

#### Report No.: E2/2018/10012 Page 377 of 556

3GHz~10GHz\_Band41\_20MHz\_QPSK\_1\_0\_LowCH39750



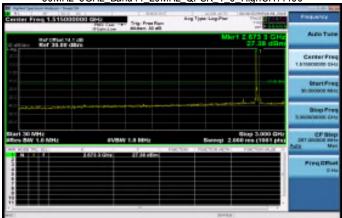
30MHz~3GHz Band41 20MHz QPSK 1 0 MidCH40620



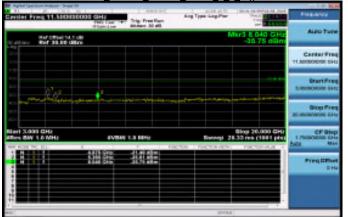
3GHz~10GHz\_Band41\_20MHz\_QPSK\_1\_0\_MidCH40620

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30MHz~3GHz\_Band41\_20MHz\_QPSK\_1\_0\_HighCH41490



3GHz~10GHz\_Band41\_20MHz\_QPSK\_1\_0\_HighCH41490



#### 30MHz~3GHz\_Band66\_1\_4MHz\_QPSK\_1\_0\_LowCH131979

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t (886-2) 2299-3279

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3GHz~10GHz Band66 1 4MHz QPSK 1 0 LowCH131979

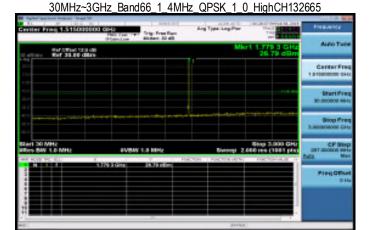
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30MHz~3GHz\_Band66\_1\_4MHz\_QPSK\_1\_0\_MidCH132322

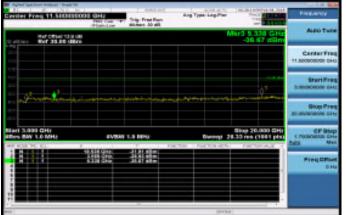


3GHz~10GHz\_Band66\_1\_4MHz\_QPSK\_1\_0\_MidCH132322

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3GHz~10GHz Band66 1\_4MHz QPSK\_1 0\_HighCH132665



#### 30MHz~3GHz\_Band66\_3MHz\_QPSK\_1\_0\_LowCH131987

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3GHz~10GHz Band66 3MHz QPSK 1 0 LowCH131987

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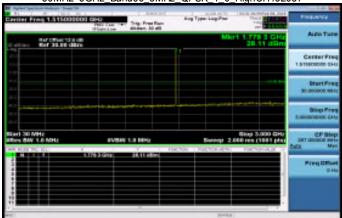
30MHz~3GHz Band66 3MHz QPSK 1 0 MidCH132322



3GHz~10GHz\_Band66\_3MHz\_QPSK\_1\_0\_MidCH132322

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30MHz~3GHz\_Band66\_3MHz\_QPSK\_1\_0\_HighCH132657



3GHz~10GHz Band66 3MHz QPSK 1 0 HighCH132657



#### 30MHz~3GHz\_Band66\_5MHz\_QPSK\_1\_0\_LowCH131997

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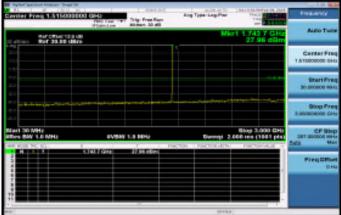


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3GHz~10GHz Band66 5MHz QPSK 1 0 LowCH131997

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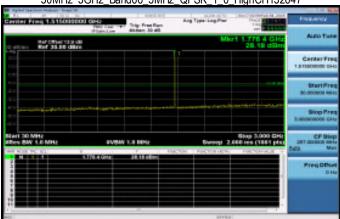
30MHz~3GHz Band66 5MHz QPSK 1 0 MidCH132322



3GHz~10GHz\_Band66\_5MHz\_QPSK\_1\_0\_MidCH132322

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30MHz~3GHz\_Band66\_5MHz\_QPSK\_1\_0\_HighCH132647



3GHz~10GHz Band66 5MHz QPSK 1 0 HighCH132647



#### 30MHz~3GHz\_Band66\_10MHz\_QPSK\_1\_0\_LowCH132022

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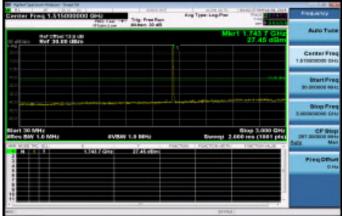


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3GHz~10GHz Band66 10MHz QPSK 1 0 LowCH132022

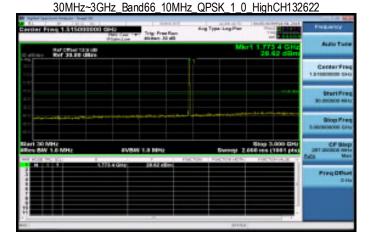
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30MHz~3GHz\_Band66\_10MHz\_QPSK\_1\_0\_MidCH132322



3GHz~10GHz\_Band66\_10MHz\_QPSK\_1\_0\_MidCH132322

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3GHz~10GHz Band66\_10MHz QPSK\_1\_0\_HighCH132622



#### 30MHz~3GHz\_Band66\_15MHz\_QPSK\_1\_0\_LowCH132047

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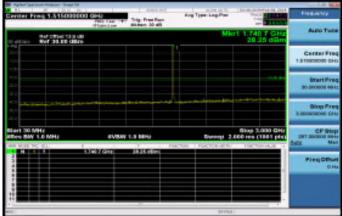


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3GHz~10GHz Band66 15MHz QPSK 1 0 LowCH132047

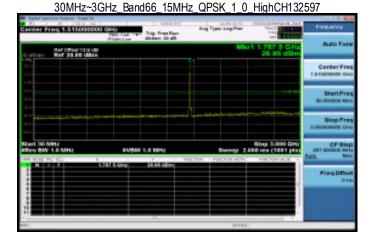
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30MHz~3GHz\_Band66\_15MHz\_QPSK\_1\_0\_MidCH132322



3GHz~10GHz\_Band66\_15MHz\_QPSK\_1\_0\_MidCH132322

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3GHz~10GHz Band66\_15MHz QPSK\_1\_0\_HighCH132597



#### 30MHz~3GHz\_Band66\_20MHz\_QPSK\_1\_0\_LowCH132072

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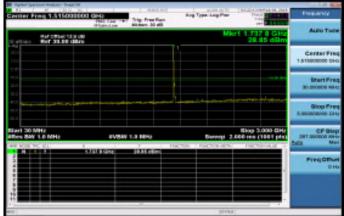


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3GHz~10GHz Band66 20MHz QPSK 1 0 LowCH132072

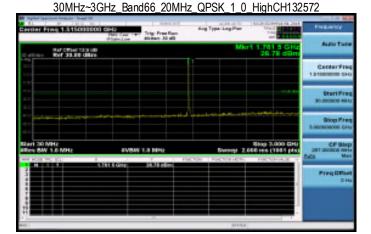
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el		13+3.4		

30MHz~3GHz Band66 20MHz QPSK 1 0 MidCH132322



3GHz~10GHz\_Band66\_20MHz\_QPSK\_1\_0\_MidCH132322

Agend (partners instant - Install III				100 100 100
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3GHz~10GHz Band66 20MHz QPSK 1 0 HighCH132572



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No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號 SGS Taiwan Ltd.

台灣檢驗科技股份有限公司	t (886-2) 2299-3279
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f (886-2) 2298-0488



#### FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT 10.

## 10.1. Standard Applicable

According to FCC §2.1053,

FCC §22.917(a), §24.238(a), §27.53 (h), the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than 43 + 10 log (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm).

### §27.53 (c)

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB (-13dBm)

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

§27.53 (f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

### FCC §27.53(c) (5) & FCC §27.53(g)

Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

### FCC §27.53(h) (3)

Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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FCC §27.53(m) (4) (6)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

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According to RSS-130 §4.6

The power of any unwanted emissions in any 100 kHz bandwidth on any frequency outside the frequency range(s) within which the equipment is designed to operate shall be attenuated below the transmitter power, P (dBW), by at least 43 + 10 log10 p (watts), dB. However, in the 100 kHz band immediately outside the equipment's operating frequency range, a resolution bandwidth of 30 kHz may be employed.

In addition to the limit outlined in Section 4.6.1 above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

(a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power,

P (dBW), by at least:

(i) 76 + 10 log10 p(watts), dB, for base and fixed equipment, and

(ii) 65 + 10 log10 p(watts), dB, for mobile and portable equipment.

### According to RSS-132 §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 log10 p (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

### According to RSS-133 §6.5.1

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 log10 p(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 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

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## According to RSS-139 §6.5

(i) In the first 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 below the transmitter output power P (in watts) by at least 43 + 10 log10(P), dB.

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

## According to RSS-195 §5.6.2

The power of any emission outside the frequency range(s) in which the equipment operates shall be attenuated below the transmitter power, P(dBW), by the amount indicated in Table 2 and graphically represented in Figure 2, where p is the transmitter output power measured in watts.

Table 2 — Unwanted Emissions for Mobile, Portable and Low-Power Fixed Subscriber
Equipment

Frequency (MHz)	Attenuation (dB)
<2200	43 + 10 log10(p)
2200 - 2288	$70 + 10 \log_{10}(p)$
2288 - 2292	67 + 10 log <sub>10</sub> (p)
2292 - 2296	61 + 10 log <sub>10</sub> (p)
2296 - 2300	55 + 10 log10(p)
2300 - 2305	43 + 10 log10(p)
2305 - 2320	43 + 10 log10(p)Note
2320 - 2324	55 + 10 log10(p)
2324 - 2328	61 + 10 log <sub>10</sub> (p)
2328 - 2337	67 + 10 log <sub>10</sub> (p)
2337 - 2341	61 + 10 log10(p)
2341 - 2345	55 + 10 log10(p)
2345 - 2360	43 + 10 log10(p)Note
2360 - 2365	43 + 10 log10(p)
2365 - 2395	$70 \pm 10 \log_{10}(p)$
>2395	43 + 10 log10(p)

**Note:** Measured at the edges of the highest and lowest frequency range(s) in which the equipment is designed to operate. See Section 1.2 for the permitted frequency ranges for various equipment types.

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According to RSS-199 §4.6

Equipment shall comply with the following unwanted emission limits:

- (a) for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least 43 + 10 log10 p.
- (b) for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least:
- (i)  $40 + 10 \log_{10} p$  from the channel edges to 5 MHz away
- (ii) 43 + 10 log<sub>10</sub> p between 5 MHz and X MHz from the channel edges, and
- (iii) 55 + 10 log10 p at X MHz and beyond from the channel edges

In addition, the attenuation shall not be less than 43 + 10 log<sub>10</sub> p on all frequencies between 2490.5 MHz and 2496 MHz, and 55 + 10 log10 p at or below 2490.5 MHz.

In (a) and (b), **p** is the transmitter power measured in watts and **X** is 6 MHz or the equipment occupied bandwidth, whichever is greater.

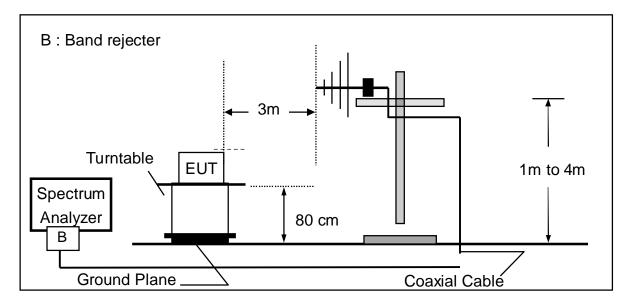
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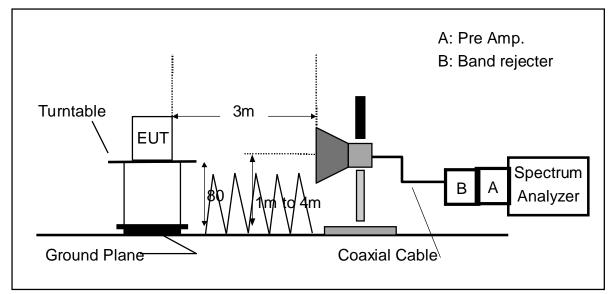


# 10.2. EUT Setup

Radiated Emission Test Set-Up, Frequency Below 1000MHz



Radiated Emission Test Set-UP Frequency Over 1 GHz





## 10.3. Measurement Procedure:

The EUT was placed on a non-conductive; the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequencies (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

"F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency. Note : "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency. "---": denotes Noise Floor.

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## 10.4. Measurement Equipment Used:

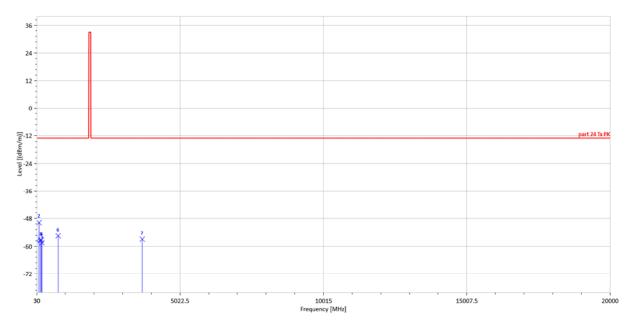
ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber										
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.					
EMI Test Receiver	R&S	ESU 40	100363	04/18/2017	04/17/2018					
Broadband Antenna	TESEQ	CBL 6112D	35240	11/03/2017	11/02/2018					
Broadband Antenna	TESEQ	CBL 6112D	35243	11/09/2017	11/08/2018					
Horn Antenna	ETS-Lindgren	3117	00143272	12/15/2017	12/16/2018					
Horn Antenna	ETS-Lindgren	3117	143279	11/14/2017	11/13/2018					
Horn Antenna	Schwarzbeck	BBHA9170	184	12/11/2017	12/10/2018					
Horn Antenna	Schwarzbeck	BBHA9170	185	08/01/2017	07/31/2018					
Pre Amplifier	EMC Instruments	EMC330	980096	12/24/2017	12/23/2018					
Pre Amplifier	EMC Instruments	EMC0011830	980199	12/24/2017	12/23/2018					
Pre Amplifier	R&S	SCU-18	10204	12/24/2017	12/23/2018					
Pre Amplifier	R&S	SCU-26	100780	12/24/2017	12/23/2018					
Pre Amplifier	EMC Instruments	EMC184045B	980135	12/24/2017	12/23/2018					
Coaxial Cable	Huber+Suhner	RG 214/U	966Rx 9K-30M	12/24/2017	12/23/2018					
Coaxial Cable	Huber+Suhner	RG 214/U SUCOFLEX 104	966Rx 30M-3G	12/24/2017	12/23/2018					
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Rx 1G-18G	12/24/2017	12/23/2018					
Coaxial Cable	Huber+Suhner	mini 141-12 SUCOFLEX 104	966Rx 18G-40G	12/24/2017	12/23/2018					
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Tx 30M-18G	12/24/2017	12/23/2018					
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	966Tx 18G-40G	12/24/2017	12/23/2018					
Attenuator	WOKEN	218FS-10	RF27	12/24/2017	12/23/2018					
Communication Tester	Anritsu	MT8820C	6201107337	06/11/2017	06/10/2018					
Site NSA	SGS	966 Chamber C	SAC-C	03/02/2017	03/01/2018					
Site VSWR	SGS	966 Chamber C	SAC-C	03/02/2017	03/01/2018					
DC Power Supply	HOLA	DP-3003	D7070035	05/04/2017	05/03/2018					
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.					
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.					
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.					
Test Software	World-Pallas	Dr. E	V 3.0 Lite	N.C.R.	N.C.R.					



## 10.5. Measurement Result:

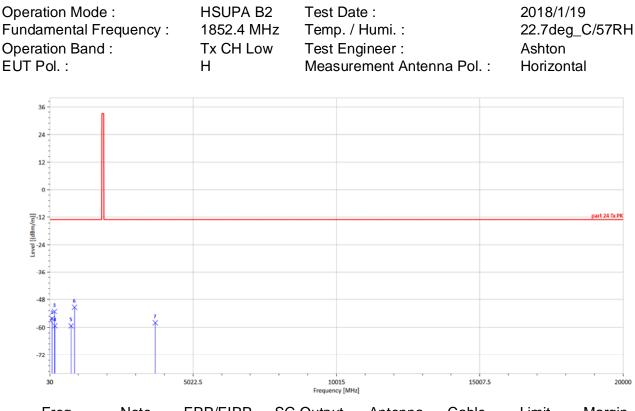
### **Radiated Spurious Emission Measurement Result: HSUPA Band 2 Mode**

Operation Mode :	HSUPA B2	Test Date :	2018/1/19
Fundamental Frequency :	1852.4 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer :	Ashton
EUT Pol. :	Н	Measurement Antenna Pol. :	Vertical



Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
38.73	S	-57.66	-41.67	-15.13	-0.85	-13.01	-44.65
111.48	S	-49.76	-44.74	-3.56	-1.46	-13.01	-36.75
164.83	S	-57.35	-57.48	1.93	-1.80	-13.01	-44.34
192.96	S	-57.37	-59.45	4.03	-1.95	-13.01	-44.36
211.39	S	-58.48	-60.44	4.00	-2.05	-13.01	-45.47
775.93	S	-55.53	-56.69	5.19	-4.03	-13.01	-42.52
3704.80	Н	-56.94	-60.46	12.42	-8.90	-13.01	-43.93





Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
			Level	Gain	Loss	@3m		
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
32.91	S	-56.89	-36.08	-19.97	-0.83	-13.01	-43.88	
111.48	S	-56.31	-51.30	-3.56	-1.46	-13.01	-43.30	
192.96	S	-53.13	-55.21	4.03	-1.95	-13.01	-40.12	
211.39	S	-59.37	-61.32	4.00	-2.05	-13.01	-46.36	
773.99	S	-59.41	-60.57	5.19	-4.03	-13.01	-46.40	
893.30	S	-51.31	-52.12	5.21	-4.40	-13.01	-38.30	
3704.80	Н	-58.07	-61.59	12.42	-8.90	-13.01	-45.06	



Operation Mode : Fundamental Freque Operation Band : EUT Pol. :	HSUP/ ency : 1880 M Tx CH H	/Hz Temp. Mid Test E	Date : . / Humi. : Engineer : urement Antenr	na Pol. :	2018/1/19 22.7deg_C/57RH Ashton Vertical
36 24 12 0 ( -12 0 0 -12 0 -12					part 24 Tx PK
-36 -48 -60 -72 30	5022.5	100 Frequence P SG Outou	y [MHz]	15007.5 Cable	Limit Margin
Freq. No	te ERP/EIRF	SG Outpu	t Antenna	Cable	Limit Margi

ricq.	NOLC		00 Output	/ inconna	Oubic		margin	
			Level	Gain	Loss	@3m		
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	_
37.76	S	-57.81	-41.04	-15.92	-0.85	-13.01	-44.80	
111.48	S	-50.67	-45.65	-3.56	-1.46	-13.01	-37.66	
191.02	S	-58.31	-60.47	4.10	-1.95	-13.01	-45.30	
260.86	S	-62.18	-62.03	2.15	-2.30	-13.01	-49.17	
291.90	S	-64.98	-65.98	3.43	-2.43	-13.01	-51.97	
773.02	S	-57.81	-58.98	5.19	-4.02	-13.01	-44.80	
3760.00	Н	-55.97	-59.48	12.46	-8.94	-13.01	-42.96	



Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :		HSUPA B2 1880 MHz Tx CH Mid H	Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :			2018/1/19 22.7deg_C/57RH Ashton Horizontal
36 24 12 0 ( [12] -36 -36 -60 -72 -72		222.5		015 1 1	5007.5	part 24 Tx PK
			Frequer	icy [minz]		

Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-48.54	-31.77	-15.92	-0.85	-13.01	-35.53
112.45	S	-54.18	-49.19	-3.52	-1.46	-13.01	-41.17
164.83	S	-59.72	-59.85	1.93	-1.80	-13.01	-46.71
193.93	S	-56.52	-58.56	4.00	-1.96	-13.01	-43.51
261.83	S	-62.49	-62.43	2.25	-2.31	-13.01	-49.48
773.02	S	-60.70	-61.87	5.19	-4.02	-13.01	-47.69
3760.00	Н	-56.54	-60.05	12.46	-8.94	-13.01	-43.53



Fundam	on Banc	requency :	HSUPA B 1907.6 Mł Tx CH Hig H	Hz Tem gh Test	Date : p. / Humi. : Engineer : surement Ante	enna Pol. :	2018/1/ 22.7deg Ashton Vertical	g_C/57RH
36 -		n						
24 -								
12 -								
0 -								
Ē-12								part 24 Tx PK
[[-12 /wgp]]  av-24								
-36 -								
-48 -	<b>54</b>							
-60 -		×						
-72								
30	0		5022.5		015 Icy [MHz]	15007.5		20000
F	req.	Note	ERP/EIRP	SG Outpu		Cable	Limit	Margin
N	/IHz	F/H/E/S	dBm	Level dBm	Gain dBd/dBi	Loss dB	@3m dBm/m	dB
	7.76	S	-57.48	-40.71	-15.92	-0.85	-13.01	-44.47

-47.90

-57.46

-54.44

-61.29

-57.57

-59.38

-3.56

2.05

4.00

4.15

5.19

12.49

S

S

S

S

S

Н

111.48

165.80

193.93

576.11

772.05

3815.20

-52.92

-57.21

-52.40

-60.61

-56.40

-55.87

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-13.01

-13.01

-13.01

-13.01

-13.01

-13.01

-39.91

-44.20

-39.39

-47.60

-43.39

-42.86

-1.46

-1.80

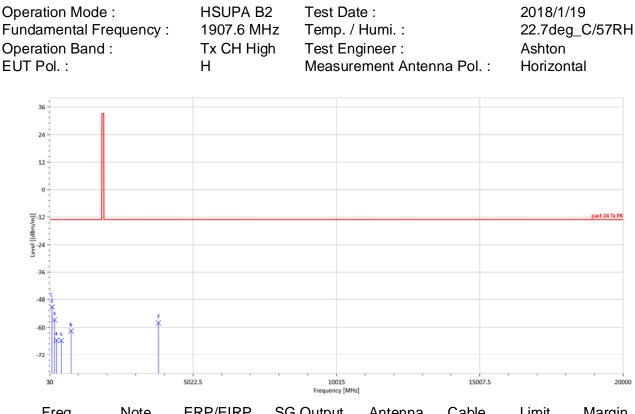
-1.96

-3.48

-4.02

-8.98





	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
				Level	Gain	Loss	@3m		
	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	-
-	37.76	S	-45.85	-29.08	-15.92	-0.85	-13.01	-32.84	-
	109.54	S	-51.16	-46.11	-3.60	-1.45	-13.01	-38.15	
	192.96	S	-56.85	-58.93	4.03	-1.95	-13.01	-43.84	
	264.74	S	-65.70	-65.92	2.55	-2.32	-13.01	-52.69	
	433.52	S	-65.83	-66.32	3.48	-2.99	-13.01	-52.82	
	773.99	S	-61.54	-62.70	5.19	-4.03	-13.01	-48.53	
	3815.20	Н	-58.12	-61.63	12.49	-8.98	-13.01	-45.11	



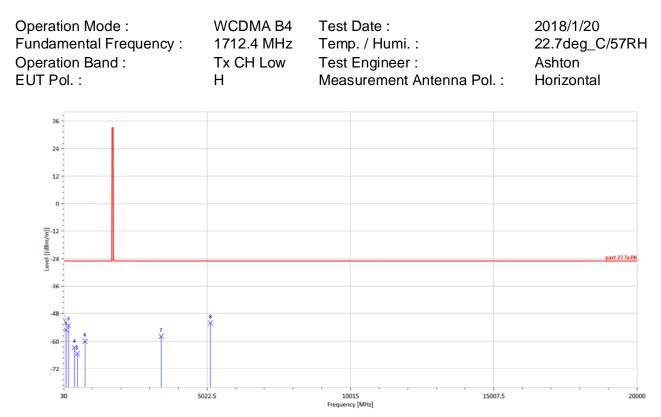
#### **Radiated Spurious Emission Measurement Result: WCDMA Band 4 Mode**

Operation Mo Fundamental Operation Bar EUT Pol. :	Frequency :	WCDMA E 1712.4 MF Tx CH Lov H	Hz Temp. w Test E	ate : / Humi. : ngineer : rement Anter	nna Pol. :	2018/1/ 22.7deg Ashton Vertical	g_C/57RH
36							
24 -							
-							
12							
0							
[[-12 [[]]] []] []] []] []] []] []] []] []]							
P] -24							part 27 Tx PK
-36							
-48		8					
-60	Ý	Ť					
×							
-72							
30		5022.5	10015 Frequency [N	IHz]	15007.5		20000
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
N 41 I		d Direc	d Duna	에 다 에 / 에 다 :		d Days / ma	d٦

				Level	Gain	LOSS	@sm		
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
	112.45	S	-49.90	-44.92	-3.52	-1.46	-25	-24.90	
	165.80	S	-54.30	-54.55	2.05	-1.80	-25	-29.30	
	191.02	S	-55.96	-58.12	4.10	-1.95	-25	-30.96	
	371.44	S	-65.43	-66.01	3.34	-2.76	-25	-40.43	
	535.37	S	-60.68	-61.30	3.99	-3.37	-25	-35.68	
	592.60	S	-60.33	-61.06	4.27	-3.54	-25	-35.33	
	3424.80	Н	-53.39	-56.84	12.15	-8.70	-25	-28.39	
	5137.20	Н	-52.24	-54.85	12.64	-10.03	-25	-27.24	

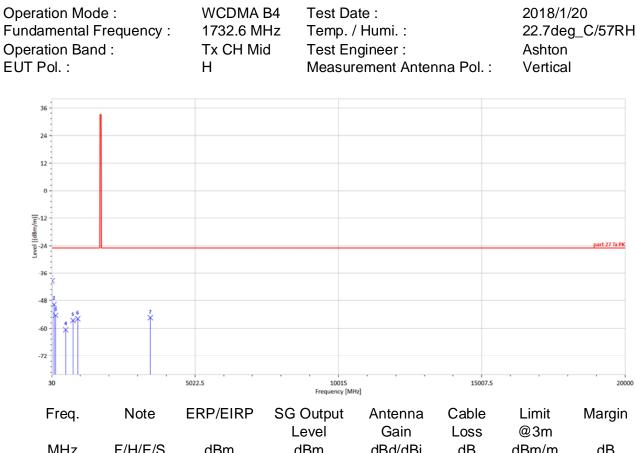
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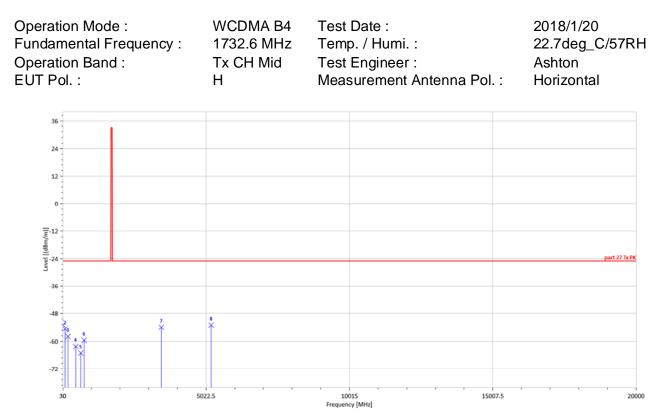
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-51.18	-34.16	-15.92	-1.10	-25	-26.18
111.48	S	-55.07	-49.65	-3.56	-1.86	-25	-30.07
192.96	S	-53.06	-54.57	4.03	-2.53	-25	-28.06
401.51	S	-62.74	-62.20	3.21	-3.76	-25	-37.74
505.30	S	-65.46	-65.28	4.03	-4.22	-25	-40.46
773.99	S	-60.00	-59.94	5.19	-5.26	-25	-35.00
3424.80	Н	-57.95	-61.40	12.15	-8.70	-25	-32.95
5137.20	Н	-52.00	-54.61	12.64	-10.03	-25	-27.00





