

NCC RADIO TEST REPORT

Product name	M1 Control module
Applicant	Asia Institute Technology Limited
Manufacture	Panasonic Industrial Devices Europe GmbH
Rating(s)	DC 12V supplied by the adapter
Trademark	MSA
Model and/or type reference	10198774
Standard	LP0002:2020
Test Result	PASS

Date of receipt : 02-24-2021

Date of Issue : 03-09-2021

signature :

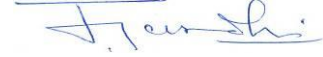


NCC RADIO TEST REPORT

Report Reference No...... M210224N2-2

Compiled by (+ signature) Kevin Bothmann


Approved by (+ signature) Jay Gandhi


Date of issue..... 2021-03-09

Applicant's name Asia Institute Technology Limited

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Manufacture's Name Panasonic Industrial Devices Europe GmbH

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Test specification:
Standard LP0002: 2020

Test procedure EIA 603、ANSI、FCC/47 CFR/2.1046、2.1047、2.1049、2.1051、2.1053 and 2.1055

Non-standard test method..... N/A

Test item description
Product name : M1 Control module

Brand name : MSA

Model and/or type reference : 10198774

Rating(s)..... : DC 12V supplied by the adapter

Testing Laboratory information:
Testing Laboratory Name : Electro Magnetic Test, Inc.

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Testing.....

Date of receipt of test item..... Feb. 24, 2021

Date (s) of performance of tests..... Feb. 24~Mar. 09, 2021

Date of Issue Mar. 09, 2021

Test Result **Pass**

GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Electro Magnetic Test, Inc., which is an independent testing and consulting firm. The test report is based on testing performed Electro Magnetic Test, Inc. personnel according to the measurement procedure described in the test specification given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Federal Government.

Electro Magnetic Test, Inc. is recognized by the following agencies for performing EMI/EMC testing:

COUNTRY	AGENCY	IDENTIFYING #
USA	Federal Communications Commission (FCC) (EMT's test site is recognized by the FCC)	Registration Number: 90576
USA, Canada, Taiwan, Australia/New Zealand, European Community	National Voluntary Lab Accreditation Program (NVLAP) (EMT is accredited by NVLAP. A copy of the NVLAP Scope Of Accreditation is available upon request.)	Lab Code: 200147-0
Canada	Industry Canada	File No.: IC 2804
Japan	Voluntary Control Council For Interference (VCCI)	A-0118
	Open Field Test Site "A"	-
	Mains Conducted Emissions Test Site "A"	-
	Telecom Conducted Emissions Test Site "A"	-
	3 Meter Semi-Anechoic Chamber Site "E"	-
	3 Meter Semi-Anechoic Chamber Site "E" (1GHz – 6GHz)	-
	Mains Conducted Emissions Test Site "E"	-
	Telecom Conducted Emissions Test Site "E"	-
Korea	Ministry of Information and Communication's Radio Research Laboratory (RRL) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (A copy of the Scope Of Accreditation is available upon request)	US0036
Taiwan	Bureau Of Standards, Metrology and Inspection (BSMI)	Reference Number: SL2-IN-E-1024
Australia / New Zealand	Australian Communications Authority (AUSTEL)	*

***THESE AGENCIES DO NOT ISSUE AN IDENTIFYING NUMBER TO TEST LABS.**

Table of Contents	Page
GENERAL REPORT SUMMARY	
1 . SUMMARY OF TEST RESULTS	6
1.1 MEASUREMENT UNCERTAINTY	7
2 . GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF EUT	8
2.2 DESCRIPTION OF TEST MODES	10
2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	10
2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	11
2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)	12
3 . EMC EMISSION TEST	15
3.1 CONDUCTED EMISSION MEASUREMENT	15
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	15
3.1.2 TEST PROCEDURE	16
3.1.3 DEVIATION FROM TEST STANDARD	16
3.1.4 TEST SETUP	16
3.1.5 TEST RESULTS	17
3.2 RADIATED EMISSION MEASUREMENT	19
3.2.1 RADIATED EMISSION LIMITS	19
3.2.2 TEST PROCEDURE	20
3.2.3 TEST SETUP	21
3.2.4 EUT OPERATING CONDITIONS	22
3.2.5 TEST RESULTS (BLOW 30MHZ)	23
3.2.6 TEST RESULTS (BETWEEN30 – 1000 MHZ)	23
3.2.7 TEST RESULTS (ABOVE 1000 MHZ)	29
3.2.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)	41
4 . OCCUPIED BANDWIDTH TEST	42
4.1 APPLIED PROCEDURES / LIMIT	42
4.1.1 TEST PROCEDURE	42
4.1.2 TEST SETUP	42
4.1.3 EUT OPERATION CONDITIONS	42
4.1.4 TEST RESULTS	43
5 . POWER DENSITY	45
5.1 APPLIED PROCEDURES / LIMIT	45
5.1.1 TEST PROCEDURE	45
5.1.2 TEST SETUP	45
5.1.3 EUT OPERATION CONDITIONS	45

Table of Contents	Page
5.1.4 TEST RESULTS	46
6 . PEAK OUTPUT POWER TEST	48
6.1 APPLIED PROCEDURES / LIMIT	48
6.1.1 TEST PROCEDURE	48
6.1.2 DEVIATION FROM STANDARD	48
6.1.3 TEST SETUP	48
6.1.4 EUT OPERATION CONDITIONS	48
6.1.5 TEST RESULTS	49
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	51
7.1 APPLIED PROCEDURES / LIMIT	51
7.1.1 TEST PROCEDURE	51
7.1.2 TEST SETUP	51
7.1.3 EUT OPERATION CONDITIONS	51
7.1.4 TEST RESULTS	52
8. ANTENNA REQUIREMENT	54
8.1 STANDARD REQUIREMENT	54
8.2 EUT ANTENNA	54
9. EUT TEST PHOTO	55

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

LP0002 : 2020			
Standard Section	Test Item	Judgment	Remark
3.3	Conducted Emission	PASS	None
4.10.1(5)/3.6	Radiated Spurious Emission	PASS	None
4.10.1(2)	Peak Output Power	PASS	None
4.10.1(6.2.1)	6dB Occupied Bandwidth	PASS	None
4.10.1(6.2.2)	Power Density	PASS	None
4.10.1(5)/3.6	Restricted Bands	PASS	None
4.10.1(3)	Antenna Requirement	PASS	None

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report
- (2) The product support for Bluetooth classic rate / EDR and low energy connections Bluetooth 4.1 Dual-mode, this report is low energy connections test mode, for classic rate / EDR connection mode please refers to the report number M210224N2-1.

