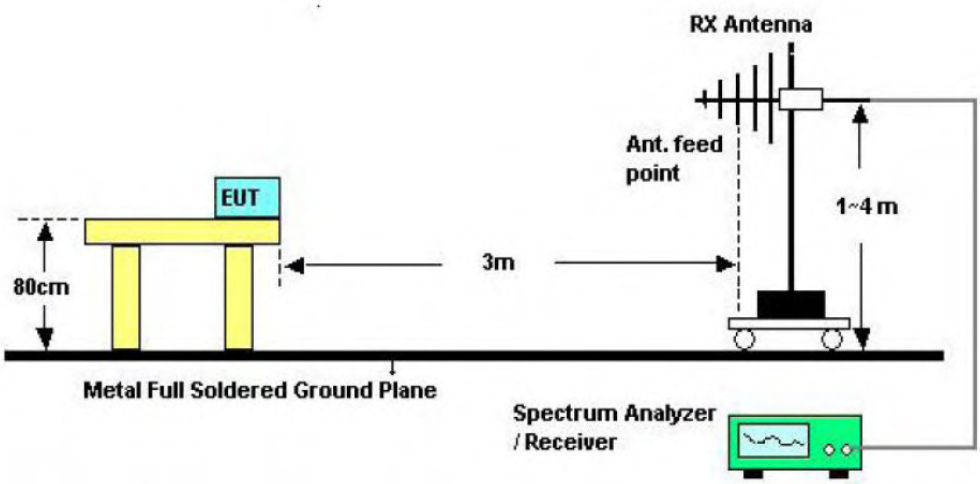
3.8. Radiated Spurious Emission

LIMIT

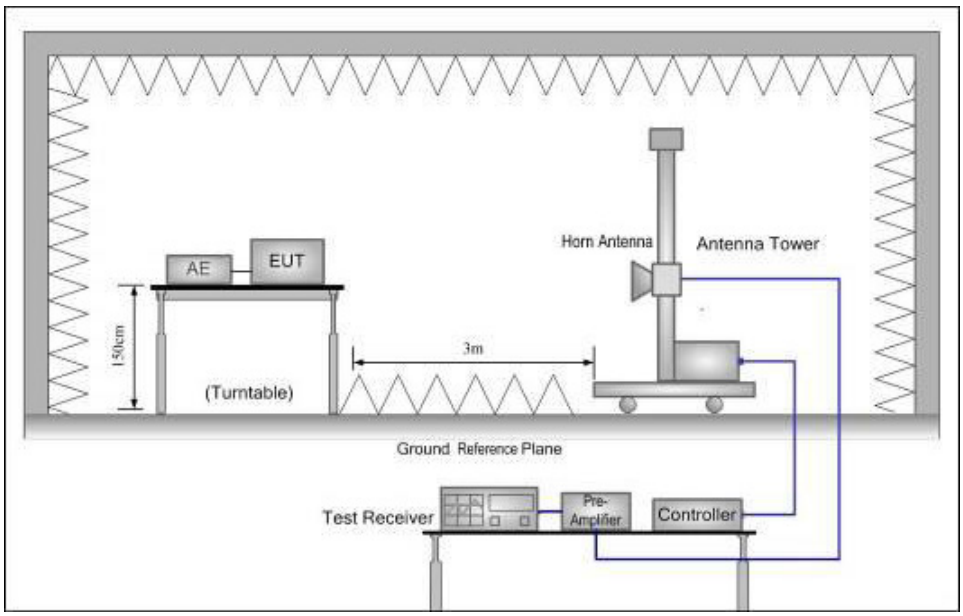
FCC: §22.917(a), §24.238(a), §27.53 (h), §90.691
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.
RSS132§5.5
Mobile and base station equipment shall comply with the limits in (i) and (ii) below.
(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts).
(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least43 +10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.
RSS133§6.5
Equipment shall comply with the limits in (i) and (ii) below.
(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).
(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.
RSS139§6.6
(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block,Footnote2 which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least43 + 10log10 p (watts) dB.
(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.

