



























































5.4. Spurious Emission at Antenna Terminal

5.4.1.Test Standard

FCC: CFR Part 2.1051, CFR Part 22.917, CFR Part 24.238, CFR Part 27.53

5.4.2.Test Limit

The radio frequency voltage or power generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in FCC 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$. For all power levels +30dBm to 0dBm, this becomes a constant specification of -13dBm.

FCC 22.917 Emission limitations for cellular equipment.

The rules in this section govern the spectral characteristics of emissions in the Cellular Radio telephone Service.

(b) Measurement procedure. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC 24.238 Emission limitations for Broadband PCS equipment.

The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service.

(b) Measurement procedure. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC: §27.53

(c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P) dB$;

(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 $43 + 10 \log (P) dB$;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(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; (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

(h) AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}$ (P) dB.

(m)(4) For mobile digital stations, the attenuation factor shall be not less than $43 + 10 \log (P) dB$ at the channel edge and $55 + 10 \log (P) dB$ at 5.5 megahertz from the channel edges.(Channel edges are defined under

§27.5 (i) Frequency assignment for the BRS/EBS band)

(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

5.4.3.Test Procedure

1. Connect the equipment as shown in the above diagram.

2. Set the spectrum analyzer to measure peak hold with the required settings.

3. Set the signal generator to a known output power and record the path loss in dB (LOSS) for frequencies up to the tenth harmonic of the EUT's carrier frequency.

LOSS = Generator Output Power (dBm) – Analyzer reading (dBm).

4. Replace the signal generator with the EUT.

5. Adjust the settings of the Universal Radio Communication Tester (CMU) to set the EUT to its maximum power at the required channel.

6. Set the spectrum analyzer to measure peak hold with the required settings. Offset the spectrum analyzer reference level by the path loss measured above.

7. Measure and record all spurious emissions up to the tenth harmonic of the carrier frequency.

8. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.

9. If necessary steps 6 and 7 may be performed with the spectrum analyzer set to average detector.

(Note: Step 3 above is performed prior to testing and LOSS is recorded by test software. Steps 2, 6, and 7 above are performed with test software.)

5.4.4.Test Data

For GSM Test Band=GSM850 Test Mode=GSM/TM1 Test Channel=LCH

Agilent Spectrum	Analyzer - Swept	SA								<i>.</i>	1
Center Fre	eq 79.500	KHZ PN	0: Wide +++	Trig: Free	Run	Avg Type Avg Hold	RMS 28/100	05:15:51 AM TRAC TYP DE	May 08, 2020	F	requency
10 dB/div	Ref Offset 6.7 Ref 20.00 (74 dB 1Bm	asm:Low	BALLETL. OF				Mkr1 9 -44.9	.71 kHz 84 dBm		Auto Tune
10.0											Center Freq 79.500 kHz
0.00 -111 <i>0</i>											Start Freq 9.000 kHz
-20.0									73/0 000		Stop Freq 150.000 kHz
-41.0 1										Auto	CF Step 14.100 kHz Man
-60.0	M. Mary	enternal	nonnahan	Allandary	other and a participation of the	www.	Marina	ulla sil. Iwa			Freq Offset 0 Hz
Start 9.00 H #Res BW 1	(Hz .0 kHz		#VBW	10 kHz*			Sweep 1	Stop 15 68.0 ms (0.00 kHz 1000 pts)		
MSG							STATU	DC Cou	pled		

Agilent	l Spectrur	n Analyzar - 1	mipt SA			11/2/02					94
Cer	Center Freq 15.075000 MHz				Trig: Fre	Trig: Free Run Avg Type: RMS AvgHold: 17/100		RMS 17/100	05:15:00 AM May 08, 2020 TRACE 11 2:02:4 5 TYPE 000000000000000000000000000000000000		Frequency
10 d	B/div	Ref Offse Ref 20.	t 6.74 dB 00 dBm	ir Gain;Low	BY REGIST O				Mkr1 -52.0	150 kHz 24 dBm	Auto Tune
10.0											Center Freq 15.075000 MHz
0.00 -111.0											Start Freq 150,000 kHz
-211.0										-20.00 ithin	Stop Freq 30.000000 MHz
-40.0	1										CF Step 2.985000 MHz Auto Man
-60.0											Freq Offset 0 Hz
-79.0	Way	4.Atronta	y spilled and fell	, were a shiph process	alitration	And the second	midummun	whether a	ulum granihi	way million	
Star #Re	Start 150 kHz Stop 30.00 MHz #Res BW 10 kHz #VBW 30 kHz* Sweep 368.3 ms (1000 pts)										
MSG								STATU	DC Co	pled	

