

# Report No.: ER/2017/30117 Page 203 of 340

#### 30MHz~3GHz\_Band12 3MHz\_QPSK 1 0\_LowCH23025-700.5

### 3GHz~10GHz\_Band12 3MHz\_QPSK 1 0\_MidCH23095-707.5

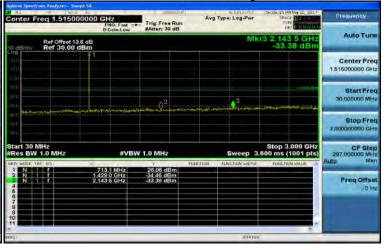
Center Freq 1.51500	Ac	AUGRAUTO DEDB.06 IM Mar 22, 2017 Avg Type: Log-Pwr Trace Topo Type Der Publicht	Frequency	Center Freq 5.5000000	S Internet State	AUGANTO DEDBARM Mar 22, 2017 Avg Type: Log-Pwr TRACE DE CONT Der Control De C	Frequency
to deraw Ref Offset 13. Ref 30.00 d	.6 dB IBm	Mkr3 2.101 5 GHz -32.91 dBm	Auto Tune	10 dEvalv Ref Offset 13.6 d Ref 30.00 dBn	iB m	Mkr1 5.597 GHz -28.27 dBm	Auto Tune
	¥1		Center Freq 1,516000000 GHz				Center Freq 6,50000000 GHz
-1000 2000 -2000	and in source and and source of the source o	3 Set Sperie 4, subtle set Sperie de la State St	Start Freq 30,000000 MHz	(0)r	ويالى له المراجع المالية المراجع	101750 مى ئەللەرلەر بەرىيە بىرى ئېچىلەر بەللەر بەللەر بىرى ئېچىلەر بەللەر بىرى	Start Freq 3,000000000 GHa
ACD Healtheadly Agentication			Stop Freq 3.00000000 GHz	100			Stop Freq 10 00000000 GHz
Start 30 MHz #Res BW 1.0 MHz	#VBW 1.0 MHz	Stop 3.000 GHz Sweep 3.600 ms (1001 pts)	CF Step 297.000000 MHz Auto Man	Start 3.000 GHz #Res BW 1.0 MHz	#VBW 1.0 MHz	Sweep 11.67 ms (1001 pts)	CF Step 700.000000 MHz Auto Man
1 N 1 F N 1 F N 1 F 3 N 1 F	699.3 MHz 25.80 dBm 1.401 0 GHz -34.21 dBm 2.101 5 GHz -32.91 dBm		Freq Offset 0 Hz		5.597 GHz .28.27 dBm		Freq Offset
7 9 10				7 9 10 11			
(DRM		STATUS		MENCI		STATUS	

#### 3GHz~10GHz\_Band12 3MHz\_QPSK 1 0\_LowCH23025-700.5

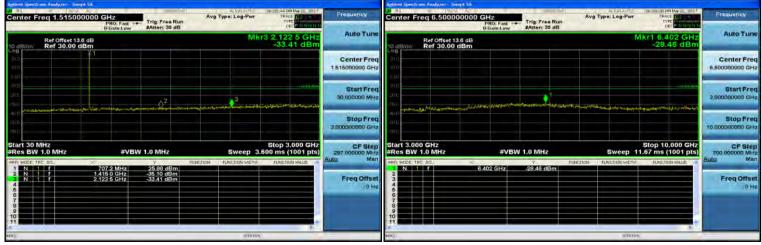


### 30MHz~3GHz\_Band12 3MHz\_QPSK 1 0\_MidCH23095-707.5

#### 30MHz~3GHz\_Band12 3MHz\_QPSK 1 0\_HighCH23165-714.5



#### 3GHz~10GHz\_Band12 3MHz\_QPSK 1 0\_HighCH23165-714.5



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f (886-2) 2298-0488
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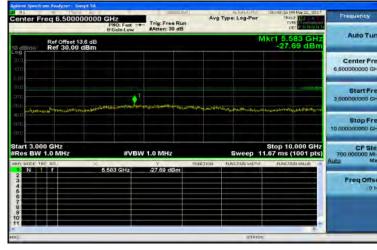
# Report No.: ER/2017/30117 Page 204 of 340

#### 30MHz~3GHz\_Band12 5MHz\_QPSK 1 0\_LowCH23035-701.5

### 3GHz~10GHz\_Band12 5MHz\_QPSK 1 0\_MidCH23095-707.5

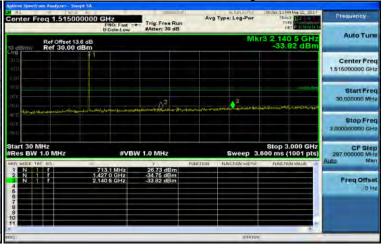
Center Freq 1.51500	AC - INVESTIGAT	ALGRAUTO (BERRATE IM Mar 20, 2017 Avg Type: Log Pwr TRACE (10, 2017 December 10, 2017) Cer Protocol	Frequency	Center Freq 6.500000000	GH2 PR0: Fast IFGain:Low #Atten: 30 dB	ALGRAUTS (BENG 54 104 Mar 22, 2017 Avg Type: Log Pwr TRACE (D = 5 THE NAME OF THE DATA OF	Frequency
10 dBraw Ref Offset 13.	.6 dB <b>iBm</b>	Mkr3 2.104 5 GHz -33.97 dBm	Auto Tune	10 dB/div Ref Offset 13.6 dB Ref 30.00 dBm		Mkr1 5.688 GHz -27.02 dBm	Auto Tune
2x0 100	¥1		Center Freq 1,51600000 GHz	200 100 0.00			Center Freq 6,50000000 GHz
-(0.0 200 	Construction of the second sec		Start Freq 30,000000 MHz	200- 202-		Constraint of the state of the	Start Freq 3,000000000 GHz
AD D AND AN A CONTRACT AND A CONTRAC			Stop Freq 3.00000000 GHz				Stop Freq 10.00000000 GHz
Start 30 MHz #Res BW 1.0 MHz	#VBW 1.0 MHz	Stop 3.000 GHz Sweep 3.600 ms (1001 pts)	CF Step 297.000000 MHz Auto Man	Start 3.000 GHz #Res BW 1.0 MHz	#VBW 1.0 MHz	Stop 10.000 GHz Sweep 11.67 ms (1001 pts)	CF Step 700 000000 MHz Auto Man
1 N N 1 F	698 3 MHz 25.01 dBm 1.403 0 GHz -33.80 dBm 2.104 5 GHz -33.97 dBm		Freq Offset 0 Hz	2	5.689 GHz -27.02 dBm		Freq Offset 0 Hz
9 10 11 11		STATUS		9 10 11 11		STATUS	

#### 3GHz~10GHz\_Band12 5MHz\_QPSK 1 0\_LowCH23035-701.5

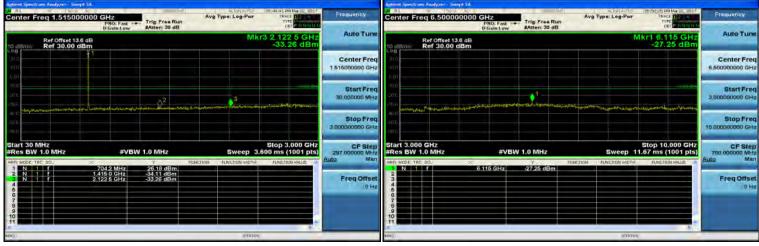


### 30MHz~3GHz\_Band12 5MHz\_QPSK 1 0\_MidCH23095-707.5

#### 30MHz~3GHz\_Band12 5MHz\_QPSK 1 0\_HighCH23155-713.5



### 3GHz~10GHz\_Band12 5MHz\_QPSK 1 0\_HighCH23155-713.5



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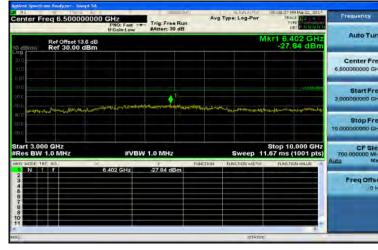
# Report No.: ER/2017/30117 Page 205 of 340

#### 30MHz~3GHz\_Band12 10MHz\_QPSK 1 0\_LowCH23060-704

### 3GHz~10GHz\_Band12 10MHz\_QPSK 1 0\_MidCH23095-707.5

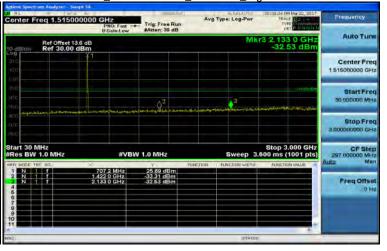
Center Freq 1.51500	AC SHOELD I	AUGRAUTO (5500,141M Mar 22, 2017 Avg Type: Log Pwr Trace (12, 2017 Tyte Cer Province)	Frequency	Figuritow #Atten: 30 dB Der Bit	Frequency
to dB/div Ref 30.00 d	.6 dB IBm	Mkr3 2.112 0 GHz -33.19 dBm		Ref Offset 13.6 dB Mkr1 6.402	
210 100	21		Center Freq 1,51600000 GHz		Center Freq 6,50000000 GHz
-1000 -2010 -3010	0 <sup>2</sup>	3 10,000 10,000 10,000 10,000 10,000 10,000 10,000	Start Freq 30,000000 MHz	1 1 1 1 1 1 1 1 1 1 1 1 1 1	Start Freq 3,000000000 GHz
40.0 0 00 00000000000000000000000000000			Stop Freq 3 00000000 GHz	HUU I	Stop Freq 10 00000000 GHz
Start 30 MHz #Res BW 1.0 MHz	#VBW 1.0 MHz	Sweep 3.600 ms (1001 pts)	CF Step 297.000000 MHz Auto Man	Start 3.000 GHz         Stop 10.000           #Res BW 1.0 MHz         #VBW 1.0 MHz         Sweep 11.67 ms (100'           wm woot First         x         FullEnder 401'	pts) 700.000000 MHz
1 N 1 F 2 N 1 F 3 N 1 F 4 6	701 2 MHz 26.02 dBm 1.409 0 GHz -35.44 dBm 2.112 0 GHz -33.19 dBm		Freq Offset 0 Hz	1         N         1         F         6.402 GHz         -28.00 dBm           2         3         3         4         5         5         5	Freq Offset 0 Hz
7 8 9 10				7 8 9 9 10 11	
(COM		STATUS		MSQ BTATUS	

#### 3GHz~10GHz\_Band12 10MHz\_QPSK 1 0\_LowCH23060-704

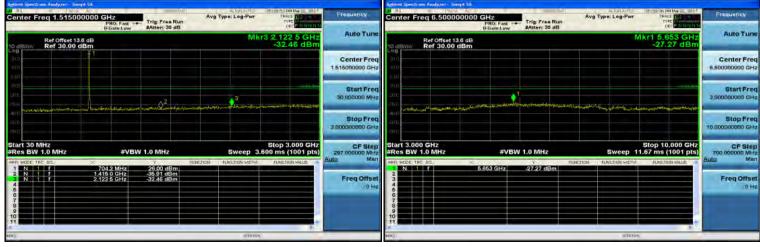


#### 30MHz~3GHz\_Band12 10MHz\_QPSK 1 0\_MidCH23095-707.5

### 30MHz~3GHz\_Band12 10MHz\_QPSK 1 0\_HighCH23130-711



#### 3GHz~10GHz\_Band12 10MHz\_QPSK 1 0\_HighCH23130-711



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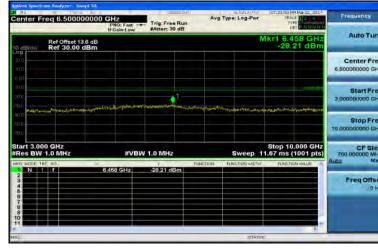
# Report No.: ER/2017/30117 Page 206 of 340

#### 30MHz~3GHz\_Band13 5MHz\_QPSK 1 0\_LowCH23205-779.5

### 3GHz~10GHz\_Band13 5MHz\_QPSK 1 0\_MidCH23230-782

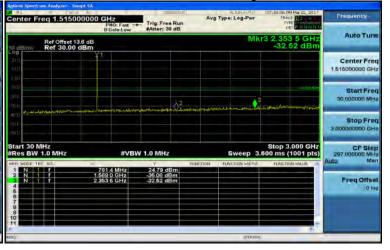
Center Freq 1.515000	AC	AUDVANTO 107(33)46161 Mar 22, 2017 Avg Type: Log-Pwr 1686E 112 - 9 Der Pwr Der Pwr	Frequency	Agence Spectroe Analyzer Song 5 AA R RL Contor Freq 5,500000000 GH2 PR0: Fast IF63 int. sw F63 int. sw	Frequency
to dB/div Ref 30.00 d		Mkr3 2,338 5 GHz -32.83 dBm	Auto Tune	Ref Offset 13.6 dB Mkr1 5.639 GH	
3x0 100 0.00			Center Freq 1,516000000 GHz		Center Freq 6,500000000 GHz
-1010 -2010 -3560		and hand all has been all has b	Start Freq 30,000000 MHz	1 Construction of the second s	Start Freq 3,000000000 GHz
Au D Au D Au D			Stop Freq 3.00000000 GHz		Stop Freq 10 00000000 GHz
Start 30 MHz #Res BW 1.0 MHz	#VBW 1.0 MHz	Stop 3.000 GHz Sweep 3.600 ms (1001 pts)	CF Step 297.000000 MHz Auto Man	Start 3.000 GHz         Stop 10.000 Gi           #Res BW 1.0 MHz         #VBW 1.0 MHz         Sweep 11.07 ms (1001 pc)           why woor the Data         xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	S) CF Step 700 000000 MHz Auto Man
1 2 1 4 6 6 7	778 4 MHz 23.74 dBm 1.559 0 GHz -34.98 dBm 2.338 5 GHz -32.83 dBm		Freq Offset 0 Hz	1 N 1 F 5.639 GHz 28 28 dBm	Freq Offset 0 Ha
8 9 10 11					
(Color		STATUS		eratus	

#### 3GHz~10GHz\_Band13 5MHz\_QPSK 1 0\_LowCH23205-779.5



#### 30MHz~3GHz\_Band13 5MHz\_QPSK 1 0\_MidCH23230-782

#### 30MHz~3GHz\_Band13 5MHz\_QPSK 1 0\_HighCH23255-784.5



#### 3GHz~10GHz\_Band13 5MHz\_QPSK 1 0\_HighCH23255-784.5



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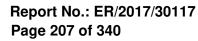
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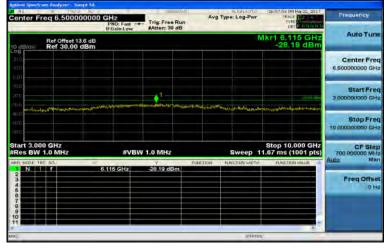


#### 30MHz~3GHz\_Band13 10MHz\_QPSK 1 0\_MidCH23230-782

### 763.3MHz~775MHz\_Band13 5MHz\_QPSK 1 0\_LowCH23205-779.5

Agilénii Spectrum Analyzer - Seept SA	Agilene Spectrum Analyzer - Sempt SA			
Conter Freq 1.515000000 GHz Avg Type Log-Per The Run Avg Type Log-Per T	Frequency	Center Freq 769,000000 MHz PRO: Wide If Gaining If Gaining	Frequency	
Ref Offset 13.6 dB Mkr3 2.348 0 GHz 10 dB/dW Ref 30.00 dBm -33.56 dBm	Auto Tune	Ref Officet 13.6 dB Mkr1 774,484 MHz 10 dB/dav Ref 30.00 dBm -56.71 dBm	Auto Tune	
	Center Freq 1,516000000 GHz		Center Freq 769 000000 MHz	
	Start Freq 30,000000 MHz	-(00 -(0) -(0) -(0) -(0) -(0) -(0) -(0)	Start Freq 763,000000 MHz	
	Stop Freq 3.00000000 GHz	non ann Ann M. A. Shi wa muabhana shi Utangiki Navaratan. Anif ikina an muana antiana tani andara	Stop Freq 775.00000 MHz	
Start 30 MHz Stop 3.000 GHz #Res BW 1.0 MHz #VBW 1.0 MHz Sweep 3.000 (100 ptc) #Res BW 1.0 MHz weep 3.000 (100 ptc)		Start 763.000 MHz Stop 775.000 MHz #Res BW 6.8 kHz 또 Sweep 989.5 ms (100 pts) ₩₩ https://www.sec.sci.com/se	CF Step 1 200000 MHz Auto Man	
1 N 1 f 7794.MHz 23.54 dBm 2 N 1 f 1564.0 fHz - 335.0 dBm N 1 f 2.346 0 GHz - 335.6 dBm 4 6 6	Freq Offset 0 Hz	1 N 1 F 774.484 MHz .56.71 dBm	Freq Offset 0 Hz	

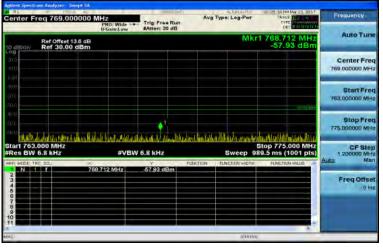
#### 3GHz~10GHz\_Band13 10MHz\_QPSK 1 0\_MidCH23230-782



#### 793MHz~805MHz\_Band13 5MHz\_QPSK 1 0\_LowCH23205-779.5

er Freq 799,000000 M			Frequency
Ref Offset 13.6 dB Ref 30.00 dBm		Mkr1 795,052 M -58.28 dl	
			Center Free 799.000000 MH
			Start Fred 793.000000 MH
1 Alma Alay is also factors is t	And Ballan and a state of the state	nde Mallina en la afait Milda adamat de la Manadalite de	Stop Fred
793.000 MHz BW 6.8 kHz dde 18c sd. 00 N 1 f 798	#VBW 6.8 kHz	Stop 805.000 h Sweep 989.5 ms (1001 PONCTION INTERNATION VALUE	
	5002 0112		Freq Offsel 0 Hz

#### 763.3MHz~775MHz\_Band13 5MHz\_QPSK 1 0\_MidCH23230-782



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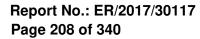
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#### 793MHz~805MHz\_Band13 5MHz\_QPSK 1 0\_MidCH23230-782

#### 763.3MHz~775MHz\_Band13 10MHz\_QPSK 1 0\_MidCH23230-782

793MHz~805MHz\_Band13 10MHz\_QPSK 1 0\_MidCH23230-782

Trig: Free Run

#VBW 6.8 kHz

Avg Type: Log-Pwr

5

3.108 N 59.41 d

Stop 805.000 M 989.5 ms (1001 p

Auto Tun

Center Fre

tartFre

opFr

CF Ste

Freq Of

Agilierst Spectrum Analyzer - Sempt SA					Agilenii Spectrum Analyzer - Seept SA				
Center Freq 799,000000 N	PNO: Wide IFGain:Low #Atten: 30 dB	Avg Type: Log-Pwr	ID2525136 JM Mar 23, 2017 TRACE TI 2 TYTE Museumouth DET E THINTERN	Frequency	Center Freq 769,000000	MH2 PNO: Wide IFGain:Low #Atten: 30 dB	Avg Type: Log-Pwr	DESTRICT IN MAR 23, 2017 TRACE 12 TVTC DUMANTANY DET STUDIER	Frequency
10 dB/div Ref 0ffset 13.6 dB Ref 30.00 dBm		Mkr	1 803 224 MHz -56.71 dBm	Auto Tune	10 dB/aiv Ref Offset 13.6 dB Ref 30.00 dBm		Mkr	-56.92 dBm	Auto Tuni
210 100				Center Freq 799.000000 MHz	210 100				Center Fre 769 000000 MH
-1000 			ະແມ	Start Freq 793,00000 MHz	-1009 			-200 april	Start Fre 763.000000 MH
and and the static static static	Routh for colors have been a shi ubaa	incea Wills a live double said	attlburt Lantit e	Stop Freq 885.000000 MHz	en en andre	1 Nolandathalala analanda i alta	to, a pla paladollo, michelda	La destactana delitra e	Stop Free 775.000000 MH
Start 793.000 MHz #Res BW 6.8 kHz		Sweep 98	Stop 805.000 MHz 89.5 ms (1001 pts) FUNICITION VALUE	CF Step 1 200000 MHz Auto Man	Start 763.000 MHz #Res BW 6.8 kHz MKN MODE THE SOL		Sweep 98	stop 775.000 MHz 9.5 ms (1001 pts)	CF Ster 1 200000 MH Auto Ma
1 N 1 F 803	3.224 MHz 56.71 dBm			Freq Offset 0 Hz	1 N 1 F 7 2 3 4	67.104 MHz 56 92 dBm			Freq Offse 0 H
7 8 9 10 11					57 89 99 10 11				
MINCI		STATOS	-		a) (pena		STATUS	-	

799.000

Ref Offset 13.6 dB Ref 30.00 dBm

rt 793.000 MH

#### 763.3MHz~775MHz\_Band13 5MHz\_QPSK 1 0\_HighCH23255-784.5

Frequency	DECE2030 PM Mar 23, 2017 TRACE 12 20 TVFE ADDRESS	Avg Type: Log-Pwr			req 769,0000	Center F	
Auto T	Ref Offset 13.6 dB Mkr1 771.856 MHz 10 dB/dw Ref 30.00 dBm -58.25 dBm						
Center F 769 000000						310 310	
Start F 763,00000						-10.0 2010	
Ştop F 775.00000	all control in the second	1 a while and an advantage	Maria (1) Altoria			-5/10	
CF 5 1 200000 Auto	Stop 775.000 MHz 89.5 ms (1001 pts)		6.8 kHz	#VBW		Start 763. #Res BW	
FreqOr			-58.25 dBm	771,056 MHz		1 N 1	
						7 8 9 10	
		STATUS				(DR)	

### 793MHz~805MHz\_Band13 5MHz\_QPSK 1 0\_HighCH23255-784.5

enter Freq 799,00000	PNO: Wide -+-	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	ICC22303 MM Mar 23, 2017 NRACE 715 Tyte DRT 5 MM Mar 23, 2017	Frequency
Ref Offset 13.6 dE	3		Mkr	798,364 MHz -58.27 dBm	Auto Tun
000 010 010					Center Fre 799.000000 MH
0.0 0.0 0.0				201151	Start Fre 793,000000 MH
	าสาราชีน		notestion and of these meric	an at an and the Westman of	Stop Fre
	s			top 805.000 MHz 9.5 ms (1001 pts)	CF Ste 1 200000 Mi-
234666788	790.364 MHz	-58:27 dBm			Freq Offse 0 H
9					

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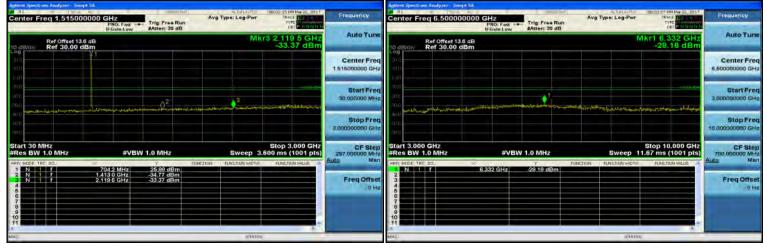
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www.tw.sgs.com
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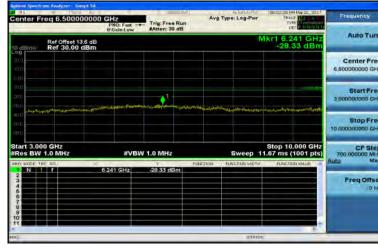
# Report No.: ER/2017/30117 Page 209 of 340

#### 30MHz~3GHz\_Band17 5MHz\_QPSK 1 0\_LowCH23755-706.5

### 3GHz~10GHz\_Band17 5MHz\_QPSK 1 0\_MidCH23790-710



#### 3GHz~10GHz\_Band17 5MHz\_QPSK 1 0\_LowCH23755-706.5

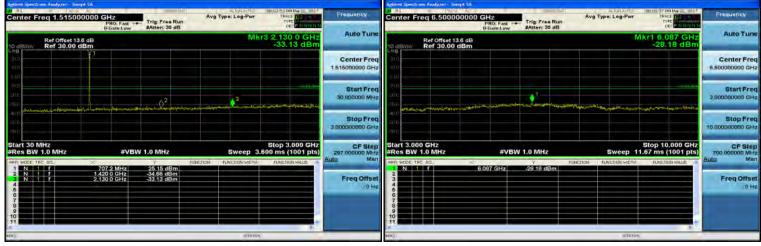


#### 30MHz~3GHz\_Band17 5MHz\_QPSK 1 0\_MidCH23790-710

#### 30MHz~3GHz\_Band17 5MHz\_QPSK 1 0\_HighCH23825-713.5



#### 3GHz~10GHz\_Band17 5MHz\_QPSK 1 0\_HighCH23825-713.5



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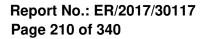
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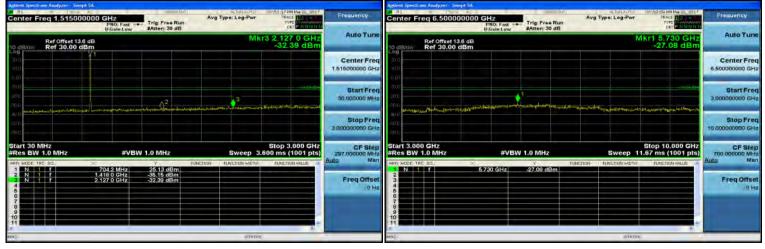
f (886-2) 2298-0488



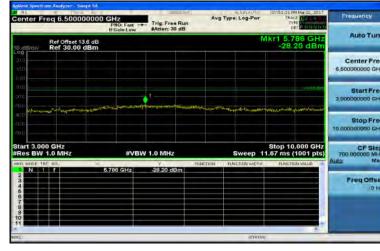


#### 30MHz~3GHz\_Band17 10MHz\_QPSK 1 0\_LowCH23780-709

### 3GHz~10GHz\_Band17 10MHz\_QPSK 1 0\_MidCH23790-710

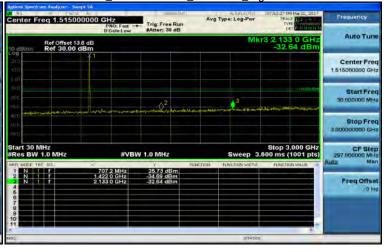


#### 3GHz~10GHz\_Band17 10MHz\_QPSK 1 0\_LowCH23780-709

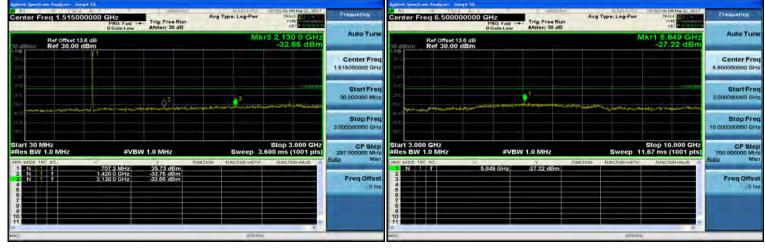


#### 30MHz~3GHz\_Band17 10MHz\_QPSK 1 0\_MidCH23790-710

### 30MHz~3GHz\_Band17 10MHz\_QPSK 1 0\_HighCH23800-711



#### 3GHz~10GHz\_Band17 10MHz\_QPSK 1 0\_HighCH23800-711



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

#### 10.1. Standard Applicable

According to FCC §2.1053,

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

FCC §27.53 (m) (4) shall not be less than 55 +10log(mean output power in watt) dBc below the mean power output outside a license's frequency block (-25dBm).