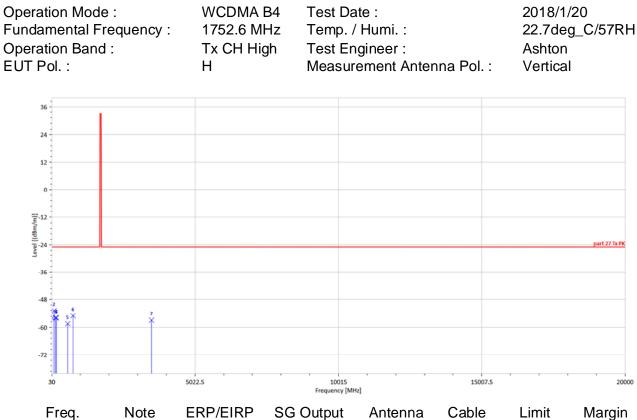
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
40.67	S	-39.44	-24.98	-13.59	-0.87	-25	-14.44
111.48	S	-49.71	-44.69	-3.56	-1.46	-25	-24.71
164.83	S	-54.37	-54.50	1.93	-1.80	-25	-29.37
516.94	S	-60.64	-61.37	4.02	-3.29	-25	-35.64
773.02	S	-56.66	-57.83	5.19	-4.02	-25	-31.66
937.92	S	-55.95	-56.82	5.37	-4.49	-25	-30.95
3465.20	Н	-55.50	-59.00	12.23	-8.73	-25	-30.50





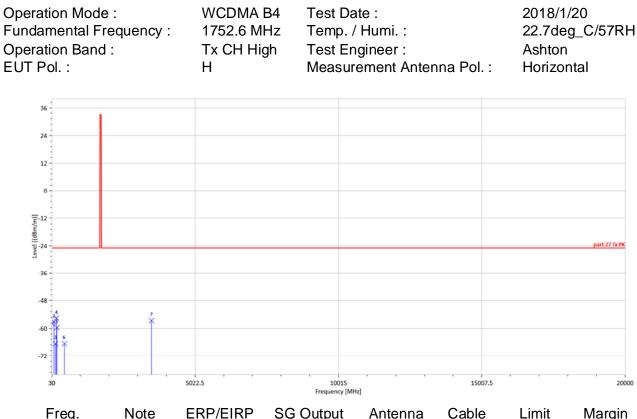
	Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
	35.82	S	-52.93	-34.59	-17.49	-0.84	-25	-27.93
	111.48	S	-54.62	-49.61	-3.56	-1.46	-25	-29.62
	213.33	S	-57.89	-59.84	4.00	-2.06	-25	-32.89
	484.93	S	-62.25	-63.00	3.91	-3.17	-25	-37.25
	659.53	S	-65.18	-66.17	4.70	-3.72	-25	-40.18
	775.93	S	-59.61	-60.77	5.19	-4.03	-25	-34.61
	3465.20	Н	-53.99	-57.49	12.23	-8.73	-25	-28.99
	5197.80	Н	-52.97	-55.60	12.70	-10.07	-25	-27.97





Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-56.16	-39.39	-15.92	-0.85	-25	-31.16
111.48	S	-52.80	-47.79	-3.56	-1.46	-25	-27.80
164.83	S	-55.90	-56.04	1.93	-1.80	-25	-30.90
191.99	S	-55.91	-58.03	4.07	-1.95	-25	-30.91
587.75	S	-58.48	-59.19	4.23	-3.52	-25	-33.48
773.02	S	-55.02	-56.19	5.19	-4.02	-25	-30.02
3505.20	Н	-56.93	-60.47	12.30	-8.76	-25	-31.93





Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
32.91	S	-57.90	-37.09	-19.97	-0.83	-25	-32.90
110.51	S	-57.45	-52.40	-3.59	-1.45	-25	-32.45
163.86	S	-66.82	-66.85	1.81	-1.79	-25	-41.82
191.99	S	-55.67	-57.79	4.07	-1.95	-25	-30.67
212.36	S	-59.72	-61.67	4.00	-2.05	-25	-34.72
470.38	S	-66.72	-67.40	3.79	-3.11	-25	-41.72
3505.20	Н	-56.73	-60.26	12.30	-8.76	-25	-31.73



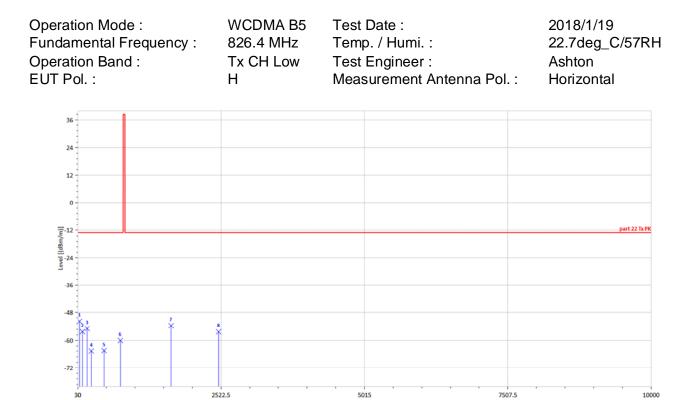
#### **Radiated Spurious Emission Measurement Result: WCDMA Band 5 Mode**

Funda	tion Mode mental Fre tion Band : Pol. :	equency :	WCDMA B 826.4 MHz Tx CH Low H	Tem Test	Date : p. / Humi. : Engineer : surement Ante	enna Pol. :	2018/1/19 22.7deg_C/57RH Ashton Vertical
3	6						
2	4						
1	2						
	0						
[(ɯ/ɯɡ	2						part 22 Tx PK
الالالمالي [[dßm/m]] ح	4						
-3	6						
-4	8 1 8	,	8				
-6		Ý					
-7.	2						
	30		2522.5		015 Icy [MHz]	7507.5	10000
	Freq	Note	FRP/FIRP	SG Outpu	ut Antenna	Cable	Limit Margin

	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
				Level	Gain	Loss	@3m		
	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
-	112.45	S	-50.20	-45.22	-3.52	-1.46	-13	-37.20	
	166.77	S	-55.45	-55.81	2.17	-1.81	-13	-42.45	
	191.02	S	-55.62	-57.78	4.10	-1.95	-13	-42.62	
	248.25	S	-59.11	-59.75	2.88	-2.24	-13	-46.11	
	773.02	S	-55.27	-56.43	5.19	-4.02	-13	-42.27	
	892.33	S	-41.22	-42.04	5.21	-4.39	-13	-28.22	
	1652.80	Н	-57.17	-57.31	6.59	-6.46	-13	-44.17	
	2479.20	Н	-54.01	-54.73	8.53	-7.81	-13	-41.01	

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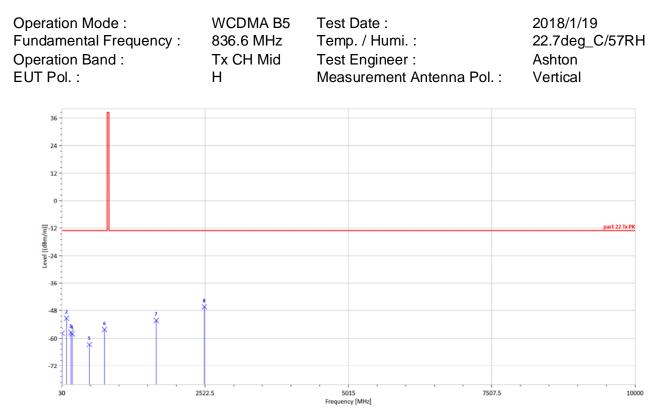




Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
62.01	S	-51.76	-47.76	-2.93	-1.07	-13	-38.76
111.48	S	-56.27	-51.25	-3.56	-1.46	-13	-43.27
192.96	S	-54.93	-57.01	4.03	-1.95	-13	-41.93
265.71	S	-64.75	-65.07	2.65	-2.32	-13	-51.75
487.84	S	-64.58	-65.34	3.94	-3.18	-13	-51.58
772.05	S	-60.09	-61.26	5.19	-4.02	-13	-47.09
1652.80	Н	-53.66	-53.79	6.59	-6.46	-13	-40.66
2479.20	Н	-56.35	-57.08	8.53	-7.81	-13	-43.35

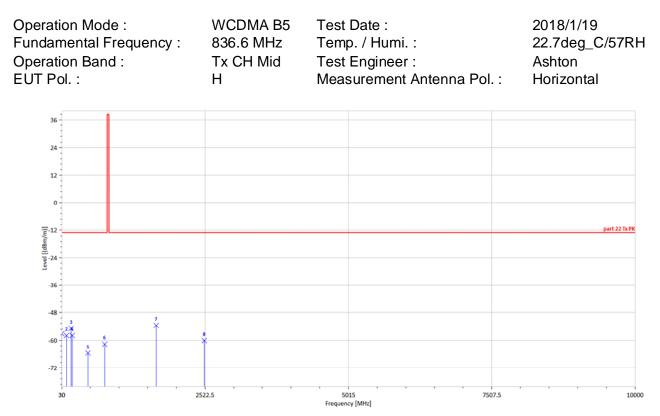
Frequency [MHz]





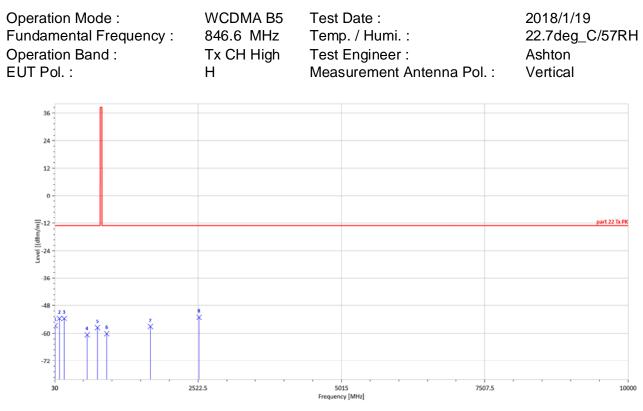
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
36.79	S	-57.91	-40.36	-16.71	-0.85	-13	-44.91
112.45	S	-51.32	-46.33	-3.52	-1.46	-13	-38.32
191.02	S	-57.48	-59.64	4.10	-1.95	-13	-44.48
212.36	S	-58.08	-60.03	4.00	-2.05	-13	-45.08
511.12	S	-62.77	-63.53	4.02	-3.27	-13	-49.77
773.02	S	-56.28	-57.44	5.19	-4.02	-13	-43.28
1673.20	Н	-52.24	-52.41	6.68	-6.50	-13	-39.24
2509.80	Н	-46.39	-47.11	8.56	-7.84	-13	-33.39





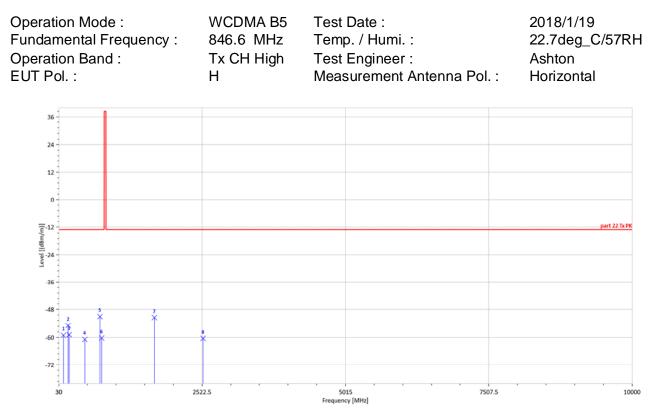
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
 31.94	S	-57.16	-35.51	-20.82	-0.83	-13	-44.16
112.45	S	-57.96	-52.98	-3.52	-1.46	-13	-44.96
192.96	S	-54.88	-56.96	4.03	-1.95	-13	-41.88
212.36	S	-57.93	-59.88	4.00	-2.05	-13	-44.93
485.90	S	-65.58	-66.32	3.92	-3.17	-13	-52.58
777.87	S	-61.71	-62.86	5.19	-4.04	-13	-48.71
1673.20	Н	-53.56	-53.73	6.68	-6.50	-13	-40.56
2509.80	Н	-60.12	-60.84	8.56	-7.84	-13	-47.12





Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-56.75	-39.98	-15.92	-0.85	-13	-43.75
111.48	S	-53.56	-48.54	-3.56	-1.46	-13	-40.56
194.90	S	-53.56	-55.56	3.96	-1.96	-13	-40.56
594.54	S	-60.65	-61.39	4.28	-3.55	-13	-47.65
773.02	S	-57.58	-58.75	5.19	-4.02	-13	-44.58
934.04	S	-60.18	-61.06	5.36	-4.48	-13	-47.18
1693.20	Н	-57.13	-57.35	6.76	-6.55	-13	-44.13
2539.80	Н	-53.05	-53.77	8.60	-7.87	-13	-40.05





Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-59.14	-54.12	-3.56	-1.46	-13	-46.14
192.96	S	-54.91	-56.98	4.03	-1.95	-13	-41.91
211.39	S	-58.88	-60.83	4.00	-2.05	-13	-45.88
483.96	S	-60.92	-61.66	3.91	-3.17	-13	-47.92
746.83	S	-51.03	-52.26	5.15	-3.93	-13	-38.03
776.90	S	-60.29	-61.44	5.19	-4.04	-13	-47.29
1693.20	Н	-51.45	-51.67	6.76	-6.55	-13	-38.45
2539.80	Н	-60.45	-61.17	8.60	-7.87	-13	-47.45



### **Radiated Spurious Emission Measurement Result: LTE-Band 2**

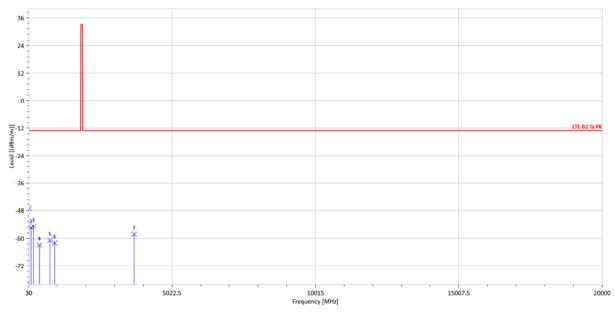
Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :		LTEB2 1.4M 16QAM 1.5 1850.7 MHz Tx CH Low H		Test Date : Temp. / Hu Test Engine Measureme	mi. : eer :	2018/1/20 22.7deg_C/57RH Enzo Vertical		
	36	0						
	24 -							
	12							
	0	_						
	Ē-12							LTE B2 TX PK
	[(-12 - ///wgp]] ]u-24 -							
	Leve							
	-36 -							
	-48							
	-60 - 4 + + + + + + + + + + + + + + + + + +	Ý						
	-72							
	30		5022.5	10015 Frequency [Mł	iz]	15007.5		20000
	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
				Level	Gain	Loss	@3m	-
-	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
	37.76	S	-57.18	-42.43	-13.90	-0.85	-13	-44.18
	111.48	S	-52.31	-49.25	-1.59	-1.46	-13	-39.31
	207.51	S	-59.01	-62.96	5.97	-2.03	-13	-46.01
	496.57	S	-63.93	-67.19	6.47	-3.22	-13	-50.93
	776.90	S	-59.67	-63.38	7.74	-4.04	-13	-46.67
	934.04	S	-59.35	-62.81	7.94	-4.48	-13	-46.35
	3701.40	Н	-56.00	-59.52	12.42	-8.90	-13	-43.00



**Operation Mode :** Fundamental Frequency : **Operation Band :** EUT Pol. :

LTEB2 1.4M 16QAM 1.5 1850.7 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
38.73	S	-47.08	-33.17	-13.06	-0.85	-13	-34.08
111.48	S	-55.40	-52.34	-1.59	-1.46	-13	-42.40
192.96	S	-54.89	-58.77	5.84	-1.95	-13	-41.89
404.42	S	-62.98	-65.89	5.80	-2.89	-13	-49.98
769.14	S	-60.88	-64.61	7.73	-4.01	-13	-47.88
935.01	S	-61.94	-65.40	7.94	-4.49	-13	-48.94
3701.40	Н	-58.29	-61.81	12.42	-8.90	-13	-45.29



Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :		LTEB2 1.4M 16QAM 1.5 1880 MHz Tx CH Mid H		Test Date : Temp. / Hur Test Engine Measureme	2018/1/20 22.7deg_C/57RH Enzo Vertical			
	36 24 12 0							
	-36	,						LTE B2 Tx PK
	-60 -72 30		5022.5	10015 Frequency (N		15007.5		20000
	Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
,	MHz	F/H/E/S		dBm	dBd/dBi	dB	dBm/m	dB
	37.76	S	-57.38	-42.62	-13.90	-0.85	-13	-44.38
	112.45	S	-52.49	-49.47	-1.55	-1.46	-13	-39.49
	193.93	S S	-52.02 -60.48	-55.89	5.82 6.94	-1.96	-13	-39.02
	596.48	3	-00.40	-63.87	0.94	-3.56	-13	-47.48

-63.29

-63.78

-50.51

-59.56

-60.34

-47.00

S

S

Н

769.14

949.56

3760.00

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/tems\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/tems\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits do Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or programmed to its indextent and offendem may be preported to the fully term of the fully. appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the faw. SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

7.73

7.96

12.46

-4.01

-4.52

-8.94

-13

-13

-13

-46.56

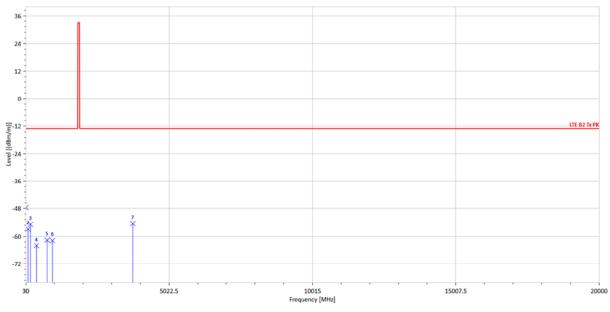
-47.34

-34.00



LTEB2 1.4M 16QAM 1.5 1880 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-47.62	-32.87	-13.90	-0.85	-13	-34.62
111.48	S	-56.93	-53.87	-1.59	-1.46	-13	-43.93
192.96	S	-54.85	-58.74	5.84	-1.95	-13	-41.85
405.39	S	-64.13	-67.04	5.81	-2.90	-13	-51.13
774.96	S	-61.64	-65.35	7.74	-4.03	-13	-48.64
958.29	S	-61.82	-65.27	7.99	-4.54	-13	-48.82
3760.00	Н	-54.51	-58.03	12.46	-8.94	-13	-41.51



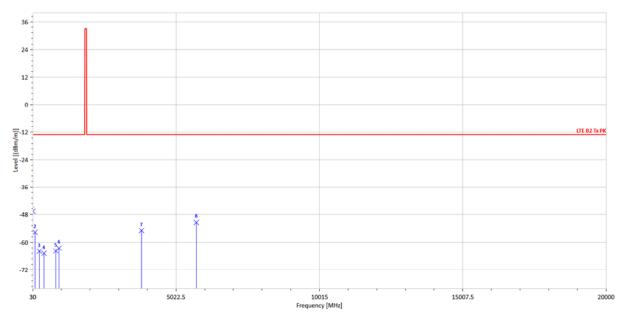
Operation Mode : Fundamental Frequency Operation Band : EUT Pol. :	LTEB2 1.4M 1 : 1909.3 MHz Tx CH High H	Temp. / I Test Eng	Humi. :	2018/1/20 22.7deg_C/57RH Enzo Vertical
24				
0 [[12 [[12 []]]]] []]]]]]]]]]]]]]]]]]]]]				LTE B2 TX PK
-36 -48	* *			
-60 -72 -72 30	5022.5	10015	15007.5	20000
Freq. N	lote ERP/EIRP	Frequency [MHz] SG Output Anten	na Cable Limit	Margin

Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
			Level	Gain	Loss	@3m		
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
111.48	S	-51.81	-48.75	-1.59	-1.46	-13	-38.81	
213.33	S	-58.15	-62.24	6.16	-2.06	-13	-45.15	
263.77	S	-62.31	-64.82	4.82	-2.32	-13	-49.31	
590.66	S	-59.51	-62.87	6.89	-3.53	-13	-46.51	
850.62	S	-60.85	-64.38	7.80	-4.27	-13	-47.85	
936.95	S	-58.73	-62.19	7.95	-4.49	-13	-45.73	
3818.60	Н	-55.08	-58.59	12.49	-8.98	-13	-42.08	
5727.90	Н	-44.89	-47.46	13.05	-10.48	-13	-31.89	



LTEB2 1.4M 16QAM 1.5 1909.3 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-46.65	-31.90	-13.90	-0.85	-13	-33.65
111.48	S	-55.76	-52.70	-1.59	-1.46	-13	-42.76
259.89	S	-63.93	-66.14	4.52	-2.30	-13	-50.93
423.82	S	-64.86	-67.89	6.00	-2.96	-13	-51.86
833.16	S	-63.77	-67.34	7.79	-4.21	-13	-50.77
943.74	S	-62.55	-65.99	7.96	-4.51	-13	-49.55
3818.60	Н	-54.95	-58.46	12.49	-8.98	-13	-41.95
5727.90	Н	-51.38	-53.95	13.05	-10.48	-13	-38.38



### **Radiated Spurious Emission Measurement Result: LTE-Band 4**

Operation Mode : Fundamental Fre Operation Band : EUT Pol. :		LTEB4 20M 1720 MHz Tx CH Low H	16QAM 1.0	Test Date : Temp. / Humi. Test Engineer Measurement	:	2018/1/20 22.7deg_C/57RH Enzo Vertical
36 24 12 0 (12 12 0 		*				LTE B4 Tx PK
-48 -60 -72 30	,	5022.5	10015 Frequency [MHz		15007.5	20000
Freq.	Note	ERP/EIRP	SG Output Level		able Limit oss @3m	Margin

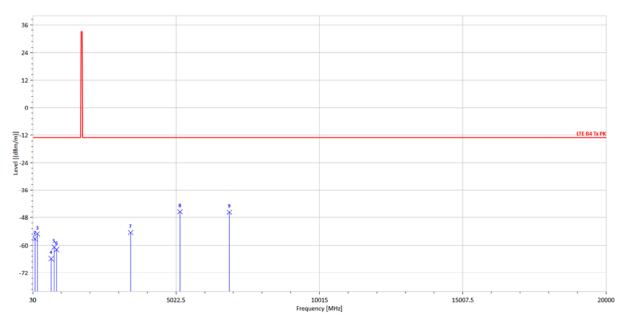
	гieq.	nole	EKF/EIKF	SG Output	Antenna	Cable		iviargin	
				Level	Gain	Loss	@3m		
-	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
	111.48	S	-52.43	-49.37	-1.59	-1.46	-13	-39.43	
	209.45	S	-58.46	-62.45	6.04	-2.04	-13	-45.46	
	255.04	S	-62.35	-64.91	4.84	-2.28	-13	-49.35	
	439.34	S	-63.78	-66.93	6.16	-3.01	-13	-50.78	
	620.73	S	-60.87	-64.29	7.05	-3.63	-13	-47.87	
	936.95	S	-60.40	-63.86	7.95	-4.49	-13	-47.40	
	3440.00	Н	-53.72	-52.92	12.18	-12.98	-13	-40.72	
	5160.00	Н	-43.53	-41.30	12.66	-14.89	-13	-30.53	



LTEB4 20M 16QAM 1.0 1720 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



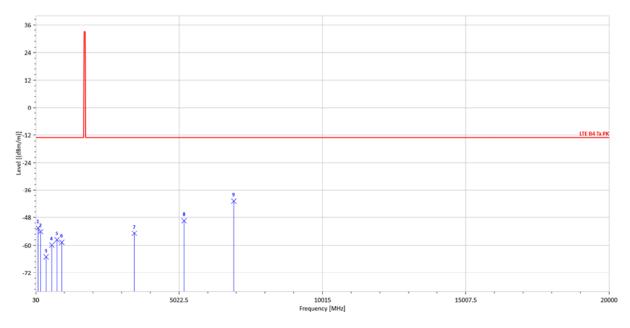
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
32.91	S	-56.40	-37.57	-18.00	-0.83	-13	-43.40
111.48	S	-57.28	-54.22	-1.59	-1.46	-13	-44.28
192.96	S	-55.11	-59.00	5.84	-1.95	-13	-42.11
672.14	S	-65.88	-69.55	7.41	-3.75	-13	-52.88
776.90	S	-60.80	-64.51	7.74	-4.04	-13	-47.80
863.23	S	-61.83	-65.33	7.82	-4.32	-13	-48.83
3440.00	Н	-54.46	-53.66	12.18	-12.98	-13	-41.46
5160.00	Н	-45.43	-43.20	12.66	-14.89	-13	-32.43
6880.00	Н	-45.68	-42.15	12.07	-15.60	-13	-32.68



LTEB4 20M 16QAM 1.0 1732.5 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Vertical



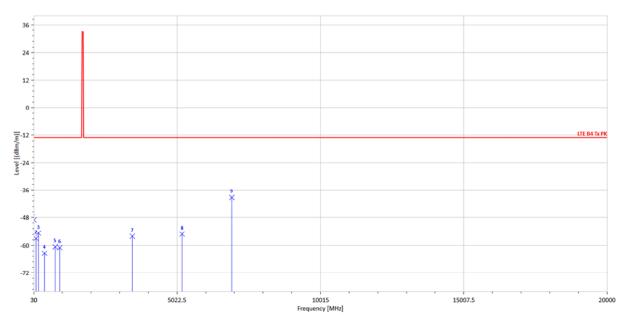
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-52.44	-49.39	-1.59	-1.46	-13	-39.44
194.90	S	-54.11	-57.96	5.81	-1.96	-13	-41.11
390.84	S	-65.12	-68.08	5.80	-2.83	-13	-52.12
588.72	S	-59.91	-63.26	6.87	-3.52	-13	-46.91
769.14	S	-57.64	-61.36	7.73	-4.01	-13	-44.64
936.95	S	-58.74	-62.20	7.95	-4.49	-13	-45.74
3465.00	Н	-54.83	-54.03	12.23	-13.03	-13	-41.83
5197.50	Н	-49.35	-47.14	12.70	-14.91	-13	-36.35
6930.00	Н	-40.83	-37.25	12.04	-15.62	-13	-27.83



LTEB4 20M 16QAM 1.0 1732.5 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal

