

Report No. : FR8O2417-03A



FCC RADIO TEST REPORT

FCC ID	:	PY7-24117P
Equipment	:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, GPS and NFC
Brand Name	:	Sony
Applicant	:	Sony Mobile Communications Inc. 4-12-3 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan
Manufacturer	:	Sony Mobile Communications Inc. 4-12-3 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002, Japan
Standard	:	FCC Part 15 Subpart C §15.247

The product was received on Nov. 01, 2018 and testing was started from Feb. 01, 2019 and completed on Feb. 28, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Reviewed by: Jones Tsai SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

	-	f this test report	
Sur	-	of Test Result	
1	Gene	ral Description	5
	1.1	Product Feature of Equipment Under Test	5
	1.2	Modification of EUT	5
	1.3	Testing Location	6
	1.4	Applicable Standards	6
2	Test	Configuration of Equipment Under Test	7
	2.1	Carrier Frequency Channel	7
	2.2	Test Mode	8
	2.3	Connection Diagram of Test System	9
	2.4	Support Unit used in test configuration and system	10
	2.5	EUT Operation Test Setup	10
	2.6	Measurement Results Explanation Example	10
3	Test I	Result	11
	3.1	Number of Channel Measurement	11
	3.2	Hopping Channel Separation Measurement	13
	3.3	Dwell Time Measurement	19
	3.4	20dB and 99% Bandwidth Measurement	21
	3.5	Output Power Measurement	32
	3.6	Conducted Band Edges Measurement	33
	3.7	Conducted Spurious Emission Measurement	40
	3.8	Radiated Band Edges and Spurious Emission Measurement	50
	3.9	AC Conducted Emission Measurement	54
	3.10	Antenna Requirements	56
4	List o	f Measuring Equipment	57
5	Unce	rtainty of Evaluation	59
Ар	pendix	A. Conducted Test Results	
Ар	pendix	B. AC Conducted Emission Test Result	

- Appendix C. Radiated Spurious Emission
- Appendix D. Radiated Spurious Emission Plots

Appendix E. Duty Cycle Plots



History of this test report

Report No.	Version	Description	Issued Date
FR802417-03A	01	Initial issue of report	Mar. 06, 2019



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(1)	Number of Channels	Pass	-
3.2	15.247(a)(1)	Hopping Channel Separation	Pass	-
3.3	15.247(a)(1)	Dwell Time of Each Channel	Pass	-
3.4	15.247(a)(1)	20dB Bandwidth	Pass	-
3.4	2.1049	99% Occupied Bandwidth	Reporting only	-
3.5	15.247(b)(1)	Peak Output Power	Pass	-
3.6	15.247(d)	Conducted Band Edges	Pass	-
3.7	15.247(d)	Conducted Spurious Emission	Pass	-
3.8	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	Under limit 5.90 dB at 45.390 MHz
3.9	15.207	AC Conducted Emission	Pass	Under limit 10.26 dB at 1.050 MHz
3.10	15.203 & 15.247(b)	Antenna Requirement	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Natasha Hsieh



1 General Description

1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, DTS/UNII a/b/g/n/ac, NFC, and GNSS.

Standards-related Product Specification					
Antenna Type / Gain Loop Antenna with gain -2.0 dBi					
EUT Information List					
HW Version SW Version		S/N	Performed Test Item		
		BH97006BFU	RF conducted measurement		
А	1.63	BH9700K3FU	Radiated Spurious Emission		
		BH97006GFR	AC Conducted Emission		
		Accessory List			
AC Adapter	S/N: 6218W3020	Model Name : UCH32 S/N: 6218W30200106 (for radiated emission) 6218W30200197 (for conducted emission)			
Earphone	Model No.: S/N : N/A	Model No.: MH750 S/N : N/A			
USB Cable	Model No.: S/N : N/A	Model No.: UCB24 S/N : N/A			
		odel No.: EC270 N : N/A			

Note:

- 1. Above EUT list used are electrically identical per declared by manufacturer.
- 2. Above the accessories list are used to exercise the EUT during test, and the serial number of each type of accessories is listed in each section of this report.
- 3. For other wireless features of this EUT, test report will be issued separately.

1.2 Modification of EUT

No modifications are made to the EUT during all test items.



1.3 Testing Location

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978			
Test Site No.	Sporton	Site No.		
Test Site NO.	TH05-HY	CO05-HY		

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855		
Test Site No.	Sporton Site No. 03CH12-HY		

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190 and TW0007

1.4 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- + FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r01
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- ANSI C63.10-2013

Remark:

- 1. All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

Test Configuration of Equipment Under Test 2

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
	0	2402	27	2429	54	2456
	1	2403	28	2430	55	2457
	2	2404	29	2431	56	2458
	3	2405	30	2432	57	2459
	4	2406	31	2433	58	2460
	5	2407	32	2434	59	2461
	6	2408	33	2435	60	2462
	7	2409	34	2436	61	2463
	8	2410	35	2437	62	2464
	9	2411	36	2438	63	2465
	10	2412	37	2439	64	2466
	11	2413	38	2440	65	2467
	12	2414	39	2441	66	2468
2400-2483.5 MHz	13	2415	40	2442	67	2469
	14	2416	41	2443	68	2470
	15	2417	42	2444	69	2471
	16	2418	43	2445	70	2472
	17	2419	44	2446	71	2473
	18	2420	45	2447	72	2474
	19	2421	46	2448	73	2475
	20	2422	47	2449	74	2476
	21	2423	48	2450	75	2477
	22	2424	49	2451	76	2478
	23	2425	50	2452	77	2479
	24	2426	51	2453	78	2480
	25	2427	52	2454	-	-
	26	2428	53	2455	-	-