§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.

Frequency (MHz)	Attenuation (dB)
<2200	43 + 10 log <sub>10</sub> (p)
2200 - 2288	70 + 10 log <sub>10</sub> (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	$43 + 10 \log_{10}(p)$
2305 - 2320	43 + 10 log <sub>10</sub> (p) <sup>Note</sup>
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	$55 + 10 \log_{10}(p)$
2345 - 2360	43 + 10 log <sub>10</sub> (p) <sup>Note</sup>
2360 - 2365	$43 \pm 10 \log_{10}(p)$
2365 - 2395	70 + 10 log <sub>10</sub> (p)
>2395	43 + 10 log10(p)

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

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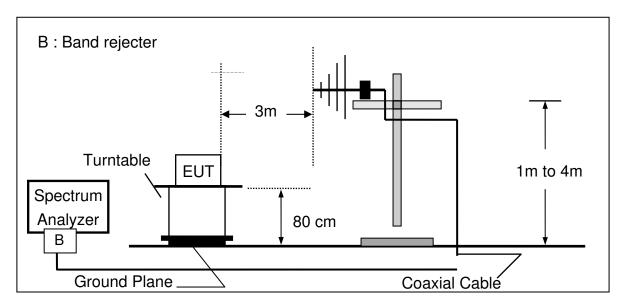
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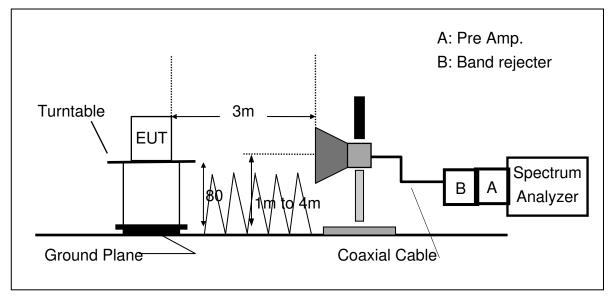
Note: Measured at the edges of the highest and lowest frequency range(s) in which the equipment is designed to operate. See Section 5.2 for the permitted frequency ranges for various equipment types.

#### 10.2. EUT Setup

Radiated Emission Test Set-Up, Frequency Below 1000MHz



Radiated Emission Test Set-UP Frequency Over 1 GHz



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# 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)

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

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#### **Measurement Equipment Used:** 10.4.

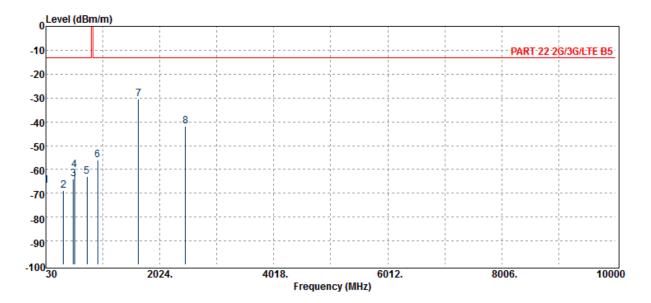
ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber								
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.			
EMI Test Receiver	R&S	ESCI7	100760	05/10/2016	05/09/2017			
Spectrum Analyzer	Agilent	E4446A	MY51100003	04/21/2016	04/20/2017			
Loop Antenna	ETS-Lindgren	6502	148045	09/20/2016	09/19/2017			
Bilog Antenna	SCHWAZBECK	VULB9168	378	12/19/2016	12/18/2017			
Horn Antenna	Schwarzbeck	BBHA9120D	1441	08/01/2016	07/31/2017			
Pre-Amplifier	Agilent	8447D	2944A07676	01/05/2017	01/04/2018			
Pre-Amplifier	EMC Instruments Corp.	EMC0126530	980038	01/05/2017	01/04/2018			
Turn Table	HD	DT420	N/A	N.C.R	N.C.R			
Antenna Tower	ChamPro	AM-BS-4500-B	060776-ABS	N.C.R	N.C.R			
Controller	ChamPro	EM1000	60776	N.C.R	N.C.R			
Low Loss Cable	Huber Suhner	966_RX	9	01/05/2017	01/04/2018			
3m Site NSA	SGS	966 chamber	N/A	07/01/2016	06/30/2017			
Low Loss Cable	Huber Suhner	966 TX	1	01/05/2017	01/04/2018			
Horn Antenna	Schwarzbeck	BBHA9170	184	12/12/2016	12/11/2017			
Pre-Amplifier	EMC Instruments Corp.	EMC184045	980135	01/05/2017	01/04/2018			
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2017	02/10/2018			
Radio Communication Analyer	Anritsu	MT8820C	6201465317	01/03/2017	01/02/2018			



#### 10.5. **Measurement Result:**

# **Radiated Spurious Emission Measurement Result: GPRS 850 Mode**

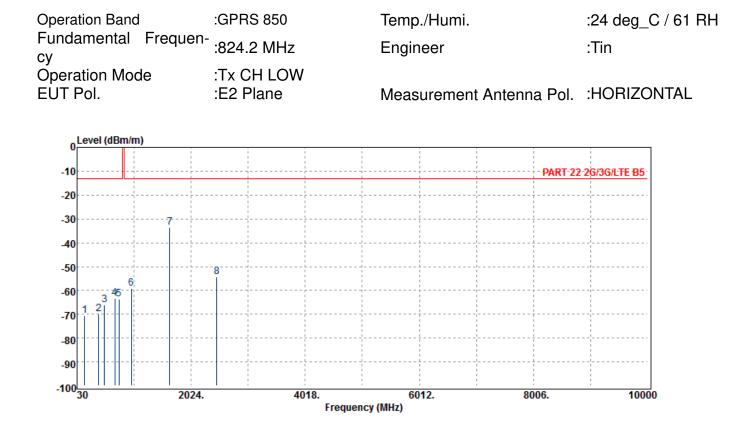
Operation Band	:GPRS 850	Temp./Humi.	:24 deg_C / 61 RH
Fundamental Frequen- cv	:824.2 MHz	Engineer	:Tin
Operation Mode EUT Pol.	:Tx CH LOW :E2 Plane	Measurement Antenna Pol.	:VERTICAL



Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
32.91	S	-66.70	-51.64	-14.09	-0.97	-13.00	-53.70
335.55	S	-69.02	-70.88	3.80	-1.93	-13.00	-56.02
510.15	S	-64.04	-65.50	3.80	-2.34	-13.00	-51.04
532.46	S	-60.14	-61.30	3.68	-2.52	-13.00	-47.14
750.71	S	-63.03	-63.14	3.18	-3.07	-13.00	-50.03
934.04	S	-55.91	-55.79	3.11	-3.23	-13.00	-42.91
1648.40	Н	-30.57	-33.46	7.11	-4.22	-13.00	-17.57
2472.60	Н	-41.72	-45.23	8.73	-5.22	-13.00	-28.72

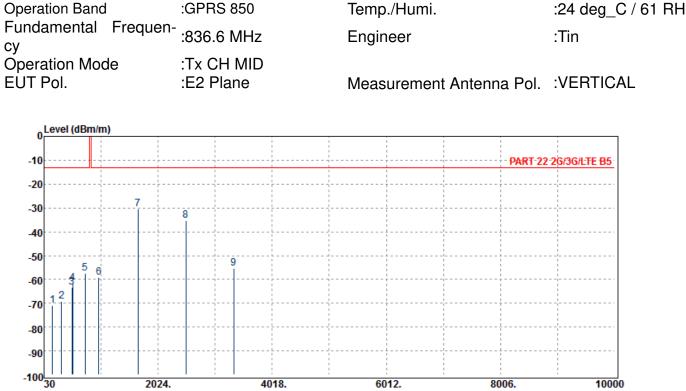


Report No.: ER/2017/30117 Page 216 of 340



Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
162.89	S	-70.76	-67.85	-1.42	-1.49	-13.00	-57.76
406.36	S	-69.99	-71.38	3.80	-2.42	-13.00	-56.99
508.21	S	-66.08	-67.55	3.81	-2.34	-13.00	-53.08
689.60	S	-63.46	-63.76	3.09	-2.79	-13.00	-50.46
765.26	S	-63.56	-63.81	3.23	-2.98	-13.00	-50.56
978.66	S	-59.08	-59.51	3.62	-3.19	-13.00	-46.08
1648.40	Н	-33.40	-36.29	7.11	-4.22	-13.00	-20.40
2472.60	Н	-54.37	-57.88	8.73	-5.22	-13.00	-41.37





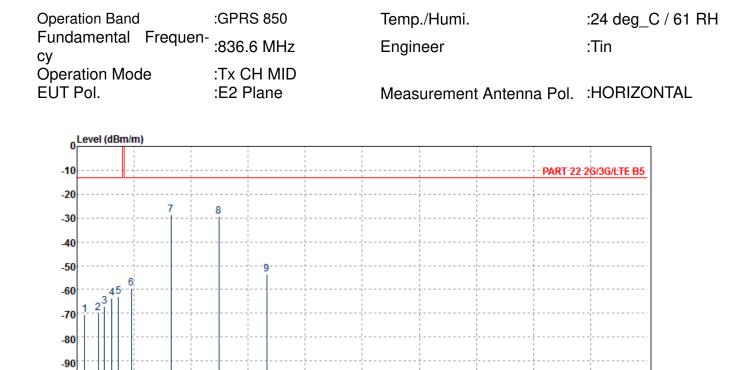
## Frequency (MHz)

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
180.35	S	-70.77	-70.16	0.95	-1.56	-13.00	-57.77
335.55	S	-69.16	-71.02	3.80	-1.93	-13.00	-56.16
515.97	S	-63.20	-64.60	3.77	-2.36	-13.00	-50.20
531.49	S	-61.46	-62.63	3.69	-2.51	-13.00	-48.46
747.80	S	-57.58	-57.67	3.18	-3.09	-13.00	-44.58
987.39	S	-59.28	-59.85	3.80	-3.23	-13.00	-46.28
1673.20	Н	-30.34	-33.24	7.20	-4.29	-13.00	-17.34
2509.80	Н	-35.29	-38.79	8.76	-5.26	-13.00	-22.29
3346.40	Н	-55.52	-59.25	9.99	-6.26	-13.00	-42.52



-100<mark>1</mark>30

2024.



#### 6012. Frequency (MHz)

8006.

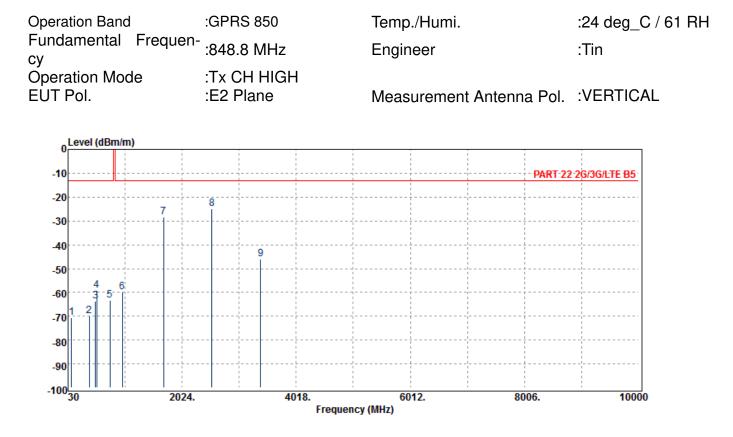
10000

4018.

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
162.89	S	-70.56	-67.64	-1.42	-1.49	-13.00	-57.56
400.54	S	-69.73	-71.17	3.82	-2.38	-13.00	-56.73
507.24	S	-67.17	-68.66	3.82	-2.33	-13.00	-54.17
638.19	S	-63.81	-64.53	3.16	-2.44	-13.00	-50.81
751.68	S	-63.06	-63.19	3.19	-3.07	-13.00	-50.06
978.66	S	-59.43	-59.86	3.62	-3.19	-13.00	-46.43
1673.20	Н	-28.77	-31.68	7.20	-4.29	-13.00	-15.77
2509.80	Н	-29.52	-33.02	8.76	-5.26	-13.00	-16.52
3346.40	Н	-53.78	-57.50	9.99	-6.26	-13.00	-40.78

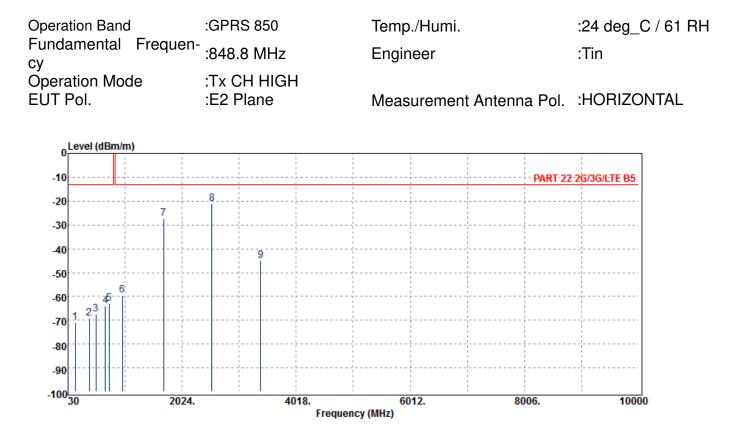


Report No.: ER/2017/30117 Page 219 of 340



Freq.	Note	ERP	SG Output Laural	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBd	Loss dB	dBm	dB
	F/N/E/3	UDIII	UDIII	UDU	uБ	UDIII	UD
93.05	S	-70.65	-68.62	-0.81	-1.22	-13.00	-57.65
398.60	S	-69.86	-71.31	3.82	-2.37	-13.00	-56.86
513.06	S	-63.75	-65.18	3.79	-2.35	-13.00	-50.75
532.46	S	-59.24	-60.40	3.68	-2.52	-13.00	-46.24
764.29	S	-63.24	-63.48	3.23	-2.99	-13.00	-50.24
977.69	S	-59.91	-60.32	3.60	-3.19	-13.00	-46.91
1697.60	Н	-28.46	-31.44	7.28	-4.31	-13.00	-15.46
2546.40	Н	-24.92	-28.40	8.81	-5.33	-13.00	-11.92
3395.20	Н	-46.03	-49.85	10.07	-6.26	-13.00	-33.03





Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
156.10	S	71.07	67.80	1 01	1 46	12.00	F9 07
401.51	S	-71.07 -69.29	-67.80 -70.72	-1.81 3.82	-1.46 -2.39	-13.00 -13.00	-58.07 -56.29
515.00	S	-67.40	-68.82	3.77	-2.36	-13.00	-54.40
684.75	S	-64.08	-64.47	3.10	-2.70	-13.00	-51.08
744.89	S	-63.11	-63.17	3.17	-3.11	-13.00	-50.11
975.75	S	-59.37	-59.75	3.56	-3.18	-13.00	-46.37
1697.60	Н	-27.38	-30.35	7.28	-4.31	-13.00	-14.38
2546.40	Н	-20.94	-24.42	8.81	-5.33	-13.00	-7.94
3395.20	Н	-44.82	-48.63	10.07	-6.26	-13.00	-31.82



#### **Radiated Spurious Emission Measurement Result: GPRS 1900 Mode Operation Band** :GPRS 1900 Temp./Humi. :22 deg\_C / 62 RH Fundamental Frequency :1850.2 MHz Engineer :Tin **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol. 0 Level (dBm/m) -10 PART-24-2G/3G/LTE-B2 -20 -30 -40 -50 4 6 -60 2 -70 -80 -90 8018. 4024. 12012. 16006. 20000

Frequency (MHz)

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
160.95	S	-68.64	-67.75	0.58	-1.48	-13.00	-55.64
366.59	S	-66.47	-70.29	6.00	-2.17	-13.00	-53.47
515.97	S	-62.19	-65.74	5.92	-2.36	-13.00	-49.19
532.46	S	-56.76	-60.07	5.83	-2.52	-13.00	-43.76
755.56	S	-60.02	-62.32	5.35	-3.04	-13.00	-47.02
977.69	S	-56.81	-59.37	5.75	-3.19	-13.00	-43.81
3700.40	H	-46.81	-52.67	12.44	-6.58	-13.00	-33.81

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/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_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 from exercising all their rights and obligations under the transaction documents. This document much paregraphic to the fulle the fulle to the fulle documents in subdulinant cannot be reproduced by the fullest extent of the law. 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



Operation Band Fundamental Frequency Operation Mode	:GPRS 1900 :1850.2 MHz :Tx CH LOW	Temp./Humi. Engineer	:22 deg_C / 62 RH :Tin
EUT Pol.	:E2 Plane	Measurement Antenna Po	I. :HORIZONTAL
Level (dBm/m)			
-10			PART-24-26/36/LTE B2
-20			
-30			
-40 7			
-50			
-60 - <del>6</del>			
-00 ₽ <sup>3</sup> -70 #			
-80			
-90			
-100 <mark>4024 -10030 4024</mark>		12012. 16006 cy (MHz)	6. 20000
Freg Note	EIBP SC	Antenna C	able Limit Margin

Freq.	note	EIRP	Output Level	Gain	Loss	LIMIL	wargin	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
170 50	C	C0 E0	<u> </u>	1 00	1 50	10.00		
173.56	S	-68.52	-68.88	1.89	-1.53	-13.00	-55.52	
246.31	S	-67.80	-71.58	5.53	-1.75	-13.00	-54.80	
478.14	S	-65.58	-69.26	5.92	-2.24	-13.00	-52.58	
629.46	S	-61.42	-64.28	5.33	-2.47	-13.00	-48.42	
749.74	S	-60.55	-62.80	5.33	-3.08	-13.00	-47.55	
978.66	S	-57.29	-59.87	5.77	-3.19	-13.00	-44.29	
3700.40	Н	-40.12	-45.98	12.44	-6.58	-13.00	-27.12	



Funda	ation Mo	I Frequency	:GPRS 1900 :1880 MHz :Tx CH MID :E2 Plane		Temp./Humi. Engineer Measurement Antenna Pol.		nna Pol.	:22 deg_C / :Tin :VERTICAL	62 RH
0	Level (dB	m/m)							
-10							PART-24	2G/3G/LTE B2	
-20									
-30		, , , , , , , , , , , , , , , , , , ,	       						
-40			         						
-50	4 6	7	       			         			
-60	4 6 1		       	·		           			
-70									
-80									
-90						 			
-100	30 30	<b>4024.</b>	:	3018. Frequenc	: 1201 y (MHz)	12.	16006.	20000	
Fre	q.	Note	EIRP	SG Output L	.evel	Antenna Gain	Cable Loss	Limit	Margin
N / I	1-		dDm	่สุดค			dD	dDm	dD

MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
91.11	S	-68.45	-68.82	1.58	-1.21	-13.00	-55.45
330.70	S	-67.21	-71.22	5.92	-1.91	-13.00	-54.21
507.24	S	-61.98	-65.62	5.97	-2.33	-13.00	-48.98
531.49	S	-56.10	-59.42	5.84	-2.51	-13.00	-43.10
798.24	S	-61.28	-63.86	5.49	-2.90	-13.00	-48.28
977.69	S	-57.53	-60.10	5.75	-3.19	-13.00	-44.53
3760.00	Н	-54.32	-60.18	12.45	-6.60	-13.00	-41.32



Operation B Fundamenta Operation M EUT Pol.	al Frequency	:GPRS 1900 :1880 MHz :Tx CH MID :E2 Plane		Temp./Hu Engineer Measurer	imi. ment Anteni		:22 deg_C / 6 :Tin :HORIZONT/	
o Level (di	Bm/m)							
-10						PART-24	2G/3G/LTE B2	
<mark>-20</mark>					       	1 1 1 1 1 1 1		
-30				·				
-40								
-50					       			
-60 -31	7							
-70								
-80								
-90								
-10030					1	1		
30	4024.	8	018. Frequency	12012. y (MHz)		16006.	20000	
Freq.	Note	EIRP	SG Output L		Antenna Gain	Cable Loss	Limit	Margin

			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
172.59	S	-68.98	-69.16	1.71	-1.53	-13.00	-55.98	
236.61	S	-66.19	-69.83	5.38	-1.73	-13.00	-53.19	
513.06	S	-65.03	-68.61	5.94	-2.35	-13.00	-52.03	
691.54	S	-60.67	-63.08	5.24	-2.83	-13.00	-47.67	
757.50	S	-59.86	-62.19	5.36	-3.03	-13.00	-46.86	
972.84	S	-56.70	-59.18	5.65	-3.17	-13.00	-43.70	
3760.00	Н	-57.22	-63.08	12.45	-6.60	-13.00	-44.22	



Funda	Operation Band Fundamental Frequency Operation Mode		:GPRS 1900 :1909.8 MHz :Tx CH HIGH			Temp./Humi. Engineer				62 RH
EUT F		6	:E2 Plane		Measu	rement A	Antenna	Pol.	:VERTICAL	
0	Level (dBm/n	n)								
-10								PART-24-2	2G/3G/LTE B2	
-20							1 1 1 1 1 1	           		
-30							       	1 1 1 1 1		
-40							, , , , , ,	       		
-50	4_6	7					       	 		
-60	1 <sup>2</sup>						         	         		
-70							i 1 1 1	T		
-80 -90			     					       		
-100							1	1 1 1		
	30	4024.		8018. Frequen		)12.	16	006.	20000	
Fre	q.	Note	EIRP	SG	ì	Anten	na	Cable	Limit	Margin

Freq.	Note	EIRP	SG Output Level	Gain	Loss	Limit	Margin	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	_
180.35	S	-68.07	-69.61	3.10	-1.56	-13.00	-55.07	
379.20	S	-66.38	-70.11	5.99	-2.26	-13.00	-53.38	
515.97	S	-61.58	-65.13	5.92	-2.36	-13.00	-48.58	
534.40	S	-57.92	-61.20	5.82	-2.54	-13.00	-44.92	
750.71	S	-60.45	-62.71	5.33	-3.07	-13.00	-47.45	
975.75	S	-57.32	-59.85	5.71	-3.18	-13.00	-44.32	
3819.60	Н	-53.10	-58.92	12.47	-6.65	-13.00	-40.10	



Operation Band Fundamental Frequency Operation Mode		:GPRS 1900 :1909.8 MHz :Tx CH HIGH		Temp./Humi. Engineer			:22 deg_C / 62 RH :Tin	
EUT Pol.		:E2 Plane		Measurement	Antenna	Pol.	:HORIZONT/	۹L
Leve	l (dBm/m)							
0								
-10	·					PART-24-2	G/3G/LTE B2	
- <b>20</b>						+		
-30						- - - 		
-40					!			
-50		· · · · · · · · · · · · · · · · · · ·				     	     	
	6 7							
-60 4 12								
-70					· -,	T		
-80	· • • • • • • • • • • • • • • • • • • •							
<b>-90</b>								
-100 <mark>30</mark>	4024.	80	0	12012.	46	006	20000	
30	4024.	80	Frequency (		10	006.	20000	
Freq.	Note	EIRP	SG	Anter	nna	Cable	Limit	Margin

rieq.	Note	Linu	Output Level	Gain	Loss	Luuu	Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
159.98	S	-69.59	-68.63	0.51	-1.48	-13.00	-56.59
343.31	S	-68.04	-72.03	5.98	-1.99	-13.00	-55.04
513.06	S	-65.43	-69.01	5.94	-2.35	-13.00	-52.43
639.16	S	-61.84	-64.71	5.31	-2.44	-13.00	-48.84
752.65	S	-60.77	-63.05	5.34	-3.06	-13.00	-47.77
970.90	S	-57.47	-59.92	5.62	-3.16	-13.00	-44.47
3819.60	Н	-58.37	-64.19	12.47	-6.65	-13.00	-45.37