TEST CONFIGURATION

For the actual test configuration, please refer to the related Item – EUT Test Photos.



Below 1GHz



Above 1GHz

TEST PROCEDURE

1. EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, and the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. An amplifier should be connected to the Signal Source output port. And the cable should be connecting between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
6. The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl + Ga
   We used SMF100A microwave signal generator which signal level can up to 33dBm,so we not used

power Amplifier for substitution test; The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga

7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.
8. Test frequency range should extend to 10th harmonic of highest fundamental frequency.

TEST RESULTS

Remark:
1. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "Z axis" position was the worst, and test data recorded in this report.
2. Pre-scan all antenna, only show the test data for worse case antenna on the test report.

GPRS 850					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
128	1648.8	Horizontal	-38.43	-13.00	Pass
	2473.2	Horizontal	-48.20		
	1648.8	Vertical	-49.98		
	2473.2	Vertical	-51.09		
190	1673.2	Horizontal	-42.04		
	2509.8	Horizontal	-49.95		
	1673.2	Vertical	-40.19		
	2509.8	Vertical	-50.41		
251	1697.6	Horizontal	-33.15		
	2546.4	Horizontal	-41.18		
	1697.6	Vertical	-40.15		
	2546.4	Vertical	-46.58		

Remark：
1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

EGPRS 850					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
128	1648.8	Horizontal	-52.68	-13.00	Pass
	2473.2	Horizontal	-48.48		
	1648.8	Vertical	-56.21		
	2473.2	Vertical	-43.55		
190	1673.2	Horizontal	-52.92		
	2509.8	Horizontal	-47.54		
	1673.2	Vertical	-55.82		
	2509.8	Vertical	-36.93		
251	1697.6	Horizontal	-45.13		
	2546.4	Horizontal	-48.41		
	1697.6	Vertical	-54.60		
	2546.4	Vertical	-52.68		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

GPRS 1900					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
512	3700.4	Horizontal	-41.84	-13.00	Pass
	5550.6	Horizontal	-53.04		
	3700.4	Vertical	-50.10		
	5550.6	Vertical	-50.12		
661	3760	Horizontal	-40.92		
	5640	Horizontal	-51.14		
	3760	Vertical	-42.70		
	5640	Vertical	-52.79		
810	3819.6	Horizontal	-42.95		
	5729.4	Horizontal	-51.72		
	3819.6	Vertical	-40.63		
	5729.4	Vertical	-48.14		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

EGPRS 1900					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
512	3700.4	Horizontal	-41.48	-13.00	Pass
	5550.6	Horizontal	-56.04		
	3700.4	Vertical	-49.28		
	5550.6	Vertical	-53.34		
661	3760	Horizontal	-51.46		
	5640	Horizontal	-56.46		
	3760	Vertical	-51.00		
	5640	Vertical	-54.18		
810	3819.6	Horizontal	-52.10		
	5729.4	Horizontal	-55.87		
	3819.6	Vertical	-49.67		
	5729.4	Vertical	-51.12		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

WCDMA Band II					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
9262	3705.20	Vertical	-37.30	-13.00	Pass
	5557.80	Vertical	-52.14		
	3705.20	Horizontal	-51.36		
	5557.80	Horizontal	-52.86		
9400	3760.00	Vertical	-44.94		
	5640.00	Vertical	-50.56		
	3760.00	Horizontal	-42.34		
	5640.00	Horizontal	-53.79		
9538	3814.80	Vertical	-41.16		
	5722.20	Vertical	-52.01		
	3814.80	Horizontal	-43.62		
	5722.20	Horizontal	-45.93		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

WCDMA Band IV					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
1312	3425.20	Vertical	-43.37	-13.00	Pass
	5137.80	Vertical	-56.14		
	3425.20	Horizontal	-48.43		
	5137.80	Horizontal	-52.49		
1413	3465.20	Vertical	-53.48		
	5197.80	Vertical	-56.87		
	3465.20	Horizontal	-50.55		
	5197.80	Horizontal	-53.80		
1513	3504.80	Vertical	-51.79		
	5257.20	Vertical	-55.94		
	3504.80	Horizontal	-49.76		
	5257.20	Horizontal	-51.13		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

