RADIO PERFORMANCE TEST REPORT

Test Report No.	: OT-223-RWD-083
Reception No.	: 2202000536
Applicant	: PROCHIP
Address	: #1112, Ace High-End Tower 1st, 5, Digital-Ro 26, Guro-Gu, Seoul, KOREA
Manufacturer	: PROCHIP
Address	: #1112, Ace High-End Tower 1st, 5, Digital-Ro 26, Guro-Gu, Seoul, KOREA
Type of Equipment	: BLE module
FCC ID.	: 2A5XQ-POT-NR232
Model Name	: PoT-nR232
Multiple Model Name	: N/A
Serial number	: N/A
Total page of Report	: 35 pages (including this page)
Date of Incoming	: March 02, 2022
Date of issue	: March 31, 2022

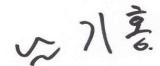
SUMMARY

The equipment complies with the regulation; *FCC PART 15 SUBPART C Section 15.247*

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

Mand



Tested by Joon-Woo, Kim / Assistant Manager ONETECH Corp.

Reviewed by Tae-Ho, Kim / General Manager ONETECH Corp.

Approved by Ki-Hong, Nam / General Manager ONETECH Corp.

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OTC-TRF-RF-001(0)

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-223-RWD-083	March 31, 2022	Initial Release	All



1. VERIFICATION OF COMPLIANCE

Applicant : PROCHIP

Address : #1112, Ace High-End Tower 1st, 5, Digital-Ro 26, Guro-Gu, Seoul, KOREA

Contact Person : Son Oh Kyoung / Department Manager

Telephone No. : +82-10-6731-4994

FCC ID : 2A5XQ-POT-NR232

Model Name : PoT-nR232

Brand Name : N/A

Serial Number : N/A

Date : March 31, 2022

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	BLE module
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2020
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT	Cartification
AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED	FCC PART 15 SUBPART C Section 15.247
UNDER FCC RULES PART(S)	KDB 558074 D01 15.247 Meas Guidance v05r02
Modifications on the Equipment to	None
Achieve Compliance	None
Final Test was Conducted On	3 m, Semi Anechoic Chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.



2. TEST SUMMARY

2.1 Test items and results

SECTION	TEST ITEMS	RESULTS
15.247 (a) (2)	Minimum 6 dB Bandwidth	Met the Limit / PASS
15.247 (b) (3)	Maximum Peak Conducted Output Power	Met the Limit / PASS
15.247 (d)	100 kHz Bandwidth Outside the Frequency Band	Met the Limit / PASS
15.247 (d)	Radiated Emission which fall in the Restricted Band	Met the Limit / PASS
15.247 (e)	Peak Power Spectral Density	Met the Limit / PASS
15.209	Radiated Emission Limits	Met the Limit / PASS
15.207	Conducted Limits	Met the Limit / PASS
15.203	Antenna Requirement	Met requirement / PASS

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in FCC PART 15 SUBPART C Section 15.247.

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2020. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

2.6 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si,

Gyeonggi-do, 12735, Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) - Registration No. R-20122/ C-14617/ G-10666/ T-11842

ISED (Innovation, Science and Economic Development Canada) - Registration No. Site# 3736A-3

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) - Designation No. KR0013



3. GENERAL INFORMATION

3.1 Product Description

The PROCHIP, Model PoT-nR232 (referred to as the EUT in this report) is a BLE module. The product specification described herein was obtained from product data sheet or user's manual.

Device Type	BLE module
Temperature Range	-40 °C ~ +85 °C
OPERATING FREQUENCY	2 402 MHz ~ 2 480 MHz
MODULATION TYPE	GFSK for 1 Mbps
Number of Channels	40 Channels
RF OUTPUT POWER	-0.13 dBm
ANTENNA TYPE	Chip Antenna
ANTENNA GAIN	0.5 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	32MHz

3.2 Alternative type(s)/model(s); also covered by this test report.

-. None

4. EUT MODIFICATIONS

-. None



5. SYSTEM TEST CONFIGURATION

5.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the

following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	PROCHIP	nRF52810	N/A

5.2 Peripheral equipment

Model	Manufacturer	Description	Connected to
XU100303-17037A	LCFC(HeFei) Electronics Tech.	Notebook Computer	EUT

5.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting is programmed.

For final testing, the EUT was set at 2 402 MHz, 2 440 MHz, and 2 480 MHz to get a maximum emission levels from the EUT. The EUT was moved throughout the XY, XZ, and YZ planes and the worst case is "XY" axis, but the worst data was recorded in this report.

-. Channel List (Bluetooth LE)

Channel	Frequency[MHz]	Channel	Frequency[MHz]	Channel	Frequency[MHz]
0	2 402.00	14	2 430.00	28	2 458.00
1	2 404.00	15	2 432.00	29	2 460.00
2	2 406.00	16	2 434.00	30	2 462.00
3	2 408.00	17	2 436.00	31	2 464.00
4	2 410.00	18	2 438.00	32	2 466.00
5	2 412.00	19	2 440.00	33	2 468.00
6	2 414.00	20	2 442.00	34	2 470.00
7	2 416.00	21	2 444.00	35	2 472.00
8	2 418.00	22	2 446.00	36	2 474.00
9	2 420.00	23	2 448.00	37	2 476.00
10	2 422.00	24	2 450.00	38	2 478.00
11	2 424.00	25	2 452.00	39	2 480.00
12	2 426.00	26	2 454.00		
13	2 428.00	27	2 456.00		



-. Duty Cycle

Mode	Tx On Time	Tx Off Time	Duty Cycle	Correction Factor
Widde	[ms]	[ms]	[%]	[dB]
Bluetooth LE	0.39	0.24	62.49 %	2.04

Note – Duty Cycle : (Tx On Time / (Tx On Time + Tx Off Time)) * 100

Correction Factor : 10 * Log(1 / (Duty Cycle / 100))