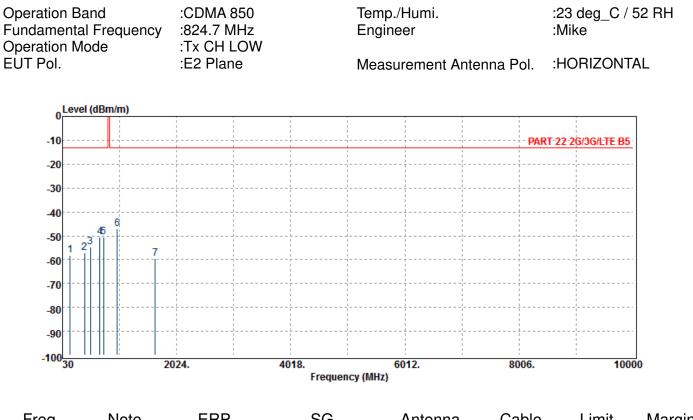


#### Radiated Spurious Emission Measurement Result: CDMA (BC0) Mode **Operation Band** Temp./Humi. :CDMA 850 :23 deg\_C / 52 RH Fundamental Frequency :824.7 MHz Engineer :Mike **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol. Level (dBm/m) -10 PART-22-2G/3G/LTE B5 -20 -30 -40 6 5 -50 3 1 2 -60 -70 -80 -90 4018. 2024. 6012. 8006. 10000 Frequency (MHz) Frea Note FRP SG Antenna Cable I imit Margin

	rieq.	NOLE		Output Level	Gain	Loss	Linin	margin	
_	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
	100.05	0	57.05	57.05	0.50	1 10	10.00	44.05	
	160.95	S	-57.95	-57.05	0.58	-1.48	-13.00	-44.95	
	359.80	S	-57.50	-61.38	6.00	-2.12	-13.00	-44.50	
	515.97	S	-53.83	-57.39	5.92	-2.36	-13.00	-40.83	
	629.46	S	-50.71	-53.57	5.33	-2.47	-13.00	-37.71	
	752.65	S	-49.59	-51.87	5.34	-3.06	-13.00	-36.59	
	983.51	S	-46.71	-49.37	5.87	-3.21	-13.00	-33.71	
	1649.40	Н	-60.87	-63.75	7.11	-4.23	-13.00	-47.87	

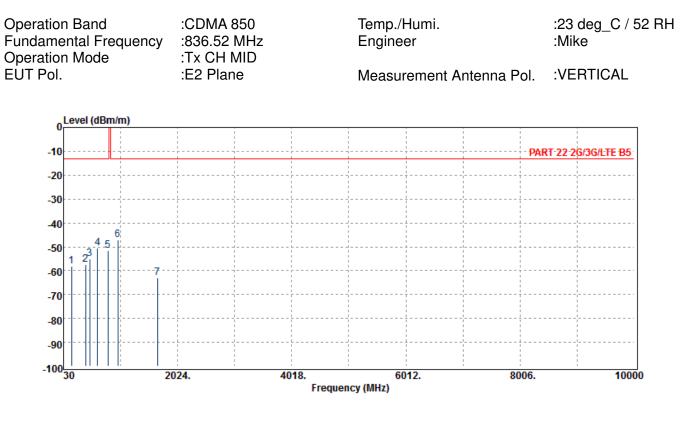
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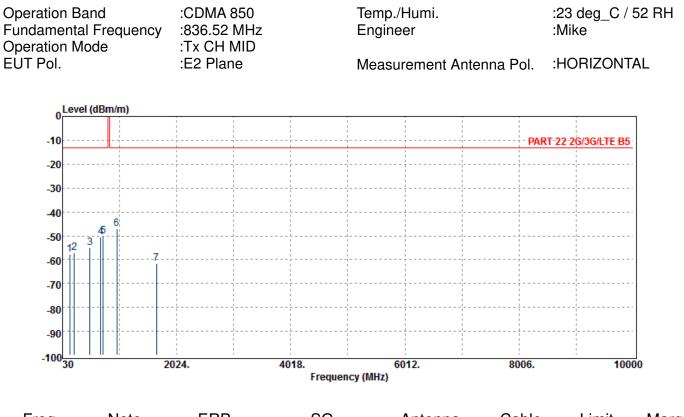
	⊢req.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
				Output Level	Gain	Loss			
	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
_									
	160.95	S	-58.08	-57.19	0.58	-1.48	-13.00	-45.08	
	413.15	S	-57.18	-60.72	5.92	-2.38	-13.00	-44.18	
	515.00	S	-54.64	-58.20	5.92	-2.36	-13.00	-41.64	
	684.75	S	-50.58	-53.12	5.25	-2.70	-13.00	-37.58	
	749.74	S	-50.47	-52.72	5.33	-3.08	-13.00	-37.47	
	982.54	S	-47.10	-49.74	5.85	-3.21	-13.00	-34.10	
	1649.40	Н	-59.36	-62.25	7.11	-4.23	-13.00	-46.36	





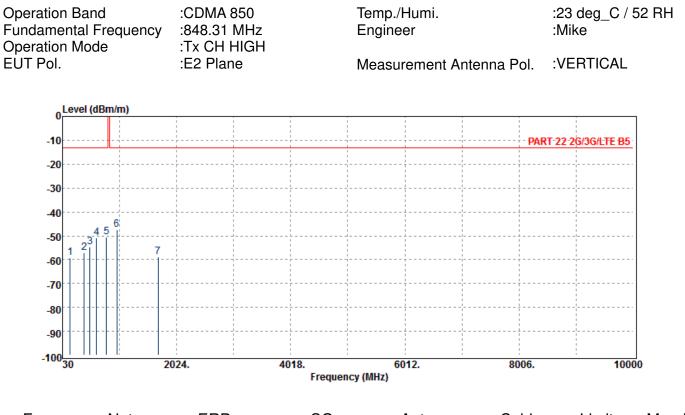
Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
173.56	S	-57.96	-58.32	1.89	-1.53	-13.00	-44.96
415.09	S	-57.30	-60.85	5.92	-2.37	-13.00	-44.30
485.90	S	-55.08	-58.78	5.95	-2.26	-13.00	-42.08
626.55	S	-50.48	-53.33	5.34	-2.49	-13.00	-37.48
804.06	S	-51.44	-54.03	5.49	-2.90	-13.00	-38.44
975.75	S	-47.06	-49.59	5.71	-3.18	-13.00	-34.06
1673.04	Н	-62.99	-65.90	7.20	-4.29	-13.00	-49.99





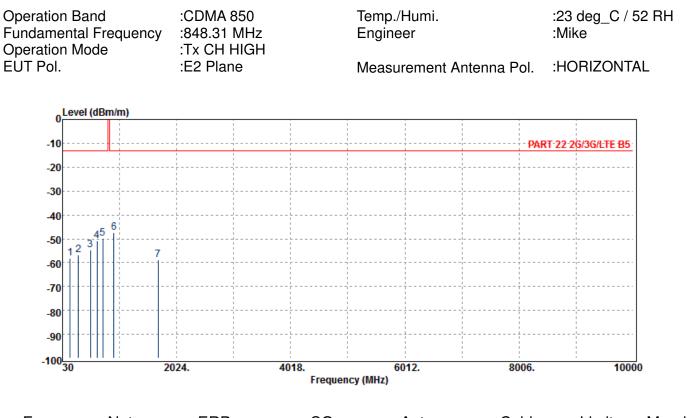
	Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
				Output Level	Gain	Loss			
	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
	159.01	S	-57.76	-56.76	0.47	-1.47	-13.00	-44.76	
:	236.61	S	-57.06	-60.70	5.38	-1.73	-13.00	-44.06	
!	510.15	S	-55.10	-58.71	5.95	-2.34	-13.00	-42.10	
(	697.36	S	-50.53	-52.83	5.23	-2.93	-13.00	-37.53	
	741.01	S	-50.27	-52.45	5.31	-3.13	-13.00	-37.27	
9	975.75	S	-47.19	-49.72	5.71	-3.18	-13.00	-34.19	
1	673.04	Н	-61.71	-64.62	7.20	-4.29	-13.00	-48.71	





Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
162.89	S	-59.03	-58.27	0.73	-1.49	-13.00	-46.03	
411.21	S	-57.22	-60.76	5.93	-2.39	-13.00	-44.22	
512.09	S	-54.61	-58.20	5.94	-2.35	-13.00	-41.61	
626.55	S	-51.04	-53.88	5.34	-2.49	-13.00	-38.04	
799.21	S	-50.49	-53.08	5.49	-2.90	-13.00	-37.49	
977.69	S	-47.49	-50.06	5.75	-3.19	-13.00	-34.49	
1696.62	Н	-58.95	-61.92	7.28	-4.31	-13.00	-45.95	





	Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
				Output Level	Gain	Loss			
	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
-									
	162.89	S	-58.11	-57.35	0.73	-1.49	-13.00	-45.11	
	309.36	S	-56.72	-60.60	5.82	-1.94	-13.00	-43.72	
	515.97	S	-54.64	-58.19	5.92	-2.36	-13.00	-41.64	
	633.34	S	-50.85	-53.72	5.32	-2.46	-13.00	-37.85	
	736.16	S	-49.74	-51.92	5.30	-3.13	-13.00	-36.74	
	927.25	S	-47.26	-49.29	5.29	-3.25	-13.00	-34.26	
	1696.62	Н	-58.80	-61.77	7.28	-4.31	-13.00	-45.80	



# Radiated Spurious Emission Measurement Result: CDMA (BC1) Mode

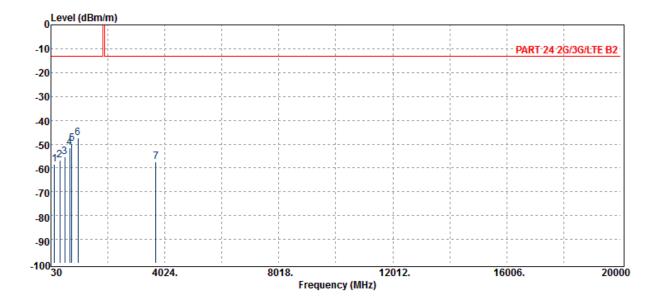
**Operation Band** Fundamental Frequency **Operation Mode** EUT Pol.

:CDMA 1900 :1851.25 MHz :Tx CH LOW :E2 Plane

Temp./Humi. Engineer

:23 deg\_C / 52 RH :Mike

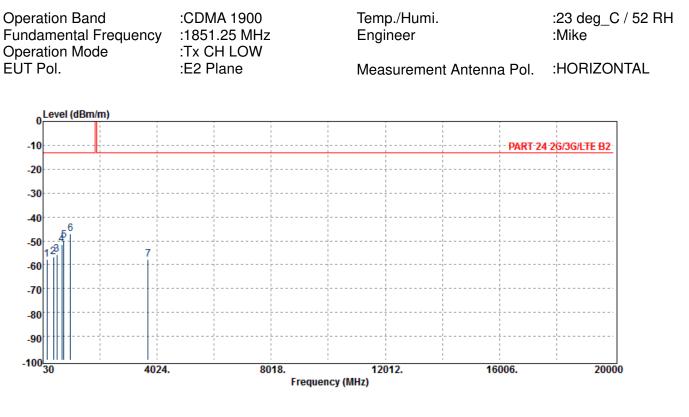
:VERTICAL Measurement Antenna Pol.



Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
	0			<b>a</b> (a			
158.04	S	-58.34	-57.29	0.42	-1.47	-13.00	-45.34
340.40	S	-56.84	-60.84	5.97	-1.97	-13.00	-43.84
512.09	S	-55.34	-58.93	5.94	-2.35	-13.00	-42.34
689.60	S	-51.45	-53.91	5.24	-2.79	-13.00	-38.45
759.44	S	-49.77	-52.12	5.36	-3.02	-13.00	-36.77
975.75	S	-47.35	-49.88	5.71	-3.18	-13.00	-34.35
3702.50	Н	-57.35	-63.22	12.44	-6.58	-13.00	-44.35

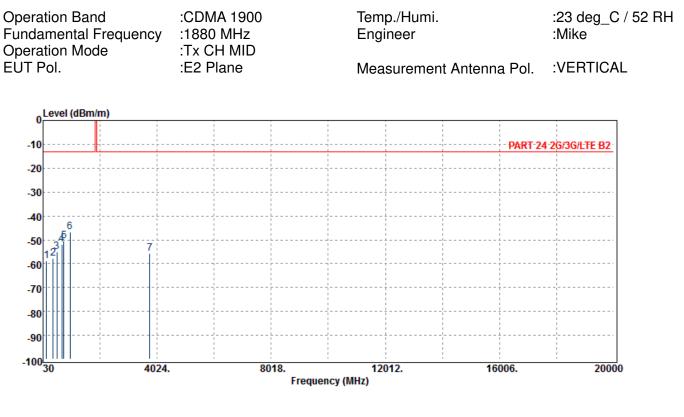
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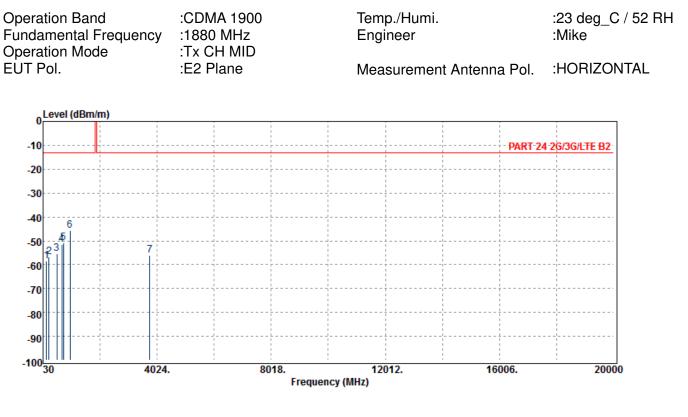
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
165.80	S	-57.96	-57.40	0.94	-1.50	-13.00	-44.96
398.60	S	-56.92	-60.52	5.97	-2.37	-13.00	-43.92
515.97	S	-55.76	-59.32	5.92	-2.36	-13.00	-42.76
689.60	S	-51.59	-54.04	5.24	-2.79	-13.00	-38.59
757.50	S	-49.68	-52.00	5.36	-3.03	-13.00	-36.68
990.30	S	-47.17	-49.94	6.01	-3.24	-13.00	-34.17
3702.50	Н	-57.64	-63.50	12.44	-6.58	-13.00	-44.64





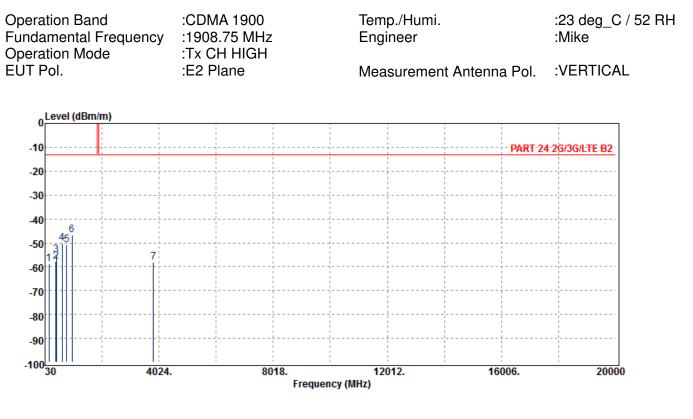
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		-
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
156.10	S	-58.80	-57.67	0.34	-1.46	-13.00	-45.80
377.26	S	-57.82	-61.57	5.99	-2.24	-13.00	-44.82
508.21	S	-54.90	-58.53	5.96	-2.34	-13.00	-41.90
684.75	S	-51.75	-54.29	5.25	-2.70	-13.00	-38.75
752.65	S	-50.40	-52.68	5.34	-3.06	-13.00	-37.40
978.66	S	-46.74	-49.32	5.77	-3.19	-13.00	-33.74
3760.00	Н	-55.67	-61.53	12.45	-6.60	-13.00	-42.67





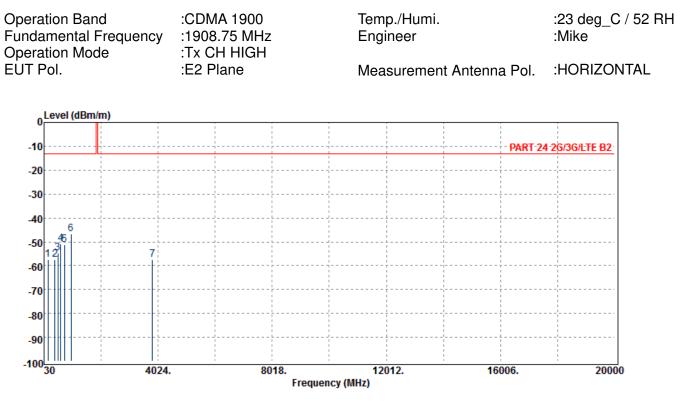
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
•			Output Level	Gain	Loss		0
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
154.16	S	-58.62	-57.42	0.25	-1.45	-13.00	-45.62
235.64	S	-56.59	-60.21	5.36	-1.73	-13.00	-43.59
510.15	S	-55.51	-59.12	5.95	-2.34	-13.00	-42.51
691.54	S	-51.68	-54.10	5.24	-2.83	-13.00	-38.68
741.01	S	-50.71	-52.89	5.31	-3.13	-13.00	-37.71
975.75	S	-45.52	-48.05	5.71	-3.18	-13.00	-32.52
3760.00	Н	-56.17	-62.02	12.45	-6.60	-13.00	-43.17





Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
•			Output Level	Gain	Loss		0
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
172.59	S	-58.81	-59.00	1.71	-1.53	-13.00	-45.81
406.36	S	-57.80	-61.33	5.95	-2.42	-13.00	-44.80
434.49	S	-55.05	-58.66	5.85	-2.24	-13.00	-42.05
631.40	S	-50.15	-53.02	5.33	-2.46	-13.00	-37.15
794.36	S	-50.80	-53.38	5.47	-2.90	-13.00	-37.80
973.81	S	-46.83	-49.33	5.67	-3.18	-13.00	-33.83
3817.50	Н	-58.14	-63.96	12.47	-6.64	-13.00	-45.14



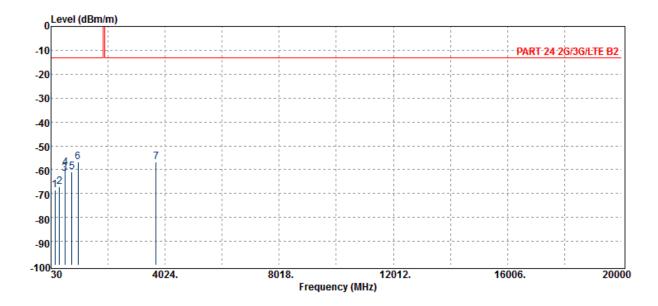


Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
168.71	S	-57.29	-56.93	1.15	-1.51	-13.00	-44.29
411.21	S	-57.40	-60.94	5.93	-2.39	-13.00	-44.40
512.09	S	-54.82	-58.41	5.94	-2.35	-13.00	-41.82
616.85	S	-50.75	-53.53	5.36	-2.58	-13.00	-37.75
749.74	S	-51.19	-53.44	5.33	-3.08	-13.00	-38.19
972.84	S	-46.84	-49.33	5.65	-3.17	-13.00	-33.84
3817.50	Н	-57.38	-63.20	12.47	-6.64	-13.00	-44.38



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

Operation Band	:HSDPA B2	Temp./Humi.	:22 deg_C / 62 RH
Fundamental Frequency	:1852.4 MHz	Engineer	:Tin
Operation Mode	:Tx CH LOW	-	
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL



Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
	_						
173.56	S	-68.39	-68.75	1.89	-1.53	-13.00	-55.39
328.76	S	-66.97	-70.97	5.91	-1.91	-13.00	-53.97
515.97	S	-61.58	-65.14	5.92	-2.36	-13.00	-48.58
532.46	S	-59.20	-62.50	5.83	-2.52	-13.00	-46.20
765.26	S	-60.78	-63.18	5.38	-2.98	-13.00	-47.78
980.60	S	-56.81	-59.43	5.81	-3.20	-13.00	-43.81
3704.80	Н	-56.80	-62.66	12.44	-6.58	-13.00	-43.80



Fundamenta			:Tx CH LOW		Temp./Humi. Engineer Measurement Antenna Pol.			:22 deg_C / 62 RH :Tin :HORIZONTAL		
0 Level (d	Bm/m)									
-10						PART-24	2G/3G/LTE B2			
-20						         				
-30										
-40										
-50	7					 				
-60					         					
-70			·			<sup>1</sup> 1 1				
-80						<sup>1</sup>				
-90										
-100 <mark>30</mark> -100-	4024	•	8018. Frequency	1201 y (MHz)	2.	16006.	20000			
Freq.	Note	EIRP	SG Output L	evel	Antenna Gain	Cable Loss	Limit	Margin		

			Output Level	Gain	Loss		-
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
159.98	S	-68.62	-67.65	0.51	-1.48	-13.00	-55.62
359.80	S	-67.40	-71.29	6.00	-2.12	-13.00	-54.40
515.97	S	-65.81	-69.36	5.92	-2.36	-13.00	-52.81
629.46	S	-60.24	-63.10	5.33	-2.47	-13.00	-47.24
749.74	S	-60.09	-62.34	5.33	-3.08	-13.00	-47.09
983.51	S	-56.38	-59.04	5.87	-3.21	-13.00	-43.38
3704.80	Н	-56.75	-62.61	12.44	-6.58	-13.00	-43.75



Operation Fundamer Operation EUT Pol.	ntal Frequency	:HSDPA B2 :1880 MHz :Tx CH MID :E2 Plane	E	emp./Humi. ngineer easurement Ant	enna Pol.	:22 deg_C / :Tin :VERTICAL	62 RH
Level	(dBm/m)						
-10					PART-24	2G/3G/LTE B2	
-20							
-30					· · · · · · · · · · · · · · · · · · ·		
-40					· · · · · · · · · · · · · · · · · · ·		
-50				1 1 1 1 1 1		 	
- <b>60</b> - 3 5	5 7						
12 - <b>70</b>							
-80							
<b>-90</b>		 I I					
-100 <mark>-11030</mark> -100	4024.		8018.	12012.	16006.	20000	
			Frequency (M	Hz)			
_					<b>.</b>		
Freq.	Note	EIRP	SG Output Low	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Leve dBm	el Gain dBi	Loss dB	dBm	dB

MHZ	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	_
173.56	S	-68.18	-68.54	1.89	-1.53	-13.00	-55.18	
328.76	S	-67.28	-71.28	5.91	-1.91	-13.00	-54.28	
515.00	S	-61.89	-65.46	5.92	-2.36	-13.00	-48.89	
532.46	S	-57.32	-60.63	5.83	-2.52	-13.00	-44.32	
754.59	S	-60.66	-62.96	5.35	-3.05	-13.00	-47.66	
966.05	S	-57.16	-59.53	5.52	-3.15	-13.00	-44.16	
3760.00	Н	-57.15	-63.01	12.45	-6.60	-13.00	-44.15	



Operation Band Fundamental Frequency Operation Mode EUT Pol.	:HSDPA B2 :1880 MHz :Tx CH MID :E2 Plane	Eng	p./Humi. ineer	:22 deg_C / 62 RH :Tin :HORIZONTAL		
	.EZ FIAIIE	Mea	surement Anter	ina Pol.		AL
Level (dBm/m)						
0				1		
-10				PART-24	2G/3G/LTE B2	
-20						
-30				     		
-40				·		
- <b>50</b> 67						
-60 45						
-70				·		
-80				·		
-90				     		
-100 <mark>30 4024</mark>			12012.	16006.	20000	
		Frequency (MHz)				
Freq. Note	EIRP	SG	Antenna	Cable	Limit	Margin
MHz F/H/E/S	dBm	Output Level dBm	Gain dBi	Loss dB	dBm	dB

MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
167.74	S	-68.68	-68.25	1.08	-1.51	-13.00	-55.68	
406.36	S	-67.40	-70.93	5.95	-2.42	-13.00	-54.40	
513.06	S	-64.87	-68.45	5.94	-2.35	-13.00	-51.87	
691.54	S	-61.60	-64.02	5.24	-2.83	-13.00	-48.60	
767.20	S	-61.12	-63.54	5.39	-2.97	-13.00	-48.12	
987.39	S	-57.14	-59.86	5.95	-3.23	-13.00	-44.14	
3760.00	Н	-57.29	-63.14	12.45	-6.60	-13.00	-44.29	



Funda Opera	Operation Band Fundamental Frequency Operation Mode EUT Pol.		:HSDPA B2 :1907.6 MHz :Tx CH HIGH :E2 Plane		Temp./Humi. Engineer Measurement Antenna Pol.				:22 deg_C / 62 RH :Tin :VERTICAL		
0	Level (dBm/	/m)							;]		
-10								PART-24	2G/3G/LTE B2		
-20						       		             			
-30								- - - - - -			
-40								, 1 1 1 1			
-50	4_6	7									
-60 -70	12					 		1 7 1 1 1 1 1 1 1 1 1 1 1 1 1			
-80						 		         			
-90								1			
-100	30	4024.		8018. Frequenc	1201 y (MHz)	12.	16	006.	20000		
Fre	q.	Note	EIRP	SG Output L	.evel	Antenr Gain		Cable Loss	Limit	Margin	