1.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	1.38dB
2	Radiated Emission Test	3.17dB
3	RF power,conducted	0.16dB
4	Spurious emissions,conducted	0.21dB
5	All emissions,radiated(<1G)	4.68dB
6	All emissions,radiated(>1G)	4.89dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	M1 Control module	
Brand Name	MSA	
Model Name	10198774	
Derivative Model	N/A	
OEM Brand/Model Name	N/A	
Product Description	The EUT is a M1 Control module .	
	Operation Frequency:	2402~2480 MHz
	Modulation Type:	GFSK
	Bit Rate of Transmitter	1Mbps
	Number Of Channel	40
	Antenna Designation:	Please see Note 3.
	Antenna Gain(Peak)	1.69dBi
	Output Power:	-3.22dBm
Channel List	Please refer to the Note 2.	
Power Rating	DC 12V supplied by the adapter	
Connecting I/O Port(s)	Please refer to the User's Manual	
Products Covered	N/A	
EUT Modification(s)	N/A	
Adapter Manufacturer /Model No.	Model:EPU26-105 I/P: AC100-240V, 47-63Hz, 0.7A O/P: DC12V, 2.08A max	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.

Description of Channel:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2402	21	2442
02	2404	22	2444
03	2406	23	2446
04	2408	24	2448
05	2410	25	2450
06	2412	26	2452
07	2414	27	2454
08	2416	28	2456
09	2418	29	2458
10	2420	30	2460
11	2422	31	2462
12	2424	32	2464
13	2426	33	2466
14	2428	34	2468
15	2430	35	2470
16	2432	36	2472
17	2434	37	2474
18	2436	38	2476
19	2438	39	2478
20	2440	40	2480

- 3.

Table for Filed Antenna

Ant	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	C2PC	CC2564MODA	Chip Antenna	N/A	1.69dBi	2.4G antenna

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	GFSK
Mode 2	RX
Mode 3	Charging

For Conducted Emission	
Final Test Mode	Description
Mode 3(worse case)	Charging

For Radiated Emission	
Final Test Mode	Description
Mode 1	GFSK
Mode 2	RX
Mode 3	Charging

Note:

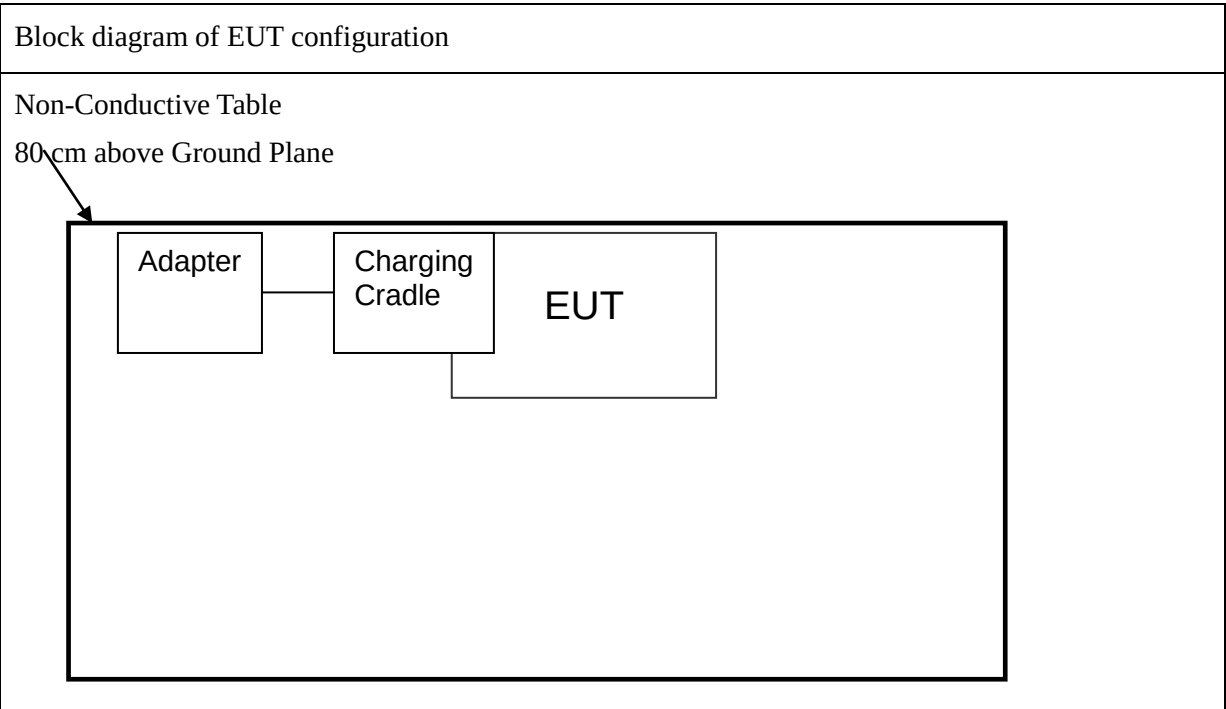
- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) For all tests the worst-case was selected as the table above, the data of the worst-case is shown in the report.

2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters.

Test software Version	Test program: CSR BlueSuite Ver. 2.23		
Frequency	2402 MHz	2440 MHz	2480 MHz
Parameters(1Mbps)	Default	Default	Default

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	NCC ID	Series No.	Note
1	M1 Control module	MSA	10198774	N/A	N/A	EUT
2	Charging Cradle	MSA	M1 Control Module	N/A	N/A	AE
3	Adapter	SINPRO	EPU-26-105	N/A	N/A	AE

Item	Shielded Type	Ferrite Core	Length	Note
-	N/A	N/A	N/A	N/A

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” or “with ferrite core”; “NO” means “unshielded” or “without ferrite core”
- (4) These accessories are only provided by the laboratory or customer for testing purpose and are not sold with the product together.