Agilent Spectrum Analyzer - Swept SA		11 10500		and the second	
Center Freq 515.000000	MHz PNO: Fest	Trig: Free Run	Avg Type: RMS Avg[Hold: 100/100	105:16:11 AM May 08, 2020 TRACE 2:244 TYPE Minimum	Frequency
Ref Offset 7.44 dB	IF Gain:Low	RAtten: 40 dB		Mkr2 956.3 MHz -35.132 dBm	Auto Tun
260				01	Center Freq 515.000000 MHz
5.00					Start Freq 30.000000 MHz
-6.00 -15.0				-42100 dBm	Stop Freq 1.000000000 GHz
-25.0				¢ ²	CF Step 97.000000 MHz Auto Man
-45.0	and an	แล้มหาหารสารไฟสลัสลุมคุ	angering (sp-childed de alaasek	ىمىمىرەل.ۋەتەيتىلىمىزا.201 يەلىردىمەر 1 <u>9</u> 1ىي	Freq Offset 0 Hz
Start 30.0 MHz #Res BW 1.0 MHz	#VBW	3.0 MHz*	Sweep	Stop 1.0000 GHz 1,199 ms (1000 pts)	
MSG			STATU	s	

Agilent Spectrum Analyzer - Swept SA						54. (†
Center Freq 5.00000000	0 GHz PNO: Fast T	rig: Free Run	Avg Type: RMS Avg Hold: 69/10	05:15:21 1 TP 0 1	AM May 08, 2020	Frequency
Ref Offset 8.65 dB	IF-Gain:Low #2	Atten: eU dib		Mkr1 7.1 -31.	75 1 GHz 203 dBm	Auto Tune
20 9 〒0						Center Freq 5.000000000 GHz
5.00						Start Freq 1.000000000 GHz
4:00 4:50					4200 (B P)	Stop Freq 9.000000000 GHz
-25.0		سريوانيد ال		1		CF Step 800.000000 MHz <u>Auto</u> Man
-15.0						Freq Offset 0 Hz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW 31	D MHz*	Swee	Stop	9.000 GHz	
MSG				STATUS		

Test Channel=MCH


Agilent	Spectrum	1 Analyzer - See	pt SA			10/10/000			- Markanesees		2
Cer	ter Fr	eq 15.07	5000 MHz	PNO: Fest ++	. Trig: Free	Run	Avg Type Avg Hold	e: RMS 17/100	05:16:47 A		Frequency
10 di	B/div	Ref Offset 0	5.74 dB dBm	Gain:Low	#Atten: 30	948			Mkr1 -51.5	150 kHz 07 dBm	Auto Tune
10.0											Center Freq 15.075000 MHz
0.00 -1(1.0											Start Freq 150,000 kHz
-20.0										-20.00 ithr	Stop Freq 30.000000 MHz
-40.0	1										CF Step 2.985000 MHz <u>Auto</u> Man
-60.0	ł										Freq Offset 0 Hz
-79.0	414444	of the trace	where a last	n an	maaladi.nima	posteristica	and the work	re harpen and	weller and when	and the particular state	
Star #Re	t 150 s BW	(Hz 10 kHz		#VBW	30 kHz*			Sweep 3	Stop 3 68.3 ms (0.00 MHz 1000 pts)	ļ
MSG								STATU	DC Co	pled	

Agilent Spectru	um Analyzer - Swept SA		11 100000		in the second	
Center F	req 515.000000	MHz PNO: Fest	Trig: Free Run	Avg Type: RMS Avg Held: 100/100	05:15:58 AM May 08, 2020 TRACE 2:34 TYPE MULTURE	Frequency
10 dB/div	Ref Offset 7.44 dB Ref 35.00 dBm	te-Gain:Low	satisfic and and		Mkr2 985.4 MHz -34.408 dBm	Auto Tune
250					01	Center Freq 515.000000 MHz
15.8 5.00						Start Freq 30.000000 MHz
-6.00					-1200 @P	Stop Freq 1.000000000 GHz
-25.0					8	CF Step 97.000000 MHz Auto Man
-35.0 -15.0	di _{n s} anternetan politikan	holtoning in animatic	skinneten etablasi	or bool and a second	sent have some more method	Freq Offset 0 Hz
65 1 Start 30.0	0 MHz				Stop 1.0000 <u>GHz</u>	
#Res BW	1.0 MHz	#VBW	3.0 MHz*	Sweep	1.199 ms (1000 pts) s	