2.2 Test Mode

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report, and the worst mode of radiated spurious emissions is Bluetooth 1Mbps mode, and recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

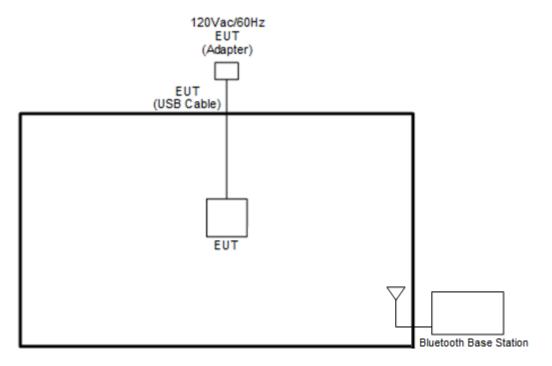
	Summary table of Test Cases						
	Data Rate / Modulation						
Test Item	Bluetooth BR 1Mbps	Bluetooth EDR 2Mbps	Bluetooth EDR 3Mbps				
	GFSK	π /4-DQPSK	8-DPSK				
Conducted	Mode 1: CH00_2402 MHz	Mode 4: CH00_2402 MHz	Mode 7: CH00_2402 MHz				
Test Cases	Mode 2: CH39_2441 MHz	Mode 5: CH39_2441 MHz	Mode 8: CH39_2441 MHz				
1631 64365	Mode 3: CH78_2480 MHz	Mode 6: CH78_2480 MHz	Mode 9: CH78_2480 MHz				
	Bluetooth 1Mbps GFS	SK / EDR 2Mbps π /4-DQPSK	/ EDR 3Mbps 8-DPSK				
	Mode 1: CH00_2402 MHz for 1Mbps						
	Mode 2: CH39_2441 MHz for 1Mbps						
	Mo	de 3: CH78_2480 MHz for 1M	bps				
Radiated	Mode 4: CH00_2402 MHz for 2Mbps						
Test Cases	Mo	de 5: CH39_2441 MHz for 2M	bps				
	Mo	de 6: CH78_2480 MHz for 2M	bps				
	Mo	de 7: CH00_2402 MHz for 3M	bps				
	Mo	de 8: CH39_2441 MHz for 3M	bps				
	Мо	de 9: CH78_2480 MHz for 3M	bps				
AC	Mode 1 CSM850 (Low Ch	onnol) Idle y Divotooth Link	$(\cdot) M = (\cdot) A = (\cdot $				
Conducted	Mode 1 :GSM850 (Low Channel) Idle + Bluetooth Link + WLAN (2.4GHz) Link + Camera (Rear) + Battery + USB Cable (Charging from Adapter)						
Emission		ballery + USD Cable (Charging	g nom Adapter)				

The following summary table is showing all test modes to demonstrate in compliance with the standard.

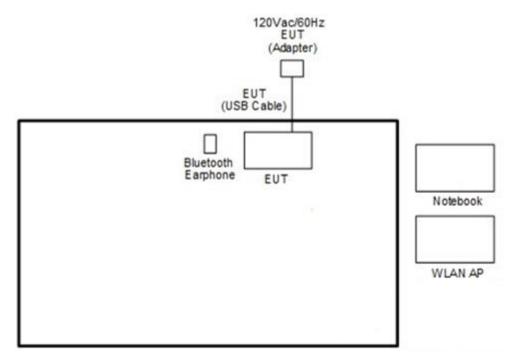


2.3 Connection Diagram of Test System

<Bluetooth Tx Mode>



<AC Conducted Emission Mode>



TEL : 886-3-327-3456	Page Number	: 9 of 59
FAX : 886-3-328-4978	Issued Date	: Mar. 06, 2019
Report Template No.: BU5-FR15CBT Version 2.4	Report Version	: 01



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Base Station	R&S	CBT32	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Bluetooth Earphone	Sony	SBH20	PY7-RD0010	N/A	N/A
4.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
5.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, utility "Tera Term" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to contact with base station to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)



3 Test Result

3.1 Number of Channel Measurement

3.1.1 Limits of Number of Hopping Frequency

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedure

- 1. The testing follows ANSI C63.10-2013 clause 7.8.3.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Enable the EUT hopping function.
- Use the following spectrum analyzer settings: Span = the frequency band of operation;
 RBW = 300kHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
- 6. The number of hopping frequency used is defined as the number of total channel.
- 7. Record the measurement data derived from spectrum analyzer.

3.1.4 Test Setup



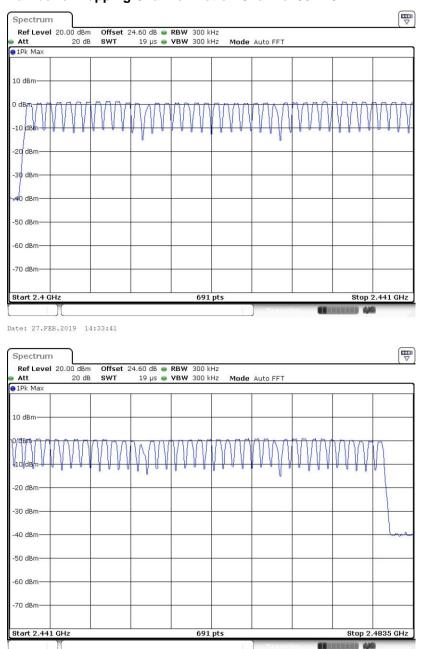
Spectrum Analyzer

EUT



3.1.5 Test Result of Number of Hopping Frequency

Please refer to Appendix A.