-. Test Plot

Att 35 dB SWT 2.9 ms VBW 3 MHz TRG:VID 03[1] 0.000 0 dBm 010 dBm 627.49 0 dBm 011 02 03 1.25280 r 0 dBm 010 dBm 011 02 03 1.25280 r -10 dBm 010 dBm 010 dBm 010 dBm 010 dBm 010 dBm -20 dBm TRG -20.000 dBm 010 dBm 010 dBm 010 dBm 010 dBm -30 dBm 010 dBm -40 dBm 010 d	Spectrum Ref Level 20.0		rum 2 🛛 🗙 Offset 0.60 dB		BW 1 MHz	X				
TRG:VID • 1Pk View 10 dBm • 03[1] • 0.00 • 627.49 • 0.05 dB										
● 1Pk View 10 dBm 0 dBm -0 dBm -10 dBm -10 dBm -20 dBm -30 dBm -40 dBm -70		JJ UD 🖶 3	JYYI 2.91115		DW JIMIZ					
D3[1] 0.00 0 10 dBm 627.49 0 dBm 02 03 0 dBm 02 03 -10 dBm 00 0 -20 dBm TRG -20 dBm 10 0 -30 dBm 0 -40 dBm 0 -70 dBm 0										
10 dBm M1 M1[1] -0.05 dB 0 dBm M1 D2 D3 1.25280 r -10 dBm M1 M1 M1 M1 -20 dBm RG -20.000 dBm M1 M1 M1 -30 dBm M1 M1 M1 M1 M1 -70 dBm M1 M1 M1 M1 M1	TEK AIGM					D	C+1			0 00 d0
10 dBm M1 D2 D3 1.25280 r 9-dBm -10 dBm -0.05 dB -0.05 dB -0.05 dB -20 dBm TRG -20.000 dBm -0.05 dB -0.05 dB -30 dBm -0.05 dB -0.05 dB -0.05 dB -30 dBm -0.05 dB -0.05 dB -0.05 dB -40 dBm -0.05 dB -0.05 dB -0.05 dB -50 dBm -0.05 dB -0.05 dB -0.05 dB -70 dBm -0.05 dB -0.05 dB -0.05 dB						Da	[1]			
M1 D2 D3 1.25280 r -10 dBm -10 dBm -10 dBm -10 dBm -10 dBm -10 dBm -20 dBm TRG -20.000 dBm -10 dBm -10 dBm -10 dBm -30 dBm -10 dBm -10 dBm -10 dBm -10 dBm -10 dBm -30 dBm -10 dBm -10 dBm -10 dBm -10 dBm -10 dBm -30 dBm -10 dBm -10 dBm -10 dBm -10 dBm -10 dBm -40 dBm -10 dBm -10 dBm -10 dBm -10 dBm -10 dBm -70 dBm -10 dBm -10 dBm -10 dBm -10 dBm -10 dBm	10 dBm					M	111			
0-d8m					M1					
-20 dBm -20.000 dBm -	0.dBm				T-0-0	D2	D3	v		
-20 dBm -20.000 dBm -						T	T			
-30 dBm	-10 dBm									
-30 dBm										
-30 dBm	-20 dBm TRG	-20.000 dBr	m							
-40 dBm -50 dBm										
-40 dBm -50 dBm	-30 dBm									
-50 dBm										
-50 dBm	-40 dBm									
-60 dBm		myritround		ngantite	unplue	leven	stand the	l li	walkenson	
-60 dBm	-50 dBm									
-70 dBm										
-70 dBm	-60 dBm									
	00 00									
	-70 dBm									
СF 2.44 GHz 1001 pts 290.0 µs	, o a.c									
CF 2.44 GHz 1001 pts 290.0 µs										
					1001 pt	s				290.0 µs/
Marker										
Type Ref Trc X-value Y-value Function Function Result						Funct	ion	Fur	nction Res	sult
M1 1 1.2528 ms -0.05 dBm										
D2 M1 1 392.13 µs -0.02 dB										
D3 M1 1 627.49 µs 0.00 dB	D3 M1	1	627.49 µs		0.00 dB					



5.4 Configuration of Test System

Line Conducted Test:	The EUT was tested in the Transmitting mode. All supporting equipment were connected
	to another LISN. Preliminary Power line Conducted Emission test was performed by
	using the procedure in ANSI C63.10: 2020 to determine the worse operating conditions.
Radiated Emission Test:	Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10:
	2020 to determine the worse operating conditions. Final radiated emission tests were
	conducted at 3 meter Semi Anechoic Chamber.
	The turntable was rotated through 360 degrees and the EUT was tested by positioned
	three orthogonal planes to obtain the highest reading on the field strength meter. Once
	maximum reading was determined, the search antenna was raised and lowered in both
	vertical and horizontal polarization.

5.5 Antenna Requirement

For intentional device, according to section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Construction:

The antenna of the EUT is a Chip Antenna on the main board in the EUT, so no consideration of replacement by the user.

6. PRELIMINARY TEST

6.1 AC Power line Conducted Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	Х

6.2 General Radiated Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	Х

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7. MINIMUM 6 dB BANDWIDTH

7.1 Operating environment

Temperature	: 22.5 °C
Relative humidity	: 53.5 % R.H.

7.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz, and peak detection was used. The 6 dB bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 6 dB.



7.3 Test Date

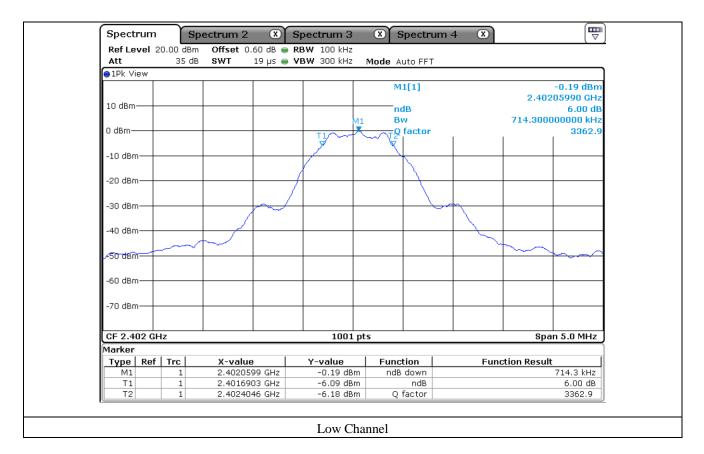
March 02, 2022 ~ March 06, 2022



7.4 Test data for 1 Mbps

CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (kHz)	LIMIT (kHz)	MARGIN (kHz)
Low	2 402.00	714.30	500.00	214.30
Middle	2 440.00	714.30	500.00	214.30
High	2 480.00	709.30	500.00	209.30