			Output Level	Gain	LOSS			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
								-
178.41	S	-67.93	-69.13	2.76	-1.55	-13.00	-54.93	
400.54	S	-66.81	-70.40	5.97	-2.38	-13.00	-53.81	
513.06	S	-60.28	-63.87	5.94	-2.35	-13.00	-47.28	
531.49	S	-57.36	-60.68	5.84	-2.51	-13.00	-44.36	
755.56	S	-59.99	-62.30	5.35	-3.04	-13.00	-46.99	
978.66	S	-57.30	-59.88	5.77	-3.19	-13.00	-44.30	
3815.20	Н	-56.85	-62.68	12.46	-6.63	-13.00	-43.85	



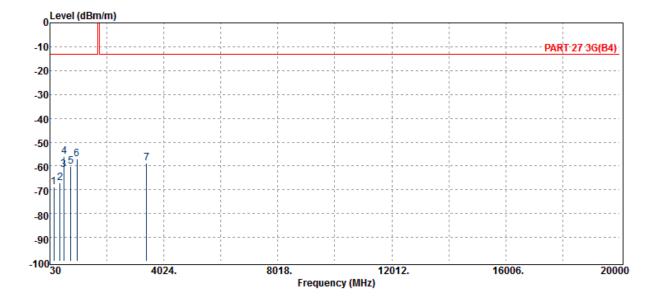
Fundament			:HSDPA B2 :1907.6 MHz :Tx CH HIGH :E2 Plane		Temp./Humi. Engineer Measurement Antenna Pol.			:22 deg_C / 62 RH :Tin :HORIZONTAL		
OLEVEI (d	Bm/m)									
-10 						PART-24	2G/3G/LTE B2			
-20				·						
-30		       		·						
-40		       				1 1 1 1				
-50	7	       				·				
-60 1 <sup>23</sup> -70										
-80 <sup></sup>										
-100										
30	4024.	. 8	018. Frequency	12012. y (MHz)		16006.	20000			
Freq.	Note	EIRP	SG Output L		ntenna Gain	Cable Loss	Limit	Margin		

				Oulpul Level	Gain	LOSS			
_	MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	_
	159.98	S	-68.80	-67.83	0.51	-1.48	-13.00	-55.80	
	377.26	S	-67.26	-71.00	5.99	-2.24	-13.00	-54.26	
	513.06	S	-65.60	-69.18	5.94	-2.35	-13.00	-52.60	
	626.55	S	-61.69	-64.53	5.34	-2.49	-13.00	-48.69	
	745.86	S	-59.70	-61.92	5.32	-3.10	-13.00	-46.70	
	990.30	S	-57.90	-60.67	6.01	-3.24	-13.00	-44.90	
	3815.20	Н	-56.90	-62.73	12.46	-6.63	-13.00	-43.90	



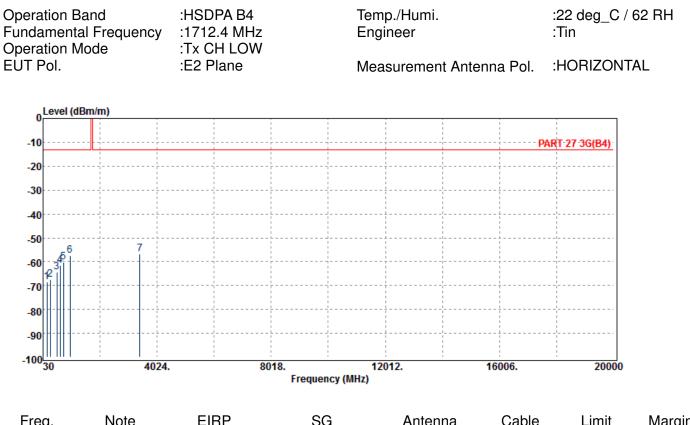
## **Radiated Spurious Emission Measurement Result: HSDPA Band 4 Mode**

Operation Band	:HSDPA B4	Temp./Humi.	:22 deg_C / 62 RH
Fundamental Frequency	:1712.4 MHz	Engineer	:Tin
Operation Mode	:Tx CH LOW		
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL



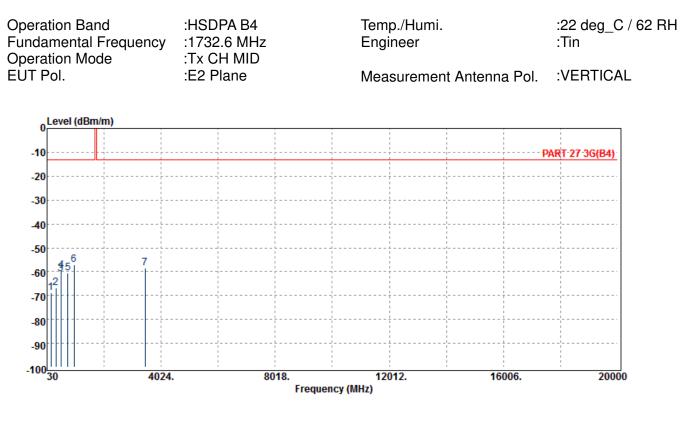
Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
165.80	S	-68.80	-68.24	0.94	-1.50	-13.00	-55.80
379.20	S	-67.25	-70.98	5.99	-2.26	-13.00	-54.25
513.06	S	-61.44	-65.03	5.94	-2.35	-13.00	-48.44
532.46	S	-56.02	-59.33	5.83	-2.52	-13.00	-43.02
752.65	S	-60.15	-62.43	5.34	-3.06	-13.00	-47.15
978.66	S	-56.93	-59.51	5.77	-3.19	-13.00	-43.93
3424.80	Н	-58.95	-64.99	12.27	-6.23	-13.00	-45.95





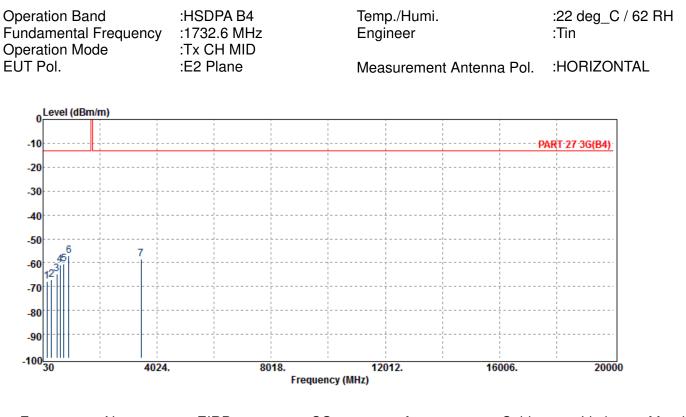
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
168.71	S	-68.45	-68.09	1.15	-1.51	-13.00	-55.45	
277.35	S	-67.30	-71.04	5.60	-1.86	-13.00	-54.30	
515.00	S	-64.26	-67.83	5.92	-2.36	-13.00	-51.26	
631.40	S	-61.75	-64.61	5.33	-2.46	-13.00	-48.75	
750.71	S	-60.31	-62.57	5.33	-3.07	-13.00	-47.31	
982.54	S	-57.41	-60.05	5.85	-3.21	-13.00	-44.41	
3424.80	Н	-56.82	-62.86	12.27	-6.23	-13.00	-43.82	





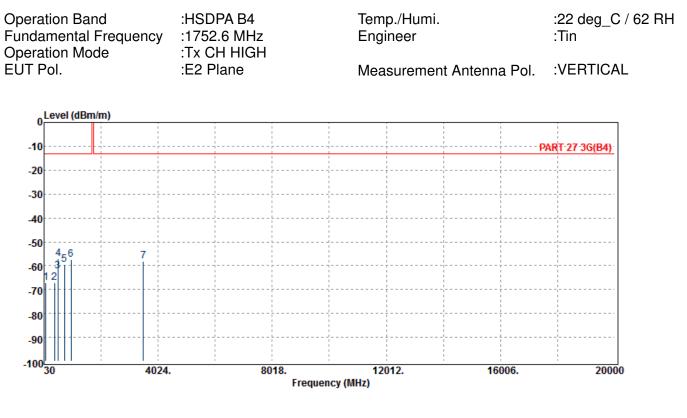
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
•			Output Level	Gain	Loss		C
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
165.80	S	-68.99	-68.42	0.94	-1.50	-13.00	-55.99
333.61	S	-66.70	-70.72	5.94	-1.92	-13.00	-53.70
515.00	S	-60.88	-64.44	5.92	-2.36	-13.00	-47.88
531.49	S	-59.66	-62.99	5.84	-2.51	-13.00	-46.66
752.65	S	-60.54	-62.82	5.34	-3.06	-13.00	-47.54
978.66	S	-56.92	-59.50	5.77	-3.19	-13.00	-43.92
3465.20	Н	-58.62	-64.71	12.34	-6.25	-13.00	-45.62





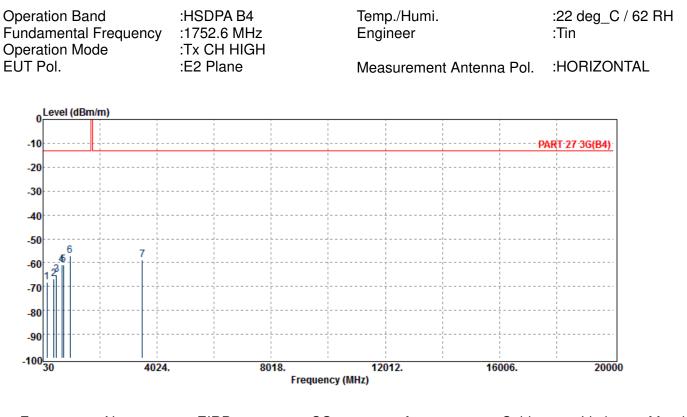
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss		-	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
								•
168.71	S	-67.80	-67.43	1.15	-1.51	-13.00	-54.80	
319.06	S	-67.19	-71.14	5.87	-1.92	-13.00	-54.19	
513.06	S	-64.71	-68.29	5.94	-2.35	-13.00	-51.71	
633.34	S	-61.07	-63.93	5.32	-2.46	-13.00	-48.07	
755.56	S	-60.46	-62.77	5.35	-3.04	-13.00	-47.46	
934.04	S	-57.26	-59.29	5.26	-3.23	-13.00	-44.26	
3465.20	Н	-58.64	-64.73	12.34	-6.25	-13.00	-45.64	





Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
91.11	S	-67.11	-67.47	1.58	-1.21	-13.00	-54.11
395.69	S	-67.20	-70.82	5.97	-2.35	-13.00	-54.20
513.06	S	-62.36	-65.94	5.94	-2.35	-13.00	-49.36
532.46	S	-57.06	-60.36	5.83	-2.52	-13.00	-44.06
750.71	S	-59.65	-61.91	5.33	-3.07	-13.00	-46.65
977.69	S	-57.42	-59.99	5.75	-3.19	-13.00	-44.42
3505.20	Н	-58.23	-64.16	12.40	-6.47	-13.00	-45.23





Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
173.56	S	-68.03	-68.39	1.89	-1.53	-13.00	-55.03	
408.30	S	-66.85	-70.38	5.94	-2.41	-13.00	-53.85	
503.36	S	-64.94	-68.61	5.99	-2.32	-13.00	-51.94	
682.81	S	-61.01	-63.60	5.25	-2.67	-13.00	-48.01	
750.71	S	-60.96	-63.22	5.33	-3.07	-13.00	-47.96	
970.90	S	-56.94	-59.40	5.62	-3.16	-13.00	-43.94	
3505.20	Н	-58.72	-64.65	12.40	-6.47	-13.00	-45.72	



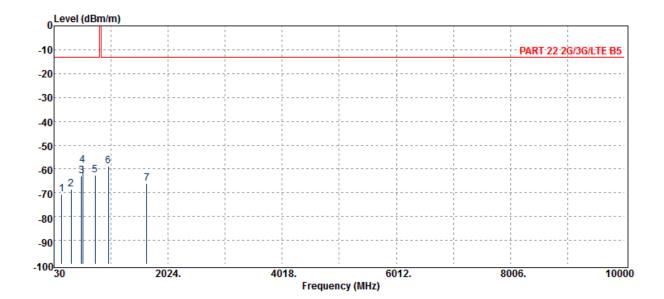
## **Radiated Spurious Emission Measurement Result: HSDPA Band 5 Mode**

Operation Band	:HSDPA B5
Fundamental Frequency	:826.4 MHz
Operation Mode	:Tx CH LOW
EUT Pol.	:E2 Plane

Temp./Humi. Engineer

:24 deg\_C / 61 RH :Tin

# Measurement Antenna Pol. : VERTICAL



Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
159.98	S	-70.63	-67.51	-1.64	-1.48	-13.00	-57.63
328.76	S	-68.54	-70.39	3.76	-1.91	-13.00	-55.54
512.09	S	-62.86	-64.30	3.79	-2.35	-13.00	-49.86
532.46	S	-58.46	-59.62	3.68	-2.52	-13.00	-45.46
749.74	S	-62.78	-62.88	3.18	-3.08	-13.00	-49.78
977.69	S	-58.99	-59.40	3.60	-3.19	-13.00	-45.99
1652.80	Н	-65.94	-68.82	7.12	-4.24	-13.00	-52.94

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**Operation Band** Temp./Humi. :HSDPA B5 :24 deg\_C / 61 RH Fundamental Frequency :826.4 MHz Engineer :Tin **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL 0 Level (dBm/m) -10 PART 22 2G/3G/LTE B5 -20 -30 -40 -50 -60 3 2 -70 -80 -90 -100<mark>1</mark>30 2024. 4018. 8006. 10000 6012. Frequency (MHz)

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
-			Output Level	Gain	Loss		-	
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
168.71	S	-70.87	-68.36	-1.00	-1.51	-13.00	-57.87	
371.44	S	-69.31	-70.95	3.84	-2.21	-13.00	-56.31	
515.00	S	-67.21	-68.63	3.77	-2.36	-13.00	-54.21	
684.75	S	-63.35	-63.74	3.10	-2.70	-13.00	-50.35	
750.71	S	-62.44	-62.55	3.18	-3.07	-13.00	-49.44	
975.75	S	-59.30	-59.69	3.56	-3.18	-13.00	-46.30	
1652.80	Н	-66.16	-69.04	7.12	-4.24	-13.00	-53.16	

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Operation Band Fundamental Frequency Operation Mode	:HSDPA B5 / :836.6 MHz :Tx CH MID	Temp./Humi. Engineer	:24 deg_C / 61 RH :Tin
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL
0			
-10		PART-2	2-26/36/LTE B5
-20			
-30			
-40			
-50			
-60			
-70			
-80			
100			
-10030 2024.	4018. Frequenc	6012. 8006. y (MHz)	10000

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		U U
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
94.99	S	-70.01	-67.74	-1.04	-1.23	-13.00	-57.01
306.45	S	-68.97	-70.69	3.66	-1.94	-13.00	-55.97
515.97	S	-63.54	-64.95	3.77	-2.36	-13.00	-50.54
531.49	S	-61.39	-62.56	3.69	-2.51	-13.00	-48.39
749.74	S	-62.21	-62.31	3.18	-3.08	-13.00	-49.21
980.60	S	-60.00	-60.47	3.66	-3.20	-13.00	-47.00
1673.20	Н	-66.23	-69.14	7.20	-4.29	-13.00	-53.23



**Operation Band** Temp./Humi. :HSDPA B5 :24 deg\_C / 61 RH Fundamental Frequency :836.6 MHz Engineer :Tin **Operation Mode** :Tx CH MID EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL 0 Level (dBm/m) -10 PART 22 2G/3G/LTE B5 -20 -30 -40 -50 -60 45 23 -70 -80 -90 -100<mark>1</mark>30 2024. 4018. 8006. 10000 6012. Frequency (MHz)

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBd	Loss dB	dBm	dB
	F/H/E/3	UDIII	UDIII	UDU	uВ	UDIII	UD
172.59	S	-71.24	-69.28	-0.44	-1.53	-13.00	-58.24
398.60	S	-68.52	-69.97	3.82	-2.37	-13.00	-55.52
513.06	S	-67.82	-69.25	3.79	-2.35	-13.00	-54.82
634.31	S	-63.24	-63.95	3.17	-2.45	-13.00	-50.24
750.71	S	-63.18	-63.29	3.18	-3.07	-13.00	-50.18
977.69	S	-58.65	-59.06	3.60	-3.19	-13.00	-45.65
1673.20	Н	-66.55	-69.46	7.20	-4.29	-13.00	-53.55

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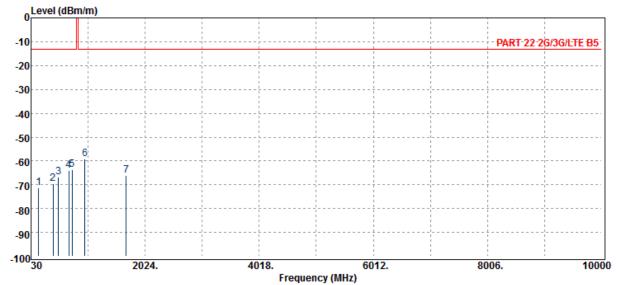


Operation Band Fundamental Frequency Operation Mode	:HSDPA B5 :846.6 MHz :Tx CH HIGH	Temp./Humi. Engineer	:24 deg_C / 61 RH :Tin	
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL	
0 Level (dBm/m)				
-10		PART-2	2-26/36/LTE B5	
-20				
-30				
-40				
-50				
-60				
-70				
-80				
-90				
-100 <mark>30 2024.</mark>	4018.	6012. 8006.	10000	
	Frequenc			

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
-			Output Level	Gain	Loss		-
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
165.80	S	-70.08	-67.36	-1.21	-1.50	-13.00	-57.08
236.61	S	-69.10	-70.59	3.23	-1.73	-13.00	-56.10
513.06	S	-63.27	-64.70	3.79	-2.35	-13.00	-50.27
531.49	S	-58.52	-59.69	3.69	-2.51	-13.00	-45.52
750.71	S	-61.69	-61.80	3.18	-3.07	-13.00	-48.69
980.60	S	-59.02	-59.48	3.66	-3.20	-13.00	-46.02
1693.20	Н	-66.49	-69.45	7.27	-4.30	-13.00	-53.49
980.60	S	-59.02	-59.48	3.66	-3.20	-13.00	-46.02



**Operation Band** Temp./Humi. :HSDPA B5 :24 deg\_C / 61 RH **Fundamental Frequency** Engineer :846.6 MHz :Tin **Operation Mode** :Tx CH HIGH EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL



Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
160.95	S	-71.28	-68.23	-1.57	-1.48	-13.00	-58.28
416.06	S	-69.60	-71.01	3.76	-2.36	-13.00	-56.60
513.06	S	-66.61	-68.05	3.79	-2.35	-13.00	-53.61
691.54	S	-64.10	-64.36	3.09	-2.83	-13.00	-51.10
749.74	S	-63.54	-63.64	3.18	-3.08	-13.00	-50.54
972.84	S	-59.21	-59.54	3.50	-3.17	-13.00	-46.21
1693.20	Н	-66.07	-69.03	7.27	-4.30	-13.00	-53.07

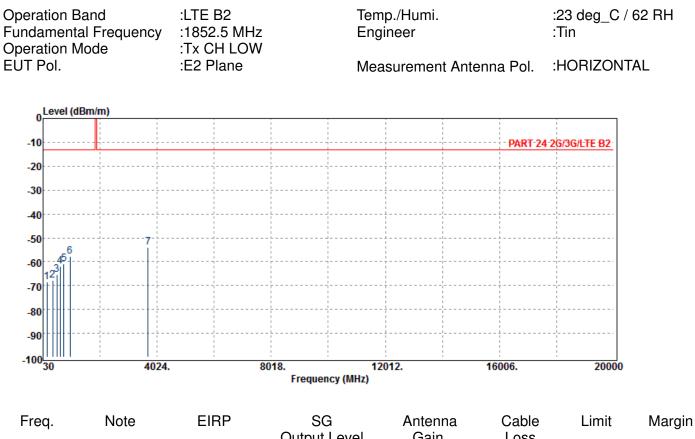


#### Radiated Spurious Emission Measurement Result: LTE-Band 2 (The Worst Case) **Operation Band** :LTE B2 Temp./Humi. :23 deg C / 62 RH Fundamental Frequency :1852.5 MHz Engineer :Tin **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol. 0 Level (dBm/m) -10 PART-24-2G/3G/LTE-B2 -20 -30 -40 -50 6 -60 2 -70 -80 -90 -100 8018. 30 4024. 12012. 16006. 20000 Frequency (MHz)

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
154.16	S	-65.68	-64.47	0.25	-1.45	-13.00	-52.68
366.59	S	-67.17	-70.99	6.00	-2.17	-13.00	-54.17
515.00	S	-62.17	-65.74	5.92	-2.36	-13.00	-49.17
531.49	S	-59.41	-62.74	5.84	-2.51	-13.00	-46.41
745.86	S	-61.05	-63.27	5.32	-3.10	-13.00	-48.05
985.45	S	-57.45	-60.15	5.91	-3.22	-13.00	-44.45
3705.00	Н	-56.53	-62.39	12.44	-6.58	-13.00	-43.53

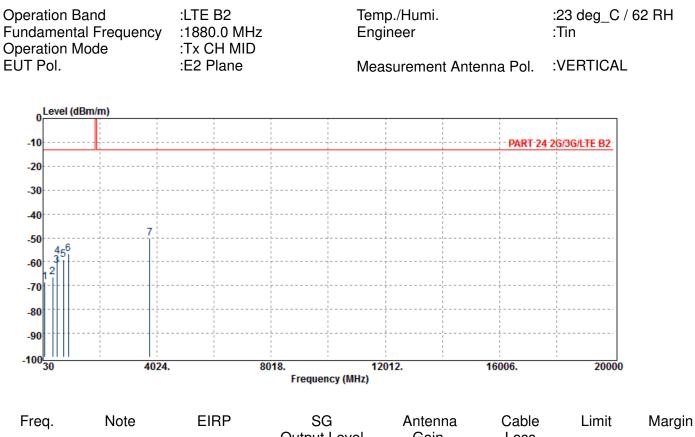
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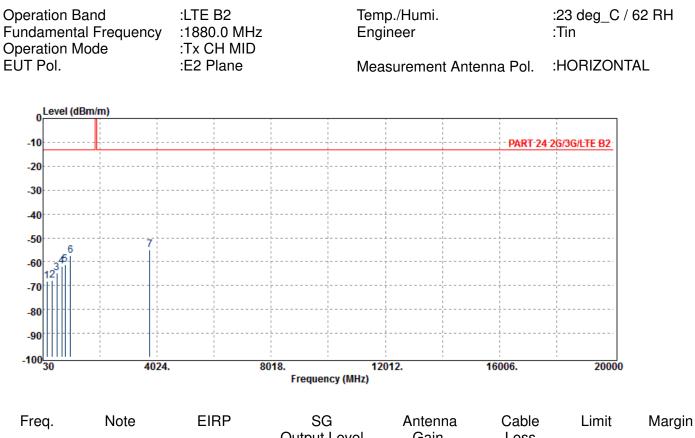
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
172.59	S	-68.48	-68.66	1.71	-1.53	-13.00	-55.48
369.50	S	-67.78	-71.58	6.00	-2.20	-13.00	-54.78
515.97	S	-65.47	-69.02	5.92	-2.36	-13.00	-52.47
628.49	S	-62.05	-64.91	5.33	-2.47	-13.00	-49.05
755.56	S	-60.94	-63.25	5.35	-3.04	-13.00	-47.94
980.60	S	-57.76	-60.37	5.81	-3.20	-13.00	-44.76
3705.00	Н	-54.12	-59.98	12.44	-6.58	-13.00	-41.12





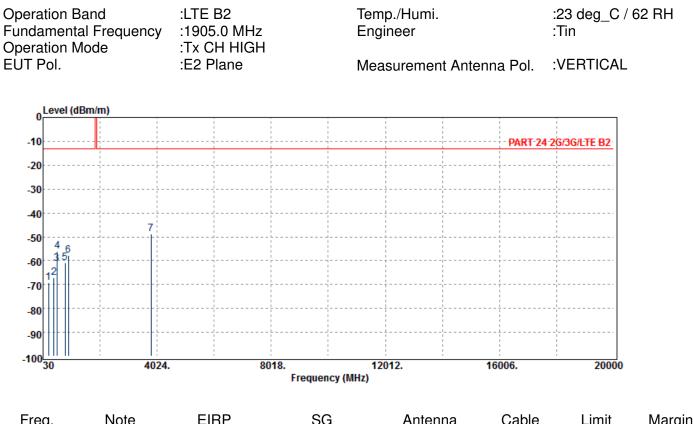
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBi	Loss dB	dBm	dB
95.96	S	-68.42	-68.18	0.99	-1.23	-13.00	-55.42
367.56	S	-66.53	-70.34	6.00	-2.18	-13.00	-53.53
508.21	S	-61.66	-65.29	5.96	-2.34	-13.00	-48.66
532.46	S	-57.92	-61.22	5.83	-2.52	-13.00	-44.92
749.74	S	-59.19	-61.44	5.33	-3.08	-13.00	-46.19
925.31	S	-56.91	-58.94	5.30	-3.26	-13.00	-43.91
3760.00	Н	-50.34	-56.20	12.45	-6.60	-13.00	-37.34