WCDMA Band V					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
4132	1653.20	Vertical	-41.57	-13.00	Pass
	2479.80	Vertical	-53.31		
	1653.20	Horizontal	-51.21		
	2479.80	Horizontal	-50.40		
4183	1672.80	Vertical	-43.00		
	2509.20	Vertical	-53.48		
	1672.80	Horizontal	-47.68		
	2509.20	Horizontal	-53.71		
4233	1692.80	Vertical	-40.47		
	2539.20	Vertical	-51.84		
	1692.80	Horizontal	-46.30		
	2539.20	Horizontal	-52.87		

Remark：

1. The emission levels of below 1 GHz are very lower than the limit above10dB and not show in test report.

3.9. Frequency stability

LIMIT

FCC §22.355, §90.213

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

FCC §24.235 & §27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

RSS132§5.3

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 SRSP for mobile stations and±1.5 ppm for base stations.

In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 5.1) when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS133§6.3

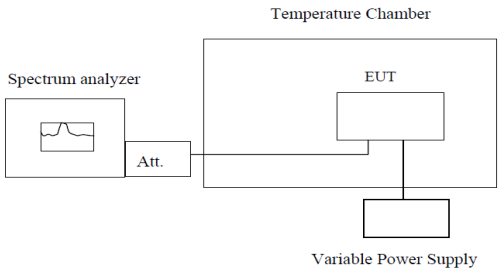
The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and±1.0 ppm for base stations.

In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the emission bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS139§6.4

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

TEST CONFIGURATION



Note : Measurement setup for testing on Antenna connector

TEST PROCEDURE

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.
3. The EUT was placed inside the temperature chamber.
4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency.
5. Turn EUT off and set the chamber temperature to -5℃. After the temperature stabilized for

approximately 30 minutes recorded the frequency.

6. Repeat step measure with 10℃ increased per stage until the highest temperature of +30℃ reached.
7. Reduce the input voltage to specified extreme voltage variation (+/- 10%) and endpoint, record the maximum frequency change.

TEST RESULTS

Voltage							
Band	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GPRS850	128	VN	NT	19.57	0.023744	±2.5	PASS
GPRS850	128	VL	NT	24.56	0.029799	±2.5	PASS
GPRS850	128	VH	NT	23.52	0.028537	±2.5	PASS
GPRS850	190	VN	NT	29.54	0.035310	±2.5	PASS
GPRS850	190	VL	NT	27.58	0.032967	±2.5	PASS
GPRS850	190	VH	NT	20.04	0.023954	±2.5	PASS
GPRS850	251	VN	NT	20.05	0.023622	±2.5	PASS
GPRS850	251	VL	NT	19.20	0.022620	±2.5	PASS
GPRS850	251	VH	NT	21.79	0.025672	±2.5	PASS
EGPRS850	128	VN	NT	0.48	0.000582	±2.5	PASS
EGPRS850	128	VL	NT	-2.96	-0.003591	±2.5	PASS
EGPRS850	128	VH	NT	-0.39	-0.000473	±2.5	PASS
EGPRS850	190	VN	NT	-4.07	-0.004865	±2.5	PASS
EGPRS850	190	VL	NT	2.52	0.003012	±2.5	PASS
EGPRS850	190	VH	NT	-0.67	-0.000801	±2.5	PASS
EGPRS850	251	VN	NT	1.05	0.001237	±2.5	PASS
EGPRS850	251	VL	NT	-4.90	-0.005773	±2.5	PASS
EGPRS850	251	VH	NT	-4.60	-0.005419	±2.5	PASS
GPRS1900	512	VN	NT	12.01	0.006491	±2.5	PASS
GPRS1900	512	VL	NT	11.14	0.006021	±2.5	PASS
GPRS1900	512	VH	NT	18.73	0.010123	±2.5	PASS
GPRS1900	661	VN	NT	13.48	0.007170	±2.5	PASS
GPRS1900	661	VL	NT	12.72	0.006766	±2.5	PASS
GPRS1900	661	VH	NT	12.35	0.006569	±2.5	PASS
GPRS1900	810	VN	NT	13.24	0.006933	±2.5	PASS
GPRS1900	810	VL	NT	18.11	0.009483	±2.5	PASS
GPRS1900	810	VH	NT	15.03	0.007870	±2.5	PASS
EGPRS1900	512	VN	NT	14.95	0.008080	±2.5	PASS
EGPRS1900	512	VL	NT	12.72	0.006875	±2.5	PASS
EGPRS1900	512	VH	NT	10.06	0.005437	±2.5	PASS
EGPRS1900	661	VN	NT	10.28	0.005468	±2.5	PASS
EGPRS1900	661	VL	NT	18.85	0.010027	±2.5	PASS
EGPRS1900	661	VH	NT	6.21	0.003303	±2.5	PASS
EGPRS1900	810	VN	NT	4.60	0.002409	±2.5	PASS