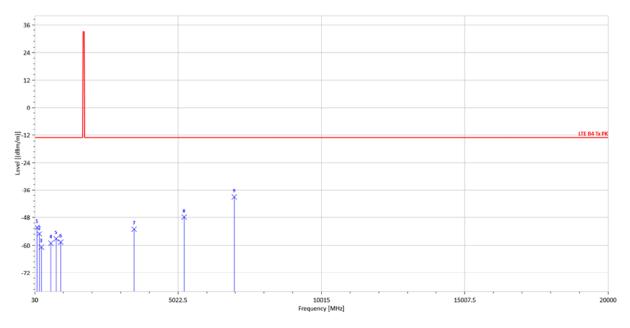


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-48.99	-34.24	-13.90	-0.85	-13	-35.99
111.48	S	-57.05	-54.00	-1.59	-1.46	-13	-44.05
192.96	S	-54.76	-58.64	5.84	-1.95	-13	-41.76
405.39	S	-63.51	-66.42	5.81	-2.90	-13	-50.51
776.90	S	-60.65	-64.36	7.74	-4.04	-13	-47.65
935.01	S	-61.02	-64.48	7.94	-4.49	-13	-48.02
3465.00	Н	-56.11	-55.31	12.23	-13.03	-13	-43.11
5197.50	Н	-55.14	-52.93	12.70	-14.91	-13	-42.14
6930.00	Н	-39.25	-35.67	12.04	-15.62	-13	-26.25



LTEB4 20M 16QAM 1.0 1745 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Vertical



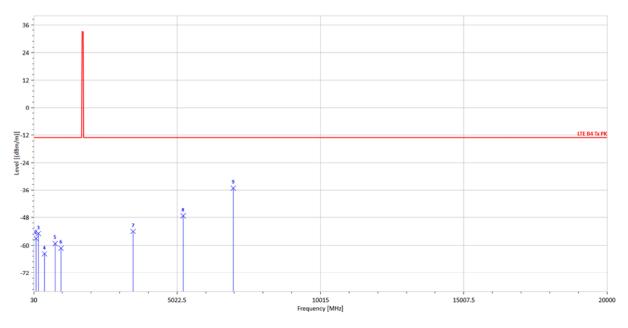
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
112.45	S	-52.25	-49.24	-1.55	-1.46	-13	-39.25
193.93	S	-55.10	-58.96	5.82	-1.96	-13	-42.10
261.83	S	-60.78	-63.13	4.66	-2.31	-13	-47.78
590.66	S	-59.10	-62.46	6.89	-3.53	-13	-46.10
775.93	S	-57.21	-60.92	7.74	-4.03	-13	-44.21
936.95	S	-58.65	-62.11	7.95	-4.49	-13	-45.65
3490.00	Н	-52.96	-52.15	12.28	-13.09	-13	-39.96
5235.00	Н	-47.80	-45.61	12.73	-14.93	-13	-34.80
6980.00	Н	-39.05	-35.42	12.01	-15.64	-13	-26.05



LTEB4 20M 16QAM 1.0 1745 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
34.85	S	-54.29	-37.02	-16.43	-0.84	-13	-41.29
111.48	S	-57.10	-54.05	-1.59	-1.46	-13	-44.10
191.99	S	-54.98	-58.88	5.85	-1.95	-13	-41.98
404.42	S	-63.78	-66.68	5.80	-2.89	-13	-50.78
776.90	S	-59.30	-63.01	7.74	-4.04	-13	-46.30
980.60	S	-61.23	-64.68	8.05	-4.60	-13	-48.23
3490.00	Н	-54.00	-53.19	12.28	-13.09	-13	-41.00
5235.00	Н	-47.27	-45.08	12.73	-14.93	-13	-34.27
6980.00	Н	-35.13	-31.50	12.01	-15.64	-13	-22.13



### **Radiated Spurious Emission Measurement Result: LTE-Band 5**

Operation Fundame Operation EUT Pol.	ental Frequ n Band :	iency :	LTEB5 5M 826.5 MHz Tx CH Low H	16QAM 1.0	Test Date : Temp. / Humi. Test Engineer Measurement /	:	2018/1/19 22.7deg_C/57RH Enzo Vertical
36 24 12 0 [(u/ugp]] 1007 -24 -36 -48 -60		7 ×	*				LTE 85 TX PK
		Note	2522.5 ERP/EIRP	5015 Frequency [MH SG Output	-	<sup>7507.5</sup> Limit	10000 Margin

⊢req.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
			Level	Gain	Loss	@3m		
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
111.48	S	-50.71	-45.69	-3.56	-1.46	-13	-37.71	
191.02	S	-56.81	-58.97	4.10	-1.95	-13	-43.81	
266.68	S	-62.00	-62.42	2.75	-2.33	-13	-49.00	
589.69	S	-60.23	-60.95	4.25	-3.53	-13	-47.23	
769.14	S	-59.27	-60.44	5.18	-4.01	-13	-46.27	
936.95	S	-57.56	-58.43	5.37	-4.49	-13	-44.56	
1653.00	Н	-54.22	-53.12	6.59	-7.70	-13	-41.22	
2479.50	Н	-45.31	-43.42	8.53	-10.42	-13	-32.31	

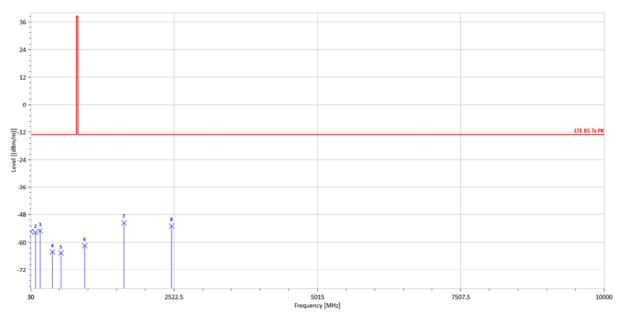
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LTEB5 5M 16QAM 1.0 826.5 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Horizontal



	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
				Level	Gain	Loss	@3m	
	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
	30.97	S	-55.39	-32.91	-21.66	-0.82	-13	-42.39
	111.48	S	-55.82	-50.80	-3.56	-1.46	-13	-42.82
	192.96	S	-55.05	-57.13	4.03	-1.95	-13	-42.05
4	409.27	S	-64.26	-64.62	3.28	-2.92	-13	-51.26
Ę	556.71	S	-64.69	-65.28	4.02	-3.42	-13	-51.69
ę	968.96	S	-61.43	-62.32	5.47	-4.58	-13	-48.43
1	653.00	Н	-51.51	-50.41	6.59	-7.70	-13	-38.51
2	479.50	Н	-52.84	-50.95	8.53	-10.42	-13	-39.84



**Operation Mode :** LTEB5 5M 16QAM 1.0 Test Date : 2018/1/19 Fundamental Frequency : 836.5 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH Mid Test Engineer : Enzo EUT Pol. : Measurement Antenna Pol. : Vertical Н 36 24 12 0 <u>-12</u> LTE B5 Tx PK PV0 -24

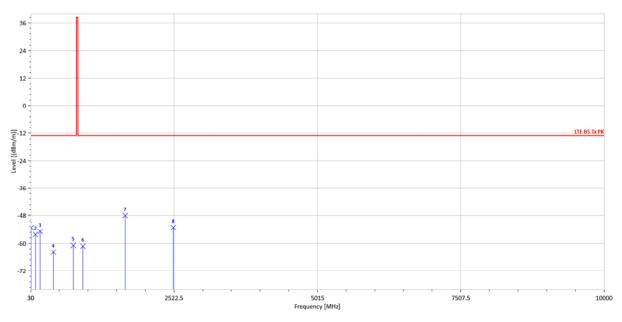
30	2522.5		5015 Frequency [MHz]		7507.5		10000	
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
111.48	S	-51.13	-46.11	-3.56	-1.46	-13	-38.13	
195.87	S	-54.69	-56.65	3.93	-1.97	-13	-41.69	
259.89	S	-61.13	-60.90	2.07	-2.30	-13	-48.13	
590.66	S	-60.77	-61.49	4.25	-3.53	-13	-47.77	
775.93	S	-57.96	-59.12	5.19	-4.03	-13	-44.96	
936.95	S	-58.49	-59.36	5.37	-4.49	-13	-45.49	
1673.00	Н	-53.69	-52.60	6.68	-7.77	-13	-40.69	
2509.50	Н	-50.51	-48.56	8.56	-10.51	-13	-37.51	



LTEB5 5M 16QAM 1.0 836.5 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable	Limit @3m	Margin
					Loss	_	15
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
36.79	S	-53.22	-35.67	-16.71	-0.85	-13	-40.22
111.48	S	-56.19	-51.17	-3.56	-1.46	-13	-43.19
192.96	S	-54.89	-56.96	4.03	-1.95	-13	-41.89
423.82	S	-63.89	-64.33	3.40	-2.96	-13	-50.89
770.11	S	-60.89	-62.06	5.18	-4.01	-13	-47.89
936.95	S	-61.28	-62.15	5.37	-4.49	-13	-48.28
1673.00	Н	-48.04	-46.94	6.68	-7.77	-13	-35.04
2509.50	Н	-53.17	-51.22	8.56	-10.51	-13	-40.17



**Operation Mode :** LTEB5 5M 16QAM 1.0 Test Date : 2018/1/19 Fundamental Frequency : 846.5 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH High Test Engineer : Enzo EUT Pol. : Measurement Antenna Pol. : Vertical Н 36 24 12 0 <u>-12</u> LTE B5 Tx PK ave | -24 36 -60 . 2522.5 5015 . 7507.5 10000

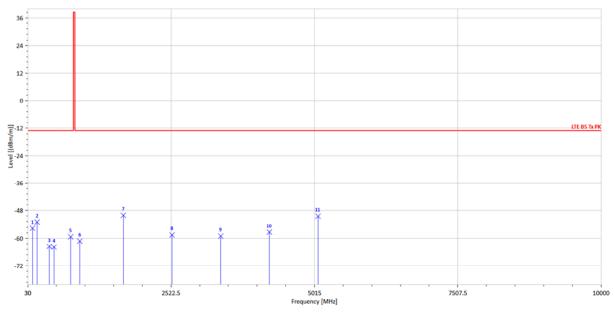
30	2522.5		5015 Frequency (MH:	Frequency [MHz]		7507.5		10000	
Freq.	Note	ERP/EIRP	SG Output	Antenna Gain	Cable	Limit @3m	Margin		
			Level		Loss	-			
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB		
111.48	S	-51.14	-46.12	-3.56	-1.46	-13	-38.14		
193.93	S	-53.13	-55.17	4.00	-1.96	-13	-40.13		
289.96	S	-62.47	-63.46	3.41	-2.42	-13	-49.47		
586.78	S	-60.13	-60.84	4.23	-3.52	-13	-47.13		
770.11	S	-59.17	-60.34	5.18	-4.01	-13	-46.17		
937.92	S	-58.27	-59.14	5.37	-4.49	-13	-45.27		
1693.00	Н	-43.16	-42.08	6.76	-7.84	-13	-30.16		
2539.50	Н	-27.93	-25.93	8.60	-10.59	-13	-14.93		
3386.00	Н	-58.26	-55.32	9.92	-12.86	-13	-45.26		
4232.50	Н	-45.63	-41.87	10.45	-14.21	-13	-32.63		
5079.00	Н	-49.42	-45.00	10.43	-14.85	-13	-36.42		



LTEB5 5M 16QAM 1.0 846.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
112.45	S	-55.71	-50.72	-3.52	-1.46	-13	-42.71
192.96	S	-52.95	-55.03	4.03	-1.95	-13	-39.95
405.39	S	-63.57	-63.92	3.25	-2.90	-13	-50.57
486.87	S	-63.86	-64.62	3.93	-3.18	-13	-50.86
776.90	S	-59.37	-60.52	5.19	-4.04	-13	-46.37
935.01	S	-61.23	-62.11	5.36	-4.49	-13	-48.23
1693.00	Н	-50.03	-48.94	6.76	-7.84	-13	-37.03
2539.50	Н	-58.57	-56.57	8.60	-10.59	-13	-45.57
3386.00	Н	-59.09	-56.15	9.92	-12.86	-13	-46.09
4232.50	Н	-57.34	-53.58	10.45	-14.21	-13	-44.34
5079.00	Н	-50.42	-46.01	10.43	-14.85	-13	-37.42



### **Radiated Spurious Emission Measurement Result: LTE-Band 7**

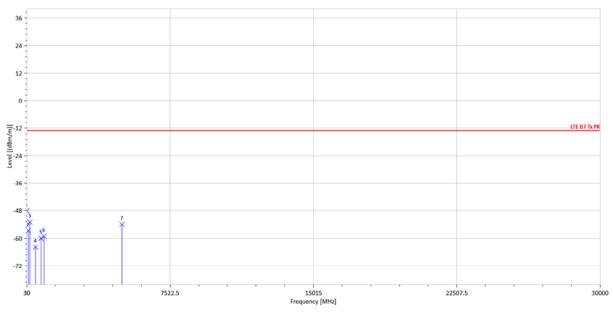
Funda	ation Mode amental Fre ation Band : Pol. :	equency :	LTEB7 10M 2505 MHz Tx CH Low H	16QAM 1.49	Test Date Temp. / I Test Eng Measure	Humi. : jineer :	enna Pol. :	2018/1/ 22.7deg Enzo Vertical	g_C/57RH
	36 -								
	24								
	12								
	0-								
	[[-12 - [w]/wgp]]-24							LTE B7 TX PK	
	8P)] 19-24								
	ຼິ -36 -								
	-48	*							
	-60								
	-72 -								
	30		7522.5	15015 Frequency [MHz]		22507.5		30000	
	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
	•			Level	Gain	Loss	@3m	Ũ	
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
	111.48	S	-52.03	-48.97	-1.59	-1.46	-25	-27.03	
	190.05	S	-57.24	-61.18	5.88	-1.94	-25	-32.24	
	255.04	S	-60.89	-63.45	4.84	-2.28	-25	-35.89	
	588.72	S	-59.28	-62.63	6.87	-3.52	-25	-34.28	
	776.90	S	-57.27	-60.98	7.74	-4.04	-25	-32.27	
	936.95	S	-57.92	-61.37	7.95	-4.49	-25	-32.92	
	5010.00	Н	-52.51	-55.09	12.51	-9.93	-25	-27.51	



LTEB7 10M 16QAM 1.49 2505 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal

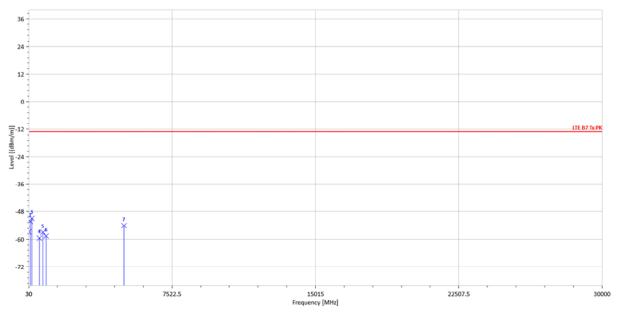


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-48.14	-33.39	-13.90	-0.85	-25	-23.14
111.48	S	-56.77	-53.72	-1.59	-1.46	-25	-31.77
192.96	S	-52.92	-56.80	5.84	-1.95	-25	-27.92
489.78	S	-63.91	-67.17	6.45	-3.19	-13.01	-50.90
776.90	S	-60.04	-63.74	7.74	-4.04	-25	-35.04
935.01	S	-59.17	-62.62	7.94	-4.49	-25	-34.17
5010.00	Н	-53.91	-56.49	12.51	-9.93	-25	-28.91



LTEB7 10M 16QAM 1.49 2535 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Vertical

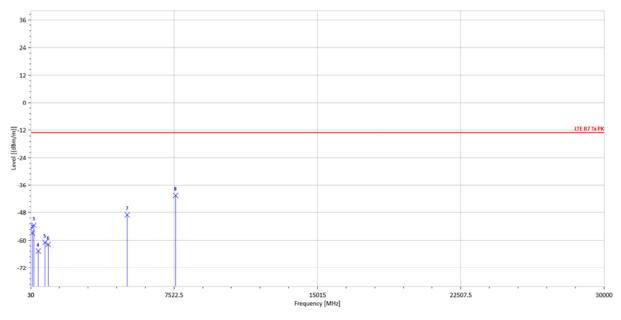


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-56.83	-42.08	-13.90	-0.85	-25	-31.83
111.48	S	-52.20	-49.15	-1.59	-1.46	-25	-27.20
192.96	S	-50.95	-54.83	5.84	-1.95	-25	-25.95
587.75	S	-59.49	-62.83	6.86	-3.52	-25	-34.49
770.11	S	-56.98	-60.71	7.74	-4.01	-25	-31.98
936.95	S	-58.61	-62.07	7.95	-4.49	-25	-33.61
5010.00	Н	-54.07	-56.65	12.51	-9.93	-25	-29.07



LTEB7 10M 16QAM 1.49 2535 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Horizontal

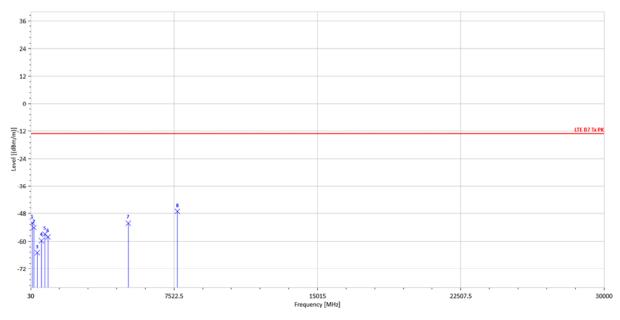


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
33.88	S	-55.42	-37.37	-17.21	-0.84	-25	-30.42
111.48	S	-56.91	-53.85	-1.59	-1.46	-25	-31.91
191.99	S	-53.43	-57.34	5.85	-1.95	-25	-28.43
424.79	S	-64.78	-67.82	6.01	-2.96	-25	-39.78
775.93	S	-60.94	-64.65	7.74	-4.03	-25	-35.94
944.71	S	-61.76	-65.20	7.96	-4.51	-25	-36.76
5070.00	Н	-48.97	-51.56	12.57	-9.98	-25	-23.97
7605.00	Н	-40.56	-40.26	11.30	-11.60	-25	-15.56



LTEB7 10M 16QAM 1.49 2565 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Vertical



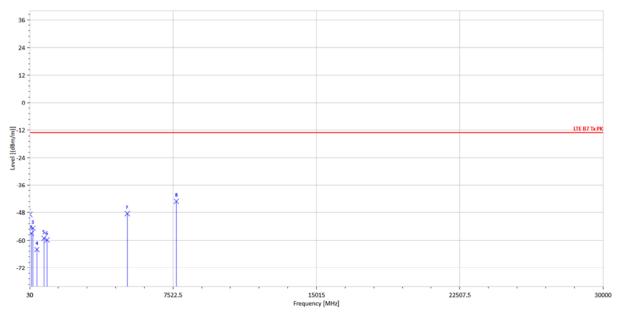
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-52.08	-49.02	-1.59	-1.46	-25	-27.08
193.93	S	-54.05	-57.91	5.82	-1.96	-25	-29.05
370.47	S	-65.04	-68.18	5.89	-2.75	-25	-40.04
592.60	S	-59.76	-63.12	6.91	-3.54	-25	-34.76
769.14	S	-56.94	-60.67	7.73	-4.01	-25	-31.94
935.01	S	-58.14	-61.60	7.94	-4.49	-25	-33.14
5130.00	Н	-52.11	-54.72	12.63	-10.02	-25	-27.11
7695.00	Н	-47.08	-46.74	11.30	-11.64	-25	-22.08



LTEB7 10M 16QAM 1.49 2565 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-48.83	-34.07	-13.90	-0.85	-25	-23.83
111.48	S	-57.01	-53.95	-1.59	-1.46	-25	-32.01
192.96	S	-54.78	-58.67	5.84	-1.95	-25	-29.78
406.36	S	-64.07	-66.99	5.82	-2.90	-25	-39.07
776.90	S	-59.15	-62.85	7.74	-4.04	-25	-34.15
934.04	S	-59.85	-63.32	7.94	-4.48	-25	-34.85
5130.00	Н	-48.45	-51.06	12.63	-10.02	-25	-23.45
7695.00	Н	-43.02	-42.68	11.30	-11.64	-25	-18.02



### **Radiated Spurious Emission Measurement Result: LTE-Band 12**

Operation Mode : Fundamental Frequ Operation Band : EUT Pol. :	uency :	LTEB12 1.4 699.7 MHz Tx CH Low H	IM 16QAM 1.5	Test Dat Temp. / Test Eng Measure	Humi. : gineer :	enna Pol. :	2018/1/19 22.7deg_C/5 Enzo Vertical	7RH
36 24 12 0 0 5 5 5 60 -72 30	, , , , , , , , , , , , , , , , , , ,	2522.5	S015 Frequency [MHz		7507.5			
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin	

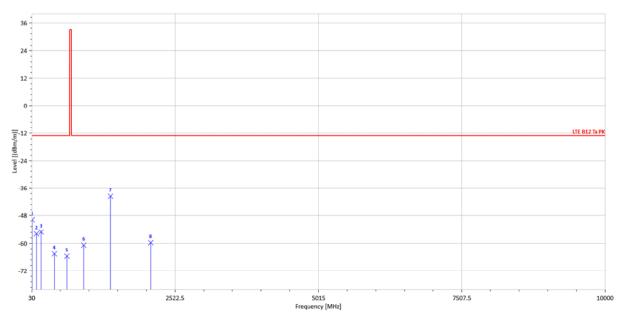
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
112.45	S	-50.56	-45.57	-3.52	-1.46	-13	-37.56
191.99	S	-52.33	-54.45	4.07	-1.95	-13	-39.33
262.80	S	-60.99	-61.03	2.35	-2.31	-13	-47.99
484.93	S	-63.53	-64.28	3.91	-3.17	-13	-50.53
773.02	S	-58.29	-59.45	5.19	-4.02	-13	-45.29
936.95	S	-57.33	-58.20	5.37	-4.49	-13	-44.33
1399.40	Н	-39.68	-39.25	5.47	-5.90	-13	-26.68
2099.10	Н	-57.88	-58.74	8.15	-7.29	-13	-44.88

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/tems\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/tems\_e-document.htm</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document of fenders may be preported to the thorized the company. Any unauthorized alteration, forgery or falsification of the content or comparts and plant and in the romation of the document of the document of the document of the links of the l appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the faw. SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



LTEB12 1.4M 16QAM 1.5 699.7 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/19 22.7deg\_C/57RH Enzo Horizontal

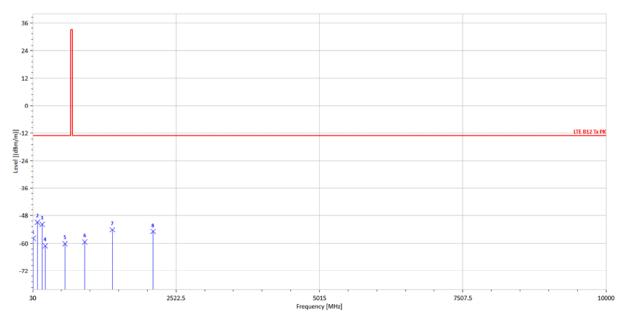


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-49.80	-33.03	-15.92	-0.85	-13	-36.80
111.48	S	-55.92	-50.90	-3.56	-1.46	-13	-42.92
192.96	S	-55.12	-57.20	4.03	-1.95	-13	-42.12
423.82	S	-64.64	-65.08	3.40	-2.96	-13	-51.64
641.10	S	-65.64	-66.53	4.57	-3.67	-13	-52.64
934.04	S	-60.81	-61.68	5.36	-4.48	-13	-47.81
1399.40	Н	-39.60	-39.16	5.47	-5.90	-13	-26.60
2099.10	Н	-59.73	-60.59	8.15	-7.29	-13	-46.73



LTEB12 1.4M 16QAM 1.5 707.5 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/19 22.7deg\_C/57RH Enzo Vertical

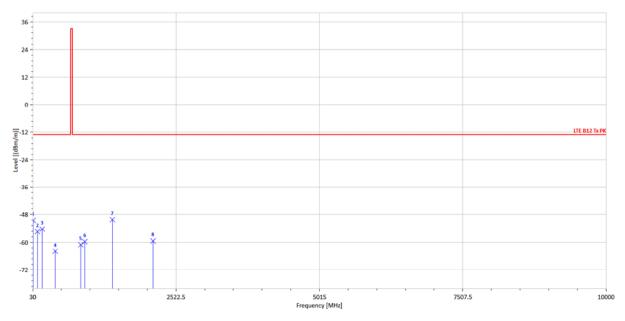


Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S S	-57.88	-41.11	-15.92	-0.85	-13	-44.88
111.48	3 S	-50.85	-45.84	-3.56	-1.46	-13	-37.85
193.93	3 S	-51.73	-53.76	4.00	-1.96	-13	-38.73
248.2	5 S	-61.08	-61.72	2.88	-2.24	-13	-48.08
591.6	3 S	-60.18	-60.91	4.26	-3.54	-13	-47.18
934.04	4 S	-59.45	-60.32	5.36	-4.48	-13	-46.45
1415.0	0 H	-54.14	-53.75	5.54	-5.93	-13	-41.14
2122.5	60 H	-54.94	-55.79	8.17	-7.32	-13	-41.94



LTEB12 1.4M 16QAM 1.5 707.5 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/19 22.7deg\_C/57RH Enzo Horizontal

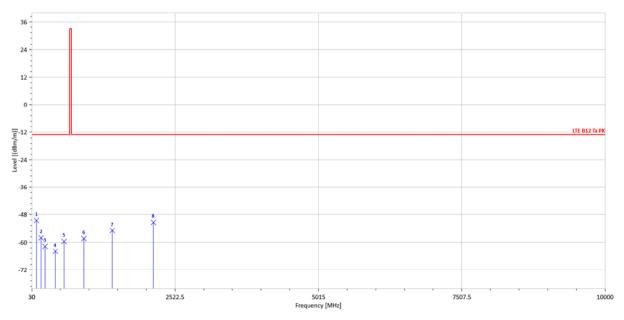


	Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
	N 41 I						_	
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
	37.76	S	-50.48	-33.71	-15.92	-0.85	-13	-37.48
	111.48	S	-55.39	-50.37	-3.56	-1.46	-13	-42.39
	194.90	S	-54.26	-56.26	3.96	-1.96	-13	-41.26
	420.91	S	-63.94	-64.36	3.38	-2.95	-13	-50.94
	865.17	S	-61.05	-61.83	5.11	-4.33	-13	-48.05
	935.01	S	-59.74	-60.61	5.36	-4.49	-13	-46.74
	1415.00	Н	-50.19	-49.80	5.54	-5.93	-13	-37.19
	2122.50	Н	-59.43	-60.28	8.17	-7.32	-13	-46.43



LTEB12 1.4M 16QAM 1.5 715.3 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/19 22.7deg\_C/57RH Enzo Vertical

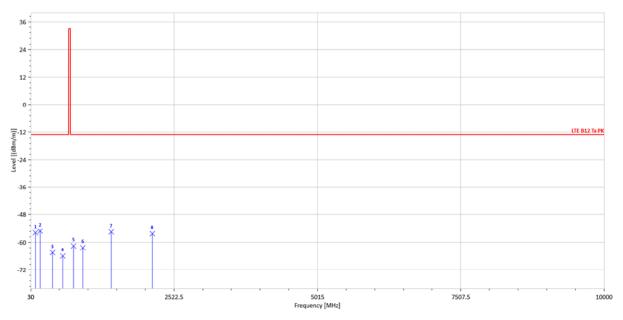


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-50.54	-45.52	-3.56	-1.46	-13	-37.54
191.99	S	-58.11	-60.22	4.07	-1.95	-13	-45.11
261.83	S	-61.77	-61.71	2.25	-2.31	-13	-48.77
441.28	S	-64.00	-64.53	3.55	-3.02	-13	-51.00
592.60	S	-59.66	-60.39	4.27	-3.54	-13	-46.66
936.95	S	-58.42	-59.30	5.37	-4.49	-13	-45.42
1430.60	Н	-54.92	-54.57	5.62	-5.97	-13	-41.92
2145.90	Н	-51.36	-52.20	8.20	-7.36	-13	-38.36