Agient Spectre	um Analyzer - Swept	LSA								
Center F	req 5.0000	00000 GH	NO: Fest	Trig: Free	Run	Avg Type Avg Hold	RMS 68/100	05:17:08 A TRA TY	M May 06, 2020 CE 1 2445	Frequency
10 dB/div	Ref Offset 8. Ref 35.00	EAtten: 40	Mkr1 2.694 0 0 -31.859 c					Auto Tune		
20										Center Freq 5.000000000 GHz
15.8 5.00										Start Freq 1.000000000 GHz
-6.00									.42100 (Bri	Stop Freq 9.000000000 GHz
-35.0		1 					a ha a yethe			CF Step 800.000000 MHz <u>Auto</u> Man
-45.0							Total A			Freq Offset 0 Hz
Start 1.0	00 GHz		#\/B\M	3.0 MH#			Swaan	Stop 9	0.000 GHz	
MSG	no mnz		WACAA	510 MHZ			STAT	us	(oriso prs)	

Test Channel=HCH



Aglent Spectrum Analyzer - Swept SA		11 10262		United and the second	
Center Freq 15.075000	MHz PNO: Fest	Trig: Free Run	Avg Type: RMS Avg Hold: 17/100	05:17:34 AM May 08, 2020 TRACE 12:244 TYPE MULTURE	Frequency
Ref Offset 5.74 d 10 dB/div Ref 20.00 dBr	B	BUILDED OF ALL		Mkr1 150 kHz -51.285 dBm	Auto Tune
10.0					Center Freq 15.075000 MHz
-11.0					Start Freq 150,000 kHz
				-33.00 alter	Stop Freq 30.000000 MHz
43.0					CF Step 2.985000 MHz Auto Man
-60.0					Freq Offset 0 Hz
Warder Martinel Mill	undallaterstation	wp. windia is a auchili	where the product of the second	an aparta and an an an an	
#Res BW 10 kHz	#VBW	30 kHz*	Sweep	368.3 ms (1000 pts)	
MSG			STAT	DC Coupled	

Agilent Spectrum Analyzer - Swept SA		11 100502			<i>ii</i>
Center Freq 515.000000	MHz PNO: Fest	Trig: Free Run	Avg Type: RMS Avg/Hold: 100/100	05:12:44 AM May 08, 2020 TRACE 1 2 2 4 5 TYPE	Frequency
Ref Offset 7.44 dB	IFGain:Low	#Atten: 40 dB		Mkr2 929.1 MHz -34.277 dBm	Auto Tune
250				\$ ¹	Center Freq 515.000000 MHz
500					Start Freq 30.000000 MHz
-6.00 -5.0				-1200 @P	Stop Freq 1.000000000 GHz
-25 0				2	CF Step 97.000000 MHz Auto Man
-45.0	Adirgina general de Salad	esoneronisk flodestredeste	oungele and service of the service	and of the state of the second of the second of the second of the state of the second	Freq Offset 0 Hz
Start 30.0 MHz		2.0.041/4		Stop 1.0000 GHz	
MRes BW TRO WHZ	#VBW	3.0 WHZ*	Sweep	s	

Agient Spectru	im Analyzer - Swept SA					The second states and	
Center F	req 5.0000000	00 GHz PN0: Fest	Trig: Free Run	Avg Type Avg Hold	RMS 69/100	05:17:55 AM May 08, 2020 TRACE 1 2 2 4 5 TYPE	Frequency
10 dB/div	Ref Offset 8.65 d Ref 35.00 dBr	IFGain:Low B	#Atten: 40 dB		M	(r1 5.877 8 GHz -31.947 dBm	Auto Tune
250							Center Freq 5.000000000 GHz
15.8 5.00							Start Freq 1.000000000 GHz
-5.00						-1210 @H	Stop Freq 9.000000000 GHz
-25.0	No.						CF Step 800.000000 MHz Auto Man
-15.0							Freq Offset 0 Hz
-65 II							
Start 1.00 #Res BW	00 GHz 1.0 MHz	#VBW	3.0 MHz*		Sweep 1	Stop 9.000 GHz 3.65 ms (8190 pts	
MSG					STATU	£	