EQUIPMENTS LIST FOR ALL TEST ITEMS

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
Spectrum Analyzer	Hewlett Packard	8566B	3013A07296	April 29, 2020	1 Year
RF Preselector	Hewlett Packard	85685A	3010A01157	April 29, 2020	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650	2521A00584	April 29, 2020	1 Year
Preamplifier	Com Power	PA-102	1482	April 29, 2020	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 8, 2020	1 Year
LISN	Com Power	LI-200	12012	September 10, 2020	1 Year
LISN	Com Power	LI-200	12214	September 10, 2020	1 Year
LISN	Com Power	LI-200	1767	September 10, 2020	1 Year
LISN	Com Power	LI-200	1768	September 10, 2020	1 Year
Biconical Antenna	Com Power	AB-100	01557	December 29, 2020	1 Year
Log Periodic Antenna	Com Power	AL-100	16037	December 22, 2020	1 Year
Horn Antenna	Com Power	AHA-118	711054	December 22, 2020	1 Year
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Dell, Inc.	DHS	DNSV641	N/A	N/A
Printer	Hewlett Packard	C8124A	CN39B2234T	N/A	N/A
Plotter	Hewlett Packard	7470A	2308A96499	N/A	N/A

EMI Test Equipment (Continued)

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESU40	100127	June 12, 2020	1 Year
BiConiLog Antenna	ETS-Lindgren	3142D	00102183	August 14, 2020	1 Year
Horn Antenna	ETS-Lindgren	3117	00109294	May 6, 2020	1 Year
Preamplifier	Rohde & Schwarz	TS-PR18	100056	June 12, 2020	1 Year
Antenna Mast	ETS-Lindgren	2175	00095727	N/A	N/A
Turntable	ETS-Lindgren	2187-3.0	00118231	N/A	N/A
Computer	Acer	Aspire 8930	85100050123	N/A	N/A
Multi-Function Controller	ETS-Lindgren	2090	00102270	N/A	N/A
Loop Antenna	ARA	PLA-1030/B	1029	May 19, 2020	1 Year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5			66 - 56 *	56 - 46 *	CISPR
0.50 -5.0			56.00	46.00	CISPR
5.0 -30.0			60.00	50.00	CISPR

0.15 -0.5			66 - 56 *	56 - 46 *	LP0002
0.50 -5.0			56.00	46.00	LP0002
5.0 -30.0			60.00	50.00	LP0002

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

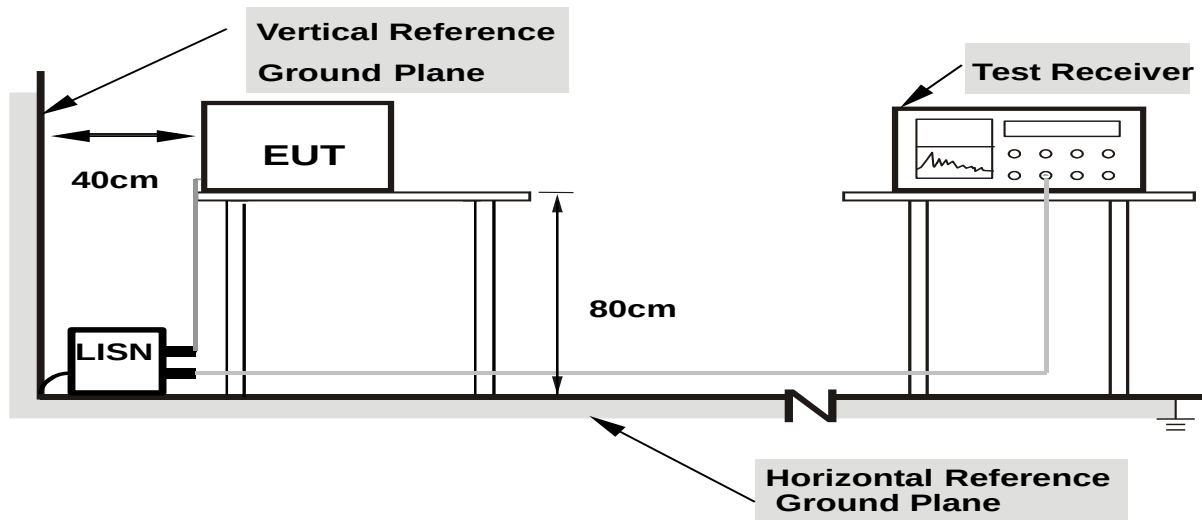
3.1.2 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