LTEB12 1.4M 16QAM 1.5 715.3 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/19 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-55.89	-50.87	-3.56	-1.46	-13	-42.89
193.93	S	-55.14	-57.18	4.00	-1.96	-13	-42.14
410.24	S	-64.51	-64.88	3.29	-2.92	-13	-51.51
586.78	S	-66.01	-66.72	4.23	-3.52	-13	-53.01
773.99	S	-61.63	-62.79	5.19	-4.03	-13	-48.63
935.98	S	-62.41	-63.28	5.36	-4.49	-13	-49.41
1430.60	Н	-55.53	-55.18	5.62	-5.97	-13	-42.53
2145.90	Н	-56.31	-57.14	8.20	-7.36	-13	-43.31



## **Radiated Spurious Emission Measurement Result: LTE-Band 13**

Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :	LTEB13 5M QPSK 1.0 779.5 MHz Tx CH Low H	Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :	2018/1/19 22.7deg_C/57RH Enzo Vertical
36			
24			
12			
0			
Ē-12			LTE B13 TX PK
[[12 /ugp]] Pov-24			
24			
-36			
-48 -48 -60 -72 -72	*		
30	2522.5 5015 Frequency [Mł	tz]	10000

Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-58.73	-41.97	-15.92	-0.85	-13	-45.73
111.48	S	-53.00	-47.99	-3.56	-1.46	-13	-40.00
193.93	S	-54.29	-56.33	4.00	-1.96	-13	-41.29
552.83	S	-62.57	-63.14	3.99	-3.42	-13	-49.57
702.21	S	-62.82	-64.05	5.06	-3.83	-13	-49.82
932.10	S	-59.68	-60.55	5.35	-4.48	-13	-46.68
1559.00	Н	-44.61	-43.46	6.20	-7.35	-13	-31.61
2338.50	Н	-49.83	-48.23	8.39	-10.00	-13	-36.83

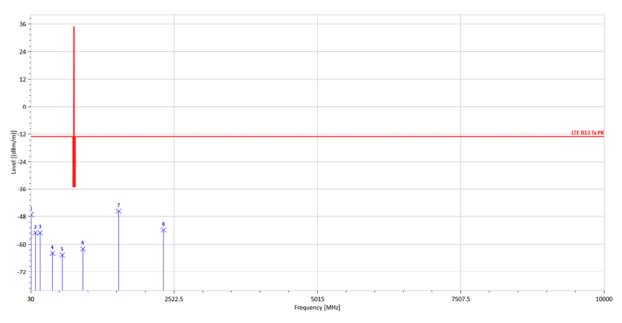
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**Operation Mode :** LTEB13 5M QPSK 1.0 Fundamental Frequency : 779.5 MHz **Operation Band :** Tx CH Low EUT Pol.: Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-47.18	-30.41	-15.92	-0.85	-13	-34.18
111.48	S	-55.10	-50.08	-3.56	-1.46	-13	-42.10
192.96	S	-55.08	-57.16	4.03	-1.95	-13	-42.08
409.27	S	-64.00	-64.36	3.28	-2.92	-13	-51.00
578.05	S	-64.80	-65.48	4.17	-3.48	-13	-51.80
937.92	S	-61.96	-62.83	5.37	-4.49	-13	-48.96
1559.00	Н	-45.63	-44.48	6.20	-7.35	-13	-32.63
2338.50	Н	-53.83	-52.23	8.39	-10.00	-13	-40.83



10000

**Operation Mode :** LTEB13 5M QPSK 1.0 Test Date : 2018/1/19 Fundamental Frequency : 782 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH Mid Test Engineer : Enzo EUT Pol.: Measurement Antenna Pol. : Vertical Н 36 24 12 0 <u>-12</u> LTE B13 Tx PK ave | -24 36 -60

> 5015 Frequency [MHz]

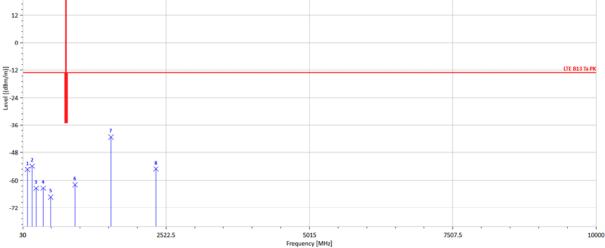
. 7507.5

Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-50.88	-45.86	-3.56	-1.46	-13	-37.88
190.05	S	-57.94	-60.14	4.14	-1.94	-13	-44.94
262.80	S	-61.08	-61.12	2.35	-2.31	-13	-48.08
485.90	S	-62.57	-63.32	3.92	-3.17	-13	-49.57
596.48	S	-60.80	-61.54	4.30	-3.56	-13	-47.80
935.01	S	-58.99	-59.87	5.36	-4.49	-13	-45.99
1564.00	Н	-44.14	-42.99	6.22	-7.37	-13	-31.14
2346.00	Н	-47.42	-45.79	8.40	-10.02	-13	-34.42

2522.5



**Operation Mode :** LTEB13 5M QPSK 1.0 Test Date : 2018/1/19 Fundamental Frequency : 782 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH Mid Test Engineer : Enzo EUT Pol.: Measurement Antenna Pol. : Horizontal Н 36 24



Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-55.32	-50.30	-3.56	-1.46	-13	-42.32
192.96	S	-53.85	-55.93	4.03	-1.95	-13	-40.85
263.77	S	-63.51	-63.64	2.45	-2.32	-13	-50.51
385.99	S	-63.48	-63.93	3.27	-2.81	-13	-50.48
515.00	S	-67.37	-68.11	4.02	-3.29	-13	-54.37
939.86	S	-61.92	-62.80	5.38	-4.50	-13	-48.92
1564.00	Н	-41.25	-40.10	6.22	-7.37	-13	-28.25
2346.00	Н	-55.12	-53.49	8.40	-10.02	-13	-42.12



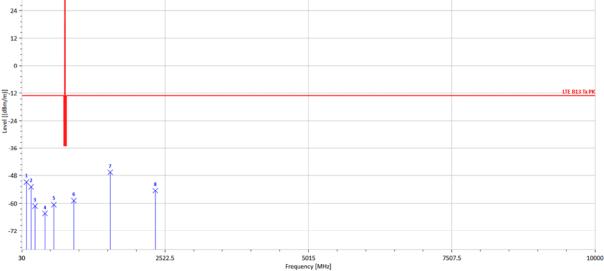
2018/1/19

Enzo

Vertical

22.7deg\_C/57RH

**Operation Mode :** LTEB13 5M QPSK 1.0 Test Date : Fundamental Frequency : 784.5 MHz Temp. / Humi. : **Operation Band :** Tx CH High Test Engineer : EUT Pol.: Measurement Antenna Pol. : Н 36 24



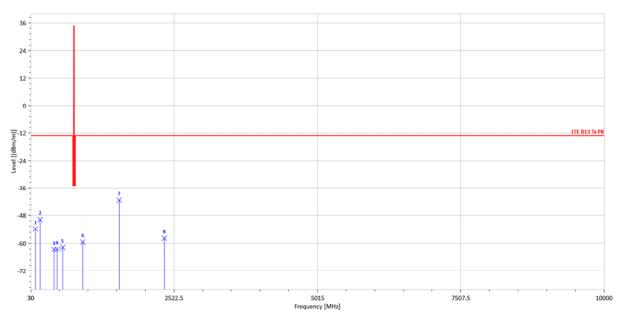
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-50.78	-45.76	-3.56	-1.46	-13	-37.78
192.96	S	-52.81	-54.89	4.03	-1.95	-13	-39.81
261.83	S	-61.20	-61.14	2.25	-2.31	-13	-48.20
434.49	S	-64.50	-65.00	3.49	-2.99	-13	-51.50
588.72	S	-60.60	-61.32	4.24	-3.52	-13	-47.60
936.95	S	-58.88	-59.75	5.37	-4.49	-13	-45.88
1569.00	Н	-46.63	-45.49	6.24	-7.39	-13	-33.63
2353.50	Н	-54.54	-52.90	8.40	-10.04	-13	-41.54



LTEB13 5M QPSK 1.0 784.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-53.76	-48.74	-3.56	-1.46	-13	-40.76
192.96	S	-49.76	-51.84	4.03	-1.95	-13	-36.76
435.46	S	-62.67	-63.17	3.50	-3.00	-13	-49.67
487.84	S	-62.62	-63.38	3.94	-3.18	-13	-49.62
586.78	S	-61.75	-62.46	4.23	-3.52	-13	-48.75
935.01	S	-59.46	-60.33	5.36	-4.49	-13	-46.46
1569.00	Н	-41.25	-40.10	6.24	-7.39	-13	-28.25
2353.50	Н	-57.82	-56.18	8.40	-10.04	-13	-44.82



# Radiated Spurious Emission Measurement Result: LTE-Band 13 (inband measurement 763~775MHz)

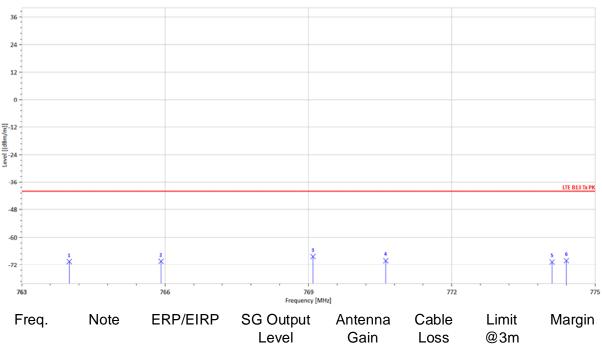
Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :	LTEB13 5M QPSK 1.0 779.5 MHz Tx CH Low H	Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :	2018/1/20 22.7deg_C/57RH Enzo Vertical
36 -			
24			
12			
0			
Ē·12			
[[-12 [w/wgp]] -24			
36-			
			LTE B13 Tx PK
-48 -			
-60			
-72	× ×	ř	×
763	766 769 Frequency [	772 MHz]	775

Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
763.67	S	-66.64	-67.83	5.18	-3.98	-40	-26.64
764.67	S	-67.81	-69.00	5.18	-3.99	-40	-27.81
765.88	S	-67.81	-69.00	5.18	-3.99	-40	-27.81
768.82	S	-67.16	-68.34	5.18	-4.01	-40	-27.16
772.18	S	-66.55	-67.72	5.19	-4.02	-40	-26.55
774.47	S	-66.94	-68.11	5.19	-4.03	-40	-26.94



LTEB13 5M QPSK 1.0 **Operation Mode :** Test Date : Fundamental Frequency : 779.5 MHz Temp. / Humi. : **Operation Band :** Tx CH Low Test Engineer : EUT Pol.: Measurement Antenna Pol. : Н

2018/1/20 22.7deg\_C/57RH Enzo Horizontal

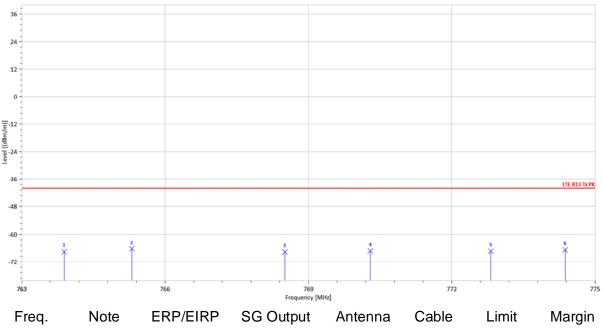


			Levei	Gain	LOSS	@3m		
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
764.00	S	-70.56	-71.75	5.18	-3.99	-40	-30.56	
765.92	S	-70.40	-71.59	5.18	-3.99	-40	-30.40	
769.10	S	-68.40	-69.57	5.18	-4.01	-40	-28.40	
770.62	S	-70.16	-71.33	5.18	-4.01	-40	-30.16	
774.10	S	-70.70	-71.86	5.19	-4.03	-40	-30.70	
774.40	S	-70.14	-71.30	5.19	-4.03	-40	-30.14	



**Operation Mode :** LTEB13 5M QPSK 1.0 Fundamental Frequency : 782 MHz **Operation Band :** Tx CH Mid EUT Pol.: Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Vertical



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
			Level	Gain	Loss	@3m		
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
763.89	S	-67.59	-68.78	5.18	-3.99	-40	-27.59	
765.30	S	-66.34	-67.52	5.18	-3.99	-40	-26.34	
768.51	S	-67.71	-68.89	5.18	-4.00	-40	-27.71	
770.30	S	-67.24	-68.41	5.18	-4.01	-40	-27.24	
772.82	S	-67.39	-68.56	5.19	-4.02	-40	-27.39	
774.38	S	-66.82	-67.98	5.19	-4.03	-40	-26.82	



LTEB13 5M QPSK 1.0 782 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

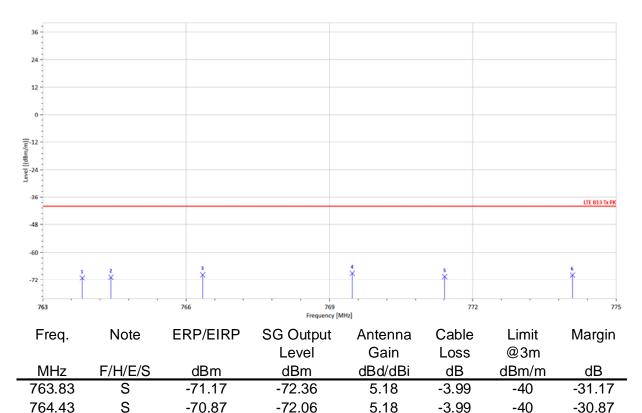
2018/1/20 22.7deg\_C/57RH Enzo Horizontal

-29.78

-29.13

-30.58

-29.91



-70.96

-70.31

-71.75

-71.08

5.18

5.18

5.19

5.19

-4.00

-4.01

-4.02

-4.03

-40

-40

-40

-40

Unless otherwise stated the results shown in thi	is test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

S

S

S

S

-69.78

-69.13

-70.58

-69.91

766.35

769.48

771.41

774.09

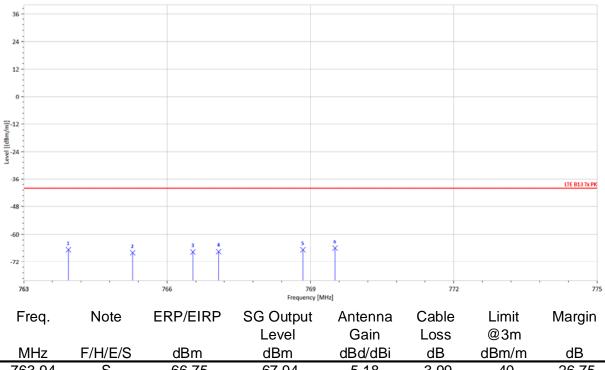
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LTEB13 5M QPSK 1.0 784.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Vertical



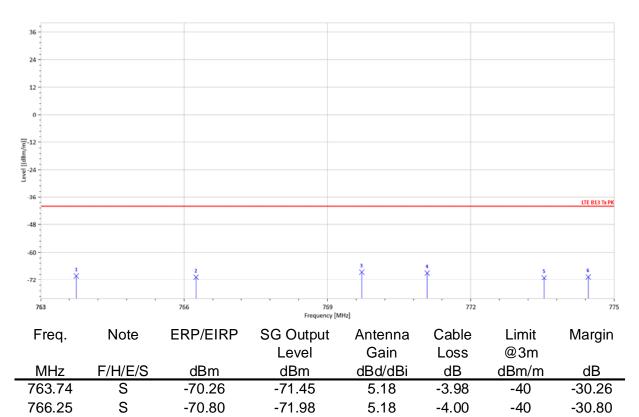
763.94	S	-66.75	-67.94	5.18	-3.99	-40	-26.75
765.28	S	-68.07	-69.26	5.18	-3.99	-40	-28.07
766.54	S	-67.72	-68.90	5.18	-4.00	-40	-27.72
767.08	S	-67.59	-68.77	5.18	-4.00	-40	-27.59
768.84	S	-66.77	-67.95	5.18	-4.01	-40	-26.77
769.52	S	-66.07	-67.25	5.18	-4.01	-40	-26.07



LTEB13 5M QPSK 1.0 784.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



-69.81

-70.20

-72.25

-71.86

5.18

5.19

5.19

5.19

-4.01

-4.01

-4.02

-4.03

-40

-40

-40

-40

-28.64

-29.03

-31.09

-30.70

-68.64

-69.03

-71.09

-70.70

S

S

S

S

769.72

771.09

773.54

774.46



803.04

804.39

S

S

# Radiated Spurious Emission Measurement Result: LTE-Band 13 (inband measurement 793~805MHz)

Operation Mode Fundamental Fr Operation Band EUT Pol. :	equency :	LTEB13 5M 779.5 MHz Tx CH Low H		Test Date Temp. / Hu Test Engir Measurem	umi. : neer :	na Pol. :	2018/1/20 22.7deg_C/57RH Enzo Vertical
36 -							
24							
12							
0							
Ê-12 È							LTE 813 TX PK
[[-12 [w/wgp]] -24							
-48							
-60	2		3 X	4		5	6
-72	×		×	Ť		Ť	×
793		796	799 Frequency [N		802		805
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
1104.	Note		Level	Gain	Loss	@3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
793.10	S	-68.04	-69.16	5.21	-4.10	-40	-28.04
795.33	S	-68.82	-69.93	5.21	-4.10	-40	-28.82
797.73	S	-68.82	-69.93	5.22	-4.11	-40	-28.82
799.97	S	-68.81	-69.92	5.22	-4.11	-40	-28.81

-70.28

-69.21

-69.19

-68.12

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5.21

5.21

-4.12

-4.12

-40

-40

-29.19

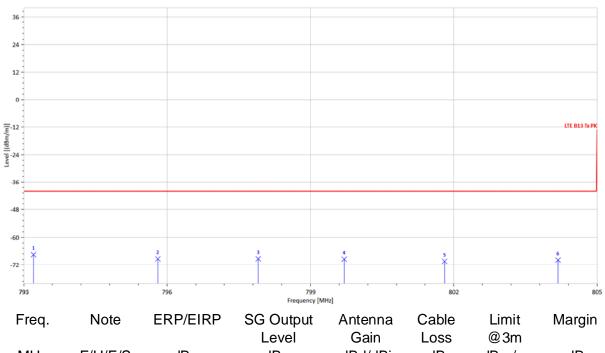
-28.12



LTEB13 5M QPSK 1.0 779.5 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

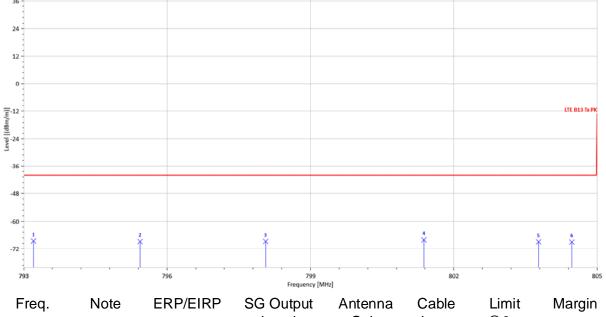
2018/1/20 22.7deg\_C/57RH Enzo Horizontal



			Level	Gain	L033	@ JIII		
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
793.20	S	-67.59	-68.71	5.21	-4.10	-40	-27.59	
795.81	S	-69.39	-70.50	5.21	-4.10	-40	-29.39	
797.91	S	-69.35	-70.46	5.22	-4.11	-40	-29.35	
799.71	S	-69.53	-70.64	5.22	-4.11	-40	-29.53	
801.81	S	-70.44	-71.54	5.21	-4.11	-40	-30.44	
804.18	S	-69.92	-71.00	5.21	-4.12	-40	-29.92	



LTEB13 5M QPSK 1.0 **Operation Mode :** Test Date : 2018/1/20 Fundamental Frequency : 782 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH Mid Test Engineer : Enzo EUT Pol.: Measurement Antenna Pol. : Vertical Н 36



1							0
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
793.20	S	-68.59	-69.70	5.21	-4.10	-40	-28.59
795.44	S	-68.83	-69.95	5.21	-4.10	-40	-28.83
798.06	S	-68.76	-69.87	5.22	-4.11	-40	-28.76
801.38	S	-68.10	-69.20	5.22	-4.11	-40	-28.10
803.78	S	-68.95	-70.04	5.21	-4.12	-40	-28.95
804.47	S	-69.04	-70.13	5.20	-4.12	-40	-29.04



S

S

S

-70.31

-70.26

-70.14

797.27

798.80

801.35

LTEB13 5M QPSK 1.0 782 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

-4.10

-4.11

-4.11

5.22

5.22

5.22

-40

-40

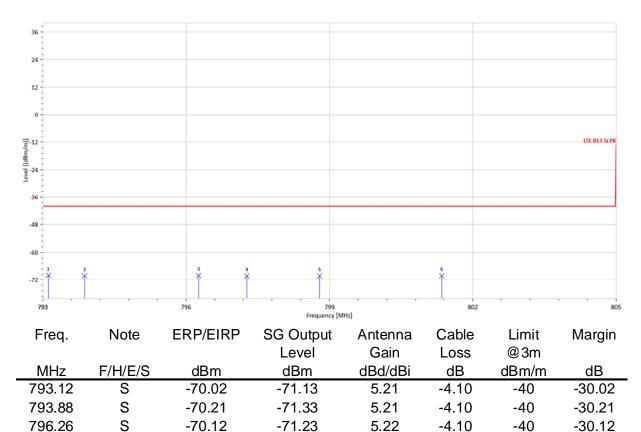
-40

-30.31

-30.26

-30.14

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



-71.42

-71.37

-71.24

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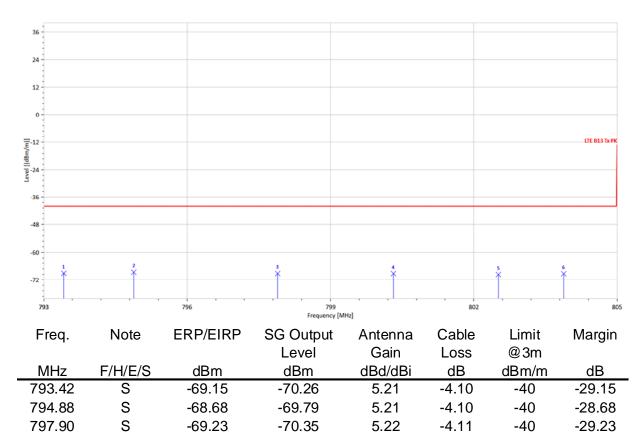
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LTEB13 5M QPSK 1.0 784.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Vertical



-70.36

-70.77

-70.44

S

S

S

-69.26

-69.67

-69.35

800.32

802.52

803.88

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-40

-40

-40

-40

-29.26

-29.67

-29.35

-4.11

-4.12

-4.12

5.22

5.21

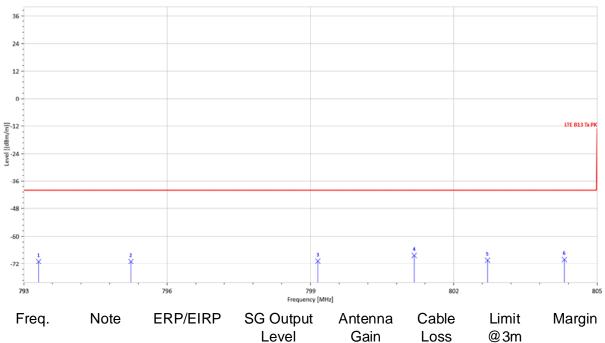
5.21



LTEB13 5M QPSK 1.0 784.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal

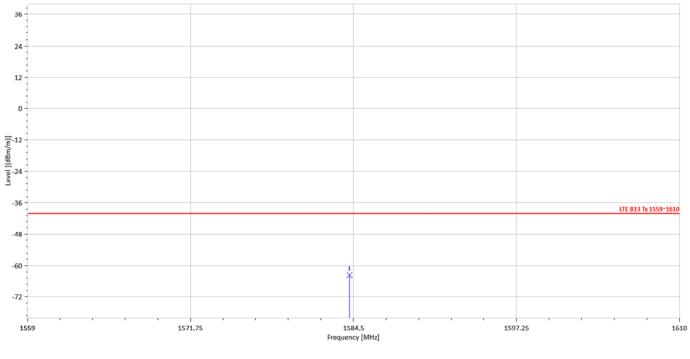


			Level	Gain	Loss	@3m	-
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
793.31	S	-70.98	-72.09	5.21	-4.10	-40	-30.98
795.24	S	-70.95	-72.06	5.21	-4.10	-40	-30.95
799.16	S	-70.74	-71.85	5.22	-4.11	-40	-30.74
801.17	S	-68.35	-69.45	5.22	-4.11	-40	-28.35
802.71	S	-70.37	-71.46	5.21	-4.12	-40	-30.37
804.32	S	-70.11	-71.19	5.21	-4.12	-40	-30.11



# Radiated Spurious Emission Measurement Result: LTE-Band 13 (inband measurement 1559~1610MHz)

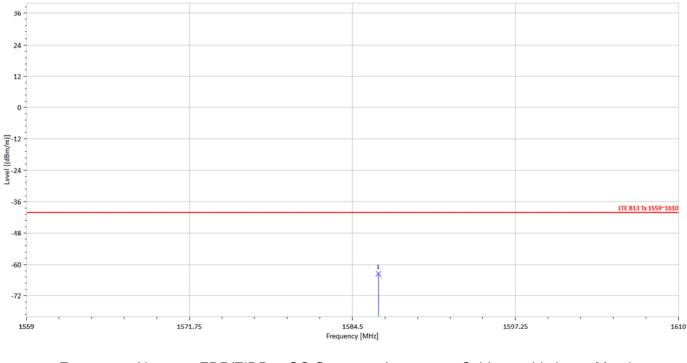
Operation Mode :	LTEB13 5M QPSK 1.0	Test Date :	2018/2/21
Fundamental Frequency :	779.5 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer :	Enzo
EUT Pol. :	Н	Measurement Antenna Pol. :	Vertical



	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
				Level	Gain	Loss	@3m	
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
	1584.19	S	-63.80	-63.79	6.30	-6.32	-40	-23.80



Operation Mode :	LTEB13 5M QPSK 1.0	Test Date :	2018/2/21
Fundamental Frequency :	779.5 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer :	Enzo
EUT Pol. :	H	Measurement Antenna Pol. :	Horizontal



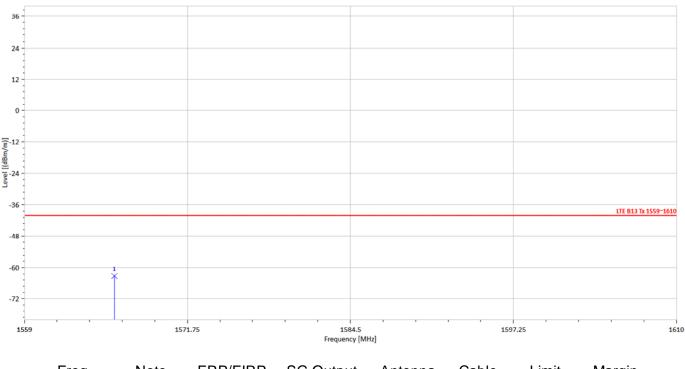
n dB	
-23.62	
	n dB

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Operation Mode :	LTEB13 5M QPSK 1.0	Test Date :
Fundamental Frequency :	782 MHz	Temp. / Humi. :
Operation Band :	Tx CH Mid	Test Engineer :
EUT Pol. :	Н	Measurement Antenna Pol. :