EGPRS1900	810	VL	NT	18.97	0.009933	±2.5	PASS
EGPRS1900	810	VH	NT	11.17	0.005849	±2.5	PASS
Band2	9262	VN	NT	-1.61	-0.000869	±2.5	PASS
Band2	9262	VL	NT	7.58	0.004092	±2.5	PASS
Band2	9262	VH	NT	-3.63	-0.001960	±2.5	PASS
Band2	9400	VN	NT	15.24	0.008106	±2.5	PASS
Band2	9400	VL	NT	12.09	0.006431	±2.5	PASS
Band2	9400	VH	NT	-1.23	-0.000654	±2.5	PASS
Band2	9538	VN	NT	-0.69	-0.000362	±2.5	PASS
Band2	9538	VL	NT	-4.30	-0.002254	±2.5	PASS
Band2	9538	VH	NT	8.72	0.004571	±2.5	PASS
Band4	1312	VN	NT	3.57	0.002085	±2.5	PASS
Band4	1312	VL	NT	-5.56	-0.003247	±2.5	PASS
Band4	1312	VH	NT	8.13	0.004748	±2.5	PASS
Band4	1413	VN	NT	1.12	0.000646	±2.5	PASS
Band4	1413	VL	NT	-4.49	-0.002591	±2.5	PASS
Band4	1413	VH	NT	1.39	0.000802	±2.5	PASS
Band4	1513	VN	NT	-2.03	-0.001158	±2.5	PASS
Band4	1513	VL	NT	0.94	0.000536	±2.5	PASS
Band4	1513	VH	NT	-0.10	-0.000057	±2.5	PASS
Band5	4132	VN	NT	-0.42	-0.000508	±2.5	PASS
Band5	4132	VL	NT	-0.54	-0.000653	±2.5	PASS
Band5	4132	VH	NT	-0.51	-0.000617	±2.5	PASS
Band5	4182	VN	NT	0.75	0.000897	±2.5	PASS
Band5	4182	VL	NT	-2.62	-0.003132	±2.5	PASS
Band5	4182	VH	NT	-2.44	-0.002917	±2.5	PASS
Band5	4233	VN	NT	-2.22	-0.002622	±2.5	PASS
Band5	4233	VL	NT	-1.45	-0.001713	±2.5	PASS
Band5	4233	VH	NT	-1.82	-0.002150	±2.5	PASS