Test Mode=GSM/TM2 Test Channel=LCH



Report No.:WT208000774

RL RF 50.0.1	00	UNT REF	ALSONCEF.	02:58:33 AM May 08, 2020	P ARATE STATE
Center Freq 15.07500	0 MHz PN0: Fest	Trig: Free Run	Avg Type: RMS Avg Hold: 15/100	TRACE TYPE MARAAAAA	Frequency
Ref Offset 6.74 10 dB/div Ref 20.00 d	dB 3m	Brittell, og dig		Mkr1 150 kHz -51.223 dBm	Auto Tune
10.0					Center Freq 15.075000 MHz
-115					Start Freq 150,000 kHz
20.0 20.0				-2300 @Pe	Stop Freq 30.000000 MHz
-40.0					CF Step 2.985000 MHz <u>Auto</u> Man
-60.0					Freq Offset 0 Hz
and a start of the start	ahdistricilation (Noticepoints	nirsystematical largestela	homenellancelappen	ntealannannananananananan s	
Start 150 kHz #Res BW 10 kHz	#VBW	30 kHz*	Sweep 3	Stop 30.00 MHz 368.3 ms (1000 pts)	
MSG			STATU	S 1 DC Coupled	

UN RL PF SEC A		INT REF	ALXIN OFF	02:58:43 AM May 08, 2020	Frequency
Center Freq 515.00000	PNO: Fast +++	Trig: Free Run	Avg Hold: 100/100	TYPE M MANAGAM	
Ref Offset 7.44 d 10 dB/div Ref 35.00 dBr	B	BE REAL TO 410		Mkr2 480.5 MHz -33.644 dBm	Auto Tune
				¢1	Center Freq 515.000000 MHz
15.0 5.00					Start Free 30.000000 MHz
-£ 00				-1210 @m	Stop Freq 1.000000000 GHz
-36 U		¢ ²			CF Step 97.000000 MHz Auto Mar
-15:0 -15:0	ad _h alan didan iyu du	hinner and the alternation of	includite the deror Weber	saya bayan dan barkatan	Freq Offset 0 Hz
5511 Start 30.0 MHz				Stop 1.0000 GHz	
#Res BW 1.0 MHz	#VBW	3.0 MHz*	Sweep	1.199 ms (1000 pts)	

Agilent Spectrum Anal	yzer - Swept SA		11 1005020		Internet Automotive	94		
Center Freq	5.000000000	GHz PNO: Fast	Trig: Free Run	Avg Type: RMS Avg Hold: 64/100	102:58:53 AM May 08, 2020 TRACE 11 2 404 5 TYPE MANAGEMENT	Frequency		
10 dB/div Ref	Offset 8.65 dB f 35.00 dBm	E-Gain:Low	RAILEN, 40 3D	Mkr1 3.709 0 GF -31.111 dB				
26.0						Center Freq 5.000000000 GHz		
5.00						Start Freq 1.000000000 GHz		
-6.00					-1010 (Bri	Stop Freq 9.000000000 GHz		
-25.0		•••••••••••••••••••••••••••••••••••••	و و و و و و و و و و و و	ada anti-anti-anti-ata anti-ata		CF Step 800.000000 MHz <u>Auto</u> Man		
-45.0						Freq Offset 0 Hz		
551 Start 1.000 GH #Res BW 1.01	1z MHz	#\/B\0	3.0 MHz*	Sween	Stop 9.000 GHz			
MSG	NII 12	WV00VV	5.0 WIN2	STAT	us			

Test Channel=MCH



Agilent 5	Spectrum	Analyza	r - Swept	SA			11.700			100000000	ininger state	-
Cent	ter Fr	eq 15	.075	000 MH	Z PNO: Fest ↔	Trig: Fre	e Run	Avg Type Avg[Hold	e: RMS 15/100	02:59:19) TRA TV	UN MAYOR, 2020	Frequency
10 dB	ydiv -	Ref O	Tset 6. 20.00	74 dB dBm	IF-Gain:Low	BALLER: 0	0 45			Mkr1 -50.6	150 kHz 58 dBm	Auto Tune
10.0												Center Freq 15.075000 MHz
0.00) -111 <i>5</i>												Start Freq 150,000 kHz
-20.0 -20.0											73/00 (10)	Stop Freq 30.000000 MHz
-40.0	1											CF Step 2.985000 MHz Auto Man
-60.0												Freq Offset 0 Hz
-70.0.5	S. C. LANGER	Ath	himi	esterne for	haidhalallustensile	handreament	kanither	wanarada	en-philips.	eybernia i ajq	ikabgad-nidiata	
Start #Res	150 BW	kHz 10 kHz	z		#VBV	# 30 kHz*			Sweep 3	Stop 3 68.3 ms	30.00 MHz (1000 pts)	ļ
MSG									STATU	DC Co	upled	