Remark. Margin = Measured Value - Limit





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	Spe	ectrum 2	× s	Spectrum 3	: ⊗ĭs	pectrum	4 🗶		
Ref Level 20				BW 100 kHz					
Att	35 dB	SWT	19 µs 🖷 🕻	/BW 300 kHz	Mode Au	uto FFT			
∋1Pk View									0.05.15
					IML:	1[1]		2 440	-0.25 dBn)05990 GH;
10 dBm					nd	IB		2.770	6.00 dE
					M1 BV			714.3000	000000 kH
0 dBm				T10.17		factor			3416.1
					\sim				
-10 dBm									
				Y		\mathbf{X}			
-20 dBm			,	4					
-30 dBm			~~/	-		~	h		
							$ \rangle$		
-40 dBm				-					
		~~~					│	han	
~50 dBm	~							- ~ `	<u>┣</u>
-60 dBm				+				+	+
-70 dBm									
CF 2.44 GHz	I			1001	nts		1	Sna	n 5.0 MHz
Marker				1001				540	
Type   Ref	Trc	X-value	. 1	Y-value	Funct	tion	Fund	ction Result	t
M1	1	2.440059		-0.25 dB		down			714.3 kHz
T1	1	2.439690		-6.20 dB	3m	ndB			6.00 dB
T2	1	2.440404	46 GHz	-6.26 dB	Sm   Q1	factor			3416.1
Spectrum		ectrum 2		Middle Gpectrum 3	× × s	pectrum	4 🗶		
Spectrum Ref Level 20 Att		Offset 0.	60 dB 👄 F		× s		4 🗴		
Ref Level 2	0.00 dBm	Offset 0.	60 dB 👄 F	pectrum 3 BW 100 kHz	× × s		4  🗴		
Ref Level 2 Att	0.00 dBm	Offset 0.	60 dB 👄 F	pectrum 3 BW 100 kHz	X S Mode At		4  🖹		-0.22 dBn
Ref Level 20 Att 1Pk View	0.00 dBm	Offset 0.	60 dB 👄 F	pectrum 3 BW 100 kHz	: X S : : Mode Au	uto FFT 1[1]	4 🛛	2.480	-0.22 dBn )05990 GH;
Ref Level 2 Att	0.00 dBm	Offset 0.	60 dB 👄 F	pectrum 3 BW 100 kHz	Mode Au	uto FFT 1[1] 1B	4 🛛		-0.22 dBn )05990 GH; 6.00 dE
Ref Level 24 Att 1Pk View 10 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 🗷		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level 20 Att 1Pk View	0.00 dBm	Offset 0.	60 dB 👄 F	pectrum 3 BW 100 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] 1B	4 🗷		-0.22 dBn )05990 GH; 6.00 dE
Ref Level 24 Att 1Pk View 10 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level 24 Att 1Pk View 10 dBm 0 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level 24 Att 1Pk View 10 dBm 0 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level 20 Att 1Pk View 10 dBm 0 dBm -10 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level 20 Att 1Pk View 10 dBm 0 dBm -10 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           Att         1Pk View           10 dBm         0           0 dBm         -10 dBm           -20 dBm         -20 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           Att         1Pk View           10 dBm         0           0 dBm         -10 dBm           -20 dBm         -20 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           Att         1Pk View           10 dBm         0           0 dBm         -10 dBm           -10 dBm         -20 dBm           -30 dBm         -30 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           Att         1Pk View           10 dBm         0           0 dBm         -10 dBm           -10 dBm         -20 dBm           -30 dBm         -30 dBm	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           Att         1Pk View           10 dBm         0           0 dBm         0           -10 dBm         0           -20 dBm         0           -30 dBm         0	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           Att         1Pk View           10 dBm         0           0 dBm         0           -10 dBm         0           -20 dBm         0           -30 dBm         0	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           1Pk         View           10 dBm         0           0 dBm         -           -10 dBm         -           -20 dBm         -           -30 dBm         -           -40 dBm         -	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           1Pk         View           10 dBm         0           0 dBm         -           -10 dBm         -           -20 dBm         -           -30 dBm         -           -40 dBm         -	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           1Pk         View           10 dBm         0           0 dBm         0           -10 dBm         0           -20 dBm         0           -30 dBm         0           -40 dBm         0           -50 dBm         0	0.00 dBm	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au Mode Au Mi Mi	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           1Pk         View           10 dBm         0           0 dBm         0           -10 dBm         0           -20 dBm         0           -30 dBm         0           -40 dBm         0           -50 dBm         0           -70 dBm         0	0.00 dBm 35 dB	Offset 0.	60 dB 👄 F	Spectrum 3 RBW 100 kHz BW 300 kHz T1 T1 T1 T1 T1 T1 T1 T1 T1 T1	Mode Au	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH: 6.00 dE 000000 kH: 3496.3
Ref Level         21           1Pk         View           10 dBm         0           0 dBm         0           -10 dBm         0           -20 dBm         0           -30 dBm         0           -40 dBm         0           -50 dBm         0           -70 dBm         0           -70 dBm         0           CF 2.48 GHz         0	0.00 dBm 35 dB	Offset 0.	60 dB 👄 F	Spectrum 3 BW 100 kHz VBW 300 kHz	Mode Au	uto FFT 1[1] IB V	4 8		-0.22 dBn 005990 GH; 6.00 dE 000000 kH;