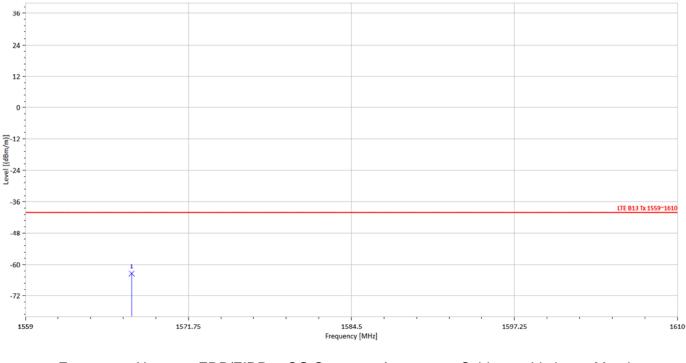
2018/2/21 22.7deg\_C/57RH Enzo Vertical



	⊢req.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
				Level	Gain	Loss	@3m		
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	_
-	1566.04	S	-63.32	-63.27	6.23	-6.28	-40	-23.32	-



Operation Mode :	LTEB13 5M QPSK 1.0	Test Date :	2018/2/21
Fundamental Frequency :	782 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Enzo
EUT Pol. :	Н	Measurement Antenna Pol. :	Horizontal



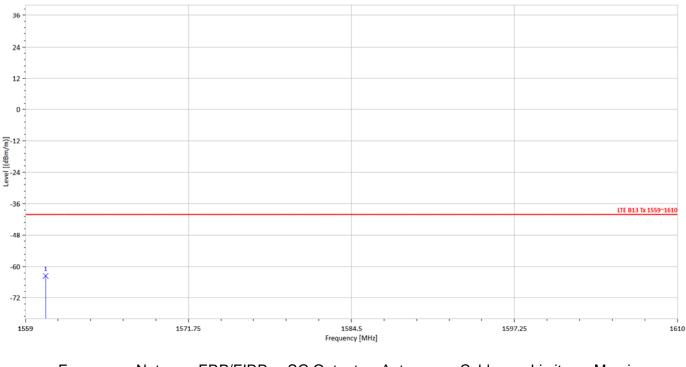
	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
				Level	Gain	Loss	@3m		
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	
-	1567.31	S	-63.54	-63.49	6.23	-6.28	-40	-23.54	



Operation Mode :	LTEB13 5M QPSK 1.0
Fundamental Frequency :	784.5 MHz
Operation Band :	Tx CH HIGH
EUT Pol. :	Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

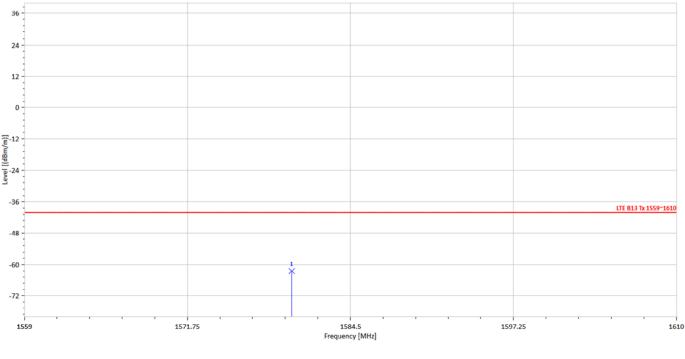
2018/2/21 22.7deg\_C/57RH Enzo Vertical



	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin	
				Level	Gain	Loss	@3m		
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB	_
_	1560.58	S	-63.68	-63.62	6.20	-6.26	-40	-23.68	



Operation Mode :	LTEB13 5M QPSK 1.0	Test Date :	2018/2/21
Fundamental Frequency :	784.5 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH HIGH	Test Engineer :	Enzo
EUT Pol. :	Н	Measurement Antenna Pol. :	Horizontal



	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
				Level	Gain	Loss	@3m	
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
	1579.91	S	-62.54	-62.52	6.29	-6.31	-40	-22.54



#### **Radiated Spurious Emission Measurement Result: LTE-Band 17**

Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :			709 MHz Tx CH Low			est Date : emp. / Humi. est Engineer leasurement	22 En	018/1/19 2.7deg_C/57RH nzo ′ertical	
	36 24 12 0								
	12 24 36 48 - 2	7						LTE 817 TX P	<u>×</u>
	72 30	* *	2522.5	50 Frequen	и5 су [MHz]		007.5		0000
	Freq.	Note	EIRP	SG Output Level	Antenr Gain		Limit @3m	Margin	
_	MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm/m	dB	-
	37.76 111.48	S S	-58.36 -50.47	-41.59 -45.45	-15.92 -3.56		-13 -13	-45.36 -37.47	

S

S

S

S

н

Н

-52.53

-60.59

-57.27

-59.96

-51.56

-54.80

-54.57

-61.30

-58.42

-60.77

-51.18

-55.64

193.93

585.81

776.90

886.51

1418.00

2127.00

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-1.96

-3.51

-4.04

-4.38

-5.94

-7.33

-13

-13

-13

-13

-13

-13

-39.53

-47.59

-44.27

-46.96

-38.56

-41.80

4.00

4.22

5.19

5.19

5.56

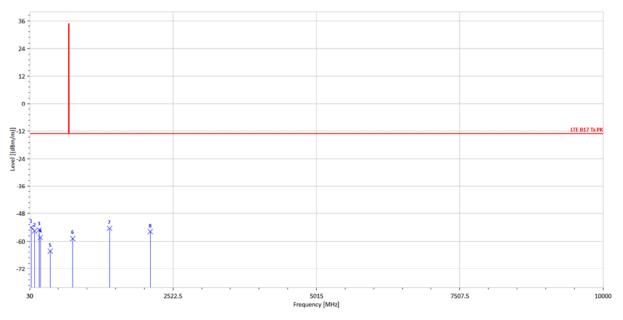
8.18



LTEB17 10M 16QAM 1.49 709 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



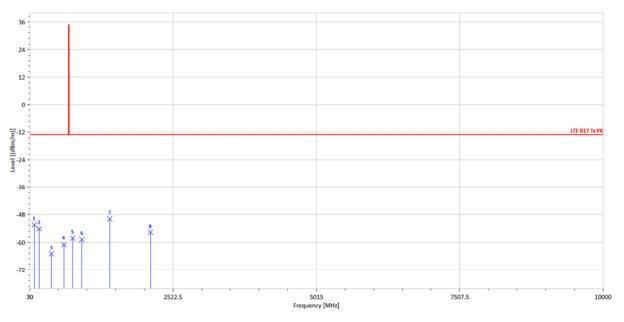
Freq.	Note	EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm/m	dB
55.22	S	-53.95	-47.86	-5.08	-1.00	-13	-40.95
112.45	S	-55.61	-50.62	-3.52	-1.46	-13	-42.61
193.93	S	-55.09	-57.13	4.00	-1.96	-13	-42.09
214.30	S	-58.37	-60.32	4.00	-2.06	-13	-45.37
386.96	S	-64.37	-64.82	3.26	-2.82	-13	-51.37
776.90	S	-58.85	-60.00	5.19	-4.04	-13	-45.85
1418.00	Н	-54.39	-54.00	5.56	-5.94	-13	-41.39
2127.00	Н	-55.88	-56.73	8.18	-7.33	-13	-42.88



LTEB17 10M 16QAM 1.49 710 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Vertical



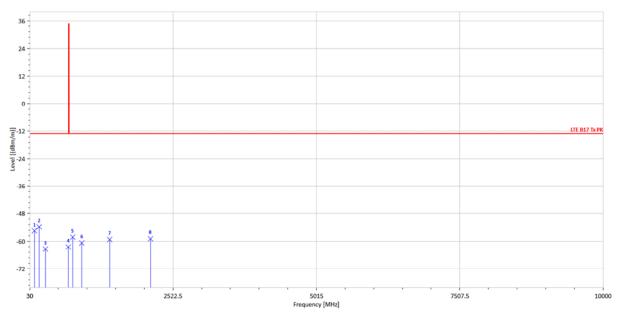
Freq.	Note	EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@ 3m	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm/m	dB
109.54	S	-52.36	-47.31	-3.60	-1.45	-13	-39.36
194.90	S	-54.17	-56.17	3.96	-1.96	-13	-41.17
407.33	S	-65.06	-65.42	3.26	-2.91	-13	-52.06
624.61	S	-60.98	-61.81	4.47	-3.64	-13	-47.98
776.90	S	-58.25	-59.40	5.19	-4.04	-13	-45.25
934.04	S	-58.86	-59.73	5.36	-4.48	-13	-45.86
1420.00	Н	-49.82	-49.44	5.57	-5.95	-13	-36.82
2130.00	Н	-55.76	-56.61	8.18	-7.34	-13	-42.76



LTEB17 10M 16QAM 1.49 710 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Horizontal



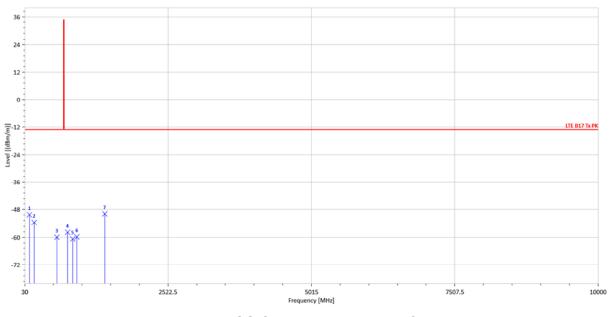
Freq.	Note	EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@ 3m	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm/m	dB
111.48	S	-55.51	-50.50	-3.56	-1.46	-13	-42.51
193.93	S	-53.70	-55.74	4.00	-1.96	-13	-40.70
302.57	S	-63.41	-64.44	3.50	-2.47	-13	-50.41
700.27	S	-62.49	-63.73	5.06	-3.82	-13	-49.49
777.87	S	-58.24	-59.39	5.19	-4.04	-13	-45.24
935.01	S	-60.76	-61.63	5.36	-4.49	-13	-47.76
1420.00	Н	-59.25	-58.87	5.57	-5.95	-13	-46.25
2130.00	Н	-58.95	-59.80	8.18	-7.34	-13	-45.95



LTEB17 10M 16QAM 1.49 711 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Vertical



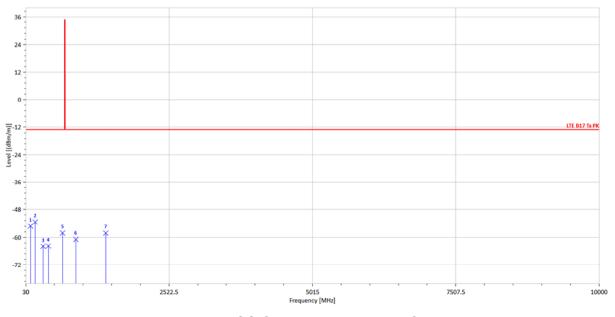
Freq.	Note	EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm/m	dB
111.48	S	-50.25	-45.24	-3.56	-1.46	-13	-37.25
194.90	S	-53.55	-55.55	3.96	-1.96	-13	-40.55
589.69	S	-59.98	-60.70	4.25	-3.53	-13	-46.98
775.93	S	-57.86	-59.02	5.19	-4.03	-13	-44.86
863.23	S	-60.71	-61.49	5.10	-4.32	-13	-47.71
935.98	S	-59.83	-60.70	5.36	-4.49	-13	-46.83
1422.00	Н	-49.84	-49.46	5.58	-5.95	-13	-36.84



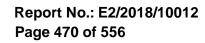
LTEB17 10M 16QAM 1.49 711 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm/m	dB
112.45	S	-55.19	-50.20	-3.52	-1.46	-13	-42.19
193.93	S	-53.38	-55.42	4.00	-1.96	-13	-40.38
331.67	S	-64.00	-64.85	3.46	-2.61	-13	-51.00
423.82	S	-63.84	-64.28	3.40	-2.96	-13	-50.84
670.20	S	-58.19	-59.25	4.80	-3.74	-13	-45.19
902.03	S	-60.92	-61.76	5.25	-4.41	-13	-47.92
1422.00	Н	-58.20	-57.83	5.58	-5.95	-13	-45.20





### Radiated Spurious Emission Measurement Result: LTE-Band 26 (The Worst Case)

Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :	LTEB26 10M 829 MHz Tx CH Low H	I QPSK 1.0	Test Date : Temp. / Hu Test Engin Measurem	ımi. : eer :	na Pol. :	2018/1/19 22.7deg_C/57RH Enzo Vertical
36						
24						
0						
Ē-12						LTE B26 Tx PK
-36						
-48 -2 -60 - 4 -5 -60 - 4 -5 -60 - 4 -5 -60 - 4 -5 -60 - 7 -60 - 7 -6 - 7 -6 - 7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -	8 ×					
-72						
30	2522.5	5015 Frequency [MHz]		7507.5		10000
Freq. Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHzF/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
66.86 S 111.48 S	-54.45 -49.70	-51.01 -44.68	-2.33 -3.56	-1.11 -1.46	-13 -13	-41.45 -36.70

-54.75

-61.75

-63.18

-58.45

-54.57

-52.38

-1.96

-2.32

-3.01

-4.04

-6.47

-7.81

-13

-13

-13

-13

-13

-13

-39.71

-48.42

-49.65

-44.30

-41.43

-38.65

4.00

2.65

3.53

5.19

6.61

8.54

-52.71

-61.42

-62.65

-57.30

-54.43

-51.65

S

S

S

S

Н

Н

193.93

265.71

439.34

777.87

1658.00

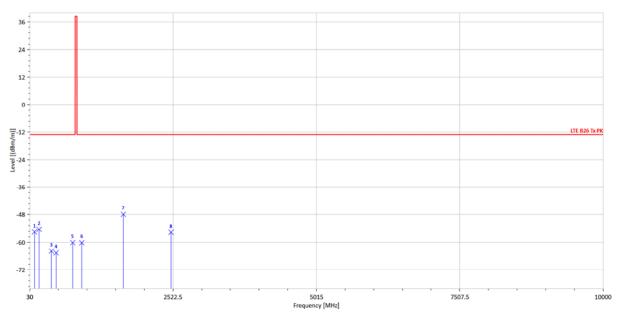
2487.00

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LTEB26 10M QPSK 1.0 829 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/19 22.7deg\_C/57RH Enzo Horizontal



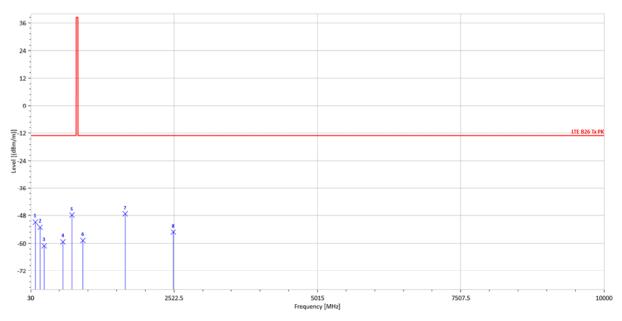
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
112.45	S	-55.54	-50.55	-3.52	-1.46	-13	-42.54
191.99	S	-54.40	-56.51	4.07	-1.95	-13	-41.40
406.36	S	-63.84	-64.19	3.25	-2.90	-13	-50.84
488.81	S	-64.63	-65.39	3.95	-3.19	-13	-51.63
777.87	S	-60.15	-61.31	5.19	-4.04	-13	-47.15
935.01	S	-60.21	-61.09	5.36	-4.49	-13	-47.21
1658.00	Н	-47.90	-48.04	6.61	-6.47	-13	-34.90
2487.00	Н	-55.71	-56.43	8.54	-7.81	-13	-42.71



LTEB26 10M QPSK 1.0 836.5 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : **Test Engineer :** Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Vertical

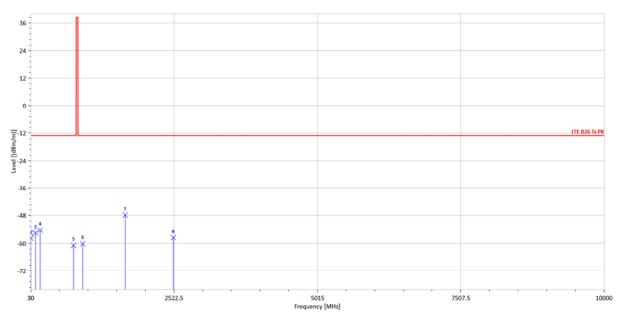


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
110.51	S	-50.82	-45.78	-3.59	-1.45	-13	-37.82
192.96	S	-53.05	-55.13	4.03	-1.95	-13	-40.05
263.77	S	-61.05	-61.19	2.45	-2.32	-13	-48.05
589.69	S	-59.40	-60.12	4.25	-3.53	-13	-46.40
746.83	S	-47.78	-49.01	5.15	-3.93	-13	-34.78
936.95	S	-58.78	-59.65	5.37	-4.49	-13	-45.78
1673.00	Н	-47.26	-47.43	6.68	-6.50	-13	-34.26
2509.50	Н	-55.17	-55.89	8.56	-7.84	-13	-42.17



LTEB26 10M QPSK 1.0 836.5 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : **Test Engineer :** Measurement Antenna Pol. : 2018/1/19 22.7deg\_C/57RH Enzo Horizontal



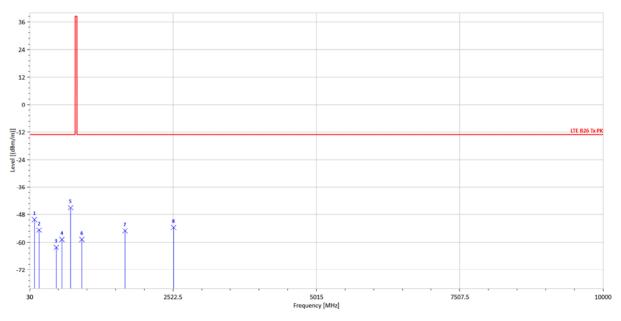
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
31.94	S	-55.68	-34.03	-20.82	-0.83	-13	-42.68
34.85	S	-57.90	-38.77	-18.29	-0.84	-13	-44.90
112.45	S	-55.50	-50.51	-3.52	-1.46	-13	-42.50
192.96	S	-54.31	-56.39	4.03	-1.95	-13	-41.31
774.96	S	-60.90	-62.06	5.19	-4.03	-13	-47.90
934.04	S	-60.19	-61.07	5.36	-4.48	-13	-47.19
1673.00	Н	-47.88	-48.05	6.68	-6.50	-13	-34.88
2509.50	Н	-57.55	-58.28	8.56	-7.84	-13	-44.55



LTEB26 10M QPSK 1.0 844 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/19 22.7deg\_C/57RH Enzo Vertical

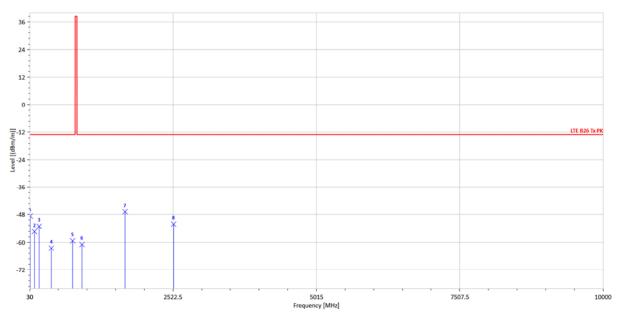


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-50.14	-45.12	-3.56	-1.46	-13	-37.14
192.96	S	-54.73	-56.81	4.03	-1.95	-13	-41.73
491.72	S	-62.22	-63.00	3.97	-3.20	-13	-49.22
589.69	S	-58.81	-59.53	4.25	-3.53	-13	-45.81
740.04	S	-44.99	-46.22	5.14	-3.91	-13	-31.99
935.98	S	-58.79	-59.67	5.36	-4.49	-13	-45.79
1688.00	Н	-55.08	-55.28	6.74	-6.53	-13	-42.08
2532.00	Н	-53.57	-54.29	8.59	-7.87	-13	-40.57

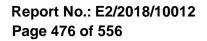


LTEB26 10M QPSK 1.0 844 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/19 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@ 3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-48.64	-31.87	-15.92	-0.85	-13	-35.64
111.48	S	-55.38	-50.37	-3.56	-1.46	-13	-42.38
192.96	S	-53.05	-55.12	4.03	-1.95	-13	-40.05
405.39	S	-62.56	-62.91	3.25	-2.90	-13	-49.56
775.93	S	-59.35	-60.51	5.19	-4.03	-13	-46.35
938.89	S	-60.96	-61.83	5.37	-4.50	-13	-47.96
1688.00	Н	-46.81	-47.02	6.74	-6.53	-13	-33.81
2532.00	Н	-52.11	-52.83	8.59	-7.87	-13	-39.11





### Radiated Spurious Emission Measurement Result: LTE-Band 26 for Part 90S

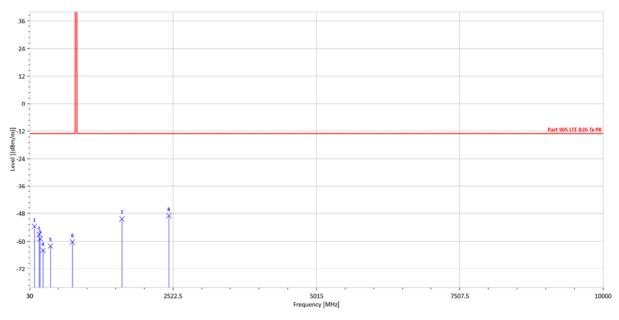
Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :	LTEB26 1.4 814.7 MHz Tx CH Low H	M QPSK 1.0	Test Date Temp. / F Test Eng Measure	lumi. :	a Pol. :	2018/1/20 22.7deg_C/57RH Ashton Vertical
36 24 12 0 <u><u><u></u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>					Part 9	25 LTE 826 Tx PK
	2522.5	5015		7507.5		10000
<b>–</b> N. <i>i</i>		Frequency [MHz]	• •			· ·
Freq. Note MHz F/H/F/S	ERP/EIRP	SG Output Level dBm	Antenna Gain dBd/dBi	Loss	Limit @3m Bm/m	Margin dB

			Level	Gain	LOSS	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
36.79	S	-57.34	-39.79	-16.71	-0.85	-13	-44.34
112.45	S	-50.53	-45.54	-3.52	-1.46	-13	-37.53
191.02	S	-58.17	-60.33	4.10	-1.95	-13	-45.17
211.39	S	-57.81	-59.77	4.00	-2.05	-13	-44.81
586.78	S	-60.12	-60.83	4.23	-3.52	-13	-47.12
773.02	S	-58.07	-59.23	5.19	-4.02	-13	-45.07
1633.40	Н	-29.97	-30.06	6.51	-6.42	-13	-16.97
2450.10	Н	-50.28	-51.01	8.50	-7.77	-13	-37.28



LTEB26 1.4M QPSK 1.0 814.7 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Ashton Horizontal

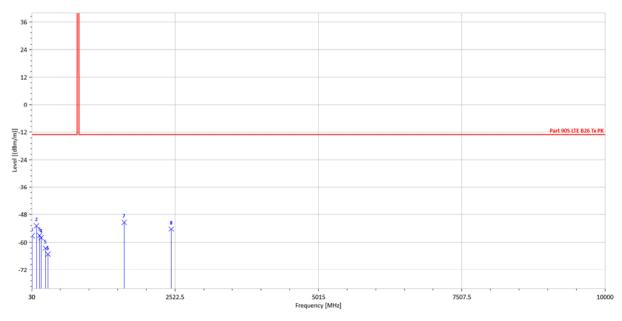


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-53.46	-48.44	-3.56	-1.46	-13	-40.46
194.90	S	-57.03	-59.03	3.96	-1.96	-13	-44.03
211.39	S	-58.89	-60.85	4.00	-2.05	-13	-45.89
262.80	S	-63.96	-64.00	2.35	-2.31	-13	-50.96
390.84	S	-62.05	-62.46	3.24	-2.83	-13	-49.05
773.02	S	-60.27	-61.44	5.19	-4.02	-13	-47.27
1633.40	Н	-50.29	-50.38	6.51	-6.42	-13	-37.29
2450.10	Н	-48.89	-49.62	8.50	-7.77	-13	-35.89



LTEB26 1.4M QPSK 1.0 819 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Ashton Vertical

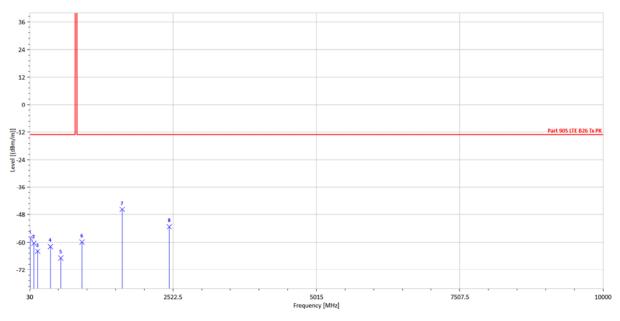


	Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
							_	15
	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
:	37.76	S	-57.22	-40.45	-15.92	-0.85	-13	-44.22
1	11.48	S	-52.82	-47.80	-3.56	-1.46	-13	-39.82
1	65.80	S	-57.11	-57.36	2.05	-1.80	-13	-44.11
1	93.93	S	-58.03	-60.07	4.00	-1.96	-13	-45.03
2	267.65	S	-62.58	-63.10	2.85	-2.33	-13	-49.58
3	312.27	S	-65.24	-66.20	3.49	-2.52	-13	-52.24
1	638.00	Н	-51.37	-51.47	6.53	-6.43	-13	-38.37
2	457.00	Н	-54.27	-55.00	8.51	-7.78	-13	-41.27



LTEB26 1.4M QPSK 1.0 819 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Ashton Horizontal

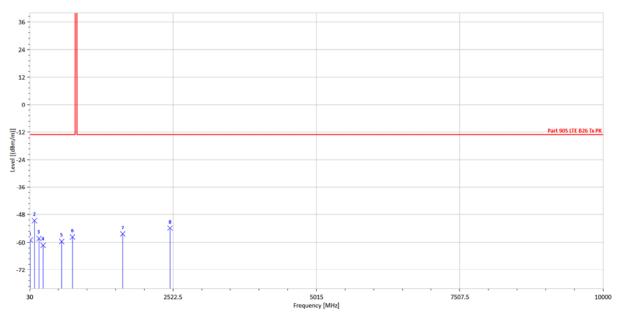


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
38.73	S	-58.23	-42.24	-15.13	-0.85	-13	-45.23
102.75	S	-60.38	-55.57	-3.41	-1.40	-13	-47.38
167.74	S	-63.96	-64.43	2.29	-1.82	-13	-50.96
389.87	S	-61.83	-62.25	3.25	-2.83	-13	-48.83
570.29	S	-66.89	-67.54	4.11	-3.46	-13	-53.89
938.89	S	-59.93	-60.81	5.37	-4.50	-13	-46.93
1638.00	Н	-45.74	-45.84	6.53	-6.43	-13	-32.74
2457.00	Н	-53.21	-53.94	8.51	-7.78	-13	-40.21



LTEB26 1.4M QPSK 1.0 823.3 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Ashton Vertical