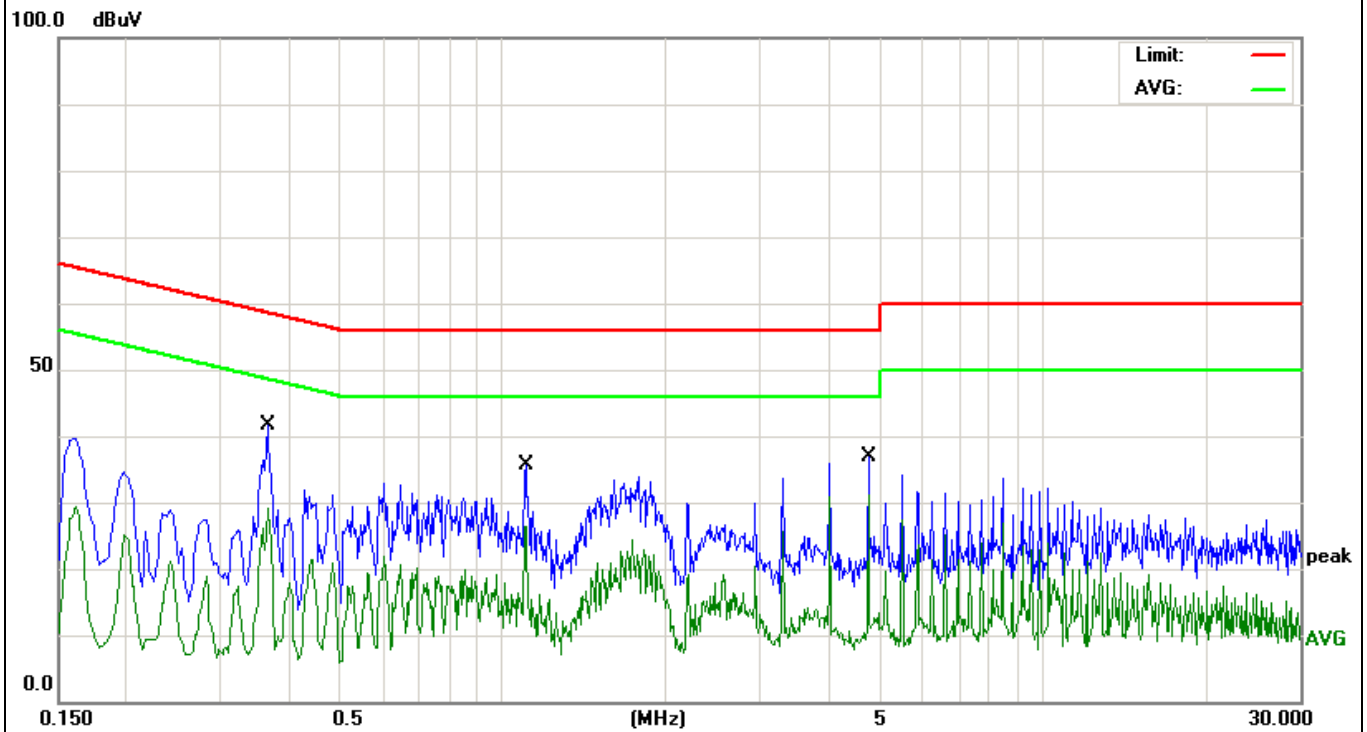
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 TEST RESULTS

EUT :	M1 Control module	Model Name. :	10198774
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2021-02-26
Test Mode :	Charging(worst case)	Phase :	L
Test Voltage :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor(dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector
0.3660	32.58	10.11	42.69	58.59	-15.90	Quasi-Peak
0.3660	19.42	10.11	29.53	48.59	-19.06	Average
1.1019	26.03	9.90	35.93	56.00	-20.07	Quasi-Peak
1.1019	18.09	9.90	27.99	46.00	-18.01	Average
4.7660	27.75	10.04	37.79	56.00	-18.21	Quasi-Peak
4.7660	21.76	10.04	31.80	46.00	-14.20	Average

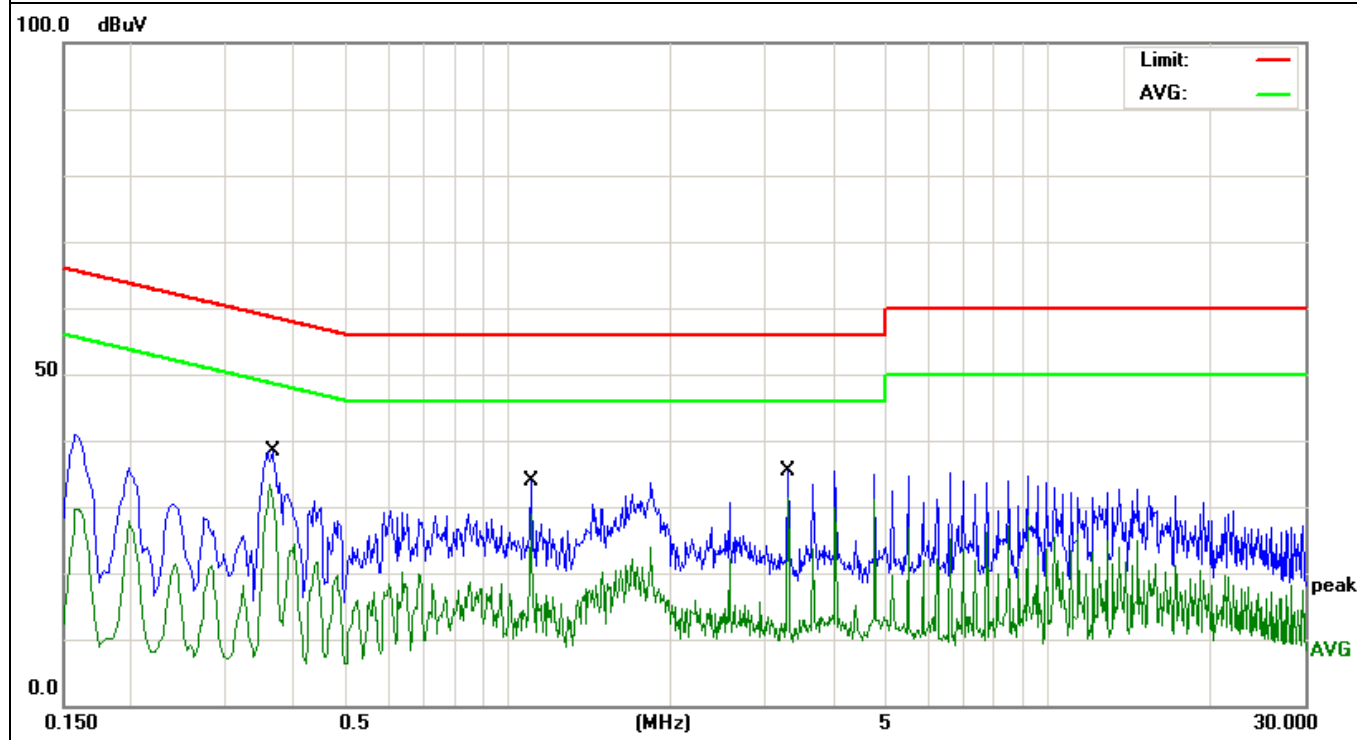
Remark: Factor = LISN factor + Cable Loss + Pulse limiter factor.



EUT :	M1 Control module	Model Name. :	10198774
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2021-02-26
Test Mode :	Charging(worst case)	Phase :	N
Test Voltage :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor(dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector
0.3660	28.68	10.11	38.79	58.59	-19.80	Quasi-Peak
0.3620	24.02	10.12	34.14	48.68	-14.54	Average
1.1019	24.84	9.90	34.74	56.00	-21.26	Quasi-Peak
1.1019	19.46	9.90	29.36	46.00	-16.64	Average
3.3100	26.04	9.98	36.02	56.00	-19.98	Quasi-Peak
3.3100	21.65	9.98	31.63	46.00	-14.37	Average

Remark: Factor = LISN factor + Cable Loss + Pulse limiter factor.