Ref Level         21           1Pk         View           10 dBm         0           0 dBm         0           -10 dBm         0           -20 dBm         0           -30 dBm         0           -40 dBm         0           -50 dBm         0           -70 dBm         0           CF         2.48 GHz	0.00 dBm 35 dB	Offset 0. SWT	60 dB • • •	Time         Time           100 kHz         100 kHz           78W         300 kHz           78W <td>Mode Au</td> <td>uto FFT  I[1]  iB  factor</td> <td></td> <td>709.3000</td> <td>-0.22 dBn 005990 GH: 6.00 dE 000000 kH: 3496.3</td>	Mode Au	uto FFT  I[1]  iB  factor		709.3000	-0.22 dBn 005990 GH: 6.00 dE 000000 kH: 3496.3
Ref Level 2t       Att       1Pk View       10 dBm       0 dBm       -10 dBm       -20 dBm       -30 dBm       -30 dBm       -40 dBm       -50 dBm       -60 dBm       -70 dBm       CF 2.48 GHz       Marker       Type     Ref	0.00 dBm 35 dB	Offset 0. SWT	60 dB • F	Spectrum 3           RBW 100 kHz           //BW 300 kHz           T1	Mode Au Mi By V V V V V V V V V V V V V V V V V V	uto FFT  1[1]  // factor  // // // // // // // // // // // // /			-0.22 dBn 005990 GH: 6.00 dE 3496.:
Ref Level         21           1Pk         View           10 dBm         0           0 dBm         0           -10 dBm         0           -20 dBm         0           -30 dBm         0           -40 dBm         0           -50 dBm         0           -70 dBm         0           CF         2.48 GHz	0.00 dBm 35 dB	Offset 0. SWT	60 dB • F 19 μs • Υ	Time         Time           100 kHz         100 kHz           78W         300 kHz           78W <td>Mode Au Mi By V V V V V V V V V V V V V V V V V V</td> <td>uto FFT  I[1]  iB  factor</td> <td></td> <td>709.3000</td> <td>-0.22 dBn 005990 GH: 6.00 dE 000000 kH: 3496.3</td>	Mode Au Mi By V V V V V V V V V V V V V V V V V V	uto FFT  I[1]  iB  factor		709.3000	-0.22 dBn 005990 GH: 6.00 dE 000000 kH: 3496.3
Ref Level 2t       Att       1Pk View       10 dBm       0 dBm       -10 dBm       -20 dBm       -30 dBm       -30 dBm       -40 dBm       -50 dBm       -60 dBm       -70 dBm <b>CF 2.48 GHz</b> Marker       Type     Ref	0.00 dBm 35 dB	Offset 0. SWT	60 dB • F 19 μs • Υ	Time           Tim           Tim </td <td>Mode Au Mi Mi Bu Mi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Bu Bu Vi Bu Vi Vi Bu Vi Bu Vi Bu Vi Vi Bu Vi Vi Bu Vi Vi Vi Vi Vi Vi Vi Vi Vi Vi Vi Vi Vi</td> <td>uto FFT 1[1] iB v factor </td> <td></td> <td>709.3000</td> <td>-0.22 dBn 005990 GH: 6.00 dk 3496.5</td>	Mode Au Mi Mi Bu Mi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Vi Bu Bu Bu Vi Bu Vi Vi Bu Vi Bu Vi Bu Vi Vi Bu Vi Vi Bu Vi Vi Vi Vi Vi Vi Vi Vi Vi Vi Vi Vi Vi	uto FFT 1[1] iB v factor 		709.3000	-0.22 dBn 005990 GH: 6.00 dk 3496.5

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# 8. MAXIMUM PEAK OUTPUT POWER

#### 8.1 Operating environment

Temperature	: 22.5 °C
Relative humidity	: 53.5 % R.H.

#### 8.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to  $\geq$  DTS Bandwidth, the video bandwidth is set to 3 times the resolution bandwidth.



#### 8.3 Test Date

March 02, 2022 ~ March 06, 2022



## 8.4 Test data for 1 Mbps

-. Test Result

CHANNEL	FREQUENCY (MHz)	6 dB Bandwidth (kHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 402.00	714.30	-0.13	30.00	30.13
MIDDLE	2 440.00	714.30	-0.22	30.00	30.22
HIGH	2 480.00	709.30	-0.16	30.00	30.16

Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

: Pass

Ref Level 20.0		et 0.60 dB							
Att	30 dB SWT	635.4 n	5 👄 VBW	/ 10 MHz	Mode A	uto FFT			
●1Pk View					1511			.13 dBm	
					1[1]		2.40185		
10 dBm						-			
0 dBm			M1						
							<u>├</u> ───┼		
-10 dBm									
-20 dBm									
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm									
, o doin									
CF 2.402 GHz				1001 pt	s			Spa	n 5.0 MHz



Spectrum	n Sp	ectrum 2	×						
				RBW 3 MH					,
Att 1Pk View	30 GB	SWI	635.4 NS 📟	<b>VBW</b> 10 MH	Z Mode A	Auto FF I			
					M1	[1]			-0.22 dBm
					1		1	2.439	86010 GHz
10 dBm									
				M1					
0 dBm									
-10 dBm									
-20 dBm									
-30 dBm									
-40 dBm									
-50 dBm			1						
-60 dBm									
70.45									
-70 dBm									
CF 2.44 GH	Ηz			1001	pts			Spa	n 5.0 MHz
	l 20.00 dBm	ectrum 2 Offset SWT	0.60 dB 🔵	<b>RBW</b> 3 MH <b>VBW</b> 10 MH	iz Iz Mode 4	Auto FFT			
		Offset	0.60 dB 🔵	RBW 3 MH VBW 10 MH	z Mode 4				[♥
Ref Leve Att	l 20.00 dBm	Offset	0.60 dB 🔵	<b>RBW</b> 3 МН <b>VBW</b> 10 МН	z Mode 4	Auto FFT			-0.16 dBm
Ref Leve Att 1Pk View	l 20.00 dBm	Offset	0.60 dB 🔵	RBW 3 MH VBW 10 MH	z Mode 4				
Ref Leve Att	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve Att 1Pk View	l 20.00 dBm	Offset	0.60 dB 🔵	RBW 3 MH VBW 10 MH	z Mode 4				-0.16 dBm
Ref Leve Att 1Pk View	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve Att 1Pk View	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve Att 1Pk View 10 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve Att 1Pk View 10 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve Att 1Pk View 10 dBm 0 dBm -10 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve Att 1Pk View 10 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm	l 20.00 dBm	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH	z Mode 4				-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -50 dBm           -50 dBm           -70 dBm	1 20.00 dBm 30 dB	Offset	0.60 dB 🔵	VBW 10 MH				2.479	-0.16 dBm 77520 GHz
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm	1 20.00 dBm 30 dB	Offset	0.60 dB 🔵	<b>VBW</b> 10 MH				2.479	-0.16 dBm
Ref Leve           Att           1Pk View           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -50 dBm           -50 dBm           -70 dBm	1 20.00 dBm 30 dB	Offset	0.60 dB 🔵	VBW 10 MH	IZ Mode A			2.479	-0.16 dBm 77520 GHz