Number of Hopping Channel Plot on Channel 00 - 78

Date: 27.FEB.2019 14:34:04

3.2 Hopping Channel Separation Measurement

3.2.1 Limit of Hopping Channel Separation

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

3.2.3 Test Procedures

- 1. The testing follows ANSI C63.10-2013 clause 7.8.2.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Enable the EUT hopping function.
- Use the following spectrum analyzer settings:
 Span = wide enough to capture the peaks of two adjacent channels;
 RBW = 300kHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
- 6. Measure and record the results in the test report.

3.2.4 Test Setup



Spectrum Analyzer

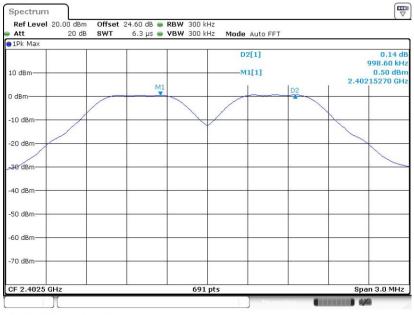
3.2.5 Test Result of Hopping Channel Separation

Please refer to Appendix A.



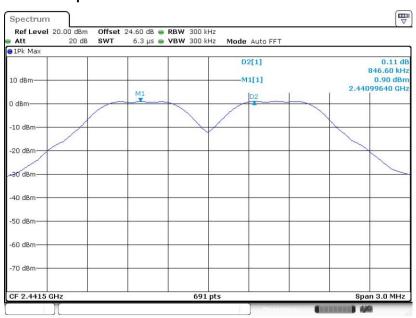
<1Mbps>

Channel Separation Plot on Channel 00 - 01



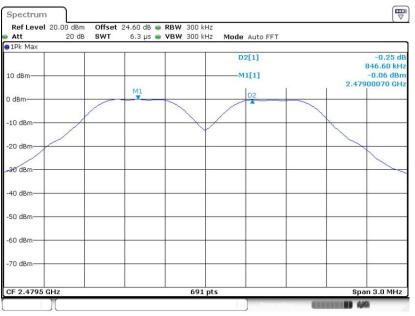
Date: 27.FEB.2019 14:56:12

Channel Separation Plot on Channel 39 - 40



Date: 27.FEB.2019 14:42:39



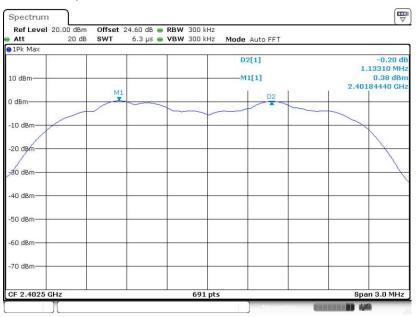


Channel Separation Plot on Channel 77 - 78

Date: 27.FEB.2019 14:36:42

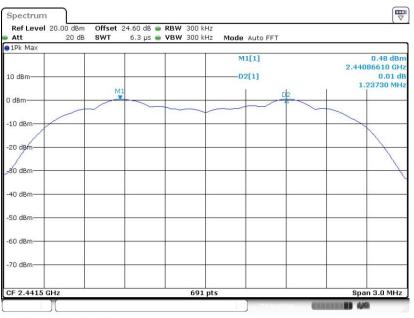
<2Mbps>

Channel Separation Plot on Channel 00 - 01



Date: 27.FEB.2019 15:49:08

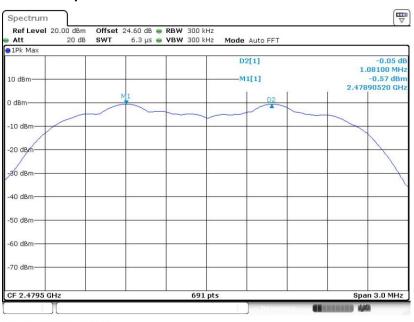




Channel Separation Plot on Channel 39 - 40

Date: 27.FEB.2019 15:41:28

Channel Separation Plot on Channel 77 - 78

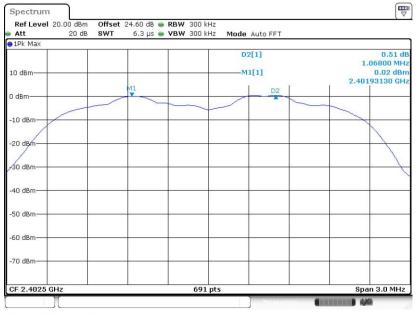


Date: 27.FEB.2019 15:46:26



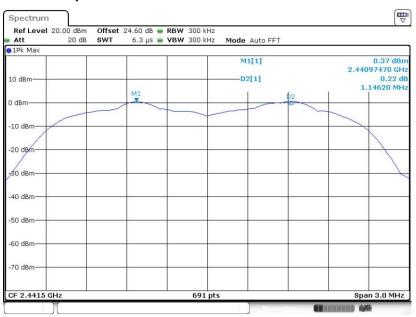
<3Mbps>

Channel Separation Plot on Channel 00 - 01



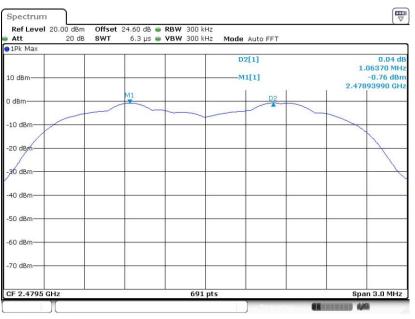
Date: 27.FEB.2019 16:14:56

Channel Separation Plot on Channel 39 - 40



Date: 27.FEB.2019 16:07:34





Channel Separation Plot on Channel 77 - 78

Date: 27.FEB.2019 16:05:29

TEL : 886-3-327-3456	Page Number :
FAX : 886-3-328-4978	Issued Date :
Report Template No.: BU5-FR15CBT Version 2.4	Report Version :

:18 of 59 :Mar. 06, 2019 :01



3.3 Dwell Time Measurement

3.3.1 Limit of Dwell Time

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

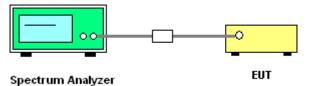
3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedures

- 1. The testing follows ANSI C63.10-2013 clause 7.8.4.
- The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Enable the EUT hopping function.
- 5. Use the following spectrum analyzer settings: Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW ≥ RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold.
- 6. Measure and record the results in the test report.