Temperature							
Band	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GPRS850	128	NV	-5	21.42	0.025989	±2.5	PASS
GPRS850	128	NV	0	21.71	0.026341	±2.5	PASS
GPRS850	128	NV	10	26.37	0.031995	±2.5	PASS
GPRS850	128	NV	20	24.07	0.029204	±2.5	PASS
GPRS850	128	NV	30	24.61	0.029859	±2.5	PASS
GPRS850	190	NV	-5	21.84	0.026106	±2.5	PASS
GPRS850	190	NV	0	23.85	0.028508	±2.5	PASS
GPRS850	190	NV	10	27.09	0.032381	±2.5	PASS
GPRS850	190	NV	20	26.71	0.031927	±2.5	PASS
GPRS850	190	NV	30	23.18	0.027707	±2.5	PASS
GPRS850	251	NV	-5	18.87	0.022231	±2.5	PASS
GPRS850	251	NV	0	19.99	0.023551	±2.5	PASS
GPRS850	251	NV	10	19.24	0.022667	±2.5	PASS
GPRS850	251	NV	20	19.85	0.023386	±2.5	PASS
GPRS850	251	NV	30	17.37	0.020464	±2.5	PASS
EGPRS850	128	NV	-5	0.11	0.000133	±2.5	PASS
EGPRS850	128	NV	0	5.75	0.006976	±2.5	PASS
EGPRS850	128	NV	10	-2.76	-0.003349	±2.5	PASS
EGPRS850	128	NV	20	6.92	0.008396	±2.5	PASS
EGPRS850	128	NV	30	2.40	0.002912	±2.5	PASS
EGPRS850	190	NV	-5	0.13	0.000155	±2.5	PASS
EGPRS850	190	NV	0	0.59	0.000705	±2.5	PASS
EGPRS850	190	NV	10	-4.39	-0.005247	±2.5	PASS
EGPRS850	190	NV	20	2.54	0.003036	±2.5	PASS
EGPRS850	190	NV	30	3.76	0.004494	±2.5	PASS
EGPRS850	251	NV	-5	-1.94	-0.002286	±2.5	PASS
EGPRS850	251	NV	0	0.12	0.000141	±2.5	PASS
EGPRS850	251	NV	10	-6.81	-0.008023	±2.5	PASS
EGPRS850	251	NV	20	-9.68	-0.011404	±2.5	PASS
EGPRS850	251	NV	30	-9.55	-0.011251	±2.5	PASS
GPRS1900	512	NV	-5	12.28	0.006637	±2.5	PASS
GPRS1900	512	NV	0	2.26	0.001221	±2.5	PASS
GPRS1900	512	NV	10	16.67	0.009010	±2.5	PASS
GPRS1900	512	NV	20	19.90	0.010756	±2.5	PASS
GPRS1900	512	NV	30	7.88	0.004259	±2.5	PASS
GPRS1900	661	NV	-5	12.80	0.006809	±2.5	PASS
GPRS1900	661	NV	0	17.41	0.009261	±2.5	PASS
GPRS1900	661	NV	10	16.78	0.008926	±2.5	PASS
GPRS1900	661	NV	20	17.58	0.009351	±2.5	PASS
GPRS1900	661	NV	30	25.80	0.013723	±2.5	PASS
GPRS1900	810	NV	-5	6.83	0.003576	±2.5	PASS