#### 9.1 Operating environment

Temperature	: 22.5 °C
Relative humidity	: 53.5 % R.H.

#### 9.2 Test set-up for conducted measurement

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz, the video bandwidth is set to 3 times the resolution bandwidth and peak detection was used.



#### 9.3 Test set-up for radiated measurement

The radiated emissions measurements were performed on the 3 m semi anechoic chamber. The EUT was placed on turntable approximately 1.5 m above the ground plane.

The frequency spectrum from 30 MHz to 26.5 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.

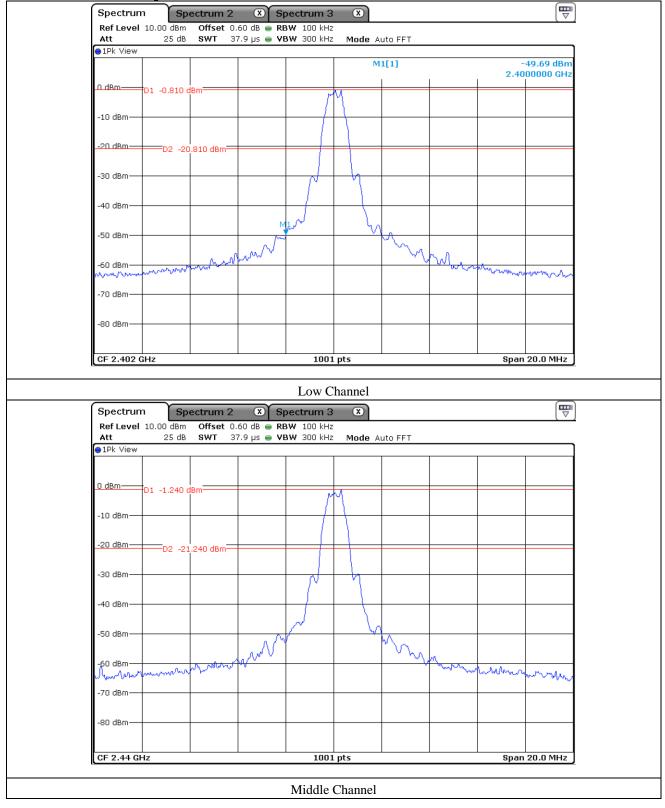
#### 9.4 Test Date

March 02, 2022 ~ March 06, 2022



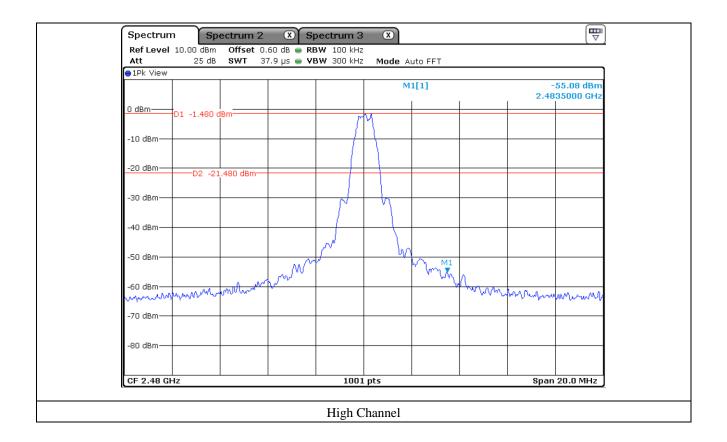
#### 9.5 Test data for conducted emission

#### 9.5.1 Test data for 1 Mbps



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Spectrum	n  Sp	ectrum 2	🗶 St	bect <mark>r</mark> um 3	×				
	10.00 dBm 25 dB			<b>BW</b> 100 kHz <b>BW</b> 300 kHz		ute Cureer			
Att ●1Pk View	25 UB	SWT 24	F.7 MS 🖶 VI	<b>BW</b> 300 KH2	MODE A	uto Sweep			
					М	1[1]			59.87 dBm
0 dBm								2.	27420 GHz
o abiii									
-10 dBm									
-20 dBm	D1 -20.810	dBm							
-30 dBm									
-40 dBm									
-50 dBm									
SS abili-									
-60 dBm									11
المعربة المراجع	and the second	orthallalland	unter publications	multiliphen	Kunnermanhabbe	driver and the	Hardeller	Moormleantaile	Hubble hunder
-70 dBm	Albert and a day of a	4-11 4 ··· 4 ··· 4 · 4 · 4							
-80 dBm									
Start 30.0	5 41 I			1001	pts			Sto	p 2.5 GHz
		a aturu una D		Low C					Ē
Spectrum			73 dB 😑 RE	Low C Dectrum 3 3W 100 kHz 3W 300 kHz	×	uto Sweep			
Spectrum Ref Level	n Sp 10.00 dBm	Offset 0.	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				
Spectrum Ref Level Att	n Sp 10.00 dBm	Offset 0.	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A	uto Sweep			56.21 dBm 4.8140 GHz
Spectrum Ref Level Att	n Sp 10.00 dBm	Offset 0.	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View 0 dBm-	n Sp 10.00 dBm	Offset 0.	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View	n Sp 10.00 dBm	Offset 0.	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View 0 dBm	n Sp 10.00 dBm 25 dB	Offset 0. SWT 24	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View 0 dBm-	n Sp 10.00 dBm 25 dB	Offset 0. SWT 24	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View 0 dBm	n Sp 10.00 dBm 25 dB	Offset 0. SWT 24	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View 0 dBm -10 dBm -20 dBm -30 dBm	n Sp 10.00 dBm 25 dB	Offset 0. SWT 24	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View 0 dBm	n Sp 10.00 dBm 25 dB	Offset 0. SWT 24	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View 0 dBm	n Sp 10.00 dBm 25 dB	Offset 0. SWT 24	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum Ref Level Att 1Pk View 0 dBm -10 dBm -20 dBm -30 dBm	D Sp 10.00 dBm 25 dB	Offset 0. SWT 24	73 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.21 dBm
Spectrum           Ref Level           Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm	D1 -20.810	dBm	73 dB • Re 40 ms • VE	Bectrum 3 BW 100 kHz BW 300 kHz	Mode A M	1[1]			56.21 dBm +.8140 GHz
Spectrum Ref Level Att 1Pk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm	D1 -20.810	Offset 0. SWT 24	73 dB • Re 40 ms • VE	oectrum 3 3W 100 kHz	Mode A M	1[1]	atribut dun an had		56.21 dBm +.8140 GHz
Spectrum           Ref Level           Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm	D1 -20.810	dBm	73 dB • Re 40 ms • VE	Bectrum 3 BW 100 kHz BW 300 kHz	Mode A M	1[1]	straf-ut the share to be		56.21 dBm +.8140 GHz
Spectrum Ref Level Att 1Pk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm M -60 dBm	D1 -20.810	dBm	73 dB • Re 40 ms • VE	Bectrum 3 BW 100 kHz BW 300 kHz	Mode A M	1[1]	atribut during half		56.21 dBm +.8140 GHz
Spectrum Ref Level Att 1Pk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm M -60 dBm	D1 -20.810	dBm	73 dB • Re 40 ms • VE	Bectrum 3 BW 100 kHz BW 300 kHz	Mode A M	1[1]	drub-ud un inter		56.21 dBm +.8140 GHz
Spectrum Ref Level Att 1Pk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -70 dBm -70 dBm	D1 -20.810	dBm	73 dB • Re 40 ms • VE	Bectrum 3 BW 100 kHz BW 300 kHz	Mode A M	1[1]			56.21 dBm +.8140 GHz
Spectrum Ref Level Att 1Pk View 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -70 dBm -70 dBm	1 Sp 10.00 dBm 25 dB	dBm	73 dB • Re 40 ms • VE	Bectrum 3 BW 100 kHz BW 300 kHz	Mode A	1[1]	dv)-utuurutut	Links Webs Ling Plyse	56.21 dBm +.8140 GHz

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OTC-TRF-RF-001(0)



Spectrum	Spectrur			trum 3	×				
Att 10.00	dBm Offse 25dB SWT	et 0.60 dB 24.7 ms	e RBW		Mode Au	to Sweep			
●1Pk View									
				N	11[1]			.05 dBm .120 GHz	
0 dBm	_								-
-10 dBm									-
-20 dBm-D1 -21	.240 dBm								
-30 dBm									
-so ubin									
-40 dBm									-
-50 dBm									-
-60 dBm								M1	-
-00 abin hey lind bour and line for	hiphonethetereepterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiterheiter	weterwhenthall	Mongulatelengest		gelffar flathlur at	Yhahashashillerhala	hyhdydeulhdefelulhdefen (f	9. Aboottaldh, au	]
-70 UBIII									
-80 dBm									-
Start 30.0 MHz				1001 p	ts.				] Stop 2.5 GHz
			М	liddle Cl	hannel				
Spectrum	Spectrur	n 2 (X	$\sim$	liddle Cl					
Spectrum Ref Level 10.00	Spectrur	n 2 🛛	Spect	trum 3	hannel 🗵				
Ref Level 10.00 Att		et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz		to Sweep			$\nabla$