Test result: The unit does meet the NCC requirements.

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 3.5, then the 3.6 limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

- (1) The limit for radiated test was performed according to LP0002.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

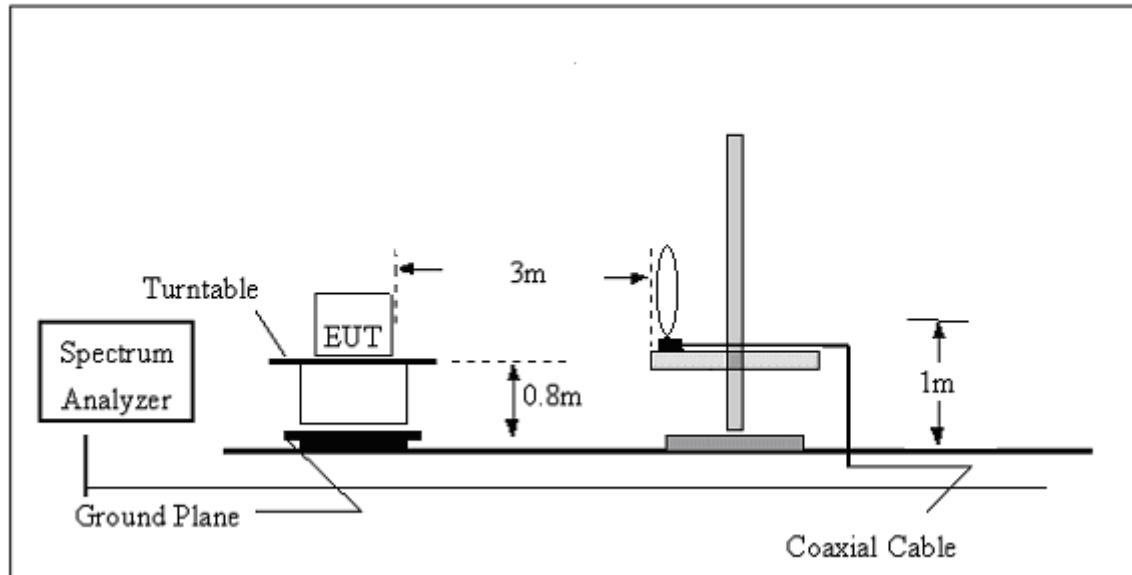
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

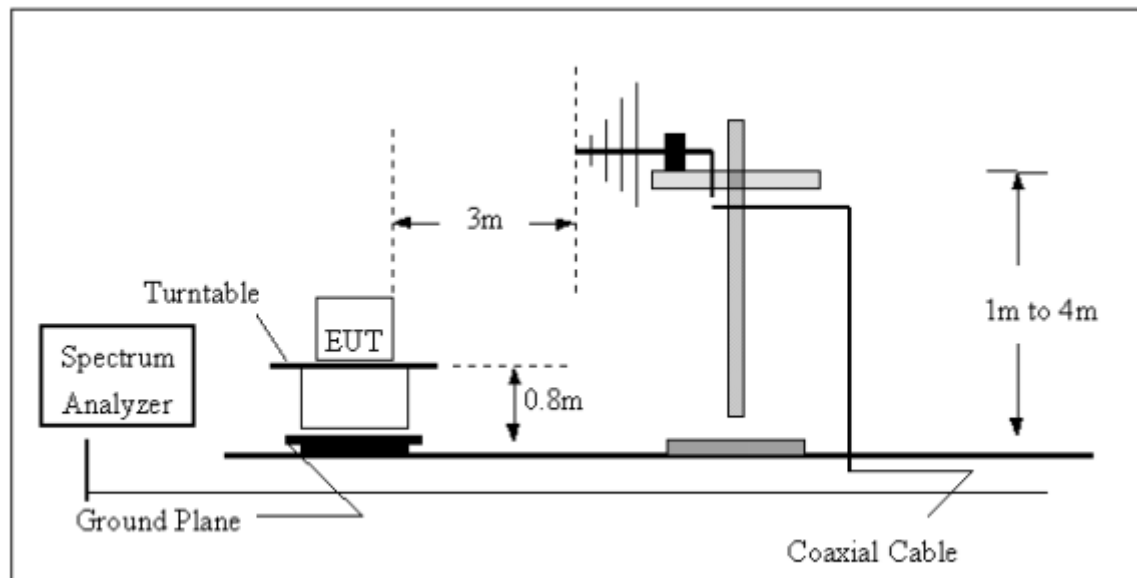
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 TEST SETUP

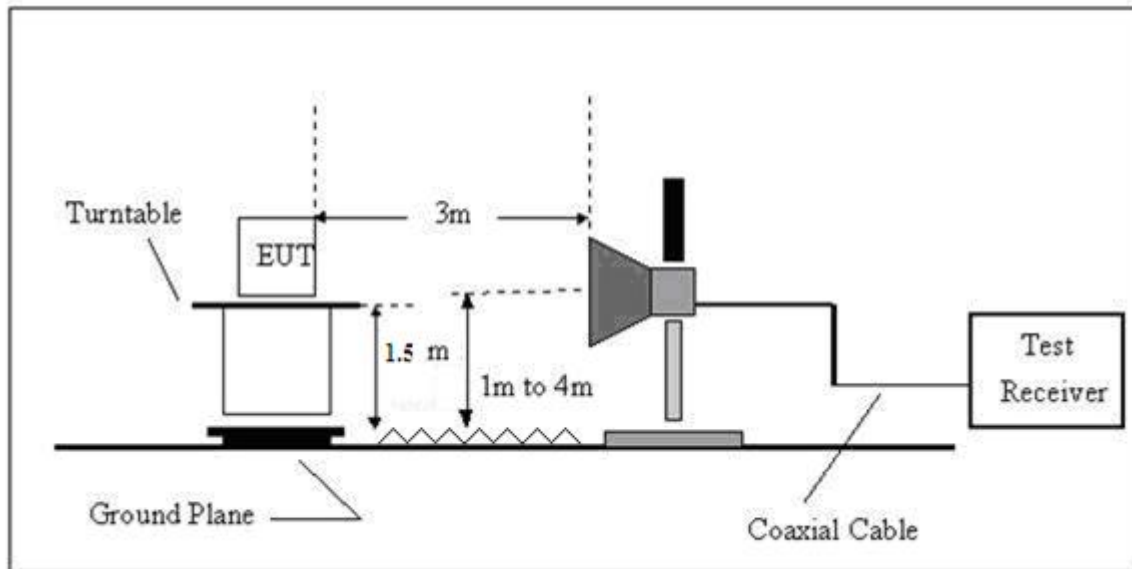
(A) Radiated Emission Test Set-Up, Frequency 9kHz-30 MHz