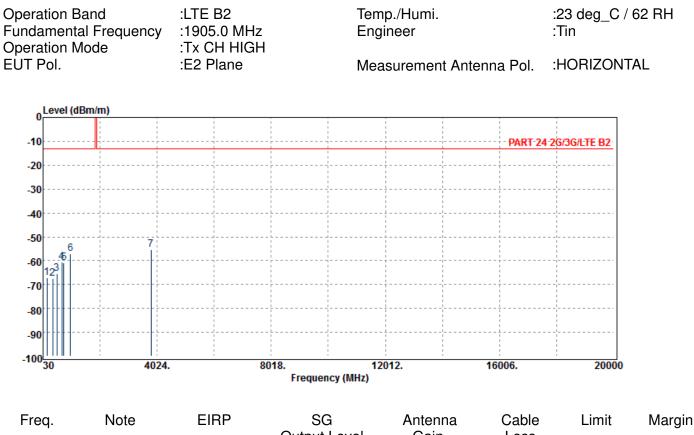
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
170.65	S	-68.29	-68.12	1.36	-1.52	-13.00	-55.29
361.74	S	-67.72	-71.59	6.00	-2.14	-13.00	-54.72
512.09	S	-64.63	-68.22	5.94	-2.35	-13.00	-51.63
694.45	S	-61.99	-64.35	5.24	-2.88	-13.00	-48.99
806.00	S	-61.36	-63.95	5.48	-2.89	-13.00	-48.36
988.36	S	-57.54	-60.28	5.97	-3.23	-13.00	-44.54
3760.00	Н	-55.06	-60.91	12.45	-6.60	-13.00	-42.06





	Fleq.	NOLE	EINF	Output Level	Gain	Loss	LIIIII	Margin	
_	MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	-
	221.09	S	-69.04	-72.79	5.45	-1.71	-13.00	-56.04	
	413.15	S	-67.01	-70.55	5.92	-2.38	-13.00	-54.01	
	513.06	S	-61.14	-64.72	5.94	-2.35	-13.00	-48.14	
	532.46	S	-56.15	-59.46	5.83	-2.52	-13.00	-43.15	
	804.06	S	-60.99	-63.58	5.49	-2.90	-13.00	-47.99	
	922.40	S	-57.66	-59.71	5.31	-3.26	-13.00	-44.66	
	3810.00	Н	-48.92	-54.77	12.46	-6.62	-13.00	-35.92	





			Output Level	Gain	Loss	-	5
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
160.95	S	-67.21	-66.32	0.58	-1.48	-13.00	-54.21
362.71	S	-67.57	-71.43	6.00	-2.15	-13.00	-54.57
513.06	S	-65.40	-68.98	5.94	-2.35	-13.00	-52.40
691.54	S	-60.43	-62.84	5.24	-2.83	-13.00	-47.43
757.50	S	-60.98	-63.31	5.36	-3.03	-13.00	-47.98
990.30	S	-57.12	-59.89	6.01	-3.24	-13.00	-44.12
3810.00	Н	-55.35	-61.19	12.46	-6.62	-13.00	-42.35

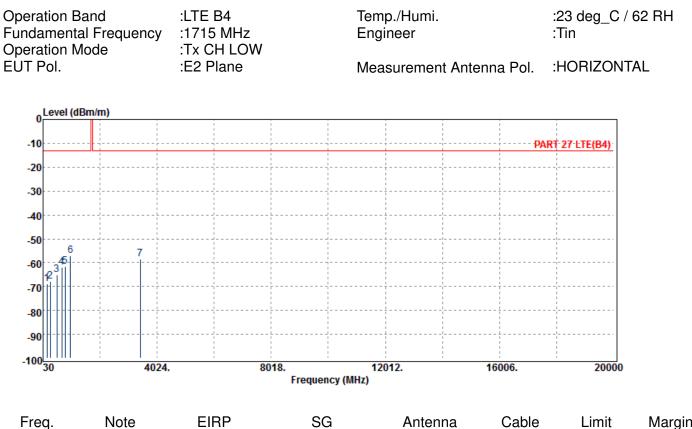


### Radiated Spurious Emission Measurement Result: LTE-Band 4 (The Worst Case) **Operation Band** :LTE B4 Temp./Humi. :23 deg C / 62 RH Fundamental Frequency :1715 MHz Engineer :Tin **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol. 0 Level (dBm/m) -10 27 | TF(B4) -20 -30 -40 -50 Λ 6 7 5 -60 $\mathbf{2}$ -70 -80 -90 8018. 4024. 12012. 16006. 20000 Frequency (MHz) ~ ~

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
165.80	S	-68.39	-67.82	0.94	-1.50	-13.00	-55.39	
348.16	S	-67.70	-71.67	6.00	-2.03	-13.00	-54.70	
513.06	S	-60.63	-64.21	5.94	-2.35	-13.00	-47.63	
531.49	S	-56.42	-59.74	5.84	-2.51	-13.00	-43.42	
798.24	S	-61.09	-63.68	5.49	-2.90	-13.00	-48.09	
980.60	S	-56.76	-59.37	5.81	-3.20	-13.00	-43.76	
3430.00	Н	-57.77	-63.82	12.28	-6.23	-13.00	-44.77	

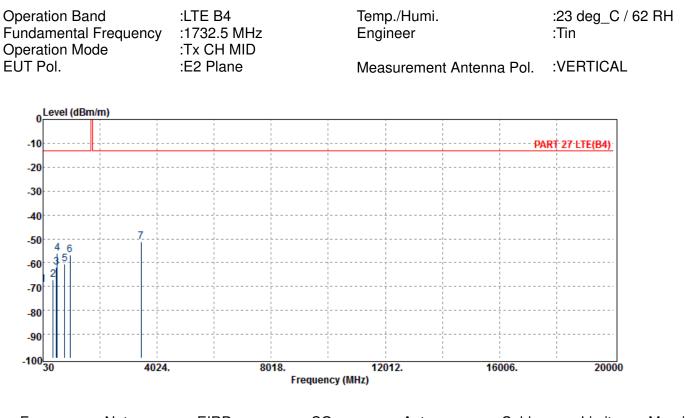
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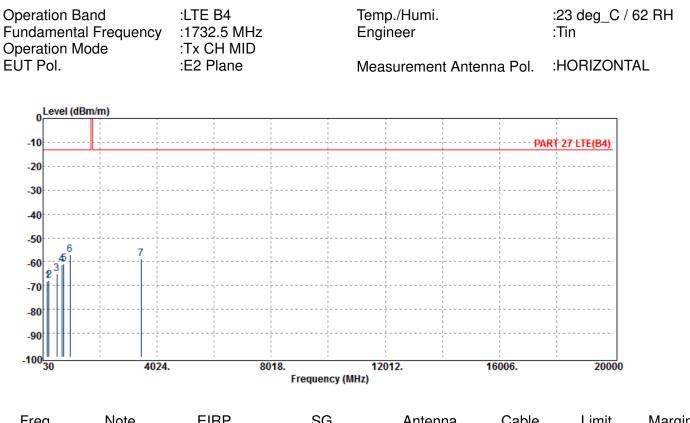
Freq.	Note	EIRP	Output Level	Gain	Loss	Linnin	Margin	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
		-		_	-			
173.56	S	-68.78	-69.14	1.89	-1.53	-13.00	-55.78	
280.26	S	-67.66	-71.36	5.57	-1.88	-13.00	-54.66	
515.00	S	-65.09	-68.66	5.92	-2.36	-13.00	-52.09	
687.66	S	-61.94	-64.43	5.25	-2.76	-13.00	-48.94	
803.09	S	-61.49	-64.08	5.49	-2.90	-13.00	-48.49	
987.39	S	-56.96	-59.69	5.95	-3.23	-13.00	-43.96	
3430.00	Н	-58.37	-64.42	12.28	-6.23	-13.00	-45.37	





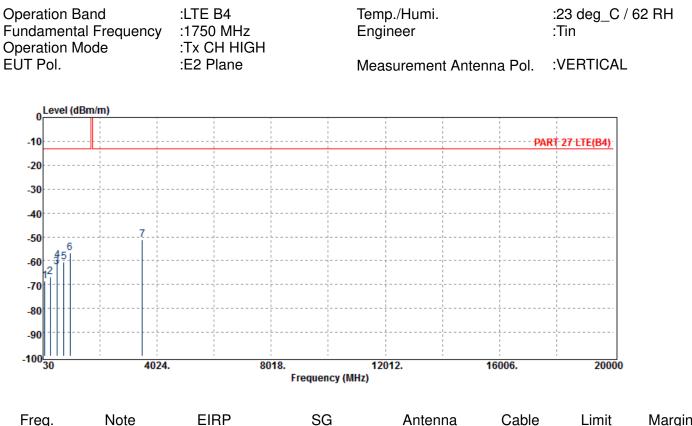
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
30.00	S	-69.18	-55.60	-12.63	-0.96	-13.00	-56.18	
390.84	S	-67.13	-70.79	5.98	-2.33	-13.00	-54.13	
505.30	S	-61.82	-65.47	5.98	-2.33	-13.00	-48.82	
531.49	S	-56.06	-59.38	5.84	-2.51	-13.00	-43.06	
786.60	S	-60.60	-63.15	5.45	-2.90	-13.00	-47.60	
975.75	S	-56.61	-59.14	5.71	-3.18	-13.00	-43.61	
3465.00	Н	-51.30	-57.40	12.34	-6.25	-13.00	-38.30	





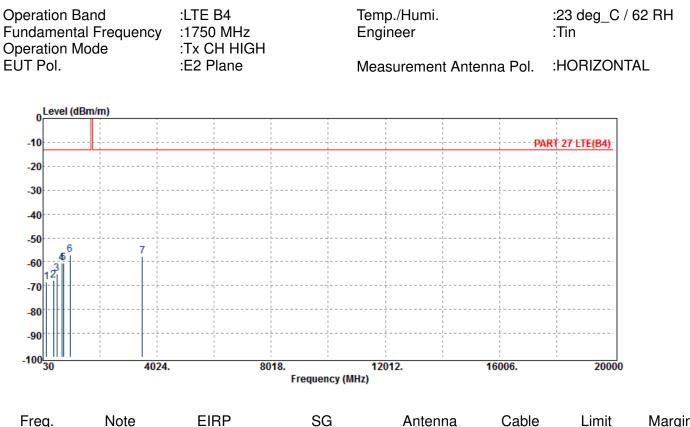
Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	_
400.05	0		~~ ~~	0.40	4 50	40.00		
180.35	S	-68.22	-69.76	3.10	-1.56	-13.00	-55.22	
235.64	S	-67.93	-71.56	5.36	-1.73	-13.00	-54.93	
515.00	S	-64.89	-68.46	5.92	-2.36	-13.00	-51.89	
687.66	S	-61.11	-63.60	5.25	-2.76	-13.00	-48.11	
757.50	S	-60.96	-63.29	5.36	-3.03	-13.00	-47.96	
977.69	S	-57.24	-59.80	5.75	-3.19	-13.00	-44.24	
3465.00	Н	-58.88	-64.97	12.34	-6.25	-13.00	-45.88	





	Freq.	Note	EIRP	SG Output Level	Antenna Gain	Loss	Limit	Margin	
_	MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	_
	93.05	S	-68.42	-68.54	1.34	-1.22	-13.00	-55.42	
	277.35	S	-66.84	-70.57	5.60	-1.86	-13.00	-53.84	
	508.21	S	-62.48	-66.11	5.96	-2.34	-13.00	-49.48	
	532.46	S	-59.93	-63.23	5.83	-2.52	-13.00	-46.93	
	757.50	S	-60.71	-63.03	5.36	-3.03	-13.00	-47.71	
	980.60	S	-56.62	-59.23	5.81	-3.20	-13.00	-43.62	
	3500.00	Н	-51.06	-57.03	12.40	-6.43	-13.00	-38.06	





Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
								•
154.16	S	-68.62	-67.42	0.25	-1.45	-13.00	-55.62	
396.66	S	-67.66	-71.27	5.97	-2.36	-13.00	-54.66	
515.00	S	-65.22	-68.79	5.92	-2.36	-13.00	-52.22	
689.60	S	-60.44	-62.89	5.24	-2.79	-13.00	-47.44	
741.01	S	-60.51	-62.69	5.31	-3.13	-13.00	-47.51	
970.90	S	-57.05	-59.50	5.62	-3.16	-13.00	-44.05	
3500.00	Н	-57.64	-63.61	12.40	-6.43	-13.00	-44.64	



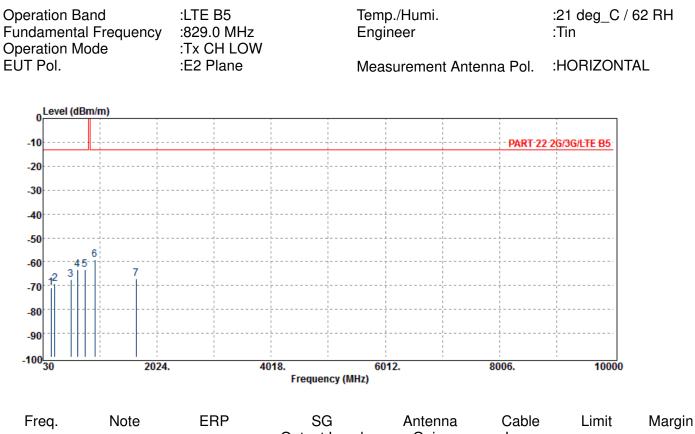
### Radiated Spurious Emission Measurement Result: LTE-Band 5 (The Worst Case) **Operation Band** Temp./Humi. :LTE B5 :21 deg C / 62 RH Fundamental Frequency :829.0 MHz Engineer :Tin **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol. 0 Level (dBm/m) -10 PART 22 26/36/LTF B5 -20 -30 -40 -50 -60 -70 -80 -90 4018. 2024. 6012. 8006. 10000

Frequency (MHz)

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
94.99	S	-70.23	-67.96	-1.04	-1.23	-13.00	-57.23
308.39	S	-68.87	-70.60	3.67	-1.94	-13.00	-55.87
515.00	S	-64.01	-65.43	3.77	-2.36	-13.00	-51.01
532.46	S	-59.93	-61.09	3.68	-2.52	-13.00	-46.93
747.80	S	-63.21	-63.30	3.18	-3.09	-13.00	-50.21
975.75	S	-60.27	-60.66	3.56	-3.18	-13.00	-47.27
1658.00	Н	-64.94	-67.82	7.14	-4.26	-13.00	-51.94

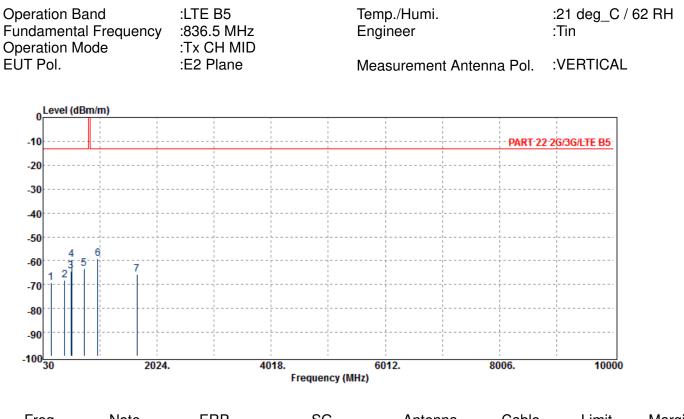
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_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 from exercising all their rights and obligations under the transaction documents. This document much paregraphic to the fulle the fulle to the fulle documents in subdulinant cannot be reproduced by the fullest extent of the law. 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





				Output Level	Gain	Loss			
_	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
	173.56	S	-70.86	-69.07	-0.26	-1.53	-13.00	-57.86	
	235.64	S	-69.14	-70.62	3.21	-1.73	-13.00	-56.14	
	515.97	S	-67.55	-68.96	3.77	-2.36	-13.00	-54.55	
	631.40	S	-63.29	-64.00	3.18	-2.46	-13.00	-50.29	
	764.29	S	-63.29	-63.53	3.23	-2.99	-13.00	-50.29	
	936.95	S	-59.13	-59.00	3.09	-3.22	-13.00	-46.13	
	1658.00	Н	-67.25	-70.13	7.14	-4.26	-13.00	-54.25	





Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
								-
172.59	S	-69.25	-67.29	-0.44	-1.53	-13.00	-56.25	
410.24	S	-68.14	-69.52	3.78	-2.40	-13.00	-55.14	
515.97	S	-64.41	-65.82	3.77	-2.36	-13.00	-51.41	
532.46	S	-59.52	-60.68	3.68	-2.52	-13.00	-46.52	
750.71	S	-63.16	-63.27	3.18	-3.07	-13.00	-50.16	
982.54	S	-59.14	-59.64	3.70	-3.21	-13.00	-46.14	
1673.00	Н	-65.82	-68.73	7.20	-4.29	-13.00	-52.82	

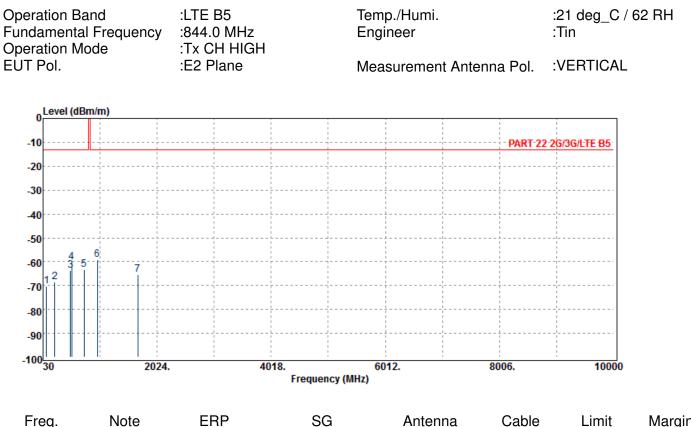


Report No.: ER/2017/30117 Page 272 of 340

Funda	tion Mode	requency	:LTE B5 :836.5 MHz :Tx CH MID :E2 Plane		Temp./Hum Engineer Measureme		:	:21 deg_C / :Tin :HORIZONT	
0	Level (dBm/m	1)						;1	
-10							- PART-22-2	G/3G/LTE B5	
-20							         		
-30							       		
-40			·				 	1 	
-50	6						 <u>+</u>		
-60 -70	4 5 1 2 <sup>3</sup>	7							
-80 -90									
-100	<u>          </u> 30	2024.		4018. Frequency (I	6012. ЛНz)	80	006.	: 10000	
Fre	eq.	Note	ERP	SG Output Lev	Ante vel Ga		Cable Loss	Limit	Margin

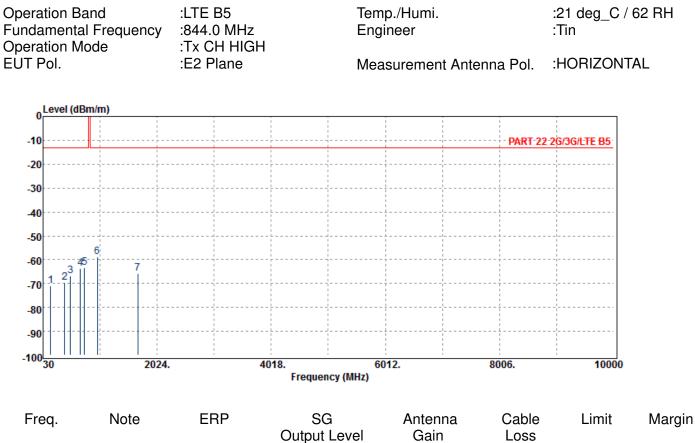
				Gain	LOSS			
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
160.95	S	-70.51	-67.47	-1.57	-1.48	-13.00	-57.51	
410.24	S	-69.23	-70.62	3.78	-2.40	-13.00	-56.23	
513.06	S	-67.14	-68.58	3.79	-2.35	-13.00	-54.14	
633.34	S	-63.69	-64.40	3.17	-2.46	-13.00	-50.69	
806.00	S	-62.95	-63.39	3.33	-2.89	-13.00	-49.95	
977.69	S	-58.00	-58.41	3.60	-3.19	-13.00	-45.00	
1673.00	Н	-65.89	-68.79	7.20	-4.29	-13.00	-52.89	





Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin	
 MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	_
	-							
93.05	S	-70.28	-68.25	-0.81	-1.22	-13.00	-57.28	
236.61	S	-68.59	-70.09	3.23	-1.73	-13.00	-55.59	
513.06	S	-63.80	-65.23	3.79	-2.35	-13.00	-50.80	
531.49	S	-60.33	-61.51	3.69	-2.51	-13.00	-47.33	
744.89	S	-63.32	-63.38	3.17	-3.11	-13.00	-50.32	
975.75	S	-59.10	-59.48	3.56	-3.18	-13.00	-46.10	
1688.00	Н	-65.33	-68.28	7.25	-4.30	-13.00	-52.33	





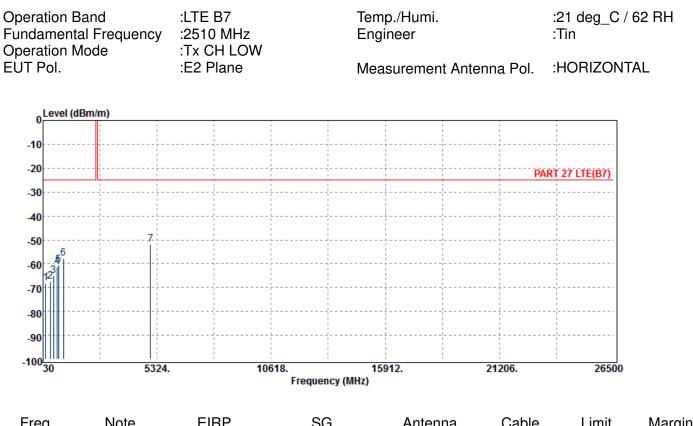
			Output Level	Gain	LOSS		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
160.95	S	-70.92	-67.87	-1.57	-1.48	-13.00	-57.92
405.39	S	-69.42	-70.81	3.80	-2.41	-13.00	-56.42
513.06	S	-66.81	-68.25	3.79	-2.35	-13.00	-53.81
682.81	S	-63.68	-64.11	3.10	-2.67	-13.00	-50.68
754.59	S	-63.28	-63.43	3.20	-3.05	-13.00	-50.28
980.60	S	-58.81	-59.27	3.66	-3.20	-13.00	-45.81
1688.00	Н	-65.66	-68.61	7.25	-4.30	-13.00	-52.66



### Radiated Spurious Emission Measurement Result: LTE-Band 7 (The Worst Case) **Operation Band** :LTE B7 Temp./Humi. :21 deg C / 62 RH Fundamental Frequency :2510 MHz Engineer :Tin **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol. 0 Level (dBm/m) -10 -20 PART 27 LTE(B7 -30 -40 -50 4 6 -60 -70 -80 -90 -100<mark>/</mark>30 5324. 10618. 15912. 21206. 26500 Frequency (MHz)

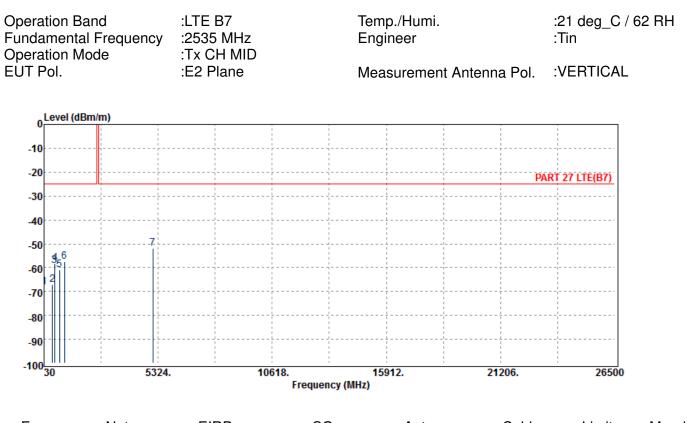
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		-
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
93.05	S	-68.20	-68.32	1.34	-1.22	-25.00	-43.20
381.14	S	-66.54	-70.26	5.99	-2.27	-25.00	-41.54
515.97	S	-62.35	-65.91	5.92	-2.36	-25.00	-37.35
531.49	S	-56.70	-60.02	5.84	-2.51	-25.00	-31.70
799.21	S	-60.82	-63.41	5.49	-2.90	-25.00	-35.82
980.60	S	-57.38	-59.99	5.81	-3.20	-25.00	-32.38
5020.00	Н	-52.05	-56.95	12.71	-7.81	-25.00	-27.05





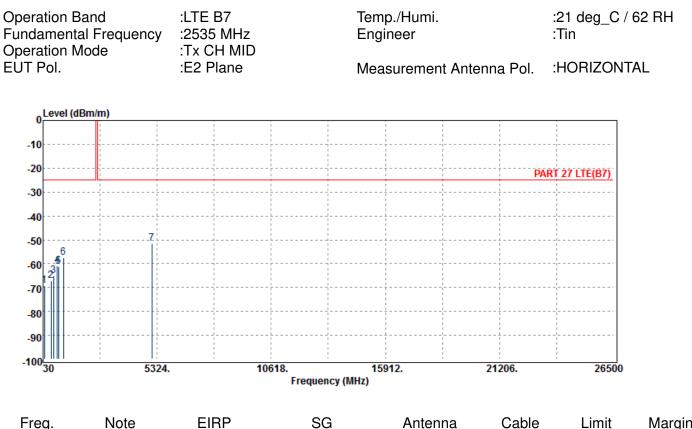
rieq.	NOLE	EINF	Output Level	Gain	Loss	LIIIII	Maryin	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
160.95	S	-68.13	-67.23	0.58	-1.48	-25.00	-43.13	
374.35	S	-67.57	-71.34	5.99	-2.23	-25.00	-42.57	
513.06	S	-65.07	-68.65	5.94	-2.35	-25.00	-40.07	
697.36	S	-61.25	-63.56	5.23	-2.93	-25.00	-36.25	
750.71	S	-60.61	-62.87	5.33	-3.07	-25.00	-35.61	
978.66	S	-57.76	-60.34	5.77	-3.19	-25.00	-32.76	
5020.00	Н	-51.79	-56.69	12.71	-7.81	-25.00	-26.79	