Agient Spectru	m Analyzer - Soupt SA			_				¥
Center F	req 515.000000	MHz PN0: Fest	Trig: Free Run	Avg Typ Avg[Hold	e: RMS 100/100	102:59:29 TRA TV	UH May 08, 2020 CE 1 2 0 4 1 FE MULLION	Frequency
10 dB/div	Ref Offset 7.44 dB Ref 35.00 dBm	IF-Gain:Low	Mkr2 632. -34.17			2.0 MHz 77 dBm	Auto Tune	
250						\$ ¹		Center Freq 515.000000 MHz
15.8 5.00								Start Freq 30.000000 MHz
-6.00							-1200 (BH	Stop Freq 1.000000000 GHz
-25.0				¢ ²				CF Step 97.000000 MHz Auto Man
-15.0	non-nizhoùpiko-likonsel	unan an	aladelia ang pang	uiden aviliet	ماناله ربار در اربعن ا	والالمولغ أعراقهم	yel sythere yets	Freq Offset 0 Hz
Start 30.0) MHz	#\/D\//	3.0 MH24		Swaan	Stop 1.	0000 GHz	
MSG	1.0 10112	WADAA	3.0 MHZ		STATU	1991115	(1000 pts)	-

Center Freg 5.0000	0 AC	19,17, 19,26			
12 V	000000 GHz PN0: Fest ++	- Trig: Free Run	Avg Type: RMS Avg Hold: 63/100	F 02:59:30 AM May 08, 2020 TRACE 1 2024 TYPE MANAGEMAN	Frequency
Ref Offset 8	IFGain:Low 3.65 dB 1 dBm	RAtten: 40 dB		Mkr1 5.736 1 GHz -31.755 dBm	Auto Tune
x60					Center Freq 5.000000000 GHz
5.00					Start Freq 1.000000000 GHz
£.00				-42100 (BBH	Stop Freq 9.000000000 GHz
-25.0			1		CF Step 800.000000 MHz Auto Man
-45.0					Freq Offset 0 Hz
Start 1.000 GHz	#VBM	(3.0 MHz*	Sweer	Stop 9.000 GHz	
MSG		5.0 Mill2	SMCC	ATUS	

Test Channel=HCH



Aplent	Spectrur	n Anelyze	r - Seept	SA								-	
Cen	Center Freq 15.075000 MHz					st +++	Trig: Fre	e Run	Avg Ty Avg(Hol	ne: RMS d: 15/100	03:00:05 A TRAC TV	H May 08, 2020	Frequency
10 di	B/div	Ref O	Tset 6.1	74 dB dBm	IF-Gain:L	GWV	RAtten: 3	0 48			Mkr1 -51.5	150 kHz 01 dBm	Auto Tune
10.0													Center Freq 15.075000 MHz
0.00 -1(1.0													Start Freq 150,000 kHz
-20.0												71/0 (9)	Stop Freq 30.000000 MHz
-40.0	1												CF Step 2.985000 MHz <u>Auto</u> Man
-60.0													Freq Offset 0 Hz
-70.0	Wind	with the	innine	and the first	Marinday	Mienan	edieve topie	a fragmenter and	en wywyddiar	as provident	pendintration	plymetric minut	
Star #Re	t 150 s BW	kHz 10 kHz	z		#	VBW	30 kHz*			Sweep	Stop 3 368.3 ms (0.00 MHz 1000 pts)	
MSG										STATU	S 1 DC Co	pled	



Agient Spectrum	n Analyzer - Swept	SA			al an				10/10/06/02/200	
Center Fr	req 5.00000	0000 GH	Z IO: Fast +++	Trig: Free	Run	Avg Type Avg Hold	RMS 63/100	03/00/25 / TRA TV	AM May DE, 2020	Frequency
10 dB/div	Ref Offset 8.6 Ref 35.00 d	ifig i5 dB iBm	ain:Low	#Atten: 40	48		N	lkr1 3.18 -31.9	Auto Tune	
75 0										Center Freq 5.000000000 GHz
15.8 5.00										Start Freq 1.000000000 GHz
-6.00									4230 (Bri	Stop Freq 9.000000000 GHz
-25.0		<u></u> 1			فليل والمعدو	Antonia area	4 Har - 194			CF Step 800.000000 MHz Auto Man
-45.0										Freq Offset 0 Hz
Start 1.00	0 GHz		#\/D\//	2.0.044			Puraan	Stop 9	9.000 GHz	
#Res DW	1.0 WH2		#VBVV	5.0 MH2"			Sweep	15.05 ms	(9190 hrs)	