(B) Radiated Emission Test Set-Up Frequency 30MHz-1 GHz



(C) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 TEST RESULTS (BLOW 30MHZ)

There is not detected blow 30MHz.

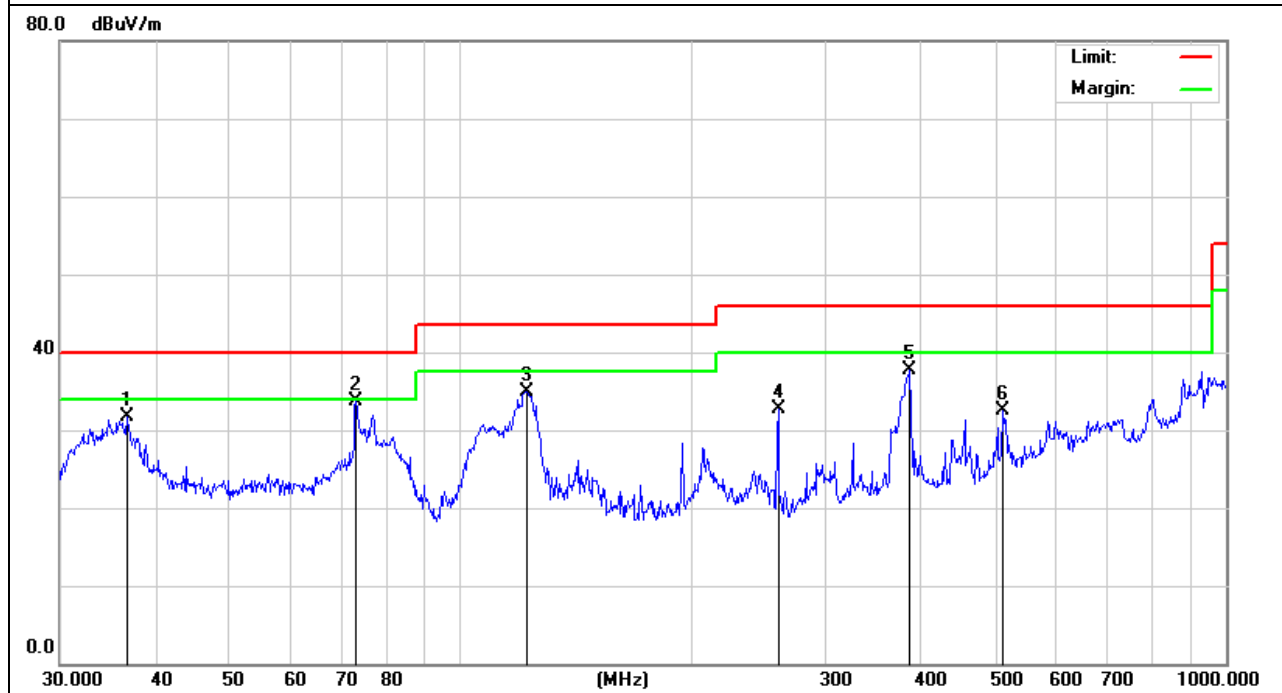
3.2.6 TEST RESULTS (BETWEEN30 – 1000 MHZ)

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Charging	Polarization :	Horizontal
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
36.7662	43.98	-12.32	31.66	40.00	-8.34	
73.1025	48.99	-15.28	33.71	40.00	-6.29	Quasi-Peak
122.4040	49.59	-14.60	34.99	43.50	-8.51	Quasi-Peak
260.1444	45.49	-12.82	32.67	46.00	-13.33	Quasi-Peak
386.6338	45.02	-7.40	37.62	46.00	-8.38	Quasi-Peak
510.0436	37.51	-4.96	32.55	46.00	-13.45	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