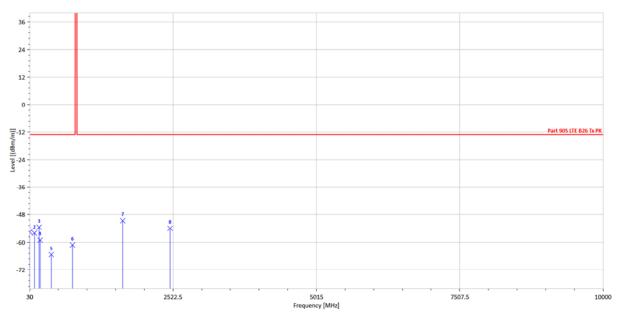


Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
38.73	S	-59.05	-43.07	-15.13	-0.85	-13	-46.05
	-					-	
111.48	S	-50.61	-45.60	-3.56	-1.46	-13	-37.61
191.02	S	-58.40	-60.56	4.10	-1.95	-13	-45.40
262.80	S	-61.27	-61.31	2.35	-2.31	-13	-48.27
584.84	S	-59.66	-60.36	4.21	-3.51	-13	-46.66
773.02	S	-57.75	-58.92	5.19	-4.02	-13	-44.75
1646.60	Н	-56.42	-56.54	6.57	-6.45	-13	-43.42
2469.90	Н	-53.84	-54.57	8.52	-7.79	-13	-40.84



LTEB26 1.4M QPSK 1.0 823.3 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Ashton Horizontal



	Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
			alDura				-	
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
	30.97	S	-55.53	-33.05	-21.66	-0.82	-13	-42.53
	111.48	S	-56.04	-51.03	-3.56	-1.46	-13	-43.04
	192.96	S	-53.48	-55.56	4.03	-1.95	-13	-40.48
	211.39	S	-59.08	-61.04	4.00	-2.05	-13	-46.08
	405.39	S	-65.40	-65.75	3.25	-2.90	-13	-52.40
	773.02	S	-61.18	-62.35	5.19	-4.02	-13	-48.18
	1646.60	Н	-50.64	-50.76	6.57	-6.45	-13	-37.64
	2469.90	Н	-53.97	-54.70	8.52	-7.79	-13	-40.97



### **Radiated Spurious Emission Measurement Result: LTE-Band 30**

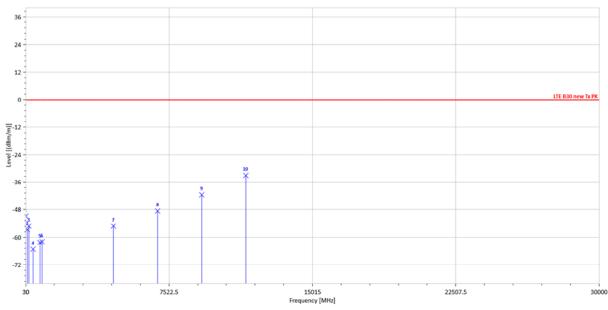
Operation Mode Fundamental Fre Operation Band EUT Pol. :	equency :	LTEB30 5M 16QAM 1.0 2307.5 MHz Tx CH Low H		Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :			2018/1/20 22.7deg_C/57RH Enzo Vertical
24							
0							LTE B30 new Tx PK
	Note	* * 7522.5 ERP/EIRP	10 10 10 15015 Frequency [MHz SG Output	Antenna	22507.5 Cable	Limit	30000 Margin
i ieq.	NOLE		Level	Gain	Loss	@3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-51.74	-48.68	-1.59	-1.46	-40	-11.74
190.05	S	-56.47	-60.42	5.88	-1.94	-40	-16.47
265.71	S	-60.83	-63.49	4.98	-2.32	-40	-20.83
591.63	S	-58.38	-61.74	6.90	-3.54	-40	-18.38
775.93	S	-55.75	-59.46	7.74	-4.03	-40	-15.75
936.95	S	-56.12	-59.58	7.95	-4.49	-40	-16.12
4615.00	Н	-54.34	-57.30	12.58	-9.61	-13	-41.34
6922.50	Н	-47.83	-48.67	12.05	-11.21	-13	-34.83
9230.00	Н	-45.07	-44.32	11.57	-12.32	-13	-32.07
11537.50	Н	-32.74	-30.61	11.50	-13.63	-13	-19.74



LTEB30 5M 16QAM 1.0 2307.5 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-50.85	-36.10	-13.90	-0.85	-40	-10.85
112.45	S	-56.70	-53.69	-1.55	-1.46	-40	-16.70
193.93	S	-55.16	-59.03	5.82	-1.96	-40	-15.16
415.09	S	-65.25	-68.22	5.91	-2.94	-40	-25.25
776.90	S	-62.21	-65.92	7.74	-4.04	-40	-22.21
885.54	S	-61.93	-65.42	7.87	-4.38	-40	-21.93
4615.00	Н	-55.17	-58.13	12.58	-9.61	-13	-42.17
6922.50	Н	-48.62	-49.46	12.05	-11.21	-13	-35.62
9230.00	Н	-41.54	-40.79	11.57	-12.32	-13	-28.54
11537.50	Н	-33.15	-31.02	11.50	-13.63	-13	-20.15



LTEB30 5M 16QAM 1.0 **Operation Mode :** Test Date : 2018/1/20 Fundamental Frequency : 2310 MHz Temp. / Humi. : 22.7deg C/57RH **Operation Band :** Tx CH Mid Test Engineer : Enzo EUT Pol. : Measurement Antenna Pol. : Vertical Н 36 24 12 LTE B30 new Tx PK 0 <u>-12</u> 1a-24 36 48

-60 --72 30 , 7522.5 15015 Frequency [MHz] . 22507.5 30000 Cable Limit Freq. Note **ERP/EIRP** SG Output Antenna Margin Level Gain Loss @3m F/H/E/S dBm/m MHz dBm dBm dBd/dBi dB dB 112.45 S -51.70 -48.69 -1.55 -1.46 -40 -11.70 S -1.95 191.02 -58.23 -62.16 5.87 -40 -18.23 S 251.16 -61.90 -64.74 5.09 -2.26 -40 -21.90

-62.89

-61.42

-62.64

-57.16

-45.82

-44.36

-31.45

-3.54

-4.04

-4.49

-9.61

-11.22

-12.33

-13.64

6.91

7.74

7.95

12.58

12.04

11.56

11.53

-40

-40

-40

-13

-13

-13

-13

-19.52

-17.72

-19.18

-41.20

-32.00

-32.13

-20.56

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

S

S

S

Н

Н

Н

Η

-59.52

-57.72

-59.18

-54.20

-45.00

-45.13

-33.56

593.57

777.87

936.95

4615.00

6930.00

9240.00

11550.00

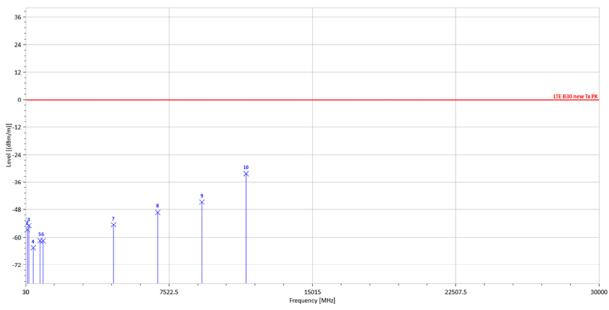
Unless the locate stated the locate states the state and the state locate resonance of the locate states and performing the states and performing t appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



LTEB30 5M 16QAM 1.0 2310 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal

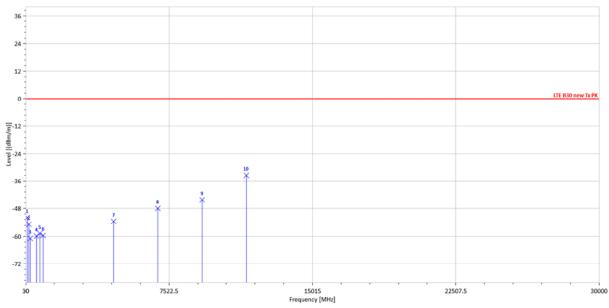


Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-53.67	-38.92	-13.90	-0.85	-40	-13.67
112.45	S	-56.75	-53.73	-1.55	-1.46	-40	-16.75
192.96	S	-54.99	-58.87	5.84	-1.95	-40	-14.99
422.85	S	-64.65	-67.69	5.99	-2.96	-40	-24.65
776.90	S	-61.43	-65.14	7.74	-4.04	-40	-21.43
935.01	S	-61.47	-64.93	7.94	-4.49	-40	-21.47
4620.00	Н	-54.56	-57.53	12.58	-9.61	-13	-41.56
6930.00	Н	-49.19	-50.02	12.04	-11.22	-13	-36.19
9240.00	Н	-44.70	-43.94	11.56	-12.33	-13	-31.70
11550.00	Н	-32.36	-30.25	11.53	-13.64	-13	-19.36



LTEB30 5M 16QAM 1.0 2312.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2018/1/20 22.7deg\_C/57RH Enzo Vertical



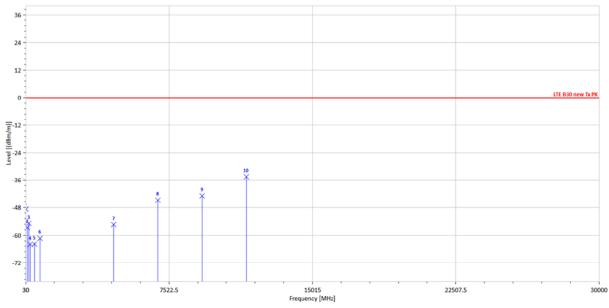
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
112.45	S	-51.87	-48.86	-1.55	-1.46	-40	-11.87
194.90	S	-54.84	-58.68	5.81	-1.96	-40	-14.84
267.65	S	-60.89	-63.70	5.14	-2.33	-40	-20.89
592.60	S	-59.90	-63.26	6.91	-3.54	-40	-19.90
773.02	S	-58.78	-62.50	7.74	-4.02	-40	-18.78
936.95	S	-59.64	-63.10	7.95	-4.49	-40	-19.64
4625.00	Н	-53.54	-56.50	12.57	-9.62	-13	-40.54
6937.50	Н	-47.92	-48.74	12.04	-11.22	-13	-34.92
9250.00	Н	-44.11	-43.33	11.55	-12.34	-13	-31.11
11562.50	Н	-33.52	-31.43	11.56	-13.65	-13	-20.52



LTEB30 5M 16QAM 1.0 2312.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-48.69	-33.93	-13.90	-0.85	-40	-8.69
112.45	S	-56.65	-53.64	-1.55	-1.46	-40	-16.65
192.96	S	-54.90	-58.79	5.84	-1.95	-40	-14.90
262.80	S	-64.02	-66.45	4.74	-2.31	-40	-24.02
489.78	S	-63.84	-67.10	6.45	-3.19	-40	-23.84
776.90	S	-61.31	-65.02	7.74	-4.04	-40	-21.31
4625.00	Н	-55.43	-58.39	12.57	-9.62	-13	-42.43
6937.50	Н	-44.77	-45.58	12.04	-11.22	-13	-31.77
9250.00	Н	-42.85	-42.07	11.55	-12.34	-13	-29.85
11562.50	Н	-34.56	-32.47	11.56	-13.65	-13	-21.56



#### **Radiated Spurious Emission Measurement Result: LTE-Band 38**

Operation Fundamer Operation EUT Pol.	ntal Fre Band :	quency :	LTEB38 15M 2577.5 MHz Tx CH Low H	116QAM 1	.74	Test Dat Temp. / Test Eng Measure	Humi. : gineer :	enna Pol.	2 E	018/1/20 2.7deg_C/57RH nzo ′ertical
36										
24										_
12										_
0										_
(a)-12-									part 22 24 27	<u>fx PK</u>
[[-12 //wgp]] Pao-24			8							_
-36			×							_
-48	2	2								
-60 -	**	×								
30	 		7522.5	150 Frequency	15 7 [MHz]		22507.5			30000
Fr	eq.	Note	ERP/EIRP	SG Outpu		ntenna	Cable	Limit	Mar	gin
М	Hz	F/H/E/S	dBm	Level dBm		Gain Bd/dBi	Loss dB	@3m dBm/m	d	3
	2.45	S	-52.03	-49.02		-1.55	-1.46	-13.01	-39.	

-60.30

-68.63

-64.51

-63.90

-61.00

-51.08

-26.60

5.81

5.92

7.04

7.82

7.95

12.65

11.30

-1.96

-2.73

-3.62

-4.31

-4.49

-14.89

-16.06

-13.01

-13.01

-13.01

-13.01

-13.01

-13.01

-13.01

-43.45

-52.43

-48.08

-47.38

-44.54

-40.30

-18.35

S

S

S

S

S

Н

Н

-56.46

-65.44

-61.09

-60.39

-57.55

-53.31

-31.36

194.90

364.65

615.88

860.32

936.95

5155.00

7732.50

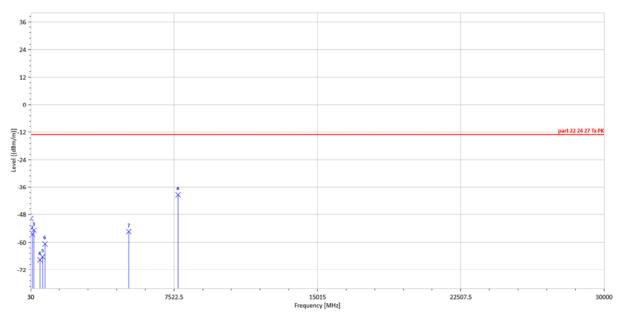
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LTEB38 15M 16QAM 1.74 2577.5 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



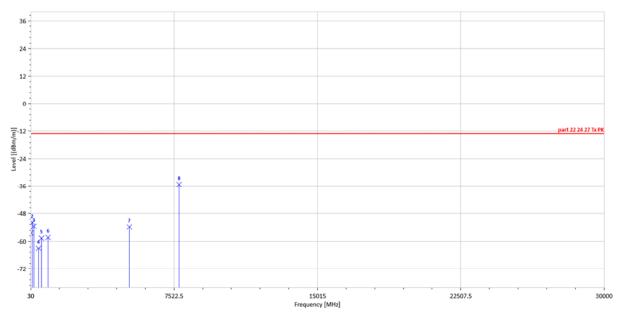
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
36.79	S	-49.72	-34.13	-14.75	-0.85	-13.01	-36.71
111.48	S	-56.53	-53.48	-1.59	-1.46	-13.01	-43.52
192.96	S	-54.78	-58.66	5.84	-1.95	-13.01	-41.77
515.00	S	-67.64	-70.86	6.50	-3.29	-13.01	-54.63
649.83	S	-66.41	-69.87	7.17	-3.70	-13.01	-53.40
776.90	S	-60.72	-64.42	7.74	-4.04	-13.01	-47.71
5155.00	Н	-55.45	-53.22	12.65	-14.89	-13.01	-42.44
7732.50	Н	-39.42	-34.66	11.30	-16.06	-13.01	-26.41



LTEB38 15M 16QAM 1.74 2595 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Vertical



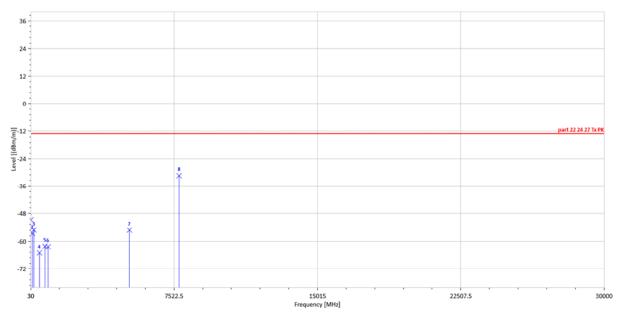
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@ 3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-56.45	-41.69	-13.90	-0.85	-13.01	-43.44
111.48	S	-51.81	-48.75	-1.59	-1.46	-13.01	-38.80
193.93	S	-53.50	-57.37	5.82	-1.96	-13.01	-40.49
439.34	S	-63.06	-66.22	6.16	-3.01	-13.01	-50.05
591.63	S	-58.65	-62.01	6.90	-3.54	-13.01	-45.64
935.98	S	-58.36	-61.81	7.94	-4.49	-13.01	-45.35
5190.00	Н	-53.77	-51.56	12.69	-14.90	-13.01	-40.76
7785.00	Н	-35.33	-30.55	11.30	-16.08	-13.01	-22.32



LTEB38 15M 16QAM 1.74 2595 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



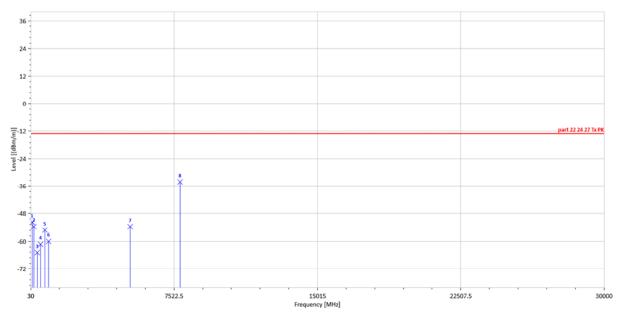
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-50.68	-35.93	-13.90	-0.85	-13.01	-37.67
111.48	S	-56.57	-53.52	-1.59	-1.46	-13.01	-43.56
192.96	S	-55.10	-58.99	5.84	-1.95	-13.01	-42.09
487.84	S	-65.08	-68.33	6.44	-3.18	-13.01	-52.07
773.99	S	-62.21	-65.93	7.74	-4.03	-13.01	-49.20
934.04	S	-62.41	-65.87	7.94	-4.48	-13.01	-49.40
5190.00	Н	-55.17	-52.95	12.69	-14.90	-13.01	-42.16
7785.00	Н	-31.54	-26.76	11.30	-16.08	-13.01	-18.53



LTEB38 15M 16QAM 1.74 2612.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Vertical



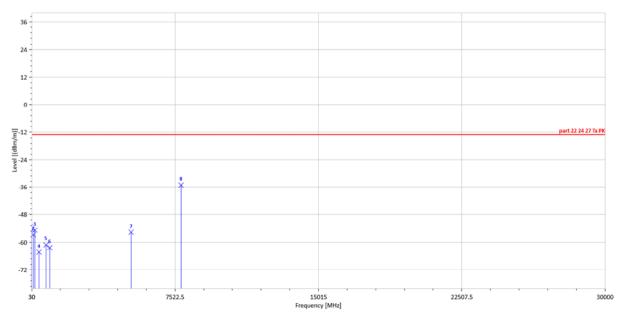
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@ 3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-51.77	-48.71	-1.59	-1.46	-13.01	-38.76
193.93	S	-53.61	-57.48	5.82	-1.96	-13.01	-40.60
371.44	S	-64.99	-68.12	5.89	-2.76	-13.01	-51.98
542.16	S	-61.30	-64.42	6.51	-3.39	-13.01	-48.29
769.14	S	-55.15	-58.88	7.73	-4.01	-13.01	-42.14
962.17	S	-60.02	-63.46	8.00	-4.56	-13.01	-47.01
5225.00	Н	-53.64	-51.44	12.73	-14.92	-13.01	-40.63
7837.50	Н	-34.22	-29.41	11.30	-16.11	-13.01	-21.21



LTEB38 15M 16QAM 1.74 2612.5 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
30.97	S	-54.53	-34.14	-19.56	-0.82	-13.01	-41.52
112.45	S	-56.72	-53.70	-1.55	-1.46	-13.01	-43.71
192.96	S	-54.75	-58.64	5.84	-1.95	-13.01	-41.74
411.21	S	-64.32	-67.27	5.87	-2.92	-13.01	-51.31
777.87	S	-61.16	-64.87	7.74	-4.04	-13.01	-48.15
975.75	S	-62.37	-65.81	8.04	-4.59	-13.01	-49.35
5225.00	Н	-55.69	-53.49	12.73	-14.92	-13.01	-42.68
7837.50	Н	-35.15	-30.34	11.30	-16.11	-13.01	-22.14



#### **Radiated Spurious Emission Measurement Result: LTE-Band 41**

Operation M Fundamenta Operation B EUT Pol. :	al Frequency			Tei Tei	st Date : mp. / Humi. st Engineer asurement		Enzo	eg_C/57RH
24								
12								
[(n-12 (m/mgp)] 19-24							LTE B41.Tx PK	
-36	ŕ	*						
-60	×							
30		7522.5	150 Frequence	015 5y [MHz]	225	07.5	30000	
Fre	q. Note	e ERP/EIR	•				Margin	
MH	lz F/H/E	/S dBm	Level dBm	Gair dBd/c			dB	
111.	48 S	-51.58	-48.53	-1.5	9 -1.46	6 -13	-38.58	

S

S

S

S

S

н

Н

-52.02

-64.30

-58.39

-55.10

-56.61

-45.27

-33.21

-55.91

-67.48

-61.75

-58.83

-60.07

-47.85

-32.95

5.84

5.92

6.91

7.73

7.95

12.51

11.30

-1.95

-2.73

-3.54

-4.01

-4.49

-9.93

-11.57

-13

-13

-13

-13

-13

-13

-13

-39.02

-51.30

-45.39

-42.10

-43.61

-32.27

-20.21

192.96

365.62

592.60

769.14

936.95

5012.00

7518.00

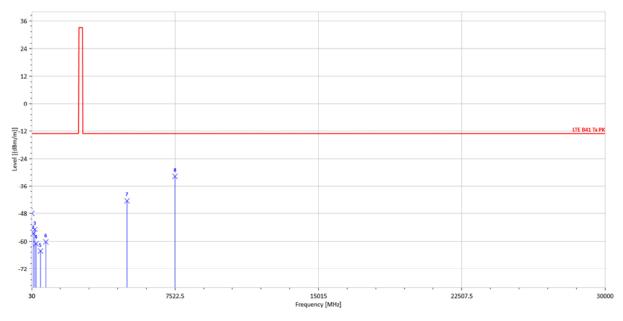
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LTEB41 20M 16QAM 1.99 2506 MHz Tx CH Low Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



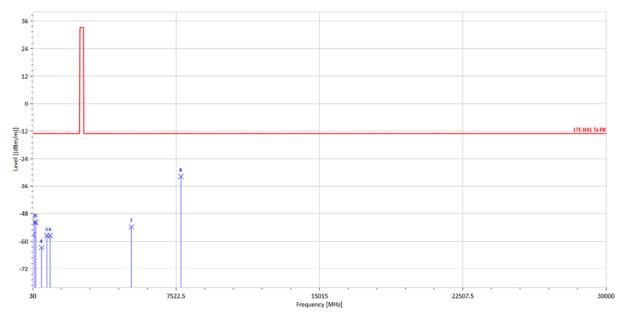
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-47.94	-33.18	-13.90	-0.85	-13	-34.94
112.45	S	-56.64	-53.63	-1.55	-1.46	-13	-43.64
192.96	S	-54.89	-58.78	5.84	-1.95	-13	-41.89
255.04	S	-60.98	-63.54	4.84	-2.28	-13	-47.98
486.87	S	-64.31	-67.57	6.43	-3.18	-13	-51.31
769.14	S	-60.26	-63.99	7.73	-4.01	-13	-47.26
5012.00	Н	-42.41	-44.99	12.51	-9.93	-13	-29.41
7518.00	Н	-31.80	-31.53	11.30	-11.57	-13	-18.80



LTEB41 20M 16QAM 1.99 2593 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Vertical



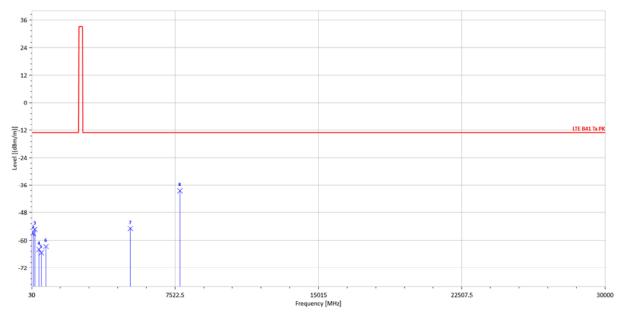
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-57.20	-42.45	-13.90	-0.85	-13	-44.20
112.45	S	-51.69	-48.67	-1.55	-1.46	-13	-38.69
192.96	S	-51.77	-55.65	5.84	-1.95	-13	-38.77
490.75	S	-62.75	-66.00	6.45	-3.19	-13	-49.75
769.14	S	-57.55	-61.28	7.73	-4.01	-13	-44.55
936.95	S	-57.50	-60.96	7.95	-4.49	-13	-44.50
5186.00	Н	-53.80	-56.43	12.69	-10.06	-13	-40.80
7779.00	Н	-31.84	-31.48	11.30	-11.66	-13	-18.84



LTEB41 20M 16QAM 1.99 2593 MHz Tx CH Mid Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



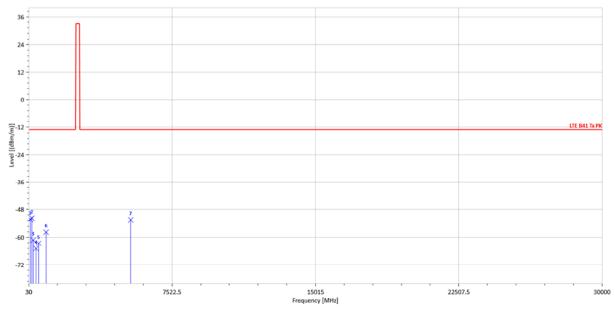
Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
31.94	S	-56.97	-37.36	-18.78	-0.83	-13	-43.97
111.48	S	-57.00	-53.94	-1.59	-1.46	-13	-44.00
193.93	S	-55.24	-59.10	5.82	-1.96	-13	-42.24
407.33	S	-64.05	-66.97	5.83	-2.91	-13	-51.05
537.31	S	-65.51	-68.64	6.51	-3.37	-13	-52.51
773.02	S	-62.73	-66.45	7.74	-4.02	-13	-49.73
5186.00	Н	-54.93	-57.55	12.69	-10.06	-13	-41.93
7779.00	Н	-38.55	-38.18	11.30	-11.66	-13	-25.55



LTEB41 20M 16QAM 1.99 2680 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Vertical



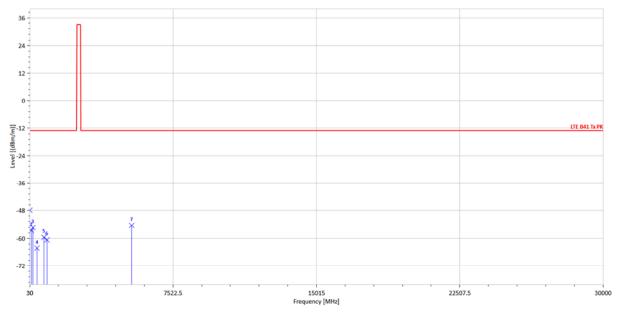
Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
111.48	S	-52.16	-49.11	-1.59	-1.46	-13	-39.16
192.96	S	-51.70	-55.59	5.84	-1.95	-13	-38.70
263.77	S	-61.20	-63.71	4.82	-2.32	-13	-48.20
411.21	S	-64.89	-67.84	5.87	-2.92	-13	-51.89
547.01	S	-62.66	-65.77	6.52	-3.40	-13	-49.66
936.95	S	-57.82	-61.27	7.95	-4.49	-13	-44.82
5360.00	Н	-52.38	-55.06	12.86	-10.18	-13	-39.38



LTEB41 20M 16QAM 1.99 2680 MHz Tx CH High Н

Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :

2018/1/20 22.7deg\_C/57RH Enzo Horizontal



Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
			Level	Gain	Loss	@3m	
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-47.87	-33.12	-13.90	-0.85	-13	-34.87
111.48	S	-56.58	-53.52	-1.59	-1.46	-13	-43.58
194.90	S	-55.40	-59.25	5.81	-1.96	-13	-42.40
410.24	S	-64.36	-67.30	5.86	-2.92	-13	-51.36
773.99	S	-59.57	-63.28	7.74	-4.03	-13	-46.57
935.01	S	-60.67	-64.13	7.94	-4.49	-13	-47.67
5360.00	Н	-54.39	-57.07	12.86	-10.18	-13	-41.39



### **Radiated Spurious Emission Measurement Result: LTE-Band 66**

Operation Mode : Fundamental Frequency : Operation Band : EUT Pol. :		LTEB66 3M 1711.5 MHz Tx CH Low H		Test Date : Temp. / Hui Test Engine Measureme	2018/1/19 22.7deg_C/57RH Enzo Vertical				
	24								
	0 [[							part 22 24 27 Tx PK	
	-36	2	*						
	-60 - 3 5 6 -72 -72								
	30	-, , <u> </u> ,	5022.5	10015 Frequency [Mi	iz]	15007.5		20000	
	Freq. MHz	Note F/H/E/S	ERP/EIRP dBm	SG Output Level dBm	Antenna Gain dBd/dBi	Cable Loss dB	Limit @3m dBm/m	Margin dB	
-	112.45	S	-50.81	-47.80	-1.55	-1.46	-13.01	-37.80	
	193.93	S	-53.03	-56.90	5.82	-1.96	-13.01	-40.02	
	252.13	S	-60.41	-63.18	5.03	-2.26	-13.01	-47.40	
	439.34	S	-63.71	-66.87	6.16	-3.01	-13.01	-50.70	
	595.51	S	-59.80	-63.18	6.93	-3.55	-13.01	-46.79	
	938.89	S	-58.69	-62.14	7.95	-4.50	-13.01	-45.68	
	3423.00	Н	-52.34	-55.78	12.15	-8.70	-13.01	-39.33	

-47.04

-40.80

-45.37

-32.39

Н

Н

Н

н

5134.50

6846.00

8557.50

10269.00

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-49.65

-41.71

-45.39

-30.83

12.63

12.09

12.07

11.24

-10.02

-11.18

-12.04

-12.80

-13.01

-13.01

-13.01

-13.01

-34.03

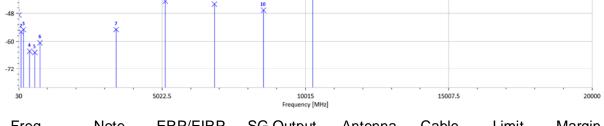
-27.79

-32.36

-19.38



**Operation Mode :** LTEB66 3M QPSK 1.0 Test Date : 2018/1/19 Fundamental Frequency : 1711.5 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH Low Test Engineer : Enzo EUT Pol.: Measurement Antenna Pol. : Horizontal Н 36 24 12 0 irt 22 24 27 Tx PK <u>-12</u> ove lave -24 36



	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
				Level	Gain	Loss	@3m	
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
-	37.76	S	-48.62	-33.87	-13.90	-0.85	-13.01	-35.61
	112.45	S	-55.98	-52.96	-1.55	-1.46	-13.01	-42.97
	192.96	S	-55.02	-58.91	5.84	-1.95	-13.01	-42.01
	408.30	S	-64.44	-67.37	5.84	-2.91	-13.01	-51.43
	588.72	S	-64.93	-68.28	6.87	-3.52	-13.01	-51.92
	770.11	S	-60.63	-64.36	7.74	-4.01	-13.01	-47.62
	3423.00	Н	-54.95	-58.40	12.15	-8.70	-13.01	-41.94
	5134.50	Н	-42.57	-45.18	12.63	-10.02	-13.01	-29.56
	6846.00	Н	-43.83	-44.75	12.09	-11.18	-13.01	-30.82
	8557.50	Н	-46.57	-46.59	12.07	-12.04	-13.01	-33.56
	10269.00	Н	-34.72	-33.15	11.24	-12.80	-13.01	-21.71



**Operation Mode :** LTEB66 3M QPSK 1.0 Test Date : 2018/1/19 Fundamental Frequency : 1745 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH Mid Test Engineer : Enzo EUT Pol.: Measurement Antenna Pol. : Vertical Н 36 24 12 0 irt 22 24 27 Tx PK <u>-12</u> ove lave -24 11 36 -60 . 5022.5 10015 . 15007.5 20000

	Freq.	Note	ERP/EIRP	SG Output	Antenna	Cable	Limit	Margin
				Level	Gain	Loss	@3m	
_	MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
	111.48	S	-50.91	-47.86	-1.59	-1.46	-13.01	-37.90
	191.99	S	-57.15	-61.05	5.85	-1.95	-13.01	-44.14
	435.46	S	-63.52	-66.65	6.12	-3.00	-13.01	-50.51
	593.57	S	-59.51	-62.88	6.91	-3.54	-13.01	-46.50
	919.49	S	-59.93	-63.41	7.92	-4.44	-13.01	-46.92
	934.04	S	-57.70	-61.16	7.94	-4.48	-13.01	-44.69
	3490.00	Н	-52.82	-56.35	12.28	-8.75	-13.01	-39.81
	5235.00	Н	-53.76	-56.40	12.73	-10.09	-13.01	-40.75
	6980.00	Н	-44.20	-44.97	12.01	-11.24	-13.01	-31.19
	8725.00	Н	-44.69	-44.60	11.97	-12.05	-13.01	-31.68
	10470.00	Н	-34.85	-33.02	11.12	-12.95	-13.01	-21.84

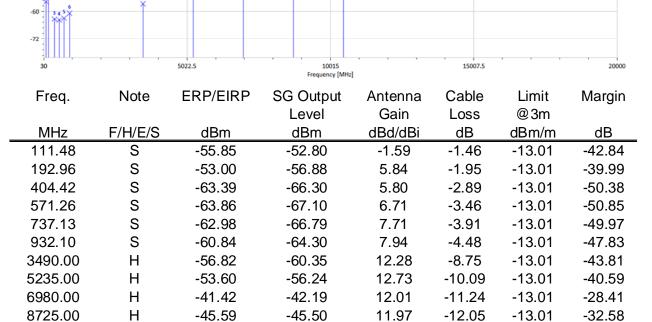
Frequency [MHz]



10470.00

н

**Operation Mode :** LTEB66 3M QPSK 1.0 Test Date : 2018/1/19 Fundamental Frequency : Temp. / Humi. : 1745 MHz 22.7deg\_C/57RH **Operation Band :** Tx CH Mid Test Engineer : Enzo EUT Pol.: Measurement Antenna Pol. : Н Horizontal 36 24 12 0 <u>-12</u> rt 22 24 27 Tx PK a-24 11 36 48



-27.82

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-29.65

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11.12

-12.95

-13.01

-13.01

-16.64



**Operation Mode :** LTEB66 3M QPSK 1.0 Test Date : 2018/1/19 Fundamental Frequency : 1778.5 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH High Test Engineer : Enzo EUT Pol.: Measurement Antenna Pol. : Vertical Н 36 24 12 0 rt 22 24 27 Tx PK <u>-12</u> PV0 -24 60 .72 . 5022.5 10015 . 15007.5 20000 Frequency [MHz]

Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
37.76	S	-57.08	-42.32	-13.90	-0.85	-13.01	-44.07
111.48	S	-51.85	-48.79	-1.59	-1.46	-13.01	-38.84
193.93	S	-55.37	-59.24	5.82	-1.96	-13.01	-42.36
438.37	S	-63.24	-66.39	6.15	-3.01	-13.01	-50.23
589.69	S	-59.98	-63.33	6.88	-3.53	-13.01	-46.97
936.95	S	-58.21	-61.67	7.95	-4.49	-13.01	-45.20
3557.00	н	-52.29	-55.83	12.33	-8.80	-13.01	-39.28
5335.50	н	-53.04	-55.71	12.84	-10.16	-13.01	-40.03
7114.00	Н	-43.24	-43.77	11.84	-11.31	-13.01	-30.23
8892.50	Н	-46.82	-46.60	11.86	-12.09	-13.01	-33.81
10671.00	Н	-41.61	-39.50	11.00	-13.11	-13.01	-28.60



20000

**Operation Mode :** LTEB66 3M QPSK 1.0 Test Date : 2018/1/19 Fundamental Frequency : 1778.5 MHz Temp. / Humi. : 22.7deg\_C/57RH **Operation Band :** Tx CH High Test Engineer : Enzo EUT Pol.: Measurement Antenna Pol. : Horizontal Н 36 24 12 0 irt 22 24 27 Tx PK <u>-12</u> -24 11 -60

> 10015 Frequency [MHz]

. 15007.5

Freq.	Note	ERP/EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit @3m	Margin
MHz	F/H/E/S	dBm	dBm	dBd/dBi	dB	dBm/m	dB
55.22	S	-61.67	-57.58	-3.08	-1.00	-13.01	-48.66
193.93	S	-55.39	-59.26	5.82	-1.96	-13.01	-42.38
262.80	S	-63.34	-65.77	4.74	-2.31	-13.01	-50.33
358.83	S	-66.85	-70.10	5.95	-2.71	-13.01	-53.84
487.84	S	-65.10	-68.35	6.44	-3.18	-13.01	-52.09
647.89	S	-65.25	-68.72	7.16	-3.69	-13.01	-52.24
3557.00	Н	-50.17	-53.70	12.33	-8.80	-13.01	-37.16
5335.50	Н	-52.99	-55.66	12.84	-10.16	-13.01	-39.98
7114.00	Н	-41.55	-42.08	11.84	-11.31	-13.01	-28.54
8892.50	Н	-45.79	-45.57	11.86	-12.09	-13.01	-32.78
10671.00	Н	-30.09	-27.98	11.00	-13.11	-13.01	-17.08

. 5022.5



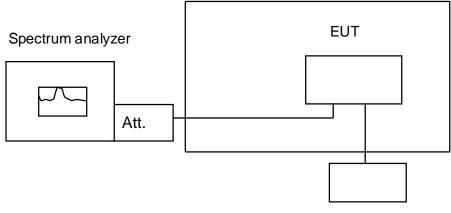
# 11. FREQUENCY STABILITY MEASUREMENT

# 11.1. Standard Applicabl

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

## 11.2. Test Set-up

**Temperature Chamber** 



Variable DC Power Supply

Note: Measurement setup for testing on Antenna connector

## **11.3.** Measurement Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Set chamber temperature to 25°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint as

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declared by the manufacturer, record the maximum frequency change.

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## 11.4. Measurement Equipment Used

Conduc	ted Emission	(measured at a	ntenna port)	Test Site	
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	06/20/2017	06/19/2018
Communication Tester	Anritsu	MT8820C	6201107337	06/11/2017	06/10/2018
Coaxial Cable 30cm	WOKEN	00100A1F1A19 5C	RF01	12/24/2017	12/23/2018
Temperature Chamber	TERCHY	MHK-120LK	1020582	06/13/2017	06/12/2018
DC Block	PASTERNACK	PE8210	RF29	12/24/2017	12/23/2018
Splitter	RF-LAMBAD	RFLT2W1G18G	RF35	12/24/2017	12/23/2018
Attenuator	WOKEN	218FS-10	RF23	12/24/2017	12/23/2018
DC Power Supply	Agilent	E3640A	MY53140006	05/02/2017	05/01/2018



## 11.5. Measurement Result

WCDMA II Mid Channel 1880 MHz								
	Limi	t: +/- 2.5 ppm						
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit (Hz)				
F	REQUENCY	ERROR vs. V	OLTAGE					
8.855	20	1879999989	-11	4700				
7.7	20	1879999991	-9	4700				
6.545	20	1879999982	-18	4700				
6.3 (End point)	20	1880000022	22	4700				
FREQUENCY ERROR vs. Temp.								
7.7	50	1880000022	22	4700				
7.7	40	1880000022	22	4700				
7.7	30	1879999983	-17	4700				
7.7	20	1880000016	16	4700				
7.7	10	1880000006	6	4700				
7.7	0	1879999993	-7	4700				
7.7	-10	1880000013	13	4700				
7.7	-20	1879999975	-25	4700				
7.7	-30	1880000010	10	4700				

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	WCDMA N	/ Mid Channel	1732.6	MHz				
	Lim	it: +/- 2.5 ppm						
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit (Hz)				
F	REQUENCY	ERROR vs. V	<b>OLTAGE</b>					
8.855	20	1732599977	-23	4331				
7.7	20	1732600016	16	4331				
6.545	20	1732599996	-4	4331				
6.3 (End point)	20	1732599982	-18	4331				
FREQUENCY ERROR vs. Temp.								
7.7	50	1732599978	-22	4331				
7.7	40	1732600012	12	4331				
7.7	30	1732599999	-1	4331				
7.7	20	1732600003	3	4331				
7.7	10	1732599998	-2	4331				
7.7	0	1732600002	2	4331				
7.7	-10	1732599981	-19	4331				
7.7	-20	1732600008	8	4331				
7.7	-30	1732599997	-3	4331				



	WCDMA V Mid Channel 836.6 MHz								
	Limi	t: +/- 2.5 ppm							
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit (Hz)					
F	REQUENCY	ERROR vs. V	OLTAGE						
8.855	20	836600020	20	2091					
7.7	20	836600009	9	2091					
6.545	20	836600023	23	2091					
6.3 (End point)	20	836600012	12	2091					
FREQUENCY ERROR vs. Temp.									
7.7	50	836600014	14	2091					
7.7	40	836600019	19	2091					
7.7	30	836599988	-12	2091					
7.7	20	836600004	4	2091					
7.7	10	836599979	-21	2091					
7.7	0	836599988	-12	2091					
7.7	-10	836600009	9	2091					
7.7	-20	836600018	18	2091					
7.7	-30	836599993	-7	2091					



Deference Free :	LTE	B2 Mid	1880	MHz 20M QPSK CH 18900	
Reference Freq.:	Ch	annel	1000		
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)	
		Freq. ERROR v	/s. VOLTAGE		
8.855	25	1880.000024	24	4700	
7.7	25	1880.000023	23	4700	
6.545	25	1880.000019	19	4700	
6.2 (End Point)	25	1879.999985	-15	4700	
	•	Freq. ERROF	R vs. Temp.		
7.7	-30	1880.000012	12	4700	
7.7	-20	1880.000000	0	4700	
7.7	-10	1880.000000	0	4700	
7.7	0	1880.000000	0	4700	
7.7	10	1880.000000	0	4700	
7.7	20	1880.000008	8	4700	
7.7	30	1880.000006	6	4700	
7.7	40	1879.999985	-15	4700	
7.7	50	1880.000020	20	4700	
Reference Freq.:	LTE B4 Mid		1733	MHz 20M QPSK CH 20175	
Reference Fleq	Channel			MHZ ZOW QFSK CH Z0175	
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)	
	-	Freq. ERROR v	s. VOLTAGE		
8.855	25	1732.500015	15	4331	
7.7	25	1732.499979	-21	4331	
6.545	25	1732.500009	9	4331	
6.2 (End Point)	25	1732.499988	-12	4331	
,/		Freq. ERROF	Rvs. Temp.		
7.7	-30		8	4331	
7.7	00	1732.500008	0	4001	
	-20	1732.500008	17	4331	
7.7					
7.7 7.7	-20	1732.500017	17	4331	
	-20 -10	1732.500017 1732.500013	17 13	4331 4331	
7.7	-20 -10 0	1732.500017 1732.500013 1732.500007	17 13 7	4331 4331 4331	
7.7 7.7	-20 -10 0 10	1732.500017 1732.500013 1732.500007 1732.499986	17 13 7 -14	4331 4331 4331 4331	
7.7 7.7 7.7	-20 -10 0 10 20	1732.500017 1732.500013 1732.500007 1732.499986 1732.500021	17 13 7 -14 21	4331 4331 4331 4331 4331 4331	



	LTE	B5 Mid	007	MHz 10M QPSK					
Reference Freq.:	Cha	annel	837	CH 20525					
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)					
		Freq. ERROR <b>v</b>	/s. VOLTAGE	Ξ					
8.855	25	836.500014	14	2091					
7.7	25	836.499994	-6	2091					
6.545	25	836.500014	14	2091					
6.2 (End Point)	25	836.500005	5	2091					
Freq. ERROR vs. Temp.									
7.7	-30	836.499995	-5	2091					
7.7	-20	836.499979	-21	2091					
7.7	-10	836.500001	1	2091					
7.7	0	836.500016	16	2091					
7.7	10	836.500020	20	2091					
7.7	20	836.499993	-7	2091					
7.7	30	836.500004	4	2091					
7.7	40	836.499987	-13	2091					
7.7	50	836.499997	-3	2091					
Deference Free L	LTE B7 Mid		2535	MHz 10M QPSK CH 21100					
Reference Freq.:	Channel			MHZ 10M QFSK CH 21100					
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)					
		Freq. ERROR v	s. Voltage						
8.855	25	2535.000006	6	6338					
7.7	25	2534.999976	-24	6338					
6.545	25	2534.999976	-24	6338					
6.2 (End Point)	25	2535.000012	12	6338					
		Freq. ERROF	R vs. Temp.						
7.7	-30	2535.000021	21	6338					
7.7	-20	2535.000021	21	6338					
7.7	-10	2535.000019	19	6338					
7.7	0	2534.999992	-8	6338					
7.7	10	2534.999986	-14	6338					
7.7	20	2535.000002	2	6338					
7.7	30	2534.999980	-20	6338					
7.7	40	2534.999980	-20	6338					
7.7	50	2534.999975	-25	6338					



Deference Free L	LTE B12 Mid		708	MHz 10M QPSK CH 23095					
Reference Freq.:	Ch	annel	700	MITZ TOW QF3R CIT 25095					
Power Supply	Tomp (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm					
Vdc	Temp. (℃)			(Hz)					
		Freq. ERROR	vs. VOLTAGE						
8.855	25	707.499996	-4	1769					
7.7	25	707.500004	4	1769					
6.545	25	707.500023	23	1769					
6.2	25	707.500016	16	1769					
(End Point)	25	707.300010	10	1765					
Freq. ERROR vs. Temp.									
7.7	-30	707.499994	16	1769					
7.7	-20	707.500003	25	1769					
7.7	-10	707.499978	0	1769					
7.7	0	707.499991	13	1769					
7.7	10	707.499975	-3	1769					
7.7	20	707.499978	-22	1769					
7.7	30	707.500004	26	1769					
7.7	40	707.500024	46	1769					
7.7	50	707.499983	5	1769					
	LTE	B13 Mid	700	MHz 10M QPSK					
Reference Freq.:	Ch	annel	782	CH 23230					
Power Supply				Limit = +/- 2.5 ppm					
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	(Hz)					
		Freq. ERROR	vs. VOLTAGE						
8.855	25	782.000008	8	1955					
7.7	25	782.000005	5	1955					
6.545	25	781.999992	-8	1955					
6.2	25	781.999995	-5	1955					
(End Point)	25	701.999995	-5	1955					
		Freq. ERRO	R vs. Temp.						
7.7	-30	782.000013	13	1955					
7.7	-20	781.999990	-10	1955					
7.7	-10	781.999999	-1	1955					
7.7	0	781.999981	-19	1955					
7.7	10	782.000005	5	1955					
7.7	20	781.999994	-6	1955					
7.7	30	782.000015	15	1955					
7.7	40	782.000001	1	1955					



Reference Freq.:	LTE B17 Mid Channel		710	MHz 10M QPSK CH 23790					
Power Supply				Limit = +/- 2.5 ppm					
Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	(Hz)					
		Freq. ERROR v	vs. VOLTAGE						
8.855	25	709.999994	-6	1775					
7.7	25	709.999999	-1	1775					
6.545	25	710.000014	14	1775					
6.2 (End Point)	25 710.000011		11	1775					
Freq. ERROR vs. Temp.									
7.7	-30	-30 710.000020		1775					
7.7	-20	709.999976	-47	1775					
7.7	-10	709.999976	-47	1775					
7.7	0	709.999990	-33	1775					
7.7	10	709.999993	-30	1775					
7.7	20	710.000023	23	1775					
7.7	30	710.000012	-11	1775					
7.7	40	709.999997	-26	1775					
7.7	50	709.999986	-37	1775					
Reference Freq.:	LTE B26 Mid		837	MHz 15M QPSK CH 26915					
	Ch	annel	001						
Power Supply Vdc	Temp. (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)					
		Freq. ERROR v	/s. VOLTAGE						
8.855	25	836.499998	-2	2091					
7.7	25	836.499975	-25	2091					
6.545	25	836.500007	7	2091					
6.2 (End Point)	25	836.499997	-3	2091					
	11	Freg. ERROF	R vs. Temp.						
7.7	-30	836.499991	-9	2091					
7.7	-20	836.500007	7	2091					
7.7	-10	836.499986	-14	2091					
7.7	0	836.499987	-13	2091					
7.7	10	836.499982	-18	2091					
7.7	20	836.499992	-8	2091					
			-	0001					
7.7	30	836.499998	-2	2091					
7.7	30 40	836.499998 836.499986	-2 -14	2091 2091					



Reference Freq.:		B26 Mid annel	819	MHz 10M QPSK CH 26740					
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)					
	Freq. ERRO	R vs. VOLTAG	E (LTE B26 f	or Part 90S)					
8.855	25	819.000021	21	2048					
7.7	25	818.999990	-10	2048					
6.545	25	819.000020	20	2048					
6.2 (End Point)	25	819.000001	1	2048					
Freq. ERROR vs. Temp.									
7.7	-30	818.999990	-17	2048					
7.7	-20	818.999984	-23	2048					
7.7	-10	818.999991	-16	2048					
7.7	0	819.000016	9	2048					
7.7	10	819.000019	12	2048					
7.7	20	819.000007	7	2048					
7.7	30	819.000024	17	2048					
7.7	40	818.999983	-24	2048					
7.7	50	819.000007	0	2048					
Reference Freq.:	LTE B30 Mid		2310	MHz 10M QPSK CH 27710					
Reference i feq	Channel		2010						
Power Supply Vdc	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm (Hz)					
		Freq. ERROR v	s. VOLTAGE						
8.855	25	2309.999994	-6	0.400					
7.7			•	6488					
	25	2310.000021	21	6488 6488					
6.545	25 25		-						
6.2		2310.000021	21	6488					
	25	2310.000021 2309.999986	21 -14 9	6488 6488					
6.2	25	2310.000021 2309.999986 2310.000009	21 -14 9	6488 6488					
6.2 (End Point)	25 25	2310.000021 2309.999986 2310.000009 Freq. ERROR	21 -14 9 vs. Temp.	6488 6488 6488					
6.2 (End Point) 7.7	25 25 -30	2310.000021 2309.999986 2310.000009 Freq. ERROR 2309.999985	21 -14 9 <b>vs. Temp.</b> -15	6488 6488 6488 6488					
6.2 (End Point) 7.7 7.7	25 25 -30 -20	2310.000021 2309.999986 2310.000009 Freq. ERROR 2309.999985 2309.999999	21 -14 9 <b>vs. Temp.</b> -15 -1	6488 6488 6488 6488 6488 6488					
6.2 (End Point) 7.7 7.7 7.7 7.7	25 25 -30 -20 -10	2310.000021 2309.999986 2310.000009 Freq. ERROR 2309.999985 2309.999999 2309.9999977	21 -14 9 <b>vs. Temp.</b> -15 -1 -23	6488 6488 6488 6488 6488 6488 6488					
6.2 (End Point) 7.7 7.7 7.7 7.7 7.7	25 25 -30 -20 -10 0	2310.000021 2309.999986 2310.000009 Freq. ERROR 2309.999985 2309.999999 2309.9999977 2310.000009	21 -14 9 <b>vs. Temp.</b> -15 -1 -23 9	6488 6488 6488 6488 6488 6488 6488 6488					
6.2 (End Point) 7.7 7.7 7.7 7.7 7.7 7.7 7.7	25 25 -30 -20 -10 0 10	2310.000021 2309.999986 2310.000009 Freq. ERROR 2309.999985 2309.999999 2309.9999977 2310.000009 2310.000008	21 -14 9 <b>vs. Temp.</b> -15 -1 -23 9 8	6488 6488 6488 6488 6488 6488 6488 6488					
6.2 (End Point) 7.7 7.7 7.7 7.7 7.7 7.7 7.7 7.7	25 25 -30 -20 -10 0 10 20	2310.000021 2309.999986 2310.000009 Freq. ERROR 2309.999985 2309.999999 2309.9999977 2310.000009 2310.000008 2309.999995	21 -14 9 <b>vs. Temp.</b> -15 -1 -23 9 8 -5	6488 6488 6488 6488 6488 6488 6488 6488					



LTE B38 Mid		B38 Mid	0505				
Reference Freq.:	Cł	nannel	2595	MHz 10M QPSK CH 38000			
Power Supply	Tomp (°C)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm			
Vdc	Temp. (℃)			(Hz)			
		Freq. ERROR v	s. VOLTAGE				
8.855	25	2595.000002	2	6488			
7.7	25	2594.999980	-20	6488			
6.545	25	2595.000001	1	6488			
6.2	25	2595.000007	7	6488			
(End Point)							
Freq. ERROR vs. Temp.							
7.7	-30	2594.999976	-24	6488			
7.7	-20	2595.000016	16	6488			
7.7	-10	2594.999992	-8	6488			
7.7	0	2595.000012	12	6488			
7.7	10	2595.000010	10	6488			
7.7	20	2594.999976	-24	6488			
7.7	30	2595.000010	10	6488			
7.7	40	2594.999984	-16	6488			
7.7	50	2594.999979	-21	6488			
Deference Free :	LTE B41 Mid		2605	MHz 10M QPSK CH 40740			
Reference Freq.:	Ch	annel	2005				
Power Supply	Temp. (℃)	Freq. (MHz)	Delta (Hz)	Limit = +/- 2.5 ppm			
Vdc		,	, , , , , , , , , , , , , , , , , , ,	(Hz)			
		Freq. ERROR v	vs. VOLTAGE				
8.855	25	2604.999983	-17	6488			
7.7	25	2604.999996	-4	6488			
6.545	25	2605.000000	0	6488			
6.2	25	2604.999992	-8	6488			
(End Point)	25	2004.333332	-0	0480			
		Freq. ERROR	R vs. Temp.				
7.7	-30	2605.000003	11	6488			
7.7	-20	2604.999995	3	6488			
7.7	-10	2604.999993	1	6488			
7.7 7.7	-10 0	2604.999993 2605.000012	1 20	6488 6488			
7.7	0	2605.000012	20	6488			
7.7 7.7	0 10	2605.000012 2604.999996	20 4	6488 6488			
7.7 7.7 7.7	0 10 20	2605.000012 2604.999996 2604.999992	20 4 -8	6488 6488 6488			



Reference Freq.:	LTE B66 Mid Channel		1745	MHz 10M QPSK CH 132322					
Power Supply Vdc	Temp. (°C) Freq. (MHz)		Delta (Hz)	Limit = +/- 2.5 ppm (Hz)					
	Freq. ERROR vs. VOLTAGE								
8.855	25	1744.999987	-13	6488					
7.7	25	1745.000013	13	6488					
6.545	25	1745.000003	3	6488					
6.2 (End Point)	25	1745.000002	2	6488					
		Freq. ERROF	R vs. Temp.						
7.7	-30	1744.999983	-17	6488					
7.7	-20	1745.000010	10	6488					
7.7	-10	1744.999982	-18	6488					
7.7	0	1745.000019	19	6488					
7.7	10	1745.000019	19	6488					
7.7	20	1744.999999	-1	6488					
7.7	30	1744.999991	-9	6488					
7.7	40	1745.000016	16	6488					
7.7	50	1745.000010	10	6488					

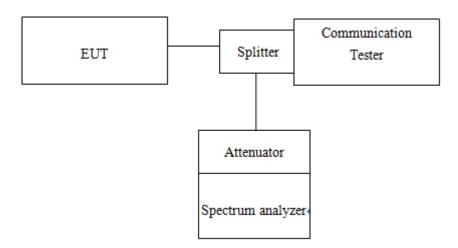


#### PEAK TO AVERAGE RATIO 12.

# 12.1. Standard Applicable

The peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

## 12.2. Test SET-UP



#### 12.3. **Measurement Procedure**

- 1. KDB 971168 D01 is employed as the following procedure is proper adjusted accordingly:
- 2. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth; & internal =1ms
- Set the number of counts to a value that stabilizes the measured CCDF curve.