Date: 9.MAY.2020 11:59:20



Date: 9.MAY.2020 11:59:30



Date: 9.MAY.2020 11:59:39



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Date: 9.MAY.2020 11:59:50
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Date: 9.MAY.2020 12:00:00



Date: 9.MAY.2020 12:00:10



Date: 9.MAY.2020 12:00:26



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Date: 9.MAY.2020 12:00:36
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Date: 9.MAY.2020 12:00:45



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Date: 9.MAY.2020 12:00:56
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Date: 9.MAY.2020 12:01:06



Date: 9.MAY.2020 12:01:16



Date: 9.MAY.2020 12:01:32



Date: 9.MAY.2020 12:01:42



Date: 9.MAY.2020 12:01:51







Date: 9.MAY.2020 12:02:12



Date: 9.MAY.2020 12:02:22



Date: 9.MAY.2020 12:06:58



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Date: 9.MAY.2020 12:07:07
```



Date: 9.MAY.2020 12:07:16







Date: 9.MAY.2020 12:07:35



Date: 9.MAY.2020 12:07:44



Date: 9.MAY.2020 12:08:02



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Date: 9.MAY.2020 12:08:10
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Date: 9.MAY.2020 12:08:19







Date: 9.MAY.2020 12:08:39



Date: 9.MAY.2020 12:08:48



Date: 9.MAY.2020 12:09:05



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Date: 9.MAY.2020 12:09:14
```



Date: 9.MAY.2020 12:09:23







Date: 9.MAY.2020 12:09:43



Date: 9.MAY.2020 12:09:52

For WCDMA Test Band=WCDMA850 Test Mode=UMTS/TM3 Test Channel=LCH

Agilent Spectrum Analyzer - Swept SA		WT ROF	Auto2007	11/53/13/0MMay 08: 2020	
Center Freq 79.500 ki	PNO: Wide 🖵	Trig: Free Run	Avg Type: RMS Avg[Hold: 20/100	TRACE IN CALL	Frequency
Ref Offset 7.28 10 dB/div Ref 30.00 dB	dB 3m	#Atten: 35 dB		Mkr1 10.55 kHz -39.361 dBm	Auto Tune
20.0					Center Freq 79.500 kHz
10.0					Start Freq 9.000 kHz
-10.0					Stop Freq 150.000 kHz
-30.0				-3300.97	CF Step 14.100 kHz wto Man
-500 WWWWWWWWWWWWW	which have been and	An Mandallandan sain	11 10 1 10 10 10 10		Freq Offset 0 Hz
Start 9.00 kHz	#VBW	10 kHz*	Sween 1	Stop 150.00 kHz	
MSG	WV DVV	10 1112	STATU	1 DC Coupled	

Aplent Spectrum Analyzer - Swept SA		11 100000		We any instruction of the store	-
Center Freq 15.075000 M	Hz PNO: Fest	Trig: Free Run	Avg Type: RMS Avg[Hold: 12/100	11:53:28 PM May 08, 2020 TRACE 2:24 TYPE M MANAGE DET & A & A & A &	Frequency
Ref Offset 7.28 dB	P Gaint Cow	STRUCT OF BE		Mkr1 150 kHz -44.753 dBm	Auto Tune
20.0					Center Freq 15.075000 MHz
10 0 0.00					Start Freq 150.000 kHz
-10.0					Stop Freq 30.000000 MHz
-30.0					CF Step 2.985000 MHz Auto Man
-51.0					Freq Offset 0 Hz
Start 150 kHz	Mundhamperhated	Nihamanan jerakada dar	eret in the state in the second	ուն <mark>ի վարություններին։</mark> Stop 30.00 MHz	
WRES BW 10 KHZ	#VBW	30 KHZ*	Sweep	1 DC Coupled	

Agient Spectrum:	Analyzer - Swept SA				With the state of the state of the state					
Center Fre	eq 515.000000 Mi	IZ PNO: Fast 😱	Avg Type: RMS Trig: Free Run Avg Hold>100/100		11:53:38 FM May 08, 2020 TRACE 1 2:24 5 TYPE MYAAAAAAA	Frequency				
10 dB/div	Ref Offset 8.2 dB Ref 28.20 dBm	FGain:Low	EARCH, OU GD	Mkr2 846.6 MH2 -43.780 dBm						
16.2						Center Freq 515.000000 MHz				
8.20 -1.80						Start Freq 30.000000 MHz				
-11.0					-1500 /84	Stop Freq 1.000000000 GHz				
-31.0					2	CF Step 97.000000 MHz <u>Auto</u> Man				
-51.8	ensenskrivetenskriveter i	nikunsensensen	و به میراند استرواه مناموا زمین	nga panganangka di pangangangka ng pangangka ng pangangka ng pangangka ng pangangka ng pangangka ng pangangka n	el teurineerenanist	Freq Offset 0 Hz				
Start 30.0 M	MHz .0 MHz	#VBW:	3.0 MHz*	Sweep 1	Stop 1.0000 GHz					
MSG				STATU	5					