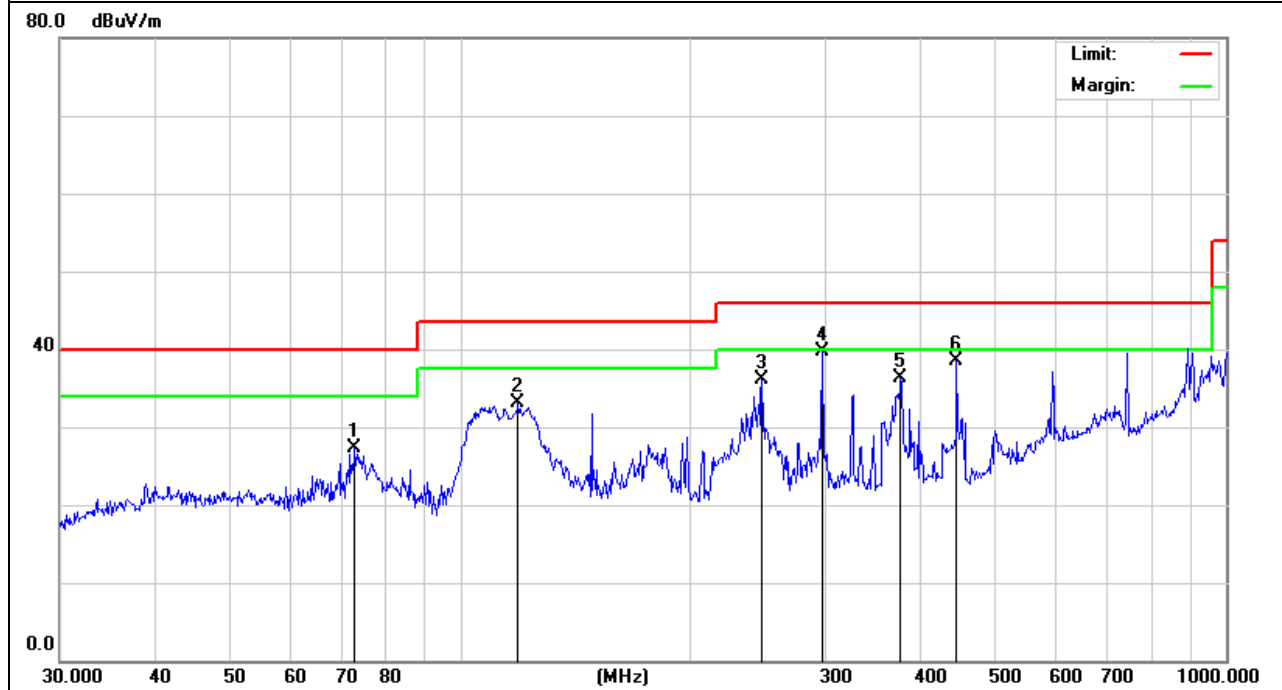


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Charging	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
72.8466	41.99	-14.62	27.37	40.00	-12.63	Quasi-Peak
119.0180	45.76	-12.74	33.02	43.50	-10.48	Quasi-Peak
247.6819	49.87	-13.78	36.09	46.00	-9.91	Quasi-Peak
297.2241	49.62	-9.98	39.64	46.00	-6.36	Quasi-Peak
375.9385	43.91	-7.54	36.37	46.00	-9.63	Quasi-Peak
444.8514	45.27	-6.79	38.48	46.00	-7.52	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



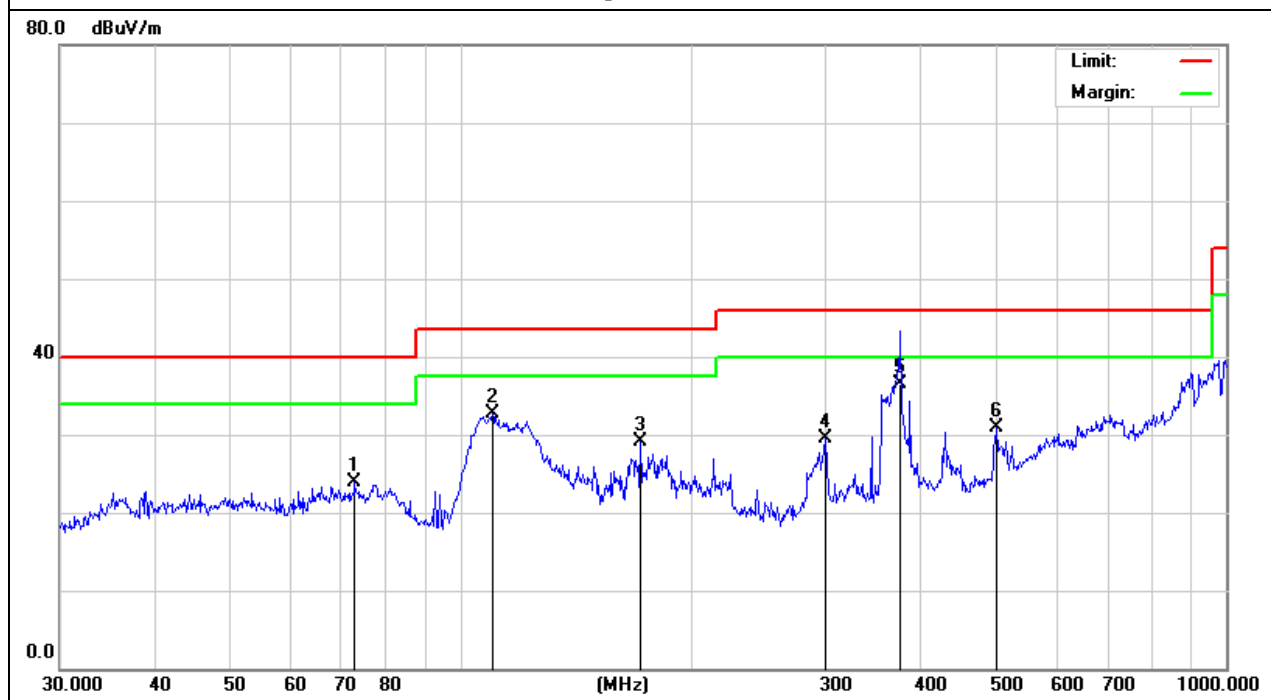
Test result: The unit does meet the NCC requirements.

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	TX-2402MHz (worst case)	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
72.8465	38.44	-14.62	23.82	40.00	-16.18	Quasi-Peak
110.1816	44.09	-11.43	32.66	43.50	-10.84	Quasi-Peak
171.9945	42.41	-13.33	29.08	43.50	-14.42	Quasi-Peak
299.3158	39.18	-9.69	29.49	46.00	-16.51	Quasi-Peak
375.9384	44.00	-7.54	36.46	46.00	-9.54	Quasi-Peak
501.1789	36.43	-5.61	30.82	46.00	-15.18	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