#### 12.4. Measurement Equipment Used

Conducted Emission (measured at antenna port) Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	06/20/2017	06/19/2018			
Communication Tester	Anritsu	MT8820C	6201107337	06/11/2017	06/10/2018			
Coaxial Cable 30cm	WOKEN	00100A1F1A19 5C	RF01	12/24/2017	12/23/2018			
Temperature Chamber	TERCHY	MHK-120LK	1020582	06/13/2017	06/12/2018			
DC Block	PASTERNACK	PE8210	RF29	12/24/2017	12/23/2018			
Splitter	RF-LAMBAD	RFLT2W1G18G	RF35	12/24/2017	12/23/2018			
Attenuator	WOKEN	218FS-10	RF23	12/24/2017	12/23/2018			
DC Power Supply	Agilent	E3640A	MY53140006	05/02/2017	05/01/2018			

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#### 12.5. **Measurement Result**

### **Tabular Results:**

Eroa		Peak-to-Average Ratio (dB)				
-	Freq. (MHz) CH		HSDPA	HSUPA		
(11112)		I	Ι			
1852.4	9262	3.44	3.98	4.05		
1880	9400	3.51	3.87	4.19		
1907.6	9538	3.45	4.05	4.19		

Erog		Peak-to-Average Ratio (dB)				
Freq. (MHz)	СН	WCDMA IV	HSDPA IV	HSUPA IV		
1712.4	1312	3.32	3.99	3.80		
1732.6	1413	3.42	3.97	3.82		
1752.6	1513	3.29	3.74	3.87		

Frog		Peak-to-	Average R	atio (dB)
Freq. (MHz)	СН	WCDMA	HSDPA	HSUPA
()		V	V	V
826.4	4132	3.25	4.08	3.74
836.6	4183	3.25	3.85	3.63
846.6	4233	2.98	3.70	3.68

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LTE BAND 2									
Chann	el bandwi	dth: 1.4M	Hz	Channel bandwidth: 3MHz					
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)		
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit		
1850.70	18607	6.98	13	1851.50	18615	6.77	13		
1880.00	18900	7.22	13	1880.00	18900	6.70	13		
1909.30	19193	6.58	13	1908.50	19185	6.68	13		
	LTE BAND 2								
Chan	nel bandw	vidth: 5M⊦	Iz	Chann	el bandw	idth: 10MI	Ηz		
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR (dB)			
(MHz)		16QAM	Limit	(MHz)	СП	16QAM	Limit		
1852.50	18625	6.86	13	1855.00	18650	6.67	13		
1880.00	18900	6.71	13	1880.00	18900	6.61	13		
1907.50	19175	6.67	13	1905.00	19150	6.59	13		
			LTE B	AND 2					
Chann	el bandwi	idth: 15M⊦	Ηz	Channel bandwidth: 20MHz					
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)		
(MHz)		16QAM	Limit	(MHz)	СП	16QAM	Limit		
1857.50	18675	6.16	13	1860.00	18700	6.71	13		
1880.00	18900	6.26	13	1880.00	18900	6.65	13		
1902.50	19125	6.25	13	1900.00	19100	6.66	13		



	LTE BAND 4										
Channe	el bandw	idth: 1.4M	Hz	Channel bandwidth: 3MHz							
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)				
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit				
1710.70	19957	6.48	13	1711.50	19965	6.41	13				
1732.50	20175	6.84	13	1732.50	20175	6.71	13				
1754.30	20393	6.55	13	1753.50	20385	6.62	13				
LTE BAND 4											
Chanr	nel bandv	vidth: 5MH	Ηz	Chann	el bandw	vidth: 10M	Hz				
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)				
(MHz)		16QAM	Limit	(MHz)		16QAM	Limit				
1712.50	19957	6.44	13	1715.00	20000	6.42	13				
1732.50	20175	6.56	13	1732.50	20175	6.65	13				
1752.50	20375	6.45	13	1750.00	20350	6.36	13				
			LTE B	AND 4							
Chann	el bandw	idth: 15M	Hz	Chann	el bandw	idth: 20M	Hz				
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)				
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit				
1717.50	20025	6.27	13	1720.00	20050	6.76	13				
1732.50	20175	6.40	13	1732.50	20175	6.84	13				
1747.50	20325	6.17	13	1745.00	20300	6.71	13				

			LTE B	AND 5				
Chann	el bandwi	dth: 1.4M	Hz	Chan	nel bandw	/idth: 3M ⊦	lz	
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR (dB)		
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit	
824.70	20407	5.23	13	825.50	20415	5.46	13	
836.50	20525	6.66	13	836.50	20525	6.39	13	
848.30	20643	5.94	13	847.50	20635	5.79	13	
			LTE B	AND 5				
Chan	nel bandw	vidth: 5M⊦	lz	Channel bandwidth: 10MHz				
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR (d		
(MHz)	CIT	16QAM	Limit	(MHz)	OII	16QAM	Limit	
826.50	20425	5.37	13	829.00	20450	5.58	13	
836.50	20525	6.44	13	836.50	20525	6.38	13	
846.50	20625	5.27	13	844.00	20600	5.62	13	

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			LTE B	AND 7				
Chanr	nel bandv	vidth: 5MI	Ηz	Channel bandwidth: 10MHz				
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)	
(MHz)	CIT	16QAM	Limit	(MHz)	CIT	16QAM	Limit	
2502.50	20775	5.73	13	2505.00	20800	5.97	13	
2535.00	21100	5.95	13	2535.00	21100	6.03	13	
2567.50	21375	5.94	13	2565.00	21350	6.11	13	
			LTE B	AND 7				
Chann	el bandw	idth: 15M	Hz	Channel bandwidth: 20MHz				
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)	
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit	
2507.50	20825	6.06	13	2510.00	20850	6.58	13	
2535.00	21100	6.15	13	2535.00	21100	6.65	13	
2562.50	21375	6.14	13	2560.00	21350	6.69	13	

			LTE BA	ND 12			
Chann	el bandwi	dth: 1.4M	Hz	Chan	nel bandw	/idth: 3M ⊦	lz
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)
(MHz)	CIT	16QAM	Limit	(MHz)	OII	16QAM	Limit
699.70	23017	6.26	13	700.50	23025	6.19	13
707.50	23095	6.15	13	707.50	23095	6.36	13
715.30	23173	6.36	13	714.50	23165	6.35	13
			LTE BA	AND 12			
Chan	nel bandw	vidth: 5M⊦	lz	Channel bandwidth: 10MHz			
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR (dB)	
(MHz)		16QAM	Limit	(MHz)		16QAM	Limit
701.50	23035	6.19	13	704.00	23060	6.42	13
707.50	23095	6.28	13	707.50	23095	6.54	13
713.50	23155	6.28	13	711.00	23130	6.33	13

	LTE BAND 13										
Chan	nel bandw	/idth: 5M⊦	lz	Channel bandwidth: 10MHz							
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR (dB)					
(MHz)	СП	16QAM	Limit	(MHz)	Сп	16QAM	Limit				
779.50	23205	6.41	13								
782.00	23230	6.49	13	782.00	23230	6.29	13				
784.50	23255	6.23	13								

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LTE BAND 17										
Chanr	iel bandv	vidth: 5MH	Ηz	Chann	el bandw	vidth: 10M	Hz			
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)			
(MHz)	СН	16QAM	Limit	(MHz)	Сп	16QAM	Limit			
706.50	23755	6.32	13	709.00	23780	6.31	13			
710.00	23790	6.37	13	710.00	23790	6.22	13			
713.50	23825	6.27	13	711.00	23780	6.19	13			

			LTE BA	ND 26						
Chann	el bandwi	dth: 1.4M	Hz	Channel bandwidth: 3MHz			lz			
Freq.		PAPR	PAPR (dB)			PAPR (dB)				
(MHz)	СН	16QAM	Limit	Freq. (MHz)	СН	16QAM	Limit			
814.70	26697	6.10	13	815.50	26705	6.14	13			
831.50	26865	5.82	13	831.50	26865	5.99	13			
848.30	27033	6.19	13	847.50	27025	6.00	13			
	LTE BAND 26									
Chan	nel bandw	vidth: 5M⊦	lz	Chanr	iel bandw	idth: 10MI	Ηz			
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR (dB)				
(MHz)		16QAM	Limit	(MHz)		16QAM	Limit			
816.50	26715	6.21	13	820.00	26750	6.30	13			
831.50	26865	5.96	13	831.50	26865	5.96	13			
846.50	27015	5.75	13	844.00	26990	5.89	13			
			LTE BA	ND 26						
Chann	nel bandwi	idth: 15MI	Ηz							
Erog		PAPR	(dB)							
Freq. (MHz)	СН	16QAM	Limit							
822.50	26775	6.77	13							
831.50	26865	6.62	13							
841.50	26965	6.78	13							

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LTE BAND 30									
Chanr	nel bandv	vidth: 5MH	Ηz	Chann	el bandw	idth: 10M	Hz		
Freq.	СН	Peak-	to-	Freq.	СН	Peak-to-			
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit		
2307.50	27685	6.32	13						
2310.00	27710	6.31	13	2310.00	27710	6.10	13		
2312.50	27735	6.22	13						

			LTE BA	ND 38				
Chann	el bandv	vidth: 5MI			el bandw	vidth: 10M	Hz	
Freq. (MHz)		PAPR	(dB)	Eroa		PAPR	(dB)	
	СН	16QAM	Limit	Freq. (MHz)	СН	16QAM	Limit	
2572.50	37775	8.79	13	2575.00	37800	7.19	13	
2595.00	38000	10.05	13	2595.00	38000	11.14	13	
2617.50	38225	11.41	13	2615.00	38200	9.18	13	
			LTE BA	AND 38				
Chann	el bandw	idth: 15M	Hz	Channel bandwidth: 20MHz				
Freq.		PAPR	(dB)	Freq.		PAPR (dB)		
(MHz)	СН	16QAM	Limit	(MHz)	CH	16QAM	Limit	
2577.50	37825	11.97	13	2580.00	37850	11.41	13	
2595.00	38000	9.90	13	2595.00	38000	10.89	13	
2612.50	38175	10.14	13	2610.00	38150	11.43	13	

			LTE BA	ND 41			
Chan	nel bandw	vidth: 5M⊦	lz	Chann	el bandw	idth: 10MI	Ηz
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR (dB)	
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit
2498.50	39675	10.43	13	2501.00	39700	8.43	13
2593.00	40620	10.22	13	2593.00	40620	8.39	13
2687.50	41565	10.52	13	2685.00	41540	10.08	13
			LTE BA	ND 41			
Chann	el bandwi	dth: 15MI	Ηz	Channel bandwidth: 20MHz			
Freq.	СН	PAPR	(dB)	Freq.	СН	PAPR	(dB)
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit
2503.50	39725	8.33	13	2506.00	39750	11.40	13
2593.00	40620	8.43	13	2593.00	40620	11.65	13
2682.50	41515	9.98	13	2680.00	41490	10.23	13

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			LTE BA	AND 66						
Chann	el bandwi	dth: 1.4M	Hz	Channel bandwidth: 3MHz						
Freq.	СН	Peak-	to-	Freq.	СН	Peak-to-				
(MHz)	СП	16QAM	Limit	(MHz)	СП	16QAM	Limit			
1710.70	131979	6.65	13	1711.50	131987	6.43	13			
1745.00	132322	6.70	13	1745.00	132322	6.62	13			
1779.30	132665	6.49	13	1778.50	132657	6.34	13			
LTE BAND 66										
Channel bandwidth: 5MHz				Channel bandwidth: 10MHz			Ηz			
Freq.	СН	Peak-	to-	Freq.	СН	Peak-to-				
(MHz)	СП	16QAM	Limit	(MHz)		16QAM	Limit			
1712.50	131997	6.35	13	1715.00	132022	6.20	13			
1745.00	132322	6.45	13	1745.00	132322	6.24	13			
1777.50	132647	6.26	13	1775.00	132622	6.16	13			
			LTE BA	AND 66						
Chann	el bandwi	dth: 15MI	Ηz	Chanr	el bandw	idth: 20MF	Ηz			
Freq.	СН	Peak-	to-	Freq.	СН	Peak-	to-			
(MHz)	Сп	16QAM	Limit	(MHz)	Сп	16QAM	Limit			
1717.50	132047	6.68	13	1720.00	132072	7.05	13			
1745.00	132322	6.70	13	1745.00	132322	7.08	13			
1772.50	132597	6.70	13	1770.00	132572	7.14	13			

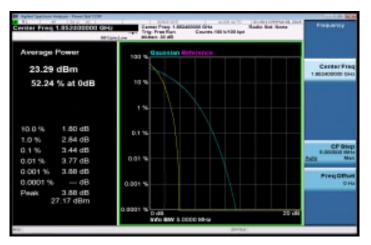
# **Measurement Results:**

Please refer to next page.

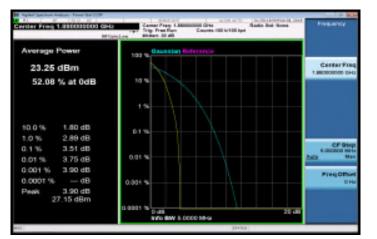
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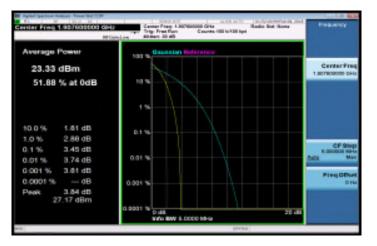
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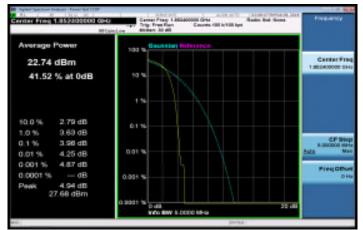
#### WCDMA B2 MidCH9400-1880



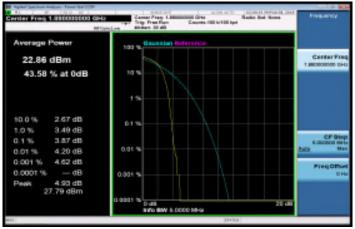
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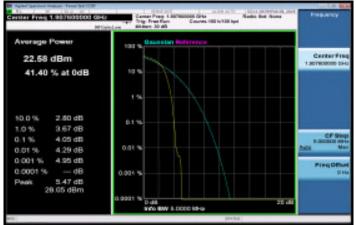
#### HSDPA B2 LowCH9262-1852.4



#### HSDPA B2 MidCH9400-1880



# HSDPA\_B2\_HighCH9538-1907.6



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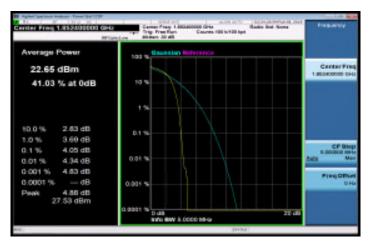
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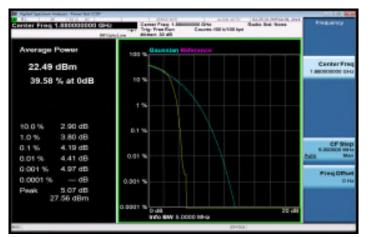
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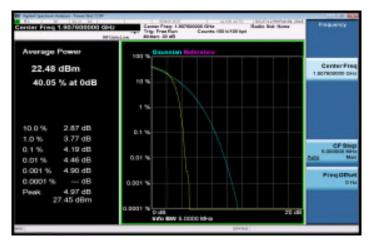
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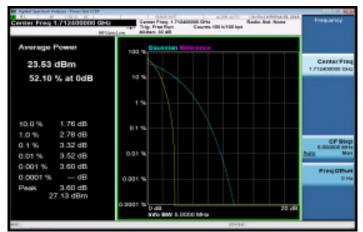
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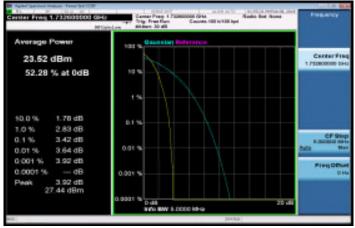
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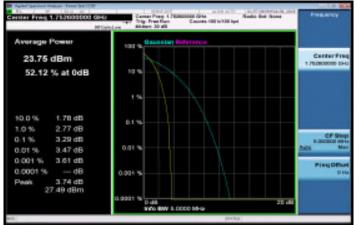
### WCDMA B4 LowCH1312-1712.4



### WCDMA\_B4\_MidCH1413-1732.6



# WCDMA\_B4\_HighCH1513-1752.6



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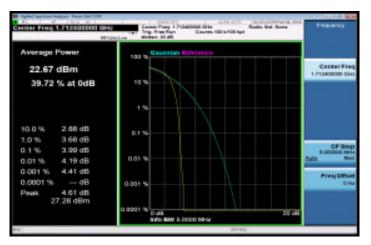
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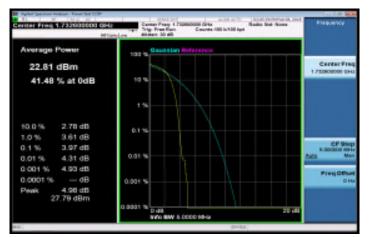
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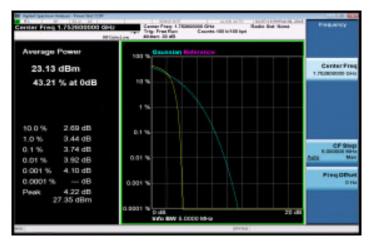
### HSDPA B4 LowCH1312-1712.4



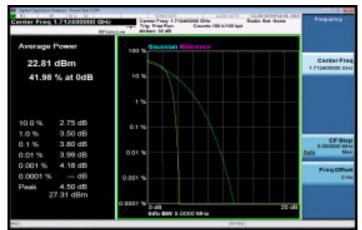
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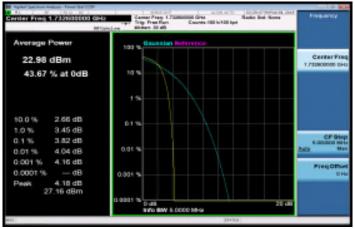
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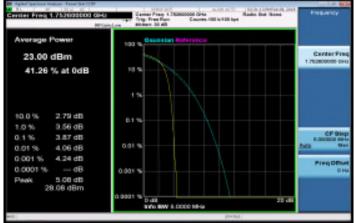
### HSUPA B4 LowCH1312-1712.4



### HSUPA\_B4\_MidCH1413-1732.6



# HSUPA\_B4\_HighCH1513-1752.6



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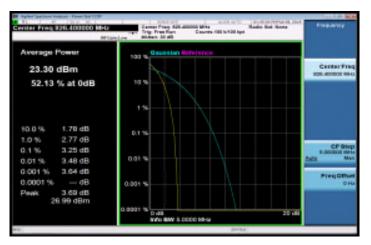
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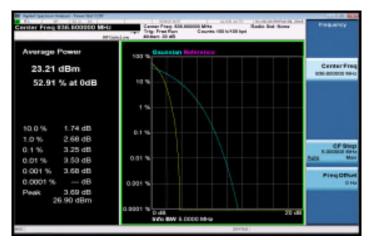
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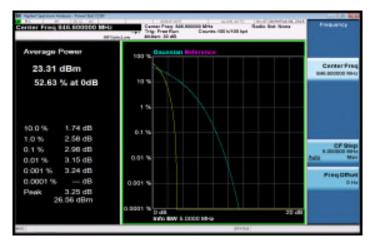
#### WCDMA B5 LowCH4132-826.4



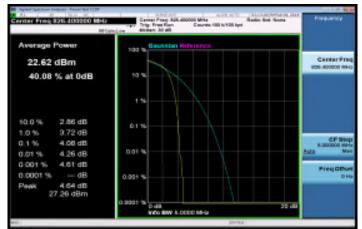
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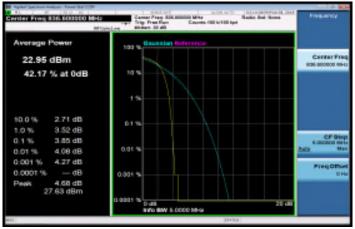
# WCDMA\_B5\_HighCH4233-846.6



### HSDPA B5 LowCH4132-826.4



### HSDPA\_B5\_MidCH4183-836.6



# HSDPA\_B5\_HighCH4233-846.6



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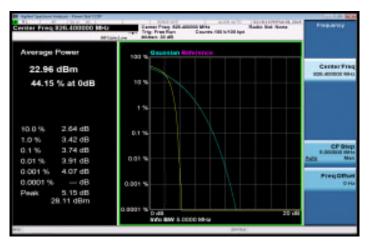
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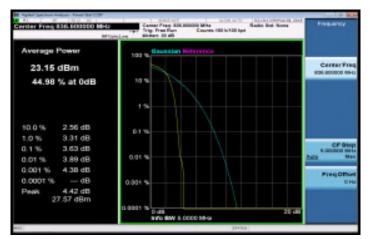
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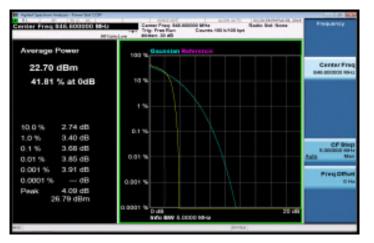
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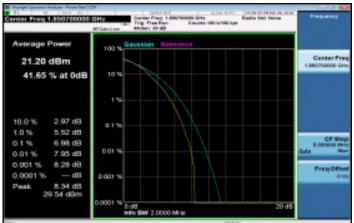


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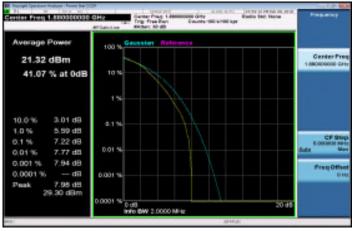


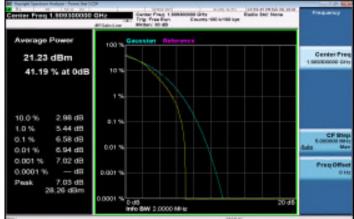


LTE Band2 1 4MHz 16QAM 6 0 LowCH18607-1850.7

## 3044(B)

#### LTE\_Band2\_1\_4MHz\_16QAM\_6\_0\_MidCH18900-1880





LTE\_Band2\_1\_4MHz\_16QAM\_6\_0\_HighCH19193-1909.3

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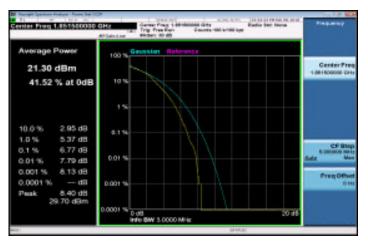
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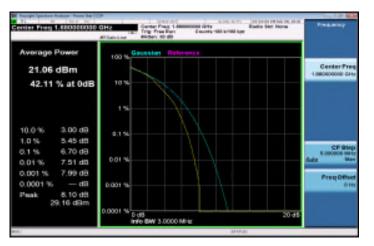
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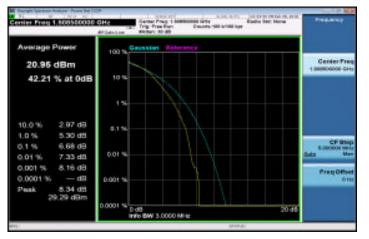
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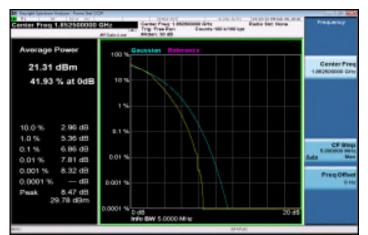


LTE\_Band2\_3MHz\_16QAM\_15\_0\_MidCH18900-1880



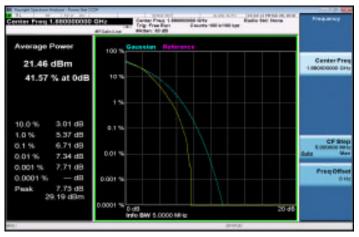
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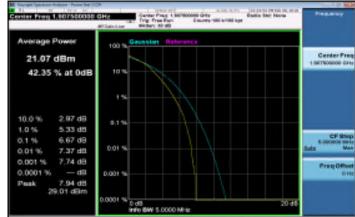




LTE Band2 5MHz 16QAM 25 0 LowCH18625-1852.5

# LTE\_Band2\_5MHz\_16QAM\_25\_0\_MidCH18900-1880





LTE\_Band2\_5MHz\_16QAM\_25\_0\_HighCH19175-1907.5

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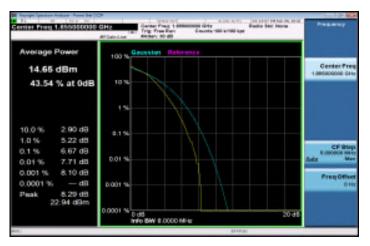
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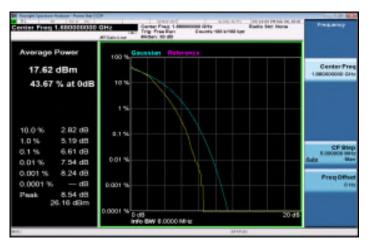
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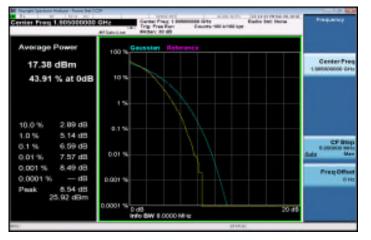
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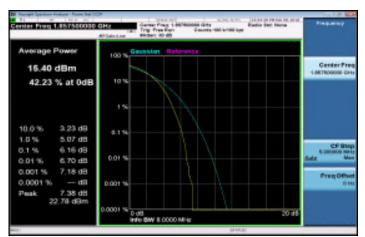


LTE\_Band2\_10MHz\_16QAM\_50\_0\_MidCH18900-1880



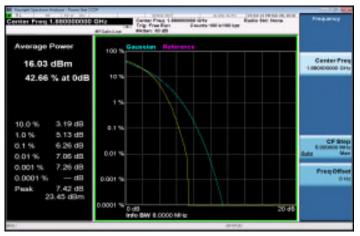
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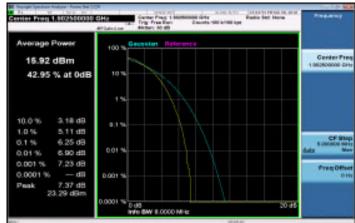




LTE Band2 15MHz 16QAM 75 0 LowCH18675-1857.5

# LTE\_Band2\_15MHz\_16QAM\_75\_0\_MidCH18900-1880





LTE\_Band2\_15MHz\_16QAM\_75\_0\_HighCH19125-1902.5

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