Agient Spectru	m Analyzer - Swep	k SA							//	e (†
Center F	req 5.0000	00000 G	NO: Fast 😱	Trig: Free	Run	Avg Type Avg Hold	E RMS 49/100	11:53:46 PI TRAC TV D		Frequency
10 dB/div	Ref Offset 9 Ref 30.00	.47 dB dBm	Gain:Low	BARRON. PA	M				6 3 GHz 87 dBm	Auto Tune
20.0										Center Freq 5.000000000 GHz
10.0										Start Freq 1.000000000 GHz
-10.0									:13.00 iBn	Stop Freq 9.000000000 GHz
-30.0	المتحاد ومعاد	an the state of the	مىنىيە المۇلىزىر	. gind jo	<u>kies te</u>		ماليويا برغا		ii	CF Step 800.000000 MHz Auto Man
-50.0										Freq Offset 0 Hz
Start 1.00	0 GHz 1.0 MHz		#VBW	3.0 MHz	•		Sweep	Stop 9	.000 GHz	
MSG				010111112			STAT	35		

Test Channel=MCH



Aplient Spectrum Analyzer - Swept SA					
Center Freq 15.075000	MHZ PNO: Fest	Trig: Free Run	Avg Type: RMS Avg[Hold: 12/100	11:54 19 FM May 08, 2020 TRACE 1 2 2 4 5 TYPE MANAGE	Frequency
Ref Offset 7.28 db	iFGain:Low	BARGE OF GD		Mkr1 150 kHz -44.689 dBm	Auto Tune
20.0					Center Freq 15.075000 MHz
10.0					Start Freq 150.000 kHz
-10.0					Stop Freq 30.000000 MHz
-30.8				-13:00 000	CF Step 2.985000 MHz <u>Auto</u> Man
-80.0					Freq Offset 0 Hz
Start 150 kHz	in farely all resident	ntal a consection is	verkingstaats tei konten sert	Managersky Manafersky Mana Stop 30.00 MHz	
#Res BW 10 kHz	#VBW 3	30 KHZ*	Sweep 3	108.3 ms (1000 pts)	

Agient Spectrum A	nelyzer - Seept SA				WHILE SHOW NO STREET	
Center Fred	q 515.000000 MH	Z PNO: Fast 😱	Avg Type: RMS Trig: Free Run Avg Hold>100/100		11:54:28 PM May 08, 2020 TRACE 1 2 2 4 5 TYPE MANAGEMENT	Frequency
to dB/div	tef Offset 8.2 dB tef 28.20 dBm	FGaimLow	satisfic of ab	1	42.762 dBm	Auto Tune
16.2						Center Freq 515.000000 MHz
8 20						Start Freq 30.000000 MHz
-11.11					-12.00 /8/1	Stop Freq 1.000000000 GHz
-31.0					2	CF Step 97.000000 MHz Auto Man
-51.8	udwyaltosoadhuusekusfii.Maaidhite	tog Japan Marine and	ander Art By Partners - for	nongan tigan gang bard	al Imperations	Freq Offset 0 Hz
Start 30.0 M	Hz 0 MHz	#VBW	3.0 MHz*	Sweep	Stop 1.0000 GHz	
MSG				STATU	5	

Agient Spectrum Analyzer - Swept SA					The second second second	2
Center Freq 5.00000000	PN0: Fest	Trig: Free Run	Avg Typ Avg Hold	e: RMS 1: 48/100	11:54:37 PM May 08, 2020 TRACE 2:04 E TYPE MULTING	Frequency
Ref Offset 9.47 dE	B 1	ACTUAL OF AD		IV	1kr1 6.000 8 GHz -31.869 dBm	Auto Tune
20.0						Center Freq 5.000000000 GHz
10.0						Start Freq 1.000000000 GHz
-10.0					-1500 attra	Stop Freq 9.000000000 GHz
-30.0	ومعايفة بمعالمة لمعاولته	ليدجه المتجربان	1 Hereiteine			CF Step 800.000000 MHz Auto Man
-50.0						Freq Offset 0 Hz
Start 1.000 GHz #Res BW 1.0 MHz	#VBW	3.0 MHz*		Sweep	Stop 9.000 GHz 13.64 ms (6200 pts)	
MSG				STAT	us	