Ref Level 10.00	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	(X) Mode Aut				X
Ref Level 10.00 Att :	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	×		1		-54.61 dBm 12.1980 GHz
Ref Level 10.00 Att	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	(X) Mode Aut				-54.61 dBm
Ref Level 10.00 Att 1Pk View	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	(X) Mode Aut				-54.61 dBm
Ref Level 10.00 Att :	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	(X) Mode Aut				-54.61 dBm
Ref Level         10.00           Att         10.00           1Pk View         10.00           0 dBm         10.00           -10 dBm         10.00	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	(X) Mode Aut				-54.61 dBm
Ref Level 10.00 Att 1Pk View	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	(X) Mode Aut				-54.61 dBm
Ref Level         10.00           Att         10.00           1Pk View         10.00           0 dBm         10.00           -10 dBm         10.00	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	(X) Mode Aut				-54.61 dBm
Ref Level         10.00           Att         10.00           1Pk         View           0 dBm         -10 dBm           -20 dBm         D1 -2	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	(X) Mode Aut				-54.61 dBm
Ref Level         10.00           Att         10.00           1Pk         View           0 dBm         -10 dBm           -20 dBm         D1 -2	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	X Mode Au				-54.61 dBm
Ref Level 10.00           Att           1Pk View           0 dBm           -10 dBm           -20 dBm           D1 -2           -30 dBm           -40 dBm	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	X Mode Au				-54.61 dBm
Ref Level         10.00           Att         3           1Pk View         3           0 dBm         -10           -10 dBm         -20 dBm           -30 dBm         -30 dBm	dBm Offse	et 1.14 dB	Spect	t <b>rum 3</b> 100 kHz	X Mode Au				-54.61 dBm
Ref Level         10.00           Att         10.00           1Pk         View           0 dBm         -           -10 dBm         -           -20 dBm         D1 -2           -30 dBm         -           -40 dBm         -	dBm Offse 25 dB SWT	et 1.14 dB 240 ms	Spect RBW VBW	trum 3 100 kHz 300 kHz	Mode Au	[1]			-54.61 dBm 12.1980 GHz
Ref Level 10.00           Att           1Pk View           0 dBm           -10 dBm           -20 dBm           D1 -2           -30 dBm           -40 dBm	dBm Offse 25 dB SWT	et 1.14 dB 240 ms	Spect RBW VBW	trum 3 100 kHz 300 kHz	Mode Au	[1]			-54.61 dBm
Ref Level 10.00           Att           1Pk View           0 dBm           -10 dBm           -20 dBm           01 -2           -30 dBm           -40 dBm           -50 dBm           -60 dBm	dBm Offse 25 dB SWT	et 1.14 dB 240 ms	Spect RBW VBW	trum 3 100 kHz 300 kHz	Mode Au	[1]			-54.61 dBm 12.1980 GHz
Ref Level         10.00           Att         10.00           1Pk         View           0 dBm         -           -10 dBm         -           -20 dBm         D1 -2           -30 dBm         -           -40 dBm         -	dBm Offse 25 dB SWT	et 1.14 dB 240 ms	Spect RBW VBW	trum 3 100 kHz 300 kHz	Mode Au	[1]			-54.61 dBm 12.1980 GHz
Ref Level 10.00           Att           1Pk View           0 dBm           -10 dBm           -20 dBm           01 -2           -30 dBm           -40 dBm           -50 dBm           -60 dBm	dBm Offse 25 dB SWT	et 1.14 dB 240 ms	Spect RBW VBW	trum 3 100 kHz 300 kHz	Mode Au	[1]			-54.61 dBm 12.1980 GHz
Ref Level 10.00           Att           1Pk View           0 dBm           -10 dBm           -20 dBm           D1 -2           -30 dBm           -40 dBm           -50 dBm           -70 dBm	dBm Offse 25 dB SWT	et 1.14 dB 240 ms	Spect RBW VBW	trum 3 100 kHz 300 kHz	Mode Au	[1]			-54.61 dBm 12.1980 GHz
Ref Level 10.00       Att       1Pk View       0 dBm       -10 dBm       -20 dBm       01 -2       -30 dBm       -40 dBm       -50 dBm       -60 dBm       -70 dBm       -80 dBm	dBm Offse 25 dB SWT	et 1.14 dB 240 ms	Spect RBW VBW	trum 3 100 kHz 300 kHz	Mode Au M1	[1]			-54.61 dBm 12.1980 GHz
Ref Level 10.00           Att           1Pk View           0 dBm           -10 dBm           -20 dBm           D1 -2           -30 dBm           -40 dBm           -50 dBm           -70 dBm	dBm Offse 25 dB SWT	et 1.14 dB 240 ms	Spect RBW VBW	trum 3 100 kHz 300 kHz	Mode Au M1	[1]			-54.61 dBm 12.1980 GHz

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Spectrum	ר ז Sp	ectrum 2	🗴 SI	bect <mark>r</mark> um 3	×				
Ref Level Att	10.00 dBm 25 dB			BW 100 kHz BW 300 kHz		uto Culoop			
o 1Pk View	25 UD	3111 2	t.7 IIIS 👿 ¥	<b>DIVY</b> 300 KH2	MOUE A	uto Sweep			
					м	1[1]			60.51 dBm 35320 GHz
0 dBm								2.	
-10 dBm									
00 48-0									
-20 dBm	D1 -21.480	dBm							
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									M1
	and a standard	العرداء ادادا مريور وال	anopen flatelies	phinamethian	renderhander	elf-likely-united outer	auphweihibudaet	Whohnwhowthe	whenter
<del>իփվիսիփիկին։</del> -70 dBm——	an a	Cudar Mander							
-80 dBm									
Start 30.0	MHZ			1001	pts			Sto	p 2.5 GHz
				High C	hannel				_
Spectrum Ref Level Att	10.00 dBm		14 dB 👄 RE	oectrum 3 3W 100 kHz	×	uto Sween			
-		Offset 1.	14 dB 😑 RE	pectrum 3	X Mode A	uto Sweep			
Ref Level Att	10.00 dBm	Offset 1.	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A	uto Sweep 1[1]			56.12 dBm