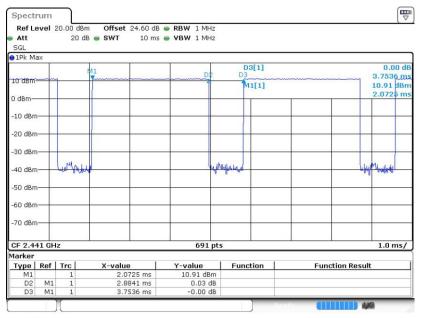
3.3.4 Test Setup



3.3.5 Test Result of Dwell Time

Please refer to Appendix A.





Package Transfer Time Plot

Date: 1.FEB.2019 23:34:41

Remark:

1. In normal mode, hopping rate is 1600 hops/s with 6 slots in 79 hopping channels. With channel hopping rate (1600 / 6 / 79) in Occupancy Time Limit (0.4×79) (s),Hops Over Occupancy Time comes to $(1600 / 6 / 79) \times (0.4 \times 79) = 106.67$ hops.

2. In AFH mode, hopping rate is 800 hops/s with 6 slots in 20 hopping channels. With channel hopping rate (800 / 6 / 20) in Occupancy Time Limit (0.4×20) (s), Hops Over Occupancy Time comes to $(800 / 6 / 20) \times (0.4 \times 20) = 53.33$ hops.

3. Dwell Time(s) = Hops Over Occupancy Time (hops) x Package Transfer Time

TEL : 886-3-327-3456	Page Number	: 20 of 59
FAX : 886-3-328-4978	Issued Date	: Mar. 06, 2019
Report Template No.: BU5-FR15CBT Version 2.4	Report Version	: 01



3.4 20dB and 99% Bandwidth Measurement

3.4.1 Limit of 20dB and 99% Bandwidth

Reporting only

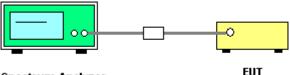
3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 Test Procedures

- 1. The testing follows ANSI C63.10-2013 clause 6.9.2 and 6.9.3.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- Use the following spectrum analyzer settings for 20dB Bandwidth measurement.
 Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel;
 RBW ≥ 1-5% of the OBW; VBW ≥ RBW; Sweep = auto; Detector function = peak;
 Trace = max hold.
- Use the following spectrum analyzer settings for 99 % Bandwidth measurement.
 Span = approximately 1.5 to 5 times the 99% bandwidth, centered on a hopping channel;
 RBW ≥ 1-5% of the 99% bandwidth; VBW ≥ 3 * RBW; Sweep = auto; Detector function = peak;
 Trace = max hold.
- 6. Measure and record the results in the test report.

3.4.4 Test Setup



Spectrum Analyzer

3.4.5 Test Result of 20dB Bandwidth

Please refer to Appendix A.