GPRS1900	810	NV	0	7.22	0.003781	±2.5	PASS
GPRS1900	810	NV	10	12.80	0.006702	±2.5	PASS
GPRS1900	810	NV	20	5.49	0.002875	±2.5	PASS
GPRS1900	810	NV	30	10.48	0.005487	±2.5	PASS
EGPRS1900	512	NV	-5	10.29	0.005562	±2.5	PASS
EGPRS1900	512	NV	0	9.26	0.005005	±2.5	PASS
EGPRS1900	512	NV	10	17.44	0.009426	±2.5	PASS
EGPRS1900	512	NV	20	4.98	0.002692	±2.5	PASS
EGPRS1900	512	NV	30	11.14	0.006021	±2.5	PASS
EGPRS1900	661	NV	-5	7.76	0.004128	±2.5	PASS
EGPRS1900	661	NV	0	10.96	0.005830	±2.5	PASS
EGPRS1900	661	NV	10	9.23	0.004910	±2.5	PASS
EGPRS1900	661	NV	20	14.86	0.007904	±2.5	PASS
EGPRS1900	661	NV	30	18.82	0.010011	±2.5	PASS
EGPRS1900	810	NV	-5	18.73	0.009807	±2.5	PASS
EGPRS1900	810	NV	0	17.72	0.009278	±2.5	PASS
EGPRS1900	810	NV	10	15.38	0.008053	±2.5	PASS
EGPRS1900	810	NV	20	23.04	0.012064	±2.5	PASS
EGPRS1900	810	NV	30	23.72	0.012420	±2.5	PASS
Band2	9262	NV	-5	-10.46	-0.005647	±2.5	PASS
Band2	9262	NV	0	5.66	0.003055	±2.5	PASS
Band2	9262	NV	10	-9.05	-0.004886	±2.5	PASS
Band2	9262	NV	20	-2.80	-0.001512	±2.5	PASS
Band2	9262	NV	30	-3.24	-0.001749	±2.5	PASS
Band2	9400	NV	-5	3.34	0.001777	±2.5	PASS
Band2	9400	NV	0	6.81	0.003622	±2.5	PASS
Band2	9400	NV	10	6.94	0.003691	±2.5	PASS
Band2	9400	NV	20	-7.43	-0.003952	±2.5	PASS
Band2	9400	NV	30	-6.18	-0.003287	±2.5	PASS
Band2	9538	NV	-5	2.32	0.001216	±2.5	PASS
Band2	9538	NV	0	0.74	0.000388	±2.5	PASS
Band2	9538	NV	10	2.16	0.001132	±2.5	PASS
Band2	9538	NV	20	-8.72	-0.004571	±2.5	PASS
Band2	9538	NV	30	4.06	0.002128	±2.5	PASS
Band4	1312	NV	-5	-7.48	-0.004368	±2.5	PASS
Band4	1312	NV	0	6.71	0.003918	±2.5	PASS
Band4	1312	NV	10	1.78	0.001039	±2.5	PASS
Band4	1312	NV	20	8.16	0.004765	±2.5	PASS
Band4	1312	NV	30	-2.37	-0.001384	±2.5	PASS
Band4	1413	NV	-5	-0.64	-0.000369	±2.5	PASS
Band4	1413	NV	0	-6.37	-0.003677	±2.5	PASS
Band4	1413	NV	10	-9.55	-0.005512	±2.5	PASS
Band4	1413	NV	20	-1.48	-0.000854	±2.5	PASS
Band4	1413	NV	30	-2.75	-0.001587	±2.5	PASS

Band4	1513	NV	-5	4.38	0.002499	±2.5	PASS
Band4	1513	NV	0	1.37	0.000782	±2.5	PASS
Band4	1513	NV	10	-3.44	-0.001963	±2.5	PASS
Band4	1513	NV	20	-3.06	-0.001746	±2.5	PASS
Band4	1513	NV	30	-14.19	-0.008097	±2.5	PASS
Band5	4132	NV	-5	-1.17	-0.001416	±2.5	PASS
Band5	4132	NV	0	-0.41	-0.000496	±2.5	PASS
Band5	4132	NV	10	-0.38	-0.000460	±2.5	PASS
Band5	4132	NV	20	-0.57	-0.000690	±2.5	PASS
Band5	4132	NV	30	-0.41	-0.000496	±2.5	PASS
Band5	4182	NV	-5	-0.36	-0.000430	±2.5	PASS
Band5	4182	NV	0	0.36	0.000430	±2.5	PASS
Band5	4182	NV	10	-1.85	-0.002212	±2.5	PASS
Band5	4182	NV	20	-1.90	-0.002272	±2.5	PASS
Band5	4182	NV	30	-1.84	-0.002200	±2.5	PASS
Band5	4233	NV	-5	-0.51	-0.000602	±2.5	PASS
Band5	4233	NV	0	-0.95	-0.001122	±2.5	PASS
Band5	4233	NV	10	-0.46	-0.000543	±2.5	PASS
Band5	4233	NV	20	-3.22	-0.003803	±2.5	PASS
Band5	4233	NV	30	-1.88	-0.002221	±2.5	PASS

**********THE END**********