Ref Level Att	10.00 dBm	Offset 1.	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				
Ref Level Att 1Pk View 0 dBm	10.00 dBm	Offset 1.	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.12 dBm
Ref Level Att 1Pk View	10.00 dBm	Offset 1.	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.12 dBm
Ref Level Att 1Pk View 0 dBm -10 dBm	10.00 dBm 25 dB	Offset 1. SWT 2	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.12 dBm
Ref Level Att 1Pk View 0 dBm -10 dBm	10.00 dBm	Offset 1. SWT 2	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.12 dBm
Ref Level Att 1Pk View 0 dBm -10 dBm	10.00 dBm 25 dB	Offset 1. SWT 2	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.12 dBm
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm	10.00 dBm 25 dB	Offset 1. SWT 2	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.12 dBm
Ref Level           Att           1Pk View           0 dBm           -10 dBm           -20 dBm	10.00 dBm 25 dB	Offset 1. SWT 2	14 dB 😑 RE	oectrum 3 3W 100 kHz	X Mode A				56.12 dBm
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	10.00 dBm 25 dB	Offset 1. SWT 2	14 dB 😑 RE	Dectrum 3 BW 100 kHz BW 300 kHz	X Mode A				56.12 dBm
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm	10.00 dBm 25 dB	Offset 1. SWT 2	14 dB • RE 40 ms • VE	M1	Mode A	1[1]			56.12 dBm 2.3900 GHz
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm	10.00 dBm 25 dB	Offset 1. SWT 2	14 dB • RE 40 ms • VE	M1	Mode A	1[1]			56.12 dBm 2.3900 GHz
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm	10.00 dBm 25 dB D1 -21.480	Offset 1. SWT 2	14 dB • RE 40 ms • VE	Dectrum 3 BW 100 kHz BW 300 kHz	Mode A	1[1]			56.12 dBm 2.3900 GHz
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm	10.00 dBm 25 dB D1 -21.480	Offset 1. SWT 2	14 dB • RE 40 ms • VE	M1	Mode A	1[1]	antification to be sentily to		56.12 dBm 2.3900 GHz
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -50 dBm           -50 dBm           -70 dBm	10.00 dBm 25 dB D1 -21.480	Offset 1. SWT 2	14 dB • RE 40 ms • VE	M1	Mode A	1[1]			56.12 dBm 2.3900 GHz
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm	10.00 dBm 25 dB D1 -21.480	Offset 1. SWT 2	14 dB • RE 40 ms • VE	M1	Mode A	1[1]			56.12 dBm 2.3900 GHz
Ref Level Att           1Pk View           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -50 dBm           -50 dBm           -70 dBm	10.00 dBm 25 dB	Offset 1. SWT 2	14 dB • RE 40 ms • VE	M1	Mode A	1[1]		12	56.12 dBm 2.3900 GHz



#### 9.6 Test data for radiated emission

#### 9.6.1 Radiated Emission which fall in the Restricted Band

Resolution bandwidth	: 1 MHz and Peak Detector for Peak Mode
	1 MHz and RMS Detector for Average Mode

- -. Video bandwidth : 3 MHz for Peak and Average Mode
- -. Measurement distance : 3 m
- -. Duty Cycle : 62.49 %
- -. Result : <u>PASSED</u>

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)		
Test Data for Low Channel												
2 341 203	57.69	Peak	Н	28.00	6.71	45.14	-	47.26	74.00	26.74		
2 330 633	47.49	Average	Н	28.10	6.71	45.14	2.04	39.20	54.00	14.80		
2 376 496	57.60	Peak	V	28.10	6.71	45.14	-	47.27	74.00	26.73		
2 341 019	47.74	Average	V	28.10	6.71	45.14	2.04	39.45	54.00	14.55		
				Test Dat	a for High	Channel						
2 493 976	59.83	Peak	Н	27.90	6.87	45.14	-	49.46	74.00	24.54		
2 491 638	48.33	Average	Н	27.90	6.87	45.14	2.04	40.00	54.00	14.00		
2 496 913	58.24	Peak	V	27.90	6.87	45.14	-	47.87	74.00	26.13		
2 491 538	48.14	Average	V	27.90	6.87	45.14	2.04	39.81	54.00	14.19		

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dB $\mu$ V/m) - Total Level (dB $\mu$ V/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor + Duty Factor - AMP Gain



#### 9.6.2 Spurious & Harmonic Radiated Emission

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,

1 MHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 62.49 %

-. Result : <u>PASSED</u>

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)				
	Test Data for Low Channel													
4 804.00	60.15	Peak	Н	31.60	9.39	45.10	-	56.04	74.00	17.96				
4 804.00	49.73	Average	Н	31.60	9.39	45.10	2.04	47.66	54.00	6.34				
4 804.00	60.18	Peak	V	31.60	9.39	45.10	-	56.07	74.00	17.93				
4 804.00	49.83	Average	V	31.60	9.39	45.10	2.04	47.76	54.00	6.24				
	Test Data for Middle Channel													
4 880.00	59.90	Peak	Н	31.50	9.39	45.10	-	55.69	74.00	18.31				
4 880.00	49.85	Average	Н	31.50	9.39	45.10	2.04	47.68	54.00	6.32				
4 880.00	59.16	Peak	V	31.50	9.39	45.10	-	54.95	74.00	19.05				
4 880.00	49.26	Average	V	31.50	9.39	45.10	2.04	47.09	54.00	6.91				
				Test Dat	a for High	Channel								
4 960.00	59.84	Peak	Н	31.20	9.39	45.10	-	55.33	74.00	18.67				
4 960.00	49.55	Average	Н	31.20	9.39	45.10	2.04	47.08	54.00	6.92				
4 960.00	60.41	Peak	V	31.20	9.39	45.10	-	55.90	74.00	18.10				
4 960.00	49.65	Average	V	31.20	9.39	45.10	2.04	47.18	54.00	6.82				

Remark: "H": Horizontal, "V": Vertical

Margin (dB) = Limits (dB $\mu$ V/m) - Total Level (dB $\mu$ V/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor + Duty Factor - AMP Gain



## **10. PEAK POWER SPECTRAL DENSITY**

#### **10.1 Operating environment**

Temperature: 22.5 °CRelative humidity: 53.5 % R.H.

#### 10.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to 3 kHz  $\leq$  RBW  $\leq$  100 kHz, the video bandwidth is set to 3 times the resolution bandwidth.



#### 10.3 Test Date

March 02, 2022 ~ March 06, 2022



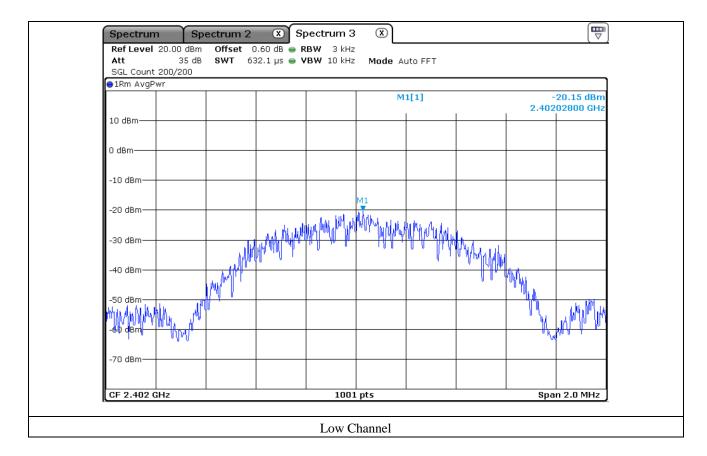
#### 10.4 Test data for 1 Mbps

-. Test Result : Pass