<1Mbps>

20 dB Bandwidth Plot on Channel 00



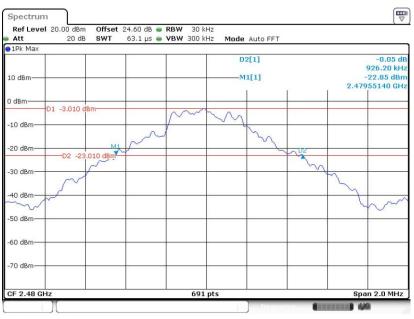
Date: 27.FEB.2019 14:57:42

20 dB Bandwidth Plot on Channel 39



Date: 27.FEB.2019 14:43:51





20 dB Bandwidth Plot on Channel 78

Date: 27.FEB.2019 14:41:09

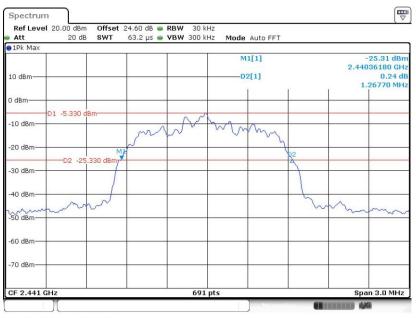
<2Mbps>

20 dB Bandwidth Plot on Channel 00



Date: 27.FEB.2019 15:07:05

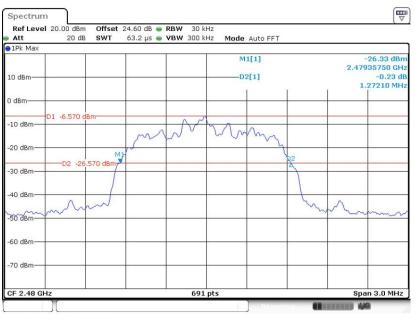




20 dB Bandwidth Plot on Channel 39

Date: 27.FEB.2019 15:27:58

20 dB Bandwidth Plot on Channel 78

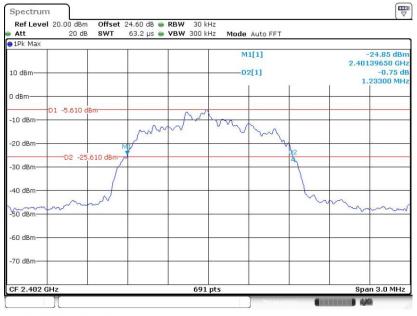


Date: 27.FEB.2019 15:50:12



<3Mbps>

20 dB Bandwidth Plot on Channel 00



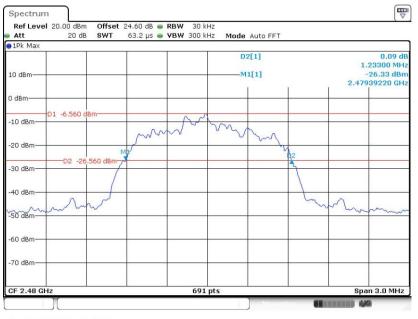
Date: 27.FEB.2019 16:16:07

20 dB Bandwidth Plot on Channel 39



Date: 27.FEB.2019 16:08:49





20 dB Bandwidth Plot on Channel 78

Date: 27.FEB.2019 16:03:22

TEL : 886-3-327-3456	Page Number
FAX : 886-3-328-4978	Issued Date
Report Template No.: BU5-FR15CBT Version 2.4	Report Version

:26 of 59 :Mar. 06, 2019 :01

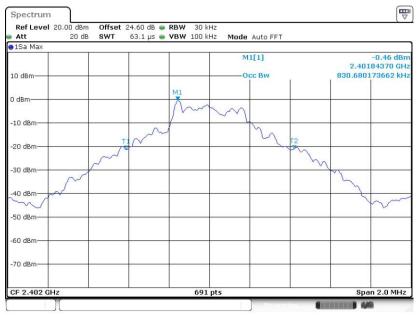


3.4.6 Test Result of 99% Occupied Bandwidth

Please refer to Appendix A.

<1Mbps>

99% Occupied Bandwidth Plot on Channel 00



Date: 27.FEB.2019 15:00:55

TEL : 886-3-327-3456	Page Number	: 27 of 59
FAX : 886-3-328-4978	Issued Date	: Mar. 06, 2019
Report Template No.: BU5-FR15CBT Version 2.4	Report Version	: 01

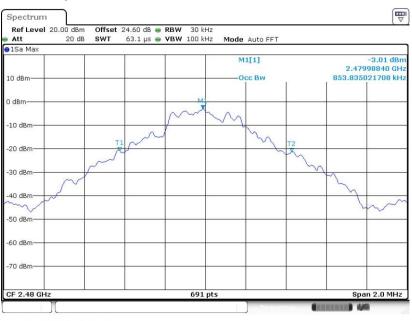




99% Occupied Bandwidth Plot on Channel 39

Date: 27.FEB.2019 14:52:12



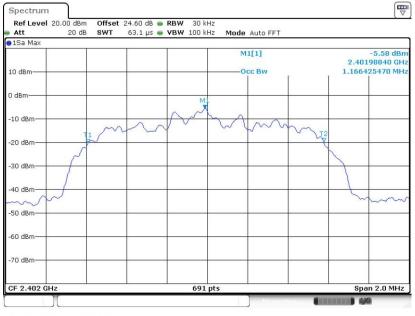


Date: 27.FEB.2019 14:37:54



<2Mbps>

99% Occupied Bandwidth Plot on Channel 00



Date: 27.FEB.2019 15:08:10

99% Occupied Bandwidth Plot on Channel 39



Date: 27.FEB.2019 15:28:52





99% Occupied Bandwidth Plot on Channel 78

Date: 27.FEB.2019 15:51:19

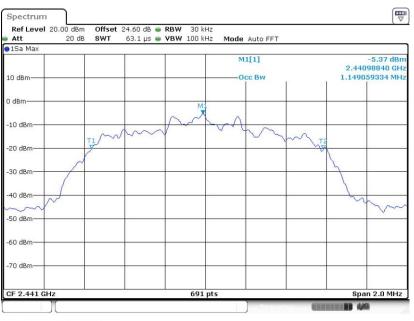
<3Mbps>

99% Occupied Bandwidth Plot on Channel 00



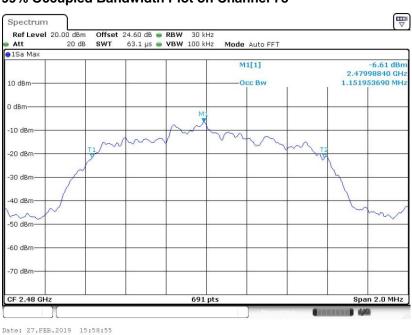
Date: 27.FEB.2019 16:17:08





99% Occupied Bandwidth Plot on Channel 39

Date: 27.FEB.2019 16:09:24



99% Occupied Bandwidth Plot on Channel 78

Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



3.5 Output Power Measurement

3.5.1 Limit of Output Power

The maximum peak conducted output power of the intentional radiator shall not exceed the following: (1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band 0.125 watts. The power limit for 1Mbps, 2Mbps, 3Mbps and AFH modes are 0.125 watts.

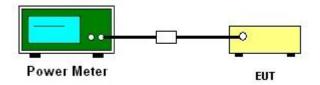
3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

3.5.3 Test Procedures

- 1. The testing follows ANSI C63.10-2013 clause 7.8.5.
- 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Measure the conducted output power with cable loss and record the results in the test report.
- 5. Measure and record the results in the test report.

3.5.4 Test Setup



3.5.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.5.6 Test Result of Average Output Power (Reporting Only)

Please refer to Appendix A.



3.6 Conducted Band Edges Measurement

3.6.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

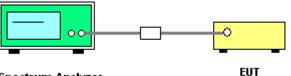
3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Procedures

- 1. The testing follows ANSI C63.10-2013 clause 7.8.6.
- 2. Set to the maximum power setting and enable the EUT transmit continuously.
- 3. Set RBW = 100kHz, VBW = 300kHz. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.
- 4. Enable hopping function of the EUT and then repeat step 2. and 3.
- 5. Measure and record the results in the test report.