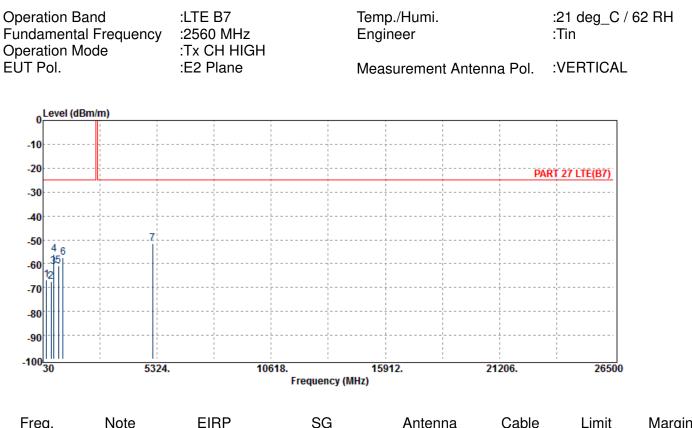
Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
30.00	S	-68.21	-54.63	-12.63	-0.96	-25.00	-43.21	
418.00	S	-67.01	-70.57	5.91	-2.35	-25.00	-42.01	
513.06	S	-59.09	-62.67	5.94	-2.35	-25.00	-34.09	
532.46	S	-57.96	-61.27	5.83	-2.52	-25.00	-32.96	
754.59	S	-60.94	-63.24	5.35	-3.05	-25.00	-35.94	
978.66	S	-57.43	-60.01	5.77	-3.19	-25.00	-32.43	
5070.00	Н	-51.86	-56.73	12.73	-7.86	-25.00	-26.86	





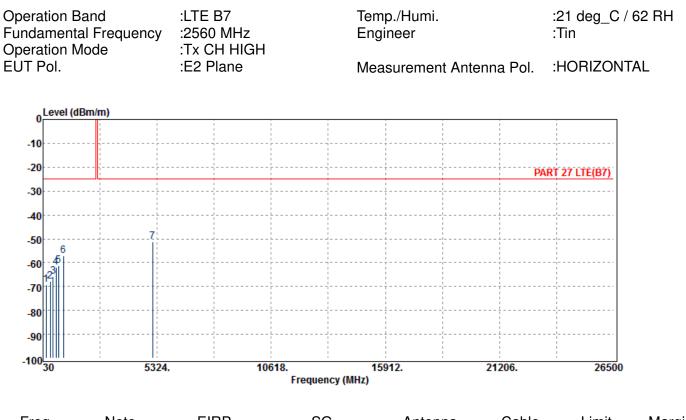
Freq.	Note	EIRF	Output Level	Gain	Loss	LIIIII	wargin	
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	_
94.99	S	-69.30	-69.18	1.11	-1.23	-25.00	-44.30	
398.60	S	-67.22	-70.82	5.97	-2.37	-25.00	-42.22	
515.00	S	-65.11	-68.68	5.92	-2.36	-25.00	-40.11	
699.30	S	-60.84	-63.11	5.23	-2.96	-25.00	-35.84	
744.89	S	-61.14	-63.35	5.32	-3.11	-25.00	-36.14	
977.69	S	-57.42	-59.98	5.75	-3.19	-25.00	-32.42	
5070.00	H I	-51.40	-56.27	12.73	-7.86	-25.00	-26.40	





	rieq.	Note	EIRF	Output Level	Gain	Loss	LIIIII	wargin	
_	MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	_
	183.26	S	-66.95	-68.97	3.59	-1.57	-25.00	-41.95	
	410.24	S	-67.64	-71.18	5.93	-2.40	-25.00	-42.64	
	512.09	S	-61.15	-64.74	5.94	-2.35	-25.00	-36.15	
	531.49	S	-56.17	-59.49	5.84	-2.51	-25.00	-31.17	
	750.71	S	-61.05	-63.31	5.33	-3.07	-25.00	-36.05	
	967.99	S	-57.42	-59.83	5.56	-3.15	-25.00	-32.42	
	5120.00	Н	-51.59	-56.44	12.75	-7.90	-25.00	-26.59	





Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB	
								•
182.29	S	-69.35	-71.21	3.43	-1.57	-25.00	-44.35	
369.50	S	-67.99	-71.79	6.00	-2.20	-25.00	-42.99	
502.39	S	-65.63	-69.30	6.00	-2.32	-25.00	-40.63	
634.31	S	-61.83	-64.70	5.32	-2.45	-25.00	-36.83	
755.56	S	-61.21	-63.52	5.35	-3.04	-25.00	-36.21	
978.66	S	-57.26	-59.84	5.77	-3.19	-25.00	-32.26	
5120.00	Н	-51.38	-56.23	12.75	-7.90	-25.00	-26.38	



10000

### Radiated Spurious Emission Measurement Result: LTE-Band 12 (The Worst Case) **Operation Band** :LTE B12 Temp./Humi. :21 deg C / 62 RH Fundamental Frequency :701.5 MHz Engineer :Tin **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol. 0 Level (dBm/m) -10 27 LTE(B12) -20 -30 -40 -50 6 -60 5 2 -70 -80 -90

Frequency (MHz)

4018.

2024.

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
170.65	S	-70.00	-67.68	-0.79	-1.52	-13.00	-57.00
364.65	S	-69.43	-71.12	3.85	-2.16	-13.00	-56.43
512.09	S	-62.99	-64.44	3.79	-2.35	-13.00	-49.99
531.49	S	-57.68	-58.85	3.69	-2.51	-13.00	-44.68
749.74	S	-62.86	-62.96	3.18	-3.08	-13.00	-49.86
978.66	S	-58.96	-59.39	3.62	-3.19	-13.00	-45.96
1403.00	Ĥ	-63.65	-65.89	6.14	-3.90	-13.00	-50.65

6012.

8006.

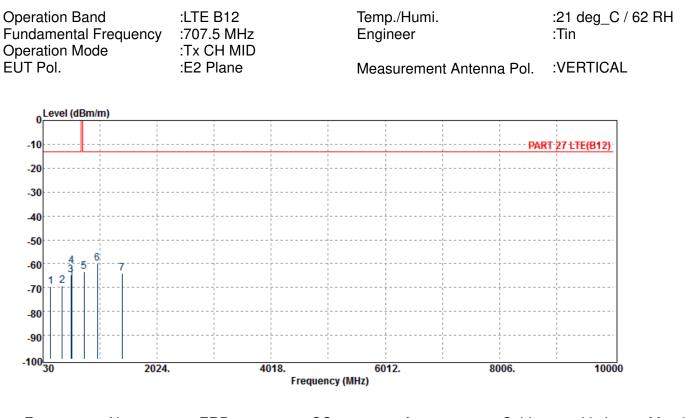
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Operation Band Fundamental Frequency Operation Mode		:LTE B12 :701.5 MHz :Tx CH LOW		Temp Engi	o./Humi. neer			:21 deg_C / 62 RH :Tin		
EUT Pol.	oue	:E2 Plane		Meas	suremen	t Antenna	a Pol.	:HORIZONTAL		
0 Level (dB	m/m)							·		
-10				           			····· PART	27 LTE(B12)		
-20										
-30										
-40				 I I I						
-50	6 7			         						
-604 3 2 <sup>3</sup> -70	D									
-80										
<b>-90</b>			· · · · · · · · · · · · · · · · · · ·							
-100 <mark>30</mark> -100	2024.	4	018. Frequenc	60 y (MHz)	12.	80	06.	10000		
Freq.	Note	ERP	SG		Anten	na	Cable	Limit	Margin	

1109.	11010	<b>L</b> 10	Output Level	Gain	Loss		margin	
 MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	-
154.16	S	-70.46	-67.11	-1.90	-1.45	-13.00	-57.46	
406.36	S	-68.35	-69.73	3.80	-2.42	-13.00	-55.35	
515.00	S	-66.13	-67.54	3.77	-2.36	-13.00	-53.13	
638.19	S	-63.11	-63.83	3.16	-2.44	-13.00	-50.11	
798.24	S	-63.22	-63.66	3.34	-2.90	-13.00	-50.22	
983.51	S	-59.15	-59.66	3.72	-3.21	-13.00	-46.15	
1403.00	Н	-62.45	-64.69	6.14	-3.90	-13.00	-49.45	





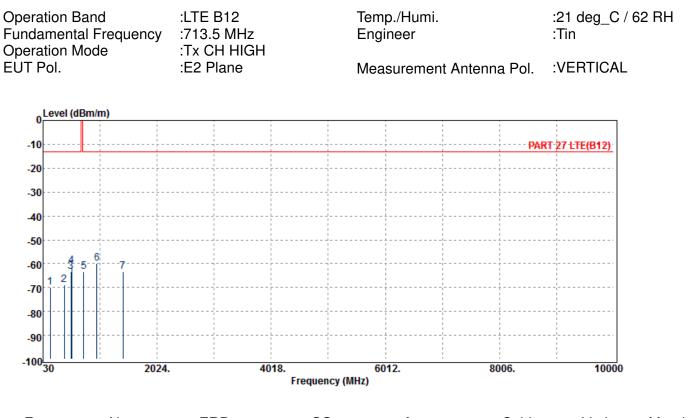
Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	_
160.95	S	-69.65	-66.61	-1.57	-1.48	-13.00	-56.65	
366.59	S	-69.32	-70.99	3.85	-2.17	-13.00	-56.32	
515.00	S	-64.75	-66.17	3.77	-2.36	-13.00	-51.75	
531.49	S	-60.79	-61.97	3.69	-2.51	-13.00	-47.79	
750.71	S	-63.34	-63.45	3.18	-3.07	-13.00	-50.34	
978.66	S	-60.00	-60.43	3.62	-3.19	-13.00	-47.00	
1415.00	Н	-64.09	-66.36	6.19	-3.91	-13.00	-51.09	



Operation Band Fundamental Frequency Operation Mode		:LTE B12 :707.5 MHz :Tx CH MID			Temp./Humi. Engineer			:21 deg_C / 62 RH :Tin		
EUT Pol.	T WOOLC		:E2 Plane		Mea	suremen	it Antenn	a Pol.	:HORIZONTAL	
o	l (dBm/m)									
-10					1 1 1 1 	1 1 1 <del>1</del> <del>1</del> 	     	····· PART	27 LTE(B12)	
-20					; ; ; ; ;	1 1 1 7	         	         		
-30					! ! ! !	       	! ! ! !	1 1 1 1 1		
-40					1 / 1 1 1	 	       	 		
-50	_ 6 _									
-60 -70 <u>1 2</u>	3					T		+		
-80			       		     	           	     	         		
-90				         	; ; ; ; ;	1 1 1 1 1 1	   	   		
-100 <mark>30</mark>		2024.	4	018. Frequer	60 ncy (MHz)	)12.	80	006.	10000	
Freq.	No	te	ERP	SC	3	Anten	na	Cable	Limit	Margin

	rieq.	NOLE		Output Level	Gain	Loss	LIIIII	Maryin	
_	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
	173.56	S	-70.90	-69.10	-0.26	-1.53	-13.00	-57.90	
	356.89	S	-70.16	-71.92	3.86	-2.10	-13.00	-57.16	
	515.00	S	-66.70	-68.11	3.77	-2.36	-13.00	-53.70	
	696.39	S	-63.40	-63.57	3.09	-2.91	-13.00	-50.40	
	752.65	S	-62.20	-62.33	3.19	-3.06	-13.00	-49.20	
	990.30	S	-59.74	-60.36	3.86	-3.24	-13.00	-46.74	
	1415.00	Н	-62.50	-64.77	6.19	-3.91	-13.00	-49.50	





Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
								-
153.19	S	-69.90	-66.51	-1.95	-1.44	-13.00	-56.90	
400.54	S	-68.70	-70.14	3.82	-2.38	-13.00	-55.70	
515.00	S	-63.47	-64.88	3.77	-2.36	-13.00	-50.47	
532.46	S	-60.76	-61.92	3.68	-2.52	-13.00	-47.76	
742.95	S	-63.35	-63.40	3.17	-3.12	-13.00	-50.35	
972.84	S	-59.99	-60.32	3.50	-3.17	-13.00	-46.99	
1427.00	Н	-63.48	-65.79	6.24	-3.93	-13.00	-50.48	



Funda	tion Band Imental F Ition Mode	requency	:LTE B12 :713.5 MHz :Tx CH HIGH			Temp./Humi. Engineer			:21 deg_C / 62 RH :Tin	
EUT P		•	:E2 Plane		Mea	suremen	t Antenna	a Pol.	:HORIZON	TAL
0	Level (dBm/n	n)								
-10								Part	27 LTE(B12)	
-20	י י י י י							1 1 1 1 1 1		
-30	                 							         		
-40 -50								1 1 1 1 1		
-50	45- 3 II	7								
-70	12							1 1 1 7		
-80								1 1 1		
-90										
-100	30	2024.	4	018. Frequenc	60 cy (MHz)	12.	80	006.	10000	
Fre	eq.	Note	ERP	SG		Anten	na	Cable	Limit	Margin

	Freq.	note	ERP	Output Level	Gain	Loss	Limit	Margin	
_	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	_
	100.00	C	70.00		1 40	1 40	10.00	57.00	
	162.89	S	-70.68	-67.77	-1.42	-1.49	-13.00	-57.68	
	235.64	S	-70.10	-71.58	3.21	-1.73	-13.00	-57.10	
	512.09	S	-65.52	-66.96	3.79	-2.35	-13.00	-52.52	
	687.66	S	-62.18	-62.52	3.10	-2.76	-13.00	-49.18	
	744.89	S	-62.48	-62.54	3.17	-3.11	-13.00	-49.48	
	982.54	S	-59.05	-59.55	3.70	-3.21	-13.00	-46.05	
	1427.00	Н	-63.19	-65.49	6.24	-3.93	-13.00	-50.19	



-40 -50

-60

-70 -80 -90 -100

30

6

2024.

5

10000

#### Radiated Spurious Emission Measurement Result: LTE-Band 13 (The Worst Case) **Operation Band** :LTE B13 Temp./Humi. :21 deg C / 62 RH Fundamental Frequency :779.5 MHz Engineer :Tin **Operation Mode** :Tx CH LOW EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol. 0 Level (dBm/m) -10 PART 27 LTE(B13) -20 -30

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
93.05	S	-70.29	-68.26	-0.81	-1.22	-13.00	-57.29
333.61	S	-69.27	-71.14	3.79	-1.92	-13.00	-56.27
510.15	S	-63.99	-65.45	3.80	-2.34	-13.00	-50.99
532.46	S	-59.08	-60.24	3.68	-2.52	-13.00	-46.08
757.50	S	-63.02	-63.20	3.21	-3.03	-13.00	-50.02
970.90	S	-59.38	-59.68	3.47	-3.16	-13.00	-46.38
1559.00	Ĥ	-64.04	-66.70	6.78	-4.12	-40.00	-24.04

Frequency (MHz)

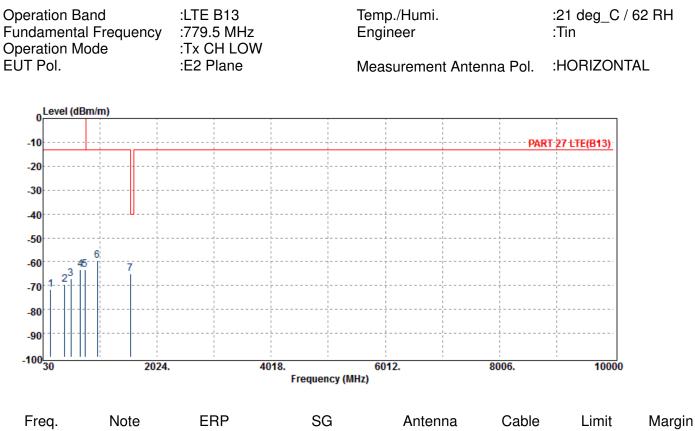
6012.

8006.

4018.

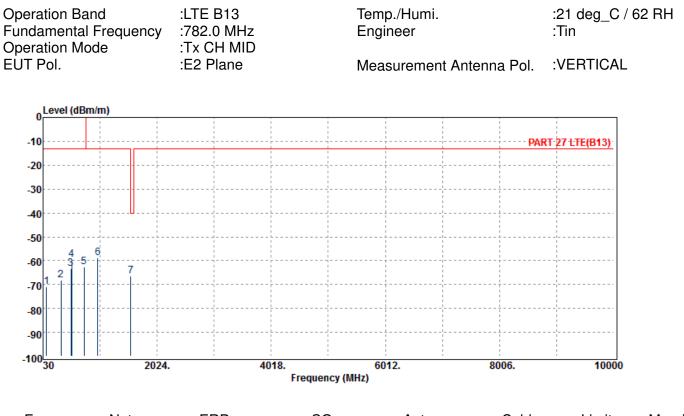
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_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 from exercising all their rights and obligations under the transaction documents. This document much paregraphic to the fulle the fulle to the fulle document is unlawful and offenders may be prosecuted to the fullest extent of the law. 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





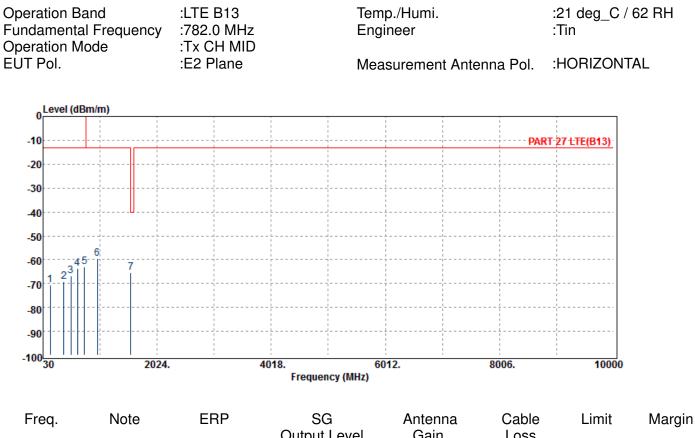
		1010	<b>_</b>	Output Level	Gain	Loss		margin	
_	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
	159.98	S	-71.47	-68.35	-1.64	-1.48	-13.00	-58.47	
	411.21	S	-69.63	-71.02	3.78	-2.39	-13.00	-56.63	
	515.00	S	-67.21	-68.62	3.77	-2.36	-13.00	-54.21	
	684.75	S	-63.40	-63.79	3.10	-2.70	-13.00	-50.40	
	760.41	S	-63.27	-63.47	3.22	-3.01	-13.00	-50.27	
	977.69	S	-59.39	-59.80	3.60	-3.19	-13.00	-46.39	
	1559.00	Н	-65.08	-67.74	6.78	-4.12	-40.00	-25.08	





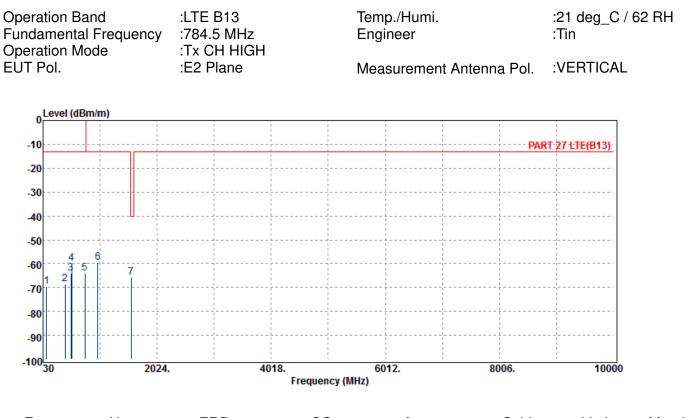
Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		-
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
93.05	S	-71.07	-69.04	-0.81	-1.22	-13.00	-58.07
342.34	S	-68.24	-70.08	3.83	-1.99	-13.00	-55.24
515.00	S	-63.38	-64.80	3.77	-2.36	-13.00	-50.38
531.49	S	-59.64	-60.81	3.69	-2.51	-13.00	-46.64
749.74	S	-62.60	-62.70	3.18	-3.08	-13.00	-49.60
983.51	S	-58.88	-59.39	3.72	-3.21	-13.00	-45.88
1564.00	Н	-66.45	-69.12	6.80	-4.13	-40.00	-26.45





			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
158.04	S	-70.61	-67.42	-1.73	-1.47	-13.00	-57.61
395.69	S	-69.14	-70.61	3.82	-2.35	-13.00	-56.14
515.00	S	-66.66	-68.08	3.77	-2.36	-13.00	-53.66
633.34	S	-63.63	-64.34	3.17	-2.46	-13.00	-50.63
754.59	S	-62.99	-63.14	3.20	-3.05	-13.00	-49.99
978.66	S	-59.48	-59.91	3.62	-3.19	-13.00	-46.48
1564.00	Н	-65.42	-68.08	6.80	-4.13	-40.00	-25.42





Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin	
			Output Level	Gain	Loss			
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	
91.11	S	-69.45	-67.67	-0.57	-1.21	-13.00	-56.45	
413.15	S	-68.44	-69.84	3.77	-2.38	-13.00	-55.44	
515.97	S	-63.96	-65.37	3.77	-2.36	-13.00	-50.96	
531.49	S	-59.70	-60.87	3.69	-2.51	-13.00	-46.70	
765.26	S	-63.85	-64.10	3.23	-2.98	-13.00	-50.85	
987.39	S	-59.38	-59.95	3.80	-3.23	-13.00	-46.38	
1569.00	Н	-65.67	-68.35	6.82	-4.14	-40.00	-25.67	



Operation Band Fundamental Frequency Operation Mode						Temp./Humi. Engineer			:21 deg_C / 62 RH :Tin	
EUT F			:E2 Plane		Mea	suremen	t Antenna	a Pol.	:HORIZON	TAL
0	Level (dBm/m)								·	
-10							1 1 1 1 1 1 1 1	PART	27 LTE(B13)	
-20								, , , , , ,		
-30							   	         		
-40		- <b>- U</b>		 			1 1 1 1 1	         		
-50							, , , , , ,	         		
-60 -70	4 <sup>5-6</sup>	7								
-80 -90										
-100		2024.	40	18. Frequen		12.	80	006.	10000	
Fre	ea No	ote	ERP	SG	i	Anten	na	Cable	Limit	Margin

	Freq.	Note	ERP	SG Output Level	Antenna Gain	Loss	Limit	Margin	
_	MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB	_
		_							
	165.80	S	-70.56	-67.85	-1.21	-1.50	-13.00	-57.56	
	361.74	S	-69.36	-71.07	3.85	-2.14	-13.00	-56.36	
	513.06	S	-66.67	-68.10	3.79	-2.35	-13.00	-53.67	
	626.55	S	-63.68	-64.37	3.19	-2.49	-13.00	-50.68	
	749.74	S	-62.39	-62.49	3.18	-3.08	-13.00	-49.39	
	978.66	S	-59.68	-60.11	3.62	-3.19	-13.00	-46.68	
	1569.00	Н	-65.97	-68.65	6.82	-4.14	-40.00	-25.97	

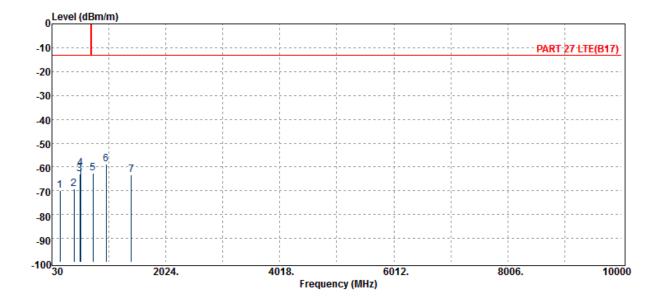


## Radiated Spurious Emission Measurement Result: LTE-Band 17 (The Worst Case)

Operation Band
Fundamental Frequency
Operation Mode
EUT Pol.

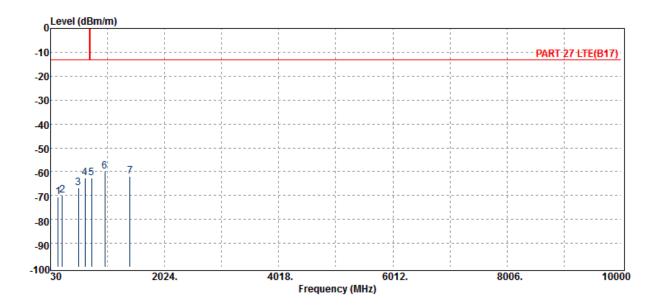
:LTE B17 :709.0 MHz :Tx CH LOW :E2 Plane

Test Date :2017-03-24 Temp./Humi. :21 deg\_C / 62 RH Engineer :Tin :VERTICAL Measurement Antenna Pol.



Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
173.56	S	-70.01	-68.22	-0.26	-1.53	-13.00	-57.01
413.15	S	-69.20	-70.59	3.77	-2.38	-13.00	-56.20
515.00	S	-62.83	-64.24	3.77	-2.36	-13.00	-49.83
532.46	S	-60.45	-61.61	3.68	-2.52	-13.00	-47.45
749.74	S	-62.75	-62.85	3.18	-3.08	-13.00	-49.75
977.69	S	-58.81	-59.23	3.60	-3.19	-13.00	-45.81
1418.00	Н	-63.32	-65.61	6.20	-3.92	-13.00	-50.32

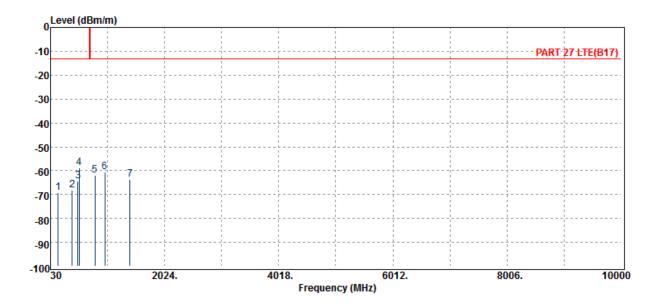




Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
165.80	S	-70.52	-67.80	-1.21	-1.50	-13.00	-57.52
235.64	S	-69.90	-71.37	3.21	-1.73	-13.00	-56.90
515.00	S	-66.87	-68.28	3.77	-2.36	-13.00	-53.87
629.46	S	-62.57	-63.28	3.18	-2.47	-13.00	-49.57
749.74	S	-62.70	-62.80	3.18	-3.08	-13.00	-49.70
977.69	S	-59.93	-60.34	3.60	-3.19	-13.00	-46.93
1418.00	Н	-62.10	-64.38	6.20	-3.92	-13.00	-49.10



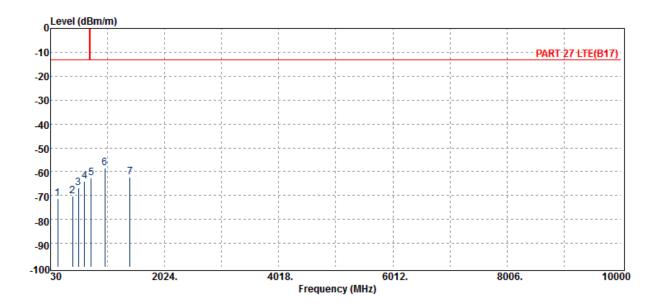
Operation Band	:LTE B17	Test Date	:2017-03-24
Fundamental Frequency	:710.0 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH MID	Engineer	:Tin
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL



Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
165.80	S	-69.13	-66.42	-1.21	-1.50	-13.00	-56.13
405.39	S	-68.30	-69.69	3.80	-2.41	-13.00	-55.30
513.06	S	-64.28	-65.71	3.79	-2.35	-13.00	-51.28
531.49	S	-58.76	-59.93	3.69	-2.51	-13.00	-45.76
806.00	S	-62.05	-62.49	3.33	-2.89	-13.00	-49.05
977.69	S	-60.40	-60.81	3.60	-3.19	-13.00	-47.40
1420.00	Н	-63.50	-65.79	6.21	-3.92	-13.00	-50.50



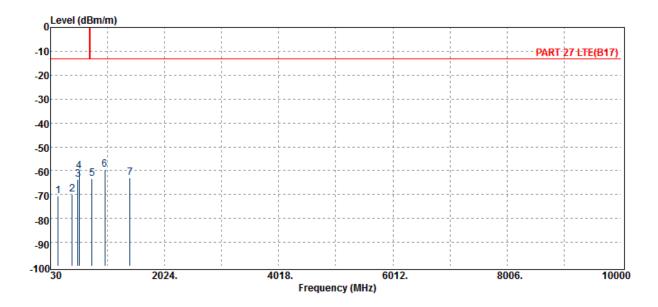
Operation Band	:LTE B17	Test Date	:2017-03-24
Fundamental Frequency	:710.0 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH MID	Engineer	:Tin
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL



Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
154.16	S	-71.14	-67.79	-1.90	-1.45	-13.00	-58.14
415.09	S	-70.38	-71.78	3.77	-2.37	-13.00	-57.38
515.97	S	-66.76	-68.17	3.77	-2.36	-13.00	-53.76
621.70	S	-63.94	-64.61	3.20	-2.53	-13.00	-50.94
740.04	S	-62.62	-62.64	3.16	-3.14	-13.00	-49.62
977.69	S	-58.34	-58.75	3.60	-3.19	-13.00	-45.34
1420.00	Н	-62.19	-64.48	6.21	-3.92	-13.00	-49.19

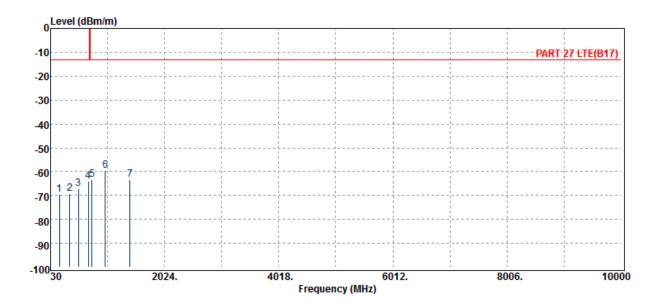


Operation Band	:LTE B17	Test Date	:2017-03-24
Fundamental Frequency	:711.0 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL



Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
159.98	S	-70.45	-67.33	-1.64	-1.48	-13.00	-57.45
411.21	S	-69.80	-71.19	3.78	-2.39	-13.00	-56.80
513.06	S	-63.63	-65.06	3.79	-2.35	-13.00	-50.63
532.46	S	-60.15	-61.30	3.68	-2.52	-13.00	-47.15
754.59	S	-63.28	-63.43	3.20	-3.05	-13.00	-50.28
980.60	S	-59.56	-60.02	3.66	-3.20	-13.00	-46.56
1422.00	Н	-63.09	-65.38	6.22	-3.93	-13.00	-50.09





Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
182.29	S	-69.47	-69.18	1.28	-1.57	-13.00	-56.47
367.56	S	-69.11	-70.78	3.85	-2.18	-13.00	-56.11
515.97	S	-67.12	-68.53	3.77	-2.36	-13.00	-54.12
687.66	S	-63.91	-64.24	3.10	-2.76	-13.00	-50.91
755.56	S	-63.21	-63.37	3.20	-3.04	-13.00	-50.21
982.54	S	-59.56	-60.05	3.70	-3.21	-13.00	-46.56
1422.00	Н	-63.28	-65.58	6.22	-3.93	-13.00	-50.28



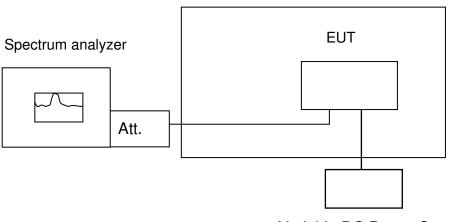
# **11. FREQUENCY STABILITY MEASUREMENT**

### 11.1. **Standard Applicable:**

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

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.

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#### 11.4. **Measurement Equipment Used:**

Conducted Emission (measured at antenna port) Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.				
Power Meter	Anritsu	ML2495A	1005007	12/15/2016	12/14/2017			
Power Sensor	Anritsu	MA2411B	917032	12/15/2016	12/14/2017			
EXA Spectrum Ana- lyzer	Agilent	N9030A	MY53120760	03/21/2017	03/20/2018			
DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2017	01/04/2018			
Coaxial Cable	HUBER+SUHNE R	SUCOFLEX 102	23670/2	01/05/2017	01/04/2018			
Attenuator	Mini-Circuit	BW-S10W2+	2	01/05/2017	01/04/2018			
Splitter	Agilent	11636B	N/A	01/05/2017	01/04/2018			
DC Power Supply	Agilent	E3640A	MY52410006	11/21/2016	11/20/2017			
Temperature Chamber	TERCHY	MHG-120LF	911009	05/17/2016	05/16/2017			
Radio Communication Analyer	Anritsu	MT8820C	6201465317	01/03/2017	01/02/2018			
Radio Communication Analyzer	R&S	CMU200	102189	02/11/2017	02/10/2018			



### 11.5. **Measurement Result:**

# FREQUENCY ERROR vs. VOLTAGE

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz						
Limit: +/- 2.5 ppm						
Power Supply	Environment	Frequency				
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		



Reference Frequency: GPRS 1900 Mid Channel 1880 MHz					
	Limit: +/- 2.5 ppm				
Power Supply Environment Frequency					
Vdc Temperature (			Delta (Hz)	Limit (Hz)	



Reference Frequency: CDMA2000 cell BC0 Mid Channel 836.52 MHz						
	Limit: +/- 2.5 ppm					
Power Supply	Environment	Frequency				
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		



Reference Frequency: CDMA2000 cell BC1 Mid Channel 1880 MHz						
	Limit: +/- 2.5 ppm					
Power Supply	Environment	Frequency				
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		



Reference Frequency: WCDMA II Mid Channel 1880 MHz					
	Limit: +/- 2.5 ppm				
Power Supply Environment Frequency					
Vdc	Temperature (		Delta (Hz)	Limit (Hz)	



Reference Frequency: WCDMA IV Mid Channel 1732.6 MHz						
Limit: +/- 2.5 ppm						
Power Supply	Power Supply Environment Frequency					
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		



	Reference Frequency: WCDMA V Mid Channel 836.6 MHz				
	Limit: +/- 2.5 ppm				
	Power Supply Environment Frequency				
•	Vdc	Temperature (		Delta (Hz)	Limit (Hz)



Reference Frequency:		LTE B2 Mid Channel	1880.0	MHz 20M QPSK CH 18900
		Limit: +/- 2.5	opm	
Power Supply	Environment	Frequency		
Vdc	Temperature (	·	Delta (Hz)	Limit (Hz)



Reference Frequency:		LTE B4 Mid Channel	1732.5	MHz 20M QPSK CH 20175
Limit: +/- 2.5 ppm				
Power Supply	Environment	Frequency		
Vdc	Temperature (		Delta (Hz)	Limit (Hz)



I Reference Frequency.		LTE B5 Mid Channel	836.5	MHz 10M QPSK CH 20525		
Limit: +/- 2.5 ppm						
Power Supply	Environment	Frequency				
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		



Reference Frequency: LTE B7 Mid Channel			2535.0	MHz 10M QPSK CH 21100		
Limit: +/- 2.5 ppm						
Power Supply	Environment	Frequency				
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		



Reference Frequency:		LTE B12 Mid 707.5 Channel		MHz 10M QPSK CH 23095		
Limit: +/- 2.5 ppm						
Power Sup- ply	Environment	Frequency				
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		



Reference Frequency:		LTE B13 Mid Channel	782.0	MHz 10M QPSK CH 23230		
Limit: +/- 2.5 ppm						
Power Supply	Environment	Frequency				
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		



Reference Frequency:		LTE B17 Mid 710.0 Channel		MHz 10M QPSK CH 23790		
Limit: +/- 2.5 ppm						
Power Supply	Environment	Frequency				
Vdc	Temperature (		Delta (Hz)	Limit (Hz)		

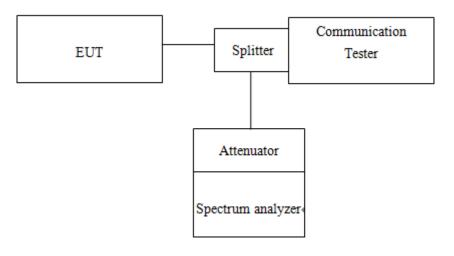


# **12. PEAK TO AVERAGE RATIO**

#### 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  $\geq$  signal's occupied bandwidth; & internal =1ms
- Set the number of counts to a value that stabilizes the measured CCDF curve.

_											
	Conducted Emission (measured at antenna port) Test Site										
	EQUIPMENT TYPE	MFR	MODEL SERIAL NUMBER NUMBER		LAST CAL.	CAL DUE.					
	EXA Spectrum Ana- lyzer	Agilent	N9030A	MY53120760	03/21/2017	03/20/2018					
	DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2017	01/04/2018					
	Coaxial Cable	HUBER+SUHNE R	SUCOFLEX 102	23670/2	01/05/2017	01/04/2018					
ſ	Attenuator	Mini-Circuit	BW-S10W2+	2	01/05/2017	01/04/2018					
Ī	Splitter	Agilent	11636B	N/A	01/05/2017	01/04/2018					
	DC Power Supply	Agilent	E3640A	MY52410006	11/21/2016	11/20/2017					

#### 12.4. Measurement Equipment Used

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

## **Tabular Results:**

Freq.		Peak-to-Average		
(MHz)	СН	GPRS	EDGE	
(1112)		1900	1900	
1850.2	9296	10.02	12.79	
1880.0	9400	10.45	12.25	
1909.8	9538	9.83	11.73	

Erog		Peak-to-Average		
Freq. (MHz)	СН	CDMA BC1	EVDO BC1	
1850.2	512	3.25	3.30	
1880.0	661	3.49	3.50	
1909.8	810	3.30	3.04	

Freq.	СН	Peak-to-Average			
(MHz)	СП	WCDMA II	HSDPA II	HSUPA II	
1850.2	9262	2.92	3.85	3.87	
1880.0	9400	3.10	3.94	3.95	
1909.8	9538	2.85	3.73	3.88	

Freq.	СН	Peak-to-Average			
(MHz)	СП	WCDMA IV	HSDPA	<b>HSUPA IV</b>	
1712.4	1312	2.83	4.06	4.09	
1732.6	1413	2.78	3.83	3.82	
1752.6	1513	2.90	3.94	3.97	



LTE BAND 2								
Ch	Channel bandwidth: 1.4MHz			Channel bandwidth: 3MHz				
Freq.	СН		Average (dB)	Freq.	СН	Peak-to-Average Ratio (dB)		
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT	
1850.7	18607	4.93	13	1851.5	18615	5.35	13	
1880.0	18900	5.38	13	1880.0	18900	5.65	13	
1909.3	19193	4.57	13	1908.5	19185	5.20	13	

LTE BAND 2							
C	Channel bandwidth: 5MHz				nannel band	lwidth: 10M	Hz
Freq.	СН	Peak-to-Average Ratio (dB)		Freq.	СН	Peak-to-Average Ratio (dB)	
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT
1852.5	18625	5.34	13	1855.0	18650	5.72	13
1880.0	18900	5.58	13	1880.0	18900	5.70	13
1907.5	19175	5.07	13	1905.0	19150	5.26	13

	LTE BAND 2										
Cł	nannel band	width: 15M	Hz	Cł	nannel band	width: 20M	Hz				
Freq.	СН	Peak-to-Average Ratio (dB)		Freq.	СН	Peak-to-Average Ratio (dB)					
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT				
1857.5	18675	5.87	13	1860.0	18700	6.57	13				
1880.0	18900	6.06	13	1880.0	18900	6.60	13				
1902.5	19125	5.88	13	1900.0	19100	6.41	13				



	LTE BAND 4											
Ch	annel band	width: 1.4M	Hz	C	hannel ban	dwidth: 3MH	lz					
Freq.	Peak-to-Average CH Ratio (dB)		Eroa		Peak-to- Ratio	Average (dB)						
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT					
1710.7	19957	5.46	13	1711.5	19965	5.94	13					
1732.5	20175	5.52	5.52 13		20175	5.85	13					
1754.3	20393	6.04	13	1753.5	20385	6.31	13					

	LTE BAND 4										
C	hannel ban	dwidth: 5MH	lz	Cł	nannel band	lwidth: 10MI	Hz				
Freq.	СН	Peak-to-Average Ratio (dB)		Freq.	СН	Peak-to-Average Ratio (dB)					
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT				
1712.5	19957	5.96	13	1715.0	20000	5.98	13				
1732.5	20175	5.65	13	1732.5	20175	5.80	13				
1752.5	20375	6.03	13	1750.0	20350	5.99	13				

	LTE BAND 4											
Cł	nannel band	width: 15M	Hz	Cł	nannel band	width: 20M	Hz					
Freq.	СН	Peak-to-Average Ratio (dB)		Freq.	СН	Peak-to-Average Ratio (dB)						
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT					
1717.5	20025	6.26	13	1720.0	20050	6.73	13					
1732.5	20175	6.07	6.07 13		20175	6.72	13					
1747.5	20325	6.23	13	1745.0	20300	6.81	13					



	LTE BAND 5										
Ch	annel band	width: 1.4M	Hz	C	hannel ban	dwidth: 3MH	lz				
Freq.	СН	Peak-to-Average Ratio (dB) Freq. CH		v		СН	Peak-to- Ratio	-			
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT				
824.7	20407	5.58	13	825.5	20415	5.86	13				
836.5	20525	4.99 13		836.5	20525	5.97	13				
848.3	20643	5.23	13	847.5	20635	5.57	13				

	LTE BAND 5										
C	hannel ban	dwidth: 5MH	lz	Cł	nannel band	lwidth: 10Ml	Hz				
Freq.	СН	Peak-to-Average Ratio (dB) Freq. CH		Peak-to- Ratio	•						
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT				
826.5	20425	5.43	13	829.0	20450	5.56	13				
836.5	20525	5.67	<b>5.67</b> 13		20525	5.43	13				
846.5	20625	5.39	13	844.0	20600	5.88	13				

	LTE BAND 7											
Channel bandwidth: 5MHz				Cł	nannel band	lwidth: 10Ml	Hz					
Freq.	СН	Peak-to-Average Ratio (dB)		Freq.	СН	Peak-to- Ratio	•					
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT					
2502.5	20775	5.94	13	2505.0	20800	6.06	13					
2535.0	21100	5.93	13	2535.0	21100	5.91	13					
2567.5	21425	5.83	13	2565.0	21400	5.96	13					

LTE BAND 7											
Cł	nannel band	width: 15M	Hz	Cł	nannel band	width: 20M	Hz				
Freq.	СН	Peak-to-Average Ratio (dB)		Freq.	СН	Peak-to-Average Ratio (dB)					
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT				
2507.5	20425	6.25	13	2510.0	20850	6.64	13				
2535.0	20525	6.18 13		2535.0	21100	6.75	13				
2562.5	20625	6.17	13	2560.0	21350	6.70	13				

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LTE BAND 12											
Ch	hannel bandwidth: 1.4MHz			C	hannel ban	dwidth: 3MH	lz				
Freq.	СН		Peak-to-Average Ratio (dB)		СН	Peak-to-Average Ratio (dB)					
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT				
699.7	23017	5.55	13	700.5	23025	6.06	13				
707.5	23095	5.26 13		707.5	23095	5.62	13				
715.3	23173	5.17	13	714.5	23165	5.90	13				

LTE BAND 12										
C	hannel ban	dwidth: 5MH	lz	Cł	nannel band	width: 10M	Hz			
Freq.	СН		Peak-to-Average Ratio (dB)		СН	Peak-to- Ratic	Average (dB)			
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT			
701.5	23035	5.95	13	704.0	23060	6.05	13			
707.5	23095	5.44 13		707.5	23095	5.90	13			
713.5	23155	5.93	13	711.0	23130	5.72	13			

	LTE BAND 13										
C	hannel ban	dwidth: 5MH	lz	Cł	nannel band	lwidth: 10M	Hz				
Freq.	СН	Peak-to-Average Ratio (dB)		Freq.	СН	Peak-to-Average Ratio (dB)					
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT				
779.5	23205	4.42	13				13				
782.0	23230	4.71	13	782.0	23230	4.66	13				
784.5	23255	4.30	13				13				

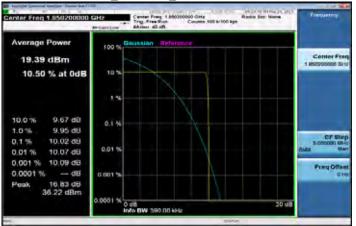
	LTE BAND 17										
C	hannel ban	dwidth: 5MH	lz	Cł	nannel band	lwidth: 10M	Hz				
Freq.	СН	Peak-to-Average Ratio (dB)		Freq.	СН		Average (dB)				
(MHz)		16QAM	LIMIT	(MHz)		16QAM	LIMIT				
706.5	23755	5.59	13	709.0	23780	5.76	13				
710.0	23790	5.58	5.58 13		23790	5.74	13				
713.5	23825	5.83	13	711.0	23780	5.64	13				

## **Measurement Results:**

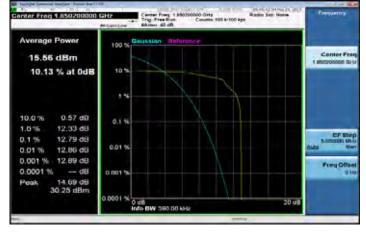
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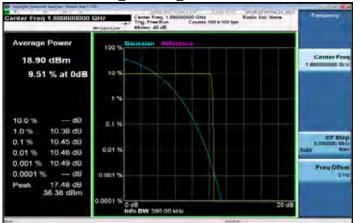
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EDGE\_1900MHz\_LowCH512-1850.2



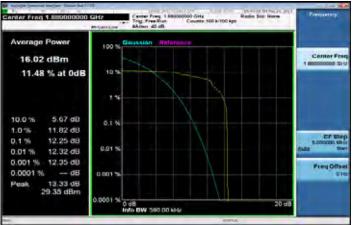
GPRS\_1900MHz\_MidCH661-1880



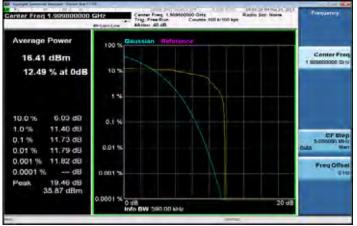
GPRS\_1900MHz\_HighCH810-1909.8



EDGE\_1900MHz\_MidCH661-1880



#### EDGE\_1900MHz\_HighCH810-1909.8



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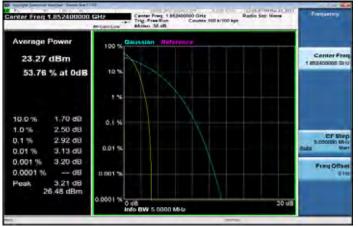
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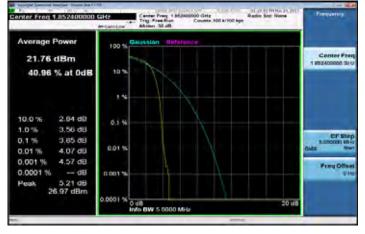
台灣檢驗科技股份有限公司



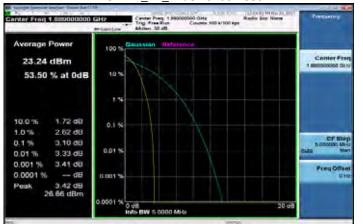
#### WCDMA\_B2\_LowCH9262-1852.4



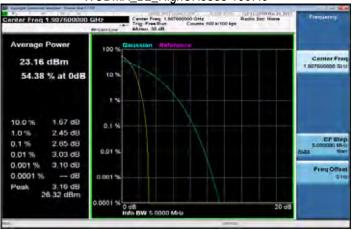
#### HSDPA B2 LowCH9262-1852.4



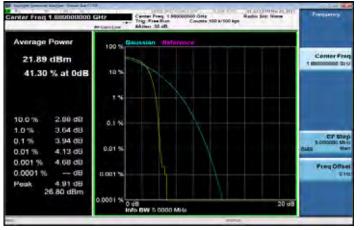
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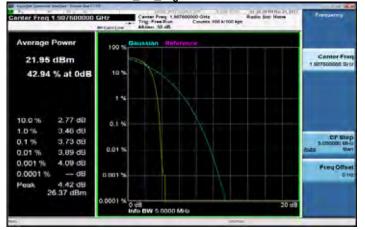
#### WCDMA\_B2\_HighCH9538-1907.6



#### HSDPA\_B2\_MidCH9400-1880



#### HSDPA\_B2\_HighCH9538-1907.6



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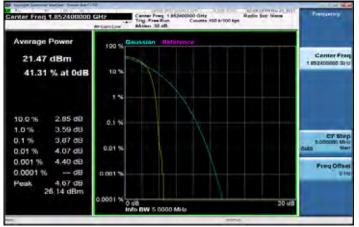
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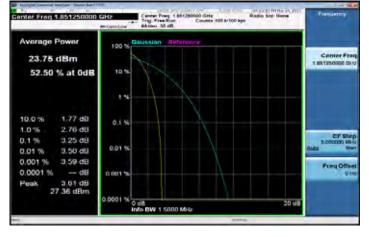
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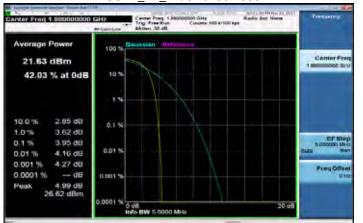
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#### CDMA2000 BC1 LowCH25-1851.3



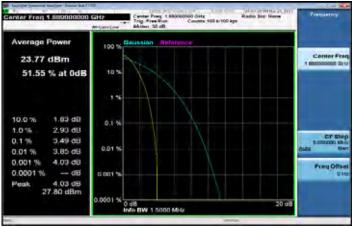
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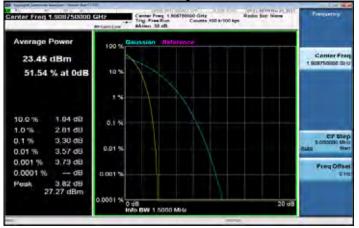
### HSUPA\_B2\_HighCH9538-1907.6