-. Operating Condition : Continuous transmitting mode

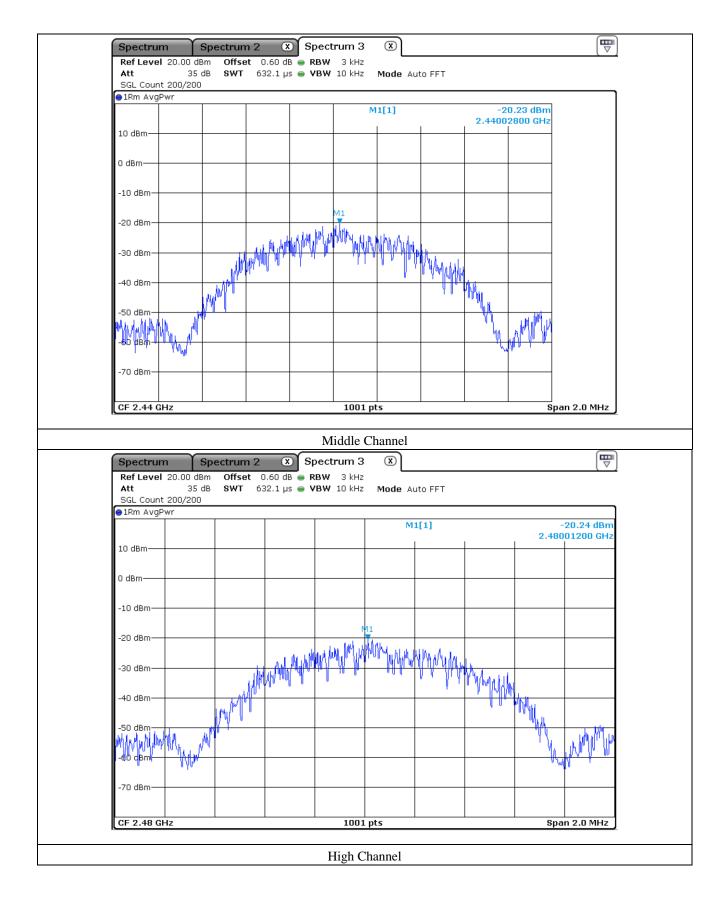
CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (dBm)	LIMIT (dBm)	MARGIN (dB)
Low	2 402.00	-20.15	8.00	28.15
Middle	2 440.00	-20.23	8.00	28.23
High	2 480.00	-20.24	8.00	28.24

Remark. Margin = Limit – Measured value





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## **11. RADIATED EMISSION TEST**

#### **11.1 Operating environment**

Temperature	: 22.5 °C
Relative humidity	: 53.5 % R.H.

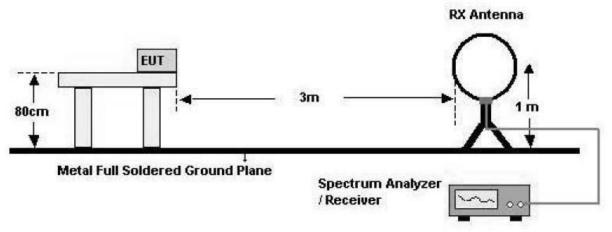
#### 11.2 Test set-up

The radiated emissions measurements were on the 3 m semi anechoic chamber. The EUT and other support equipment were placed on a non-conductive turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

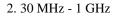
The frequency spectrum from 30 MHz to 26.5 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

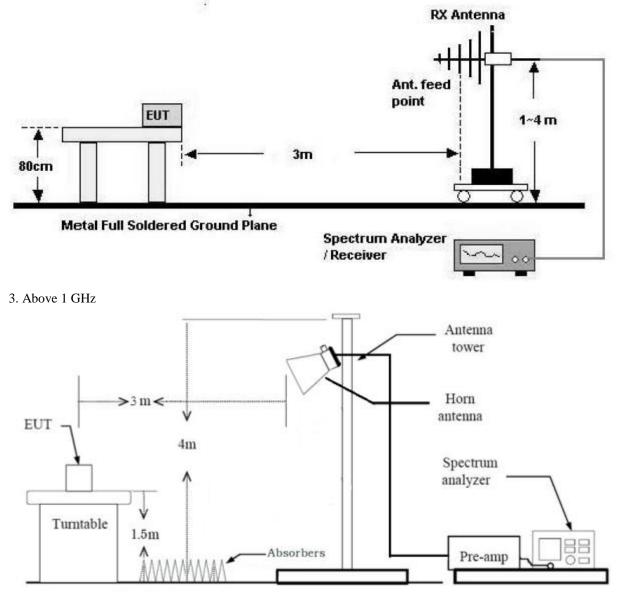
#### - Test Configuration

1. Below 30 MHz









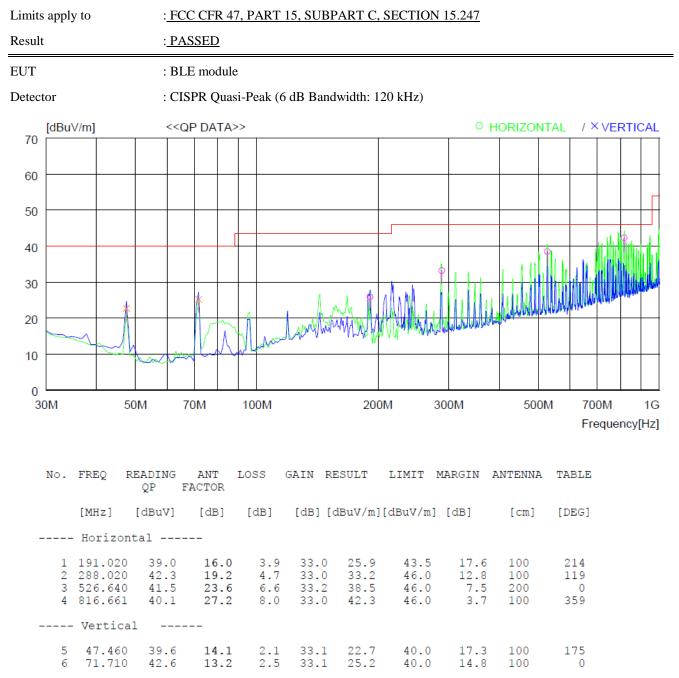
## 11.3 Test Date

March 02, 2022 ~ March 06, 2022

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

## 11.4 Test data for 30 MHz ~ 1 GHz

#### 11.4.1 Test data for Bluetooth LE



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#### 11.5 Test data for Below 30 MHz

- -. Resolution bandwidth : 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)
- -. Frequency range : 9 kHz ~ 30 MHz
- -. Measurement distance : 3 m
- -. Operating mode : Transmitting mode

Frequency	Reading	Ant. Pol.	Ant.	Angle	Ant. Factor	Cable	Emission	Limits	Margin
(MHz)	(dBµV)	(H/V)	Height (m)	(°)	(dB/m)	Loss	Level(dBµV/m)	(dBµV/m)	(dB)
	En	nission fror	n the EUT mo	ore than 20	) dB below the	e limit in e	each frequency rang	ge.	

#### 11.6 Test data for above 1 GHz

-. Resolution bandwidth : 1 MHz for Peak and Average Mode for the emissions fall in restricted band,

1 MHz for Peak Mode for the emissions outside restricted band

- -. Video bandwidth : 3 MHz for Peak and Average Mode
- -. Frequency range : 1 GHz ~ 26.5 GHz
- -. Measurement distance : 3 m
- -. Operating mode : Transmitting mode

Frequency	Reading	Ant. Pol.	Ant.	Angle	Ant. Factor	Cable	Emission	Limits	Margin
(MHz)	(dBµV)	(H/V)	Height (m)	(°)	(dB/m)	Loss	Level(dBµV/m)	(dBµV/m)	(dB)
	Er	nission fror	n the EUT mo	ore than 20	) dB below the	e limit in e	each frequency rang	ge.	



# **12. CONDUCTED EMISSION TEST**

#### 12.1 Operating environment

Temperature	: 22.5 °C
Relative humidity	: 53.5 % R.H.

#### 12.2 Test set-up

The EUT was placed on a wooden table, 0.8 m height above the floor. Power was fed to the EUT through a 50  $\Omega$  / 50  $\mu$ H + 5  $\Omega$  Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

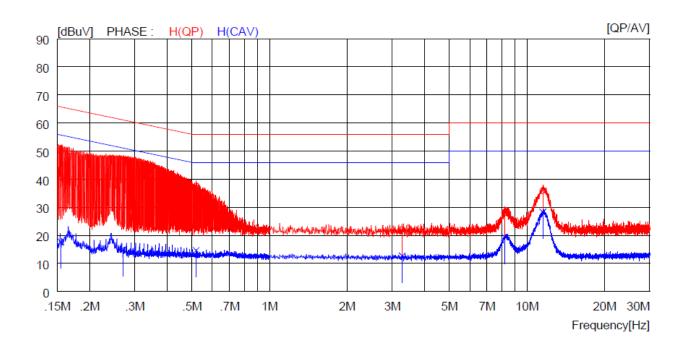
#### 12.3 Test Date

March 02, 2022 ~ March 06, 2022



#### 12.4 Test data

- -. Resolution bandwidth : 9 kHz
- -. Frequency range : 0.15 MHz ~ 30 MHz
- -. Tested Line : HOT LINE

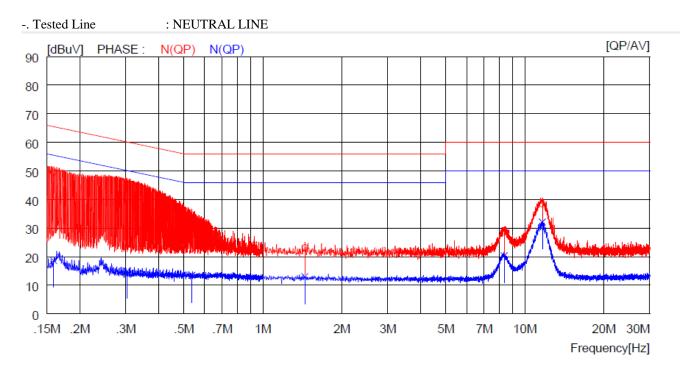


NO	FREQ	READ		C.FACTOR	RESI		LIM		MAR		PHASE
	[MHz]	QP [dBuV]	AV [dBuV]	[dB]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15500	40.1		10.0	50.1		65.7		15.6		H(QP)
2	0.27100	36.4		10.0	46.4		61.1		14.7		H(QP)
3	0.51900	27.5		10.0	37.5		56.0		18.5		H(QP)
4	3.27600	12.0		10.1	22.1		56.0		33.9		H(QP)
5	8.19500	17.9		10.2	28.1		60.0		31.9		H(QP)
6	11.53000	25.7		10.2	35.9		60.0		24.1		H(QP)
7	0.15500		7.7	10.0		17.7		55.7		38.0	H (CAV)
8	0.27100		5.0	10.0		15.0		51.1		36.1	H (CAV)
9	0.51900		4.6	10.0		14.6		46.0		31.4	H (CAV)
10	3.27600		2.6	10.1		12.7		46.0		33.3	H (CAV)
11	8.19500		9.2	10.2		19.4		50.0		30.6	H (CAV)
12	11.53000		18.1	10.2		28.3		50.0		21.7	H (CAV)

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NC	) FREQ	READ OP	ING AV	C.FACTOR	RESU OP	JLT AV	LIM QP	IT AV	MAR QP	GIN AV	PHASE	
	[MHz]	[dBuV]		[dB]	[dÊuV]		[dBuV]		[dBuV]			
1	0.15900	39.5		10.0	49.5		65.5		16.0		N(QP)	
2	0.30400	35.2		10.0	45.2		60.1		14.9		N(QP)	
3	0.53600	24.6		10.0	34.6		56.0		21.4		N(QP)	
4	1.44800	13.2		10.0	23.2		56.0		32.8		N(QP)	
5	8.34000	18.4		10.2	28.6		60.0		31.4		N(QP)	
6	11.67000	28.2		10.2	38.4		60.0		21.6		N(QP)	
7	0.15900		8.7	10.0		18.7		55.5		36.8	N (CAV)	
8	0.30400		4.9	10.0		14.9		50.1		35.2	N(CAV)	
9	0.53600		3.5	10.0		13.5		46.0		32.5	N(CAV)	
10	1.44800		3.0	10.0		13.0		46.0		33.0	N (CAV)	
11	8.34000		10.1	10.2		20.3		50.0		29.7	N(CAV)	
12	11.67000		21.9	10.2		32.1		50.0		17.9	N(CAV)	

#### Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

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# **13. LIST OF TEST EQUIPMENT**

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)	
FSV40-N	Rohde & Schwarz	Spectrum Analyzer	102165	Apr. 16, 2021 (1Y)	
ESR	Rohde & Schwarz	EMI Test Receiver	101470	Oct. 18, 2021 (1Y)	
ESCI	Rohde & Schwarz	Test Receiver	101012	Oct. 20, 2021 (1Y)	
ESH3-Z2	Rohde & Schwarz	Pulse Limiter	100655	Mar. 14, 2022 (1Y)	
NSLK8128	Schwarzbeck	V-LISN (4*32/50A)	8128216	Mar. 14, 2022 (1Y)	
GP-4303D	LG Precision Co.,Ltd	DC Power Supply	5071069	Jan. 03, 2022(1Y)	
310N	Sonoma Instrument	Pre-Amplifier	312544	Mar. 15, 2022(1Y)	
SCU18	Rohde & Schwarz	Pre-Amplifer	102266	Jul. 14, 2021 (1Y)	
DT3000-3t	Innco System	Turn Table	DT3000/093	N/A	
MA-4000XPET	Innco System	Antenna Master	MA4000/509	N/A	
HLP-2008	TDK	Hybrid Antenna	131313	Feb. 21, 2022 (1Y)	
BBHA9120D	Schwarzbeck	Horn Antenna	295	Feb. 25, 2022 (1Y)	
HPF 3GHz	Rohde & Schwarz	High Pass Filter	N/A	Jan. 19, 2022 (1Y)	