3.6.4 Test Setup



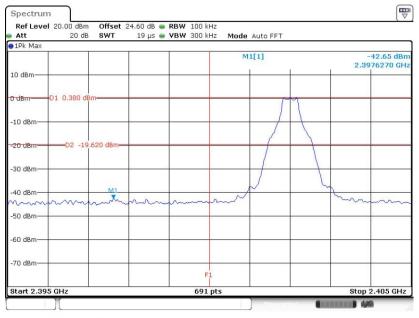
Spectrum Analyzer



3.6.5 Test Result of Conducted Band Edges

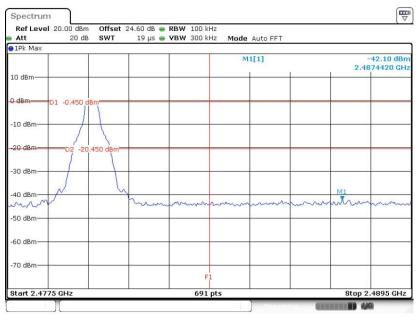
<1Mbps>

Low Band Edge Plot on Channel 00



Date: 27.FEB.2019 15:00:08

High Band Edge Plot on Channel 78

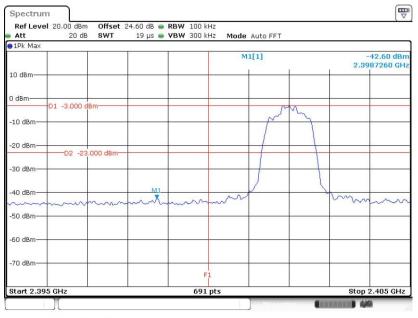


Date: 27.FEB.2019 14:37:18



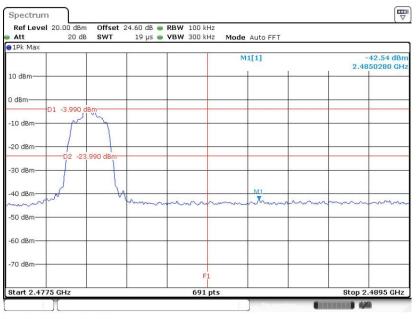
<2Mbps>

Low Band Edge Plot on Channel 00



Date: 27.FEB.2019 15:07:30

High Band Edge Plot on Channel 78

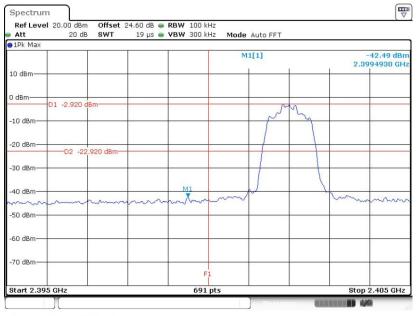


Date: 27.FEB.2019 15:50:36



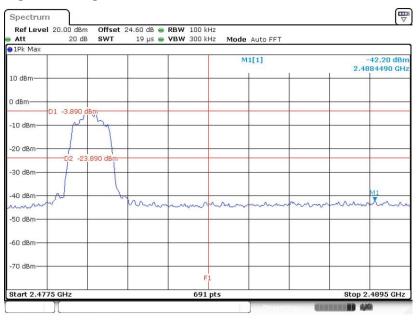
<3Mbps>

Low Band Edge Plot on Channel 00



Date: 27.FEB.2019 16:16:28

High Band Edge Plot on Channel 78

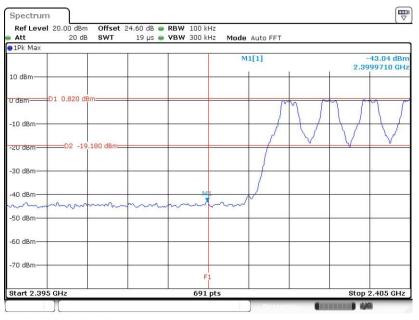


Date: 27.FEB.2019 15:56:40

3.6.6 Test Result of Conducted Hopping Mode Band Edges

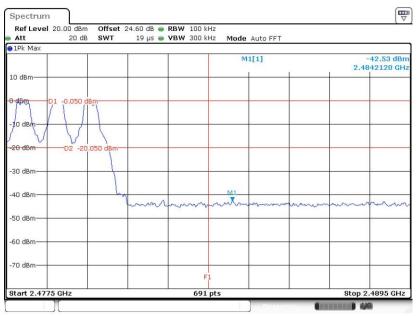
<1Mbps>

Hopping Mode Low Band Edge Plot



Date: 27.FEB.2019 14:32:32

Hopping Mode High Band Edge Plot

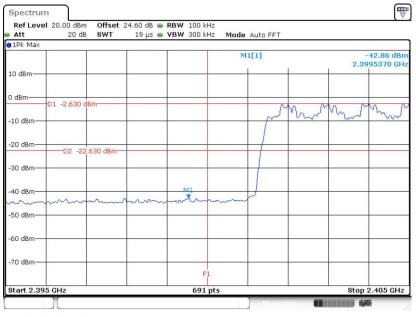


Date: 27.FEB.2019 14:32:49



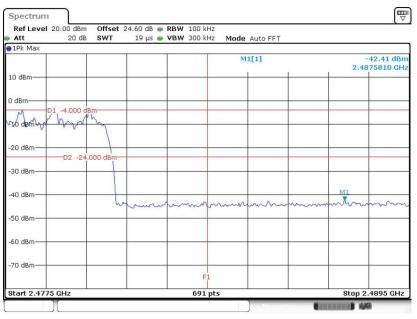
<2Mbps>

Hopping Mode Low Band Edge Plot



Date: 27.FEB.2019 15:53:44

Hopping Mode High Band Edge Plot

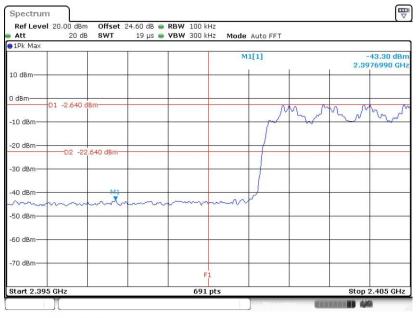


Date: 27.FEB.2019 15:53:11



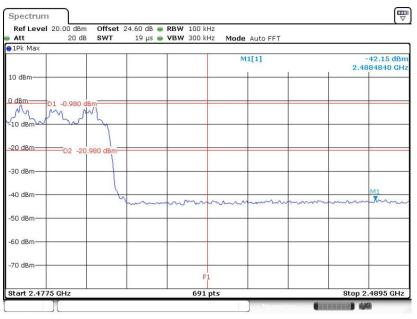
<3Mbps>

Hopping Mode Low Band Edge Plot



Date: 27.FEB.2019 15:54:12

Hopping Mode High Band Edge Plot



Date: 27.FEB.2019 15:56:17

3.7 Conducted Spurious Emission Measurement

3.7.1 Limit of Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

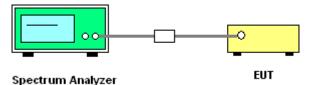
3.7.2 Measuring Instruments

See list of measuring equipment of this test report.

3.7.3 Test Procedure

- 1. The testing follows ANSI C63.10-2013 clause 7.8.8.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.
- 5. Measure and record the results in the test report.
- 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.7.4 Test Setup

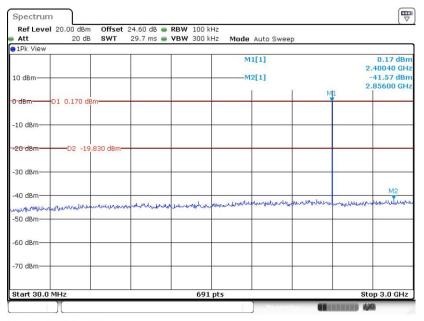


TEL : 886-3-327-3456 FAX : 886-3-328-4978 Report Template No.: BU5-FR15CBT Version 2.4