Test Channel=HCH



Aplinit	Spectrum	Analyzer	- Swept	sa 👘						_		Wite stor	oll Wind History	-
Cen	ter Fr	eq 15	.0750	00 MH	2 PNO: Fast	Ģ	Trig: Fre	e Run	Avg Avgi	Type: I Hold: 1	RMS 2/100	11:55:16	DM May 08, 2020 BACE	Frequency
10 dB	B/div	Ref Of Ref 3	fset 7.2 0.00 d	8 dB IBm	le Gain.Lov		BCHOOL 9					Mkr1 -41.	150 kHz 629 dBm	Auto Tune
20.0														Center Freq 15.075000 MHz
10.8 0.00														Start Freq 150,000 kHz
-10.0													-75,00 (8)	Stop Freq 30.000000 MHz
-30.0	1													CF Step 2.985000 MHz <u>Auto</u> Man
-50.0														Freq Offset 0 Hz
-60.0	The work	ANNA A	Invite	estre land	with the second	diviers	et we have	eren and	Annual	4/24	aportal la	ner-bellevia	un obsistancessi	
Star #Res	t 150 k s BW	Hz I0 kHz	8		#V	BW	30 kHz*			S	weep 3	Stop 68.3 ms	30.00 MHz (1000 pts)	
MSG											STATU	DC C	oupled	

Agilent Spectrum And	dyzer - Swept SA						
Center Freq	515.000000 M	IZ PNO: Fast 😱	Trig: Free Run	e Run Avg Hold>100/100		PM May DB, 2020	Frequency
10 dB/div Re	ef Offset 8.2 dB ef 28.20 dBm	FGain:Low	#Atten: 30 dB		Mkr2 82 -43.0	Auto Tune	
16.2					Q1		Center Freq 515.000000 MHz
8.20 -1.80							Start Freq 30.000000 MHz
-11.0						15.00 (8)	Stop Freq 1.000000000 GHz
-31.0					2		CF Step 97.000000 MHz Auto Man
-51.8	Antoles white associ	or frank March	Haden Mar J. Hawald and	din ongine na divisionali di disonali di di	وسلقه محملين	rand Hillinger Azing	Freq Offset 0 Hz
Start 30.0 MH #Res BW 1.0	iz MHz	#VBW	3.0 MHz*	Sweep	Stop 1. 1.199 ms	.0000 GHz (1000 pts)	
MSG	a			STAT	35		

Aplent Sp	ectrum Analyzer	Swept SA	_	in the second				V. V. Sol Marsha	1
Cente	r Freq 5.0	0000000) GHz	Trim See a Dee	Avg Type: F	RMS	11/35/34 F	CE EL CALLER	Frequency
,			PNO: Fest 😱 IFGain:Low	#Atten: 40 dB	wyginolo: 45	Arginolo. 45/100		AAAAAA	
10 dB/c	Ref Off	set 9.47 dB).00 dBm				м	-32.4	0 9 GHz 31 dBm	Auto Tune
20.0									Center Freq 5.000000000 GHz
10.8 0.00									Start Freq 1.000000000 GHz
-10.0								113.00 (01)	Stop Freq 9.00000000 GHz
-30.0	a de sa de la d		10 sections	a farafiti (an hina da da	1		hangala		CF Step 800.000000 MHz Auto Man
-50.0									Freq Offset 0 Hz
Start 1	1.000 GHz						Stop 9	0.000 GHz	
#Res I	BW 1.0 MH	z	#VBW	3.0 MHz*	Sv	weep	13.64 ms	(6200 pts)	
MSG						STATU	5		


Date: 9.MAY.2020 14:33:58



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Date: 9.MAY.2020 14:34:06
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Date: 9.MAY.2020 14:34:14



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Date: 9.MAY.2020 14:34:23
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Date: 9.MAY.2020 14:34:32



Date: 9.MAY.2020 14:34:40



Date: 9.MAY.2020 14:34:58



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Date: 9.MAY.2020 14:35:06
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Date: 9.MAY.2020 14:35:14







Date: 9.MAY.2020 14:35:32



Date: 9.MAY.2020 14:35:40



Date: 9.MAY.2020 14:35:59

Date: 9.MAY.2020 14:36:15













Date: 9.MAY.2020 14:36:33



Date: 9.MAY.2020 14:36:41