#### CDMA2000\_BC1\_MidCH600-1880



#### CDMA2000\_BC1\_HighCH1175-1908.8



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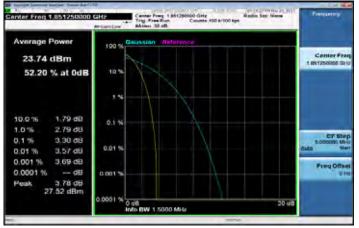
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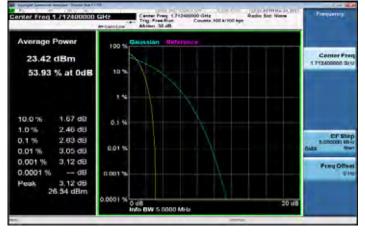
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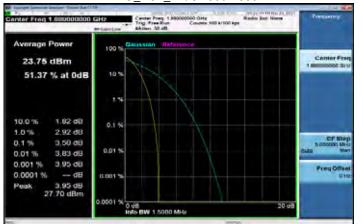
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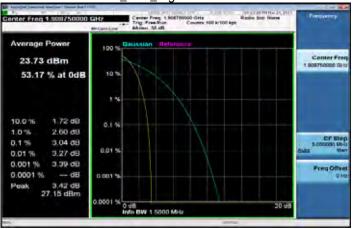
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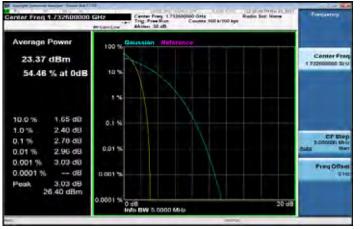
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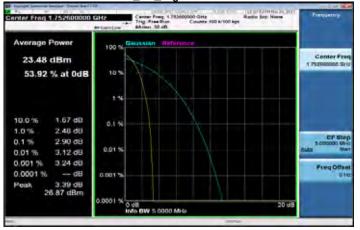
#### EVDO\_BC1\_HighCH1175-1908.8



#### WCDMA\_B4\_MidCH1413-1732.6



#### WCDMA\_B4\_HighCH1513-1752.6



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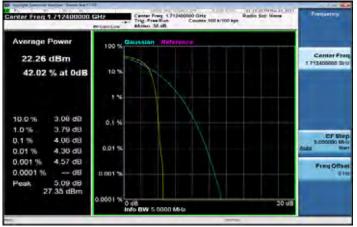
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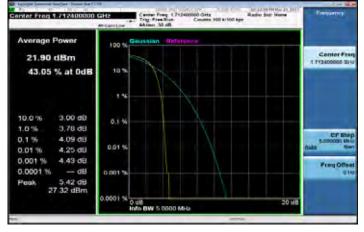
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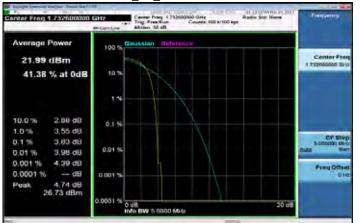
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#### HSUPA\_B4\_LowCH1312-1712.4



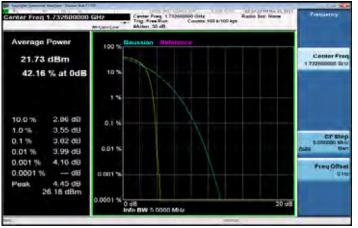
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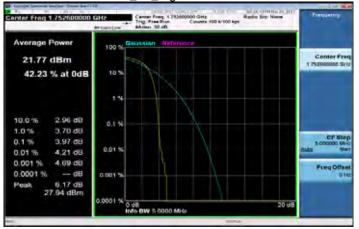
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#### HSUPA\_B4\_MidCH1413-1732.6



### HSUPA\_B4\_HighCH1513-1752.6



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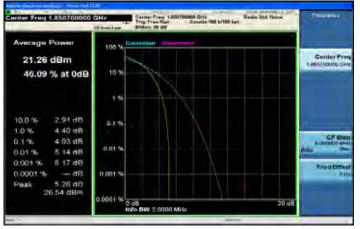
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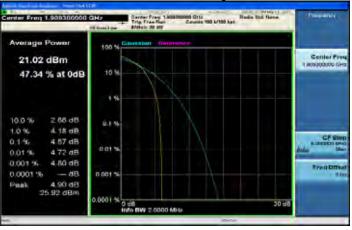
#### LTE\_Band2 1.4MHz\_16-QAM 6 0\_LowCH18607-1850.7

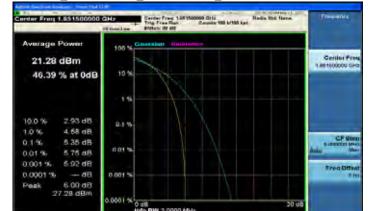


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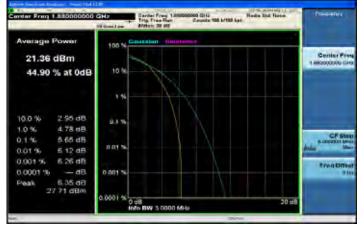




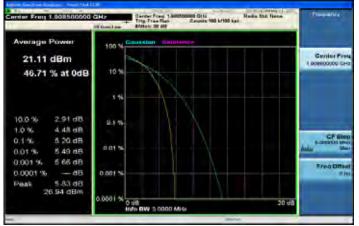
LTE Band2 3MHz 16-QAM 15 0 LowCH18615-1851.5

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#### LTE\_Band2 3MHz\_16-QAM 15 0\_MidCH18900-1880



#### LTE\_Band2 3MHz\_16-QAM 15 0\_HighCH19185-1908.5



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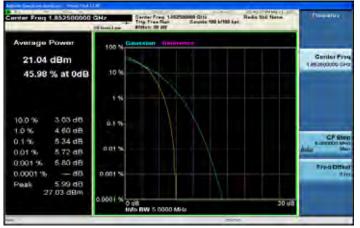
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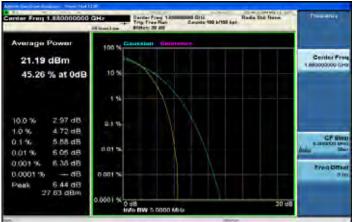
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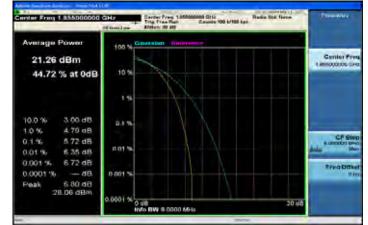


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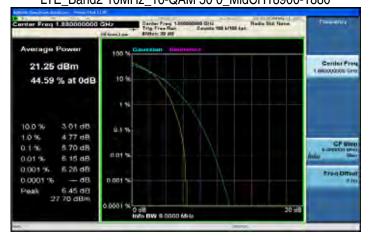
#### LTE\_Band2 5MHz\_16-QAM 25 0\_HighCH19175-1907.5





LTE Band2 10MHz 16-QAM 50 0 LowCH18650-1855

## LTE\_Band2 10MHz\_16-QAM 50 0\_MidCH18900-1880



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LTE\_Band2 10MHz\_16-QAM 50 0\_HighCH19150-1905

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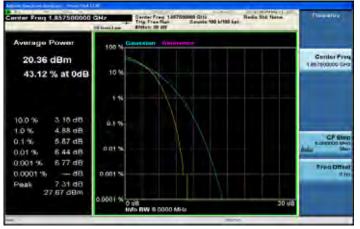
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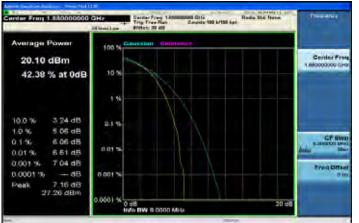
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#### LTE\_Band2 15MHz\_16-QAM 75 0\_LowCH18675-1857.5



#### LTE\_Band2 15MHz\_16-QAM 75 0\_MidCH18900-1880



#### LTE\_Band2 15MHz\_16-QAM 75 0\_HighCH19125-1902.5





#### LTE\_Band2 20MHz\_16-QAM 100 0\_LowCH18700-1860

### LTE Bondo 2000H- 16 0.00 100 0 MidCH18000 1880





#### LTE\_Band2 20MHz\_16-QAM 100 0\_HighCH19100-1900

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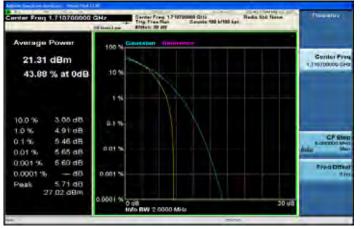
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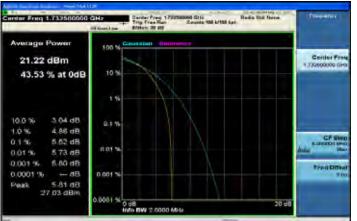
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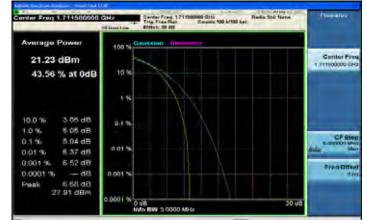


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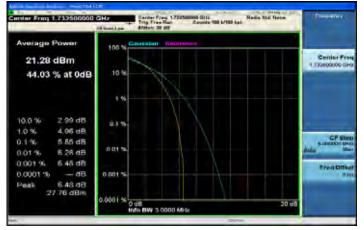
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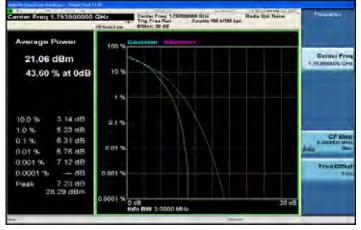




LTE Band4 3MHz 16-QAM 15 0 LowCH19965-1711.5

#### LTE\_Band4 3MHz\_16-QAM 15 0\_MidCH20175-1732.5





#### LTE\_Band4 3MHz\_16-QAM 15 0\_HighCH20385-1753.5

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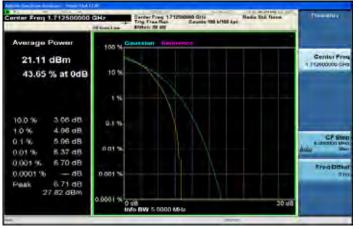
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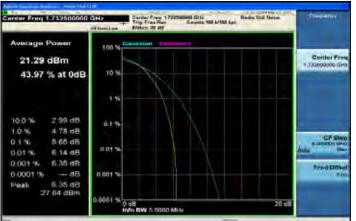
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#### LTE\_Band4 5MHz\_16-QAM 25 0\_LowCH19975-1712.5

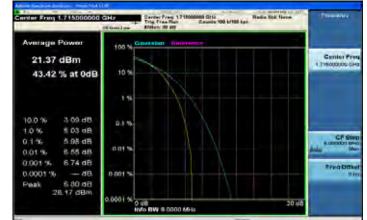


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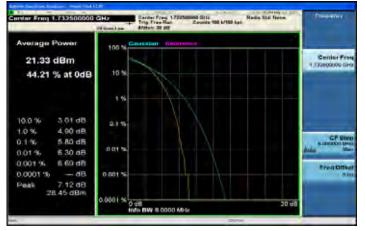
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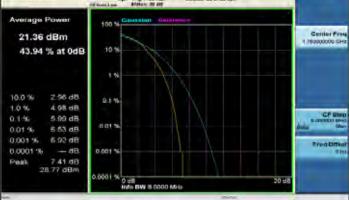
LTE Band4 10MHz 16-QAM 50 0 LowCH20000-1715

#### LTE\_Band4 10MHz\_16-QAM 50 0\_MidCH20175-1732.5



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LTE\_Band4 10MHz\_16-QAM 50 0\_HighCH20350-1750



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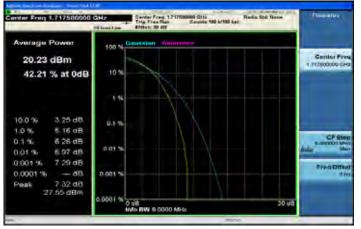
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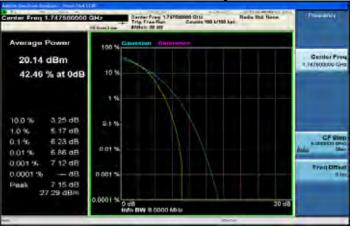
#### LTE\_Band4 15MHz\_16-QAM 75 0\_LowCH20025-1717.5



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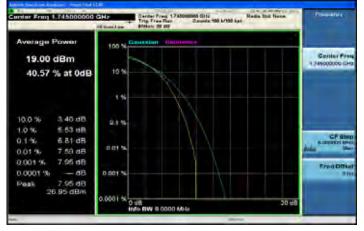


LTE Band4 20MHz 16-QAM 100 0 LowCH20050-1720

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#### LTE\_Band4 20MHz\_16-QAM 100 0\_MidCH20175-1732.5





#### LTE\_Band4 20MHz\_16-QAM 100 0\_HighCH20300-1745

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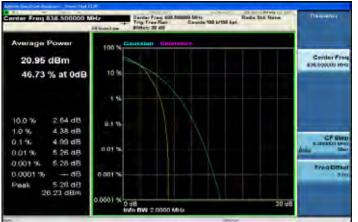
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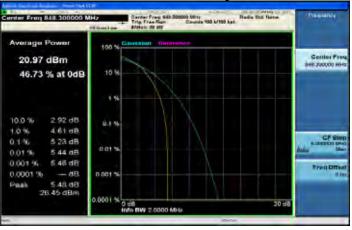
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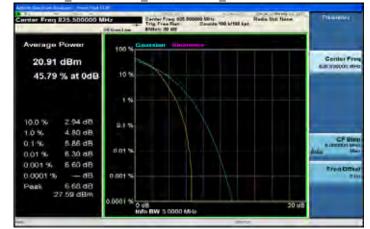


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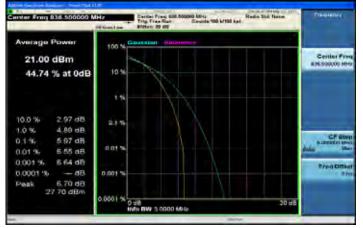
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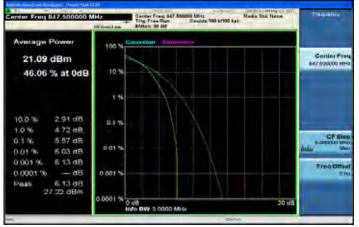


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#### LTE\_Band5 3MHz\_16-QAM 15 0\_MidCH20525-836.5



#### LTE\_Band5 3MHz\_16-QAM 15 0\_HighCH20635-847.5



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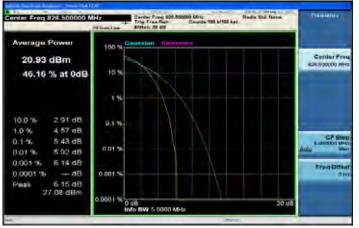
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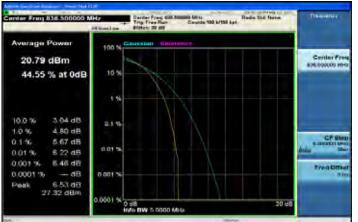
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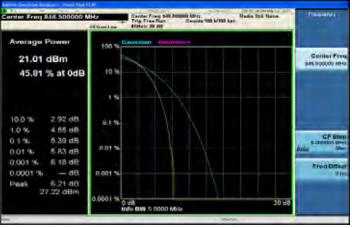
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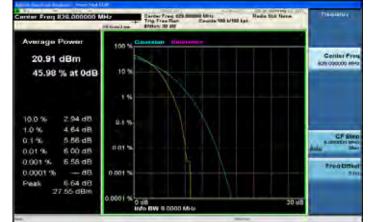


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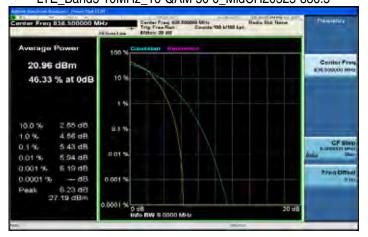
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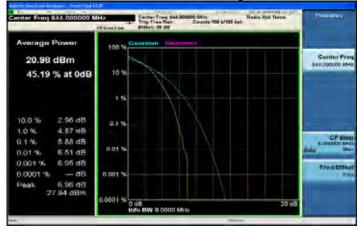




LTE Band5 10MHz 16-QAM 50 0 LowCH20450-829

## LTE\_Band5 10MHz\_16-QAM 50 0\_MidCH20525-836.5





#### LTE\_Band5 10MHz\_16-QAM 50 0\_HighCH20600-844

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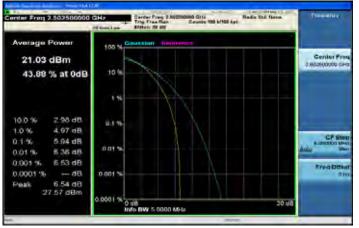
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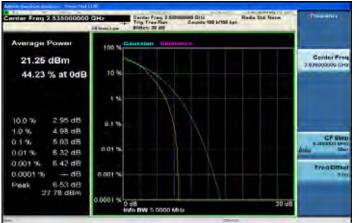
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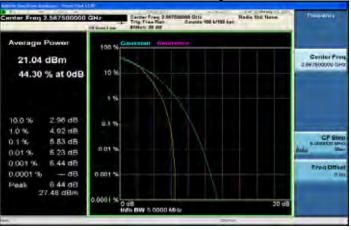
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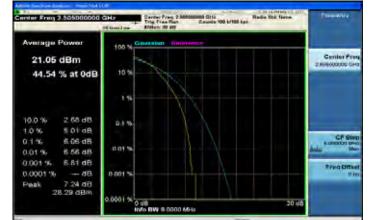


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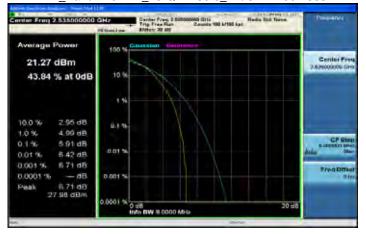
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LTE Band7 10MHz 16-QAM 50 0 LowCH20800-2505

### LTE\_Band7 10MHz\_16-QAM 50 0\_MidCH21100-2535



#### age Powe Center Fre 20.98 dBm 10.9 44.88 % at 0dB 1 56 10.0 % 2-91 dB 0.1 % 5.00 dB 1.0 % CEI 0.1.% 5.96 dB 0.01 0.01 % 6.72 48 0.001 % 6.90 dB 0.0001 % -+ 88 0 001 6.90 dB 27 88 dBm Peak 0.000 i % 0 uB 20 di NV 8 0000 MH

LTE\_Band7 10MHz\_16-QAM 50 0\_HighCH21400-2565

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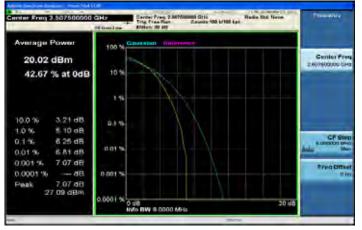
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#### LTE\_Band7 15MHz\_16-QAM 75 0\_LowCH20825-2507.5

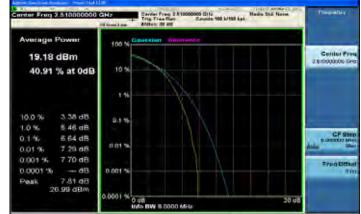


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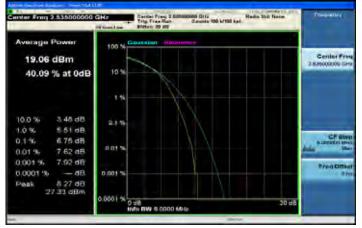
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# LTE\_Band7 20MHz\_16-QAM 100 0\_LowCH20850-2510

#### LTE\_Band7 20MHz\_16-QAM 100 0\_MidCH21100-2535





#### LTE\_Band7 20MHz\_16-QAM 100 0\_HighCH21350-2560

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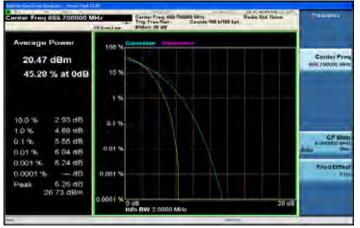
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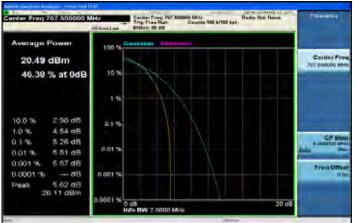
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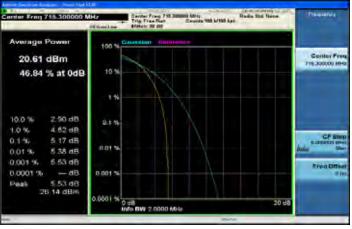
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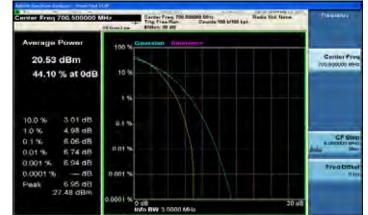


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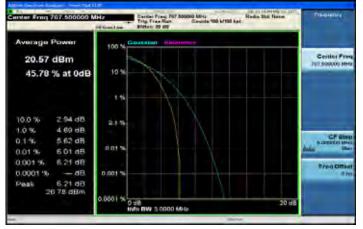
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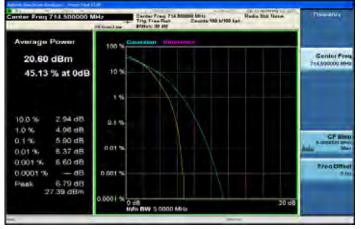


LTE Band12 3MHz 16-QAM 15 0 LowCH23025-700.5

#### LTE\_Band12 3MHz\_16-QAM 15 0\_MidCH23095-707.5



#### LTE\_Band12 3MHz\_16-QAM 15 0\_HighCH23165-714.5



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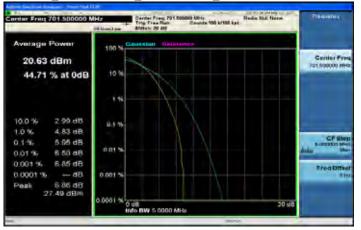
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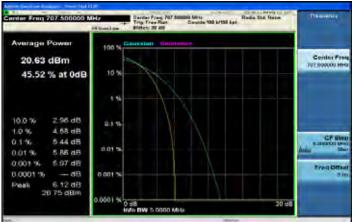
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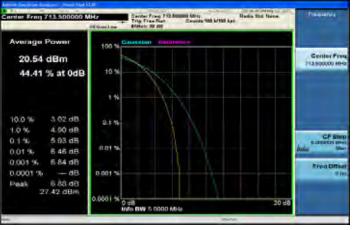
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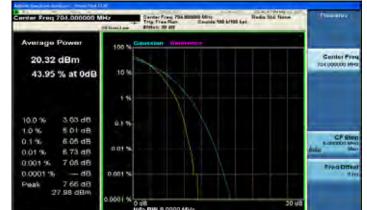


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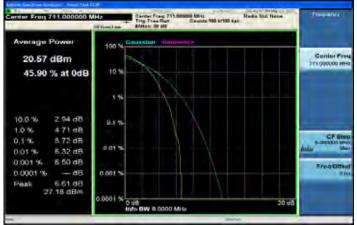




LTE Band12 10MHz 16-QAM 50 0 LowCH23060-704



#### LTE\_Band12 10MHz\_16-QAM 50 0\_HighCH23130-711



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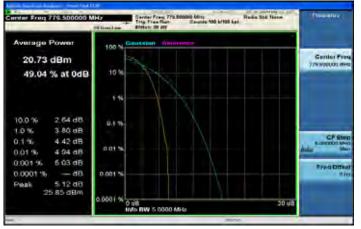
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#### LTE\_Band13 5MHz\_16-QAM 25 0\_LowCH23205-779.5



#### LTE\_Band13 5MHz\_16-QAM 25 0\_MidCH23230-782



#### LTE\_Band13 5MHz\_16-QAM 25 0\_HighCH23255-784.5



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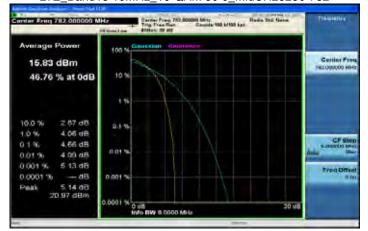
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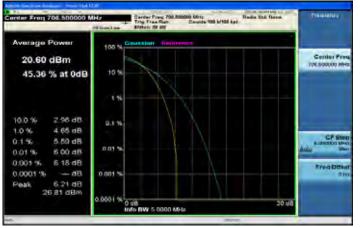
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# LTE Band13 10MHz 16-QAM 50 0 MidCH23230-782





LTE\_Band17 5MHz\_16-QAM 25 0\_LowCH23755-706.5

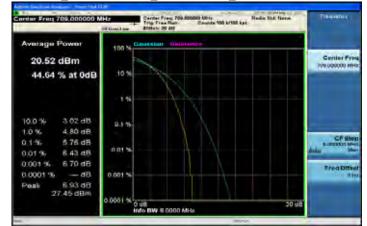


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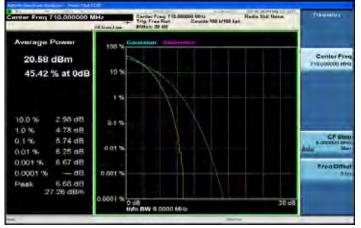
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LTE Band17 10MHz 16-QAM 50 0 LowCH23780-709

#### LTE\_Band17 10MHz\_16-QAM 50 0\_MidCH23790-710



#### Radio Std. House age Powe Center Fre 20.61 dBm 10.5 45.33 % at 0dB 1 56 10.0 % 2.93 dB 0.1 % 4 70 dB 1.0 % CEI 0.1.% 5.64 dB 0.01 0.01 % 6 25 dB 6.53 dB 0.001 % 0.0001 % -+ dB 0 001 6.93 dB 27.54 dBm Peak 0.000 1 % 0 uB 20 dl NV 8 0000 MH

LTE\_Band17 10MHz\_16-QAM 50 0\_HighCH23800-711

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