3.7.5 Test Result of Conducted Spurious Emission

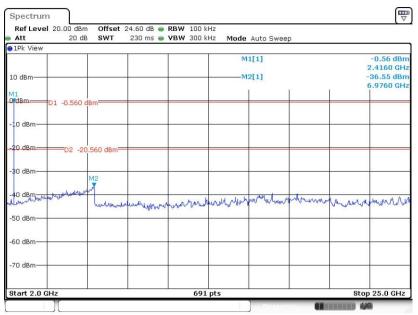
<1Mbps>

CSE Plot on Ch 00 between 30MHz ~ 3 GHz



Date: 27.FEB.2019 15:01:41

1Mbps CSE Plot on Ch 00 between 2 GHz ~ 25 GHz



Date: 27.FEB.2019 15:02:21



Att 🗧	20 dB	SWT	29.7 ms 🖷	VBW 300	kHz Mode	Auto Sweep			
1Pk View						1[1] 2[1]			0.53 dBn 2.43910 GH -41.42 dBn 2.86890 GH
0 dBm	D1 0.530 di	Bm						M1	2.00090 (11)
-10 dBm									
-20 dBm	D2 -19	.470 dBm=							_
-30 dBm				-					
-40 dBm						and the second		1 4 4 1 1	M2
50 dBm	an Makala dama	retherapilization	erentehing-whee	den han freen open	en der dar er hand	n and and and the	Same and an an a	Maninow	urnordentised
-60 dBm									
-70 dBm									

CSE Plot on Ch 39 between 30MHz ~ 3 GHz

Date: 27.FEB.2019 14:52:53

CSE Plot on Ch 39 between 2 GHz ~ 25 GHz

Ref Level 20.0 Att	0 dBm Offset 20 dB SWT	t 24.60 dB 👄 🖡 230 ms 👄 🛛			Auto Swee	D		
1Pk View								
				M	1[1]			-0.71 dBn 2.4490 GH
10 dBm				M	2[1]			-35.50 dBr
M1					I	r i	r i	6.9430 GH
	.710 dBm	_						-
-10 dBm				·				
20 dBm								
	2 -20.710 dBm							
-30 dBm	110	-		-				
	M2							
40 dBm	when she we	would would would would would would would would be a set of the set	the second second	. I The Antilan	Mut Linut	white here the	ام الم الم	March M. M.
	howhere	wowenably	how many	and an amount		A CARLON	Pro Phone Ma	Land A A
-50 dBm								
-60 dBm								
oo abiii								
-70 dBm				ļ				
Start 2.0 GHz			691	nte			Pto	25.0 GHz

Date: 27.FEB.2019 14:53:37



Att	20.00 dBm 20 dB	SWT		RBW 100		Auto Swe	ер		
∋1Pk View									
					P	11[1]			-0.52 dBn 2.47780 GH:
10 dBm				_	N	12[1]			-41.50 dBn
					1.12		1	1	2.29300 GH
0 dBm	D1 -0.520 dB	m		_				M1	
	01-0.520 db								
-10 dBm-				_					
02220120002240202									
-20 dBm	D2 -20.5	520 dBm=		_					
-30 dBm				-		-			
-40 dBm							M2		
mphiliter	ensurement	wanter	aharabad	when have been all and	uplandult	manushall	uppersonalition	an planning	elementer
-50 dBm			-	-	-				
-60 dBm			-						
-70 dBm			-	-			-	-	
				60	1 pts	-			Stop 3.0 GHz
Start 30.0	MHZ								

CSE Plot on Ch 78 between 30MHz ~ 3 GHz

Date: 27.FEB.2019 14:38:31

CSE Plot on Ch 78 between 2 GHz ~ 25 GHz

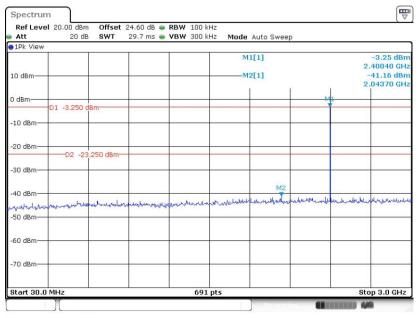
Att	20 dB SWT	230 ms 👄 🕈	/BW 300 k	Hz Mode	Auto Swee	р		
1Pk View				М	1[1]			-1.20 dBr
10 dBm				M	2[1]			2.4830 GH -34.66 dBr 6.9760 GH
D1 -1	200 dBm						<u> </u>	
10 dBm								-
20 dBm	02 -21.200 dBm							
-30 dBm	M2							
40 dBm	wormen when when when when when when when wh	werterner	mound	whynemen	withhur	<i>intranew</i>	munho	humanner
-50 dBm								
-60 dBm								
-70 dBm								
Start 2.0 GHz			691	nte			Sto	p 25.0 GHz

Date: 27.FEB.2019 14:39:18



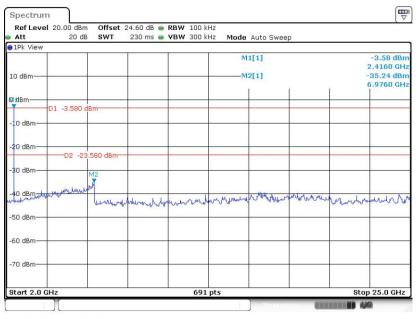
<2Mbps>

CSE Plot on Ch 00 between 30MHz ~ 3 GHz



Date: 27.FEB.2019 15:08:54

CSE Plot on Ch 00 between 2 GHz ~ 25 GHz



Date: 27.FEB.2019 15:10:41



Att	20.00 dBm 20 dB		24.60 dB 👄 29.7 ms 👄	VBW 300 k		Auto Swee	5		
1Pk View									
					M	1[1]			-2.77 dBn .43910 GH;
10 dBm	_				M	2[1]			-41.86 dBn
10 0011						-[-]			.39180 GH
0 dBm								41	
5 abili	D1 -2.770 d	8m-						Ť	-
-10 dBm									
10 0011									
-20 dBm			2						
20 0011	D2 -22	.770 dBm-							
-30 dBm			2	-					
50 abiii									
-40 dBm							M	2	
1 . Marthur	non film has	entreneeder	moundred	Julamanero	molohulum	alundrale.	hildenthill	monterim	a abecause and
-50 dBm			-11						
-60 dBm									
00 00111									
-70 dBm									
Start 30.0	MHz			691	pts			St	op 3.0 GHz

CSE Plot on Ch 39 between 30MHz ~ 3 GHz

Date: 27.FEB.2019 15:29:45

CSE Plot on Ch 39 between 2 GHz ~ 25 GHz

Ref Level 20.0 Att	0 dBm Offse 20 dB SWT	230 ms - N	(BW 100 kH /BW 300 kH		Auto Sweep			
1Pk View	20 00 011	200 110 🍯	BH SSS AI	e Moue	Mato Sweep			
10 dBm					1[1] 2[1]		2	3.17 dBr .4490 GH 35.15 dBr .9100 GH
	1.630 dBm							
10 dBm)2 -23.630 dBm							
30 dBm	M2							
40 dBm	homen	whent	which	Mulun	whitewri	strung	minum	month
60 dBm								
70 dBm								
Start 2.0 GHz			691 p	ts			Ston	25.0 GHz

Date: 27.FEB.2019 15:32:20



Att 20 d	IB SWT	29.7 ms 👄	VBW 300 k	Hz Mode	Auto Swee	р		
1Pk View 10 dBm					1[1] 2[1]	r.		-4.33 dBn 2.48210 GH -41.82 dBn 2.24570 GH
0 dBm	dBm						MI	
-10 dBm								
20 dBm	4.330 dBm-							
-30 dBm								
40 dBm	under produces	Uhrwerhelmi	mandumat	whichpleteres	marchan	M2 neverseller	nerellanta	whenthe
50 dBm								
60 dBm								
-70 dBm								
						1	1	

CSE Plot on Ch 78 between 30MHz ~ 3 GHz

Date: 27.FEB.2019 15:52:02

CSE Plot on Ch 78 between 2 GHz ~ 25 GHz

Ref Level 20.0 Att		.60 dB 👄 RBW 100 30 ms 👄 VBW 300		ep
1Pk View		1	M4543	4.45
			M1[1]	-4.15 c 2.4830
10 dBm			M2[1]	-34.98 0
			Ĩ.	6.9760
₿idBm	.150 dBm			
	.150 dBm			
-10 dBm				
-20 dBm				
[2] A. C. S. S. S. M. S. M. S. S. M. S.	2 -24.150 dBm			
-30 dBm	M2			· · · · · · · · · · · · · · · · · · ·
	Y			
-40 dBm	MAR. Mar		Lunin ung the Mart	nor wedness much for providently
	www.www	man white and the second second		Anna A A A A
-50 dBm				
-60 dBm				
-70 dBm				
Start 2.0 GHz			1 pts	Stop 25.0 G

Date: 27.FEB.2019 15:52:47