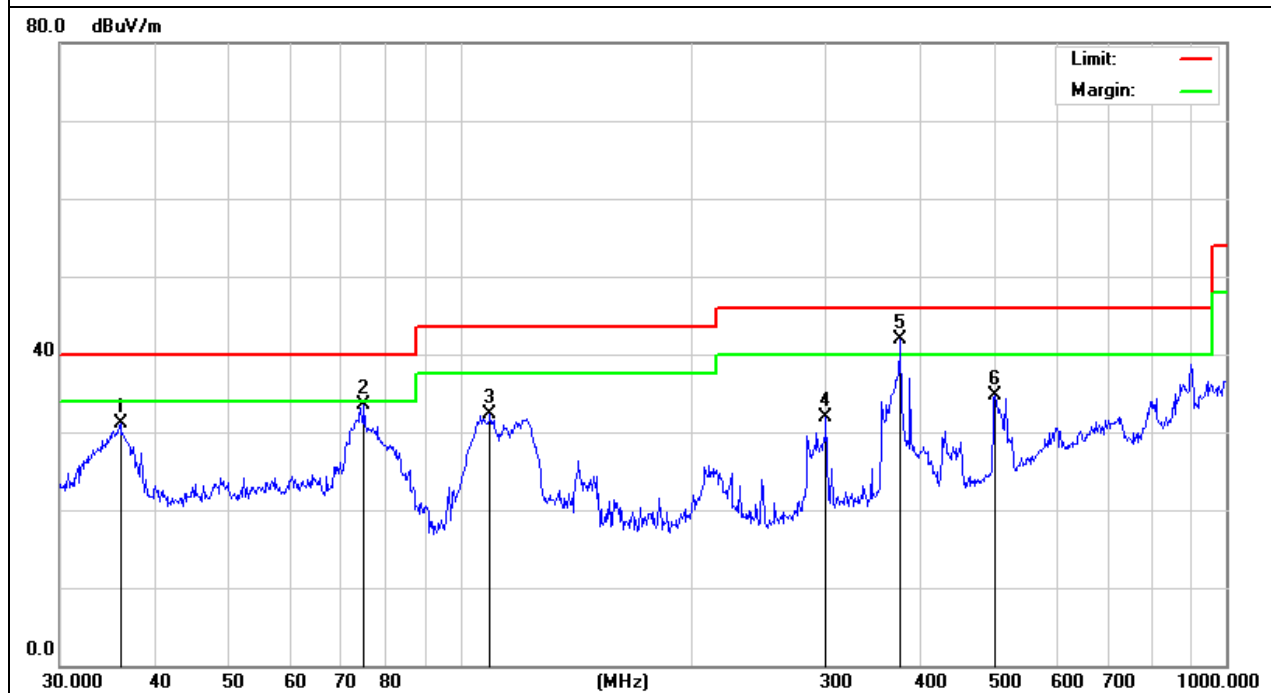


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	TX-2402MHz (worst case)	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
36.0007	43.54	-12.40	31.14	40.00	-8.86	Quasi-Peak
74.9191	48.92	-15.49	33.43	40.00	-6.57	Quasi-Peak
109.4116	45.38	-13.04	32.34	43.50	-11.16	Quasi-Peak
300.3672	41.59	-9.59	32.00	46.00	-14.00	Quasi-Peak
375.9385	49.52	-7.54	41.98	46.00	-4.02	Quasi-Peak
499.4247	40.35	-5.69	34.66	46.00	-11.34	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



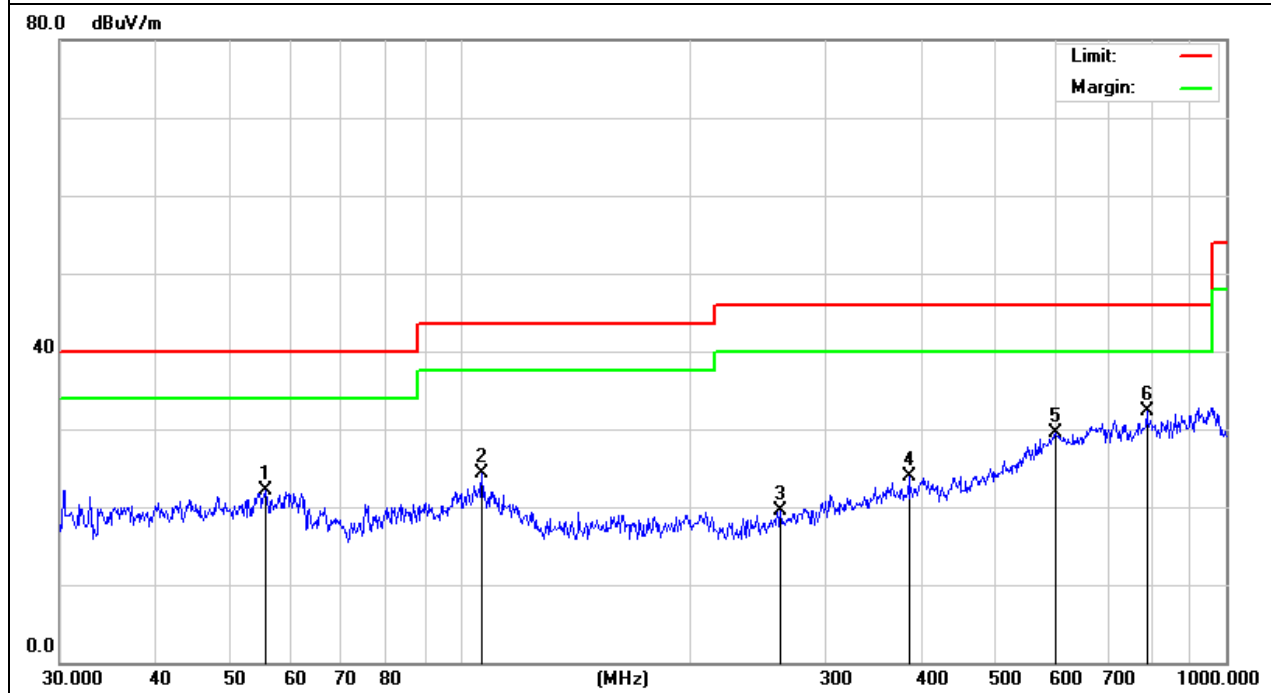
Test result: The unit does meet the NCC requirements.

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	RX	Polarization :	Horizontal
Test Power :	DC 12V supplied by the adapter		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
55.6094	31.82	-9.81	22.01	40.00	-17.99	Quasi-Peak
106.7587	37.63	-13.23	24.40	43.50	-19.10	Quasi-Peak
261.9753	32.32	-12.87	19.45	46.00	-26.55	Quasi-Peak
385.2805	31.30	-7.42	23.88	46.00	-22.12	Quasi-Peak
599.3211	30.36	-0.80	29.56	46.00	-16.44	Quasi-Peak
787.8513	30.75	1.51	32.26	46.00	-13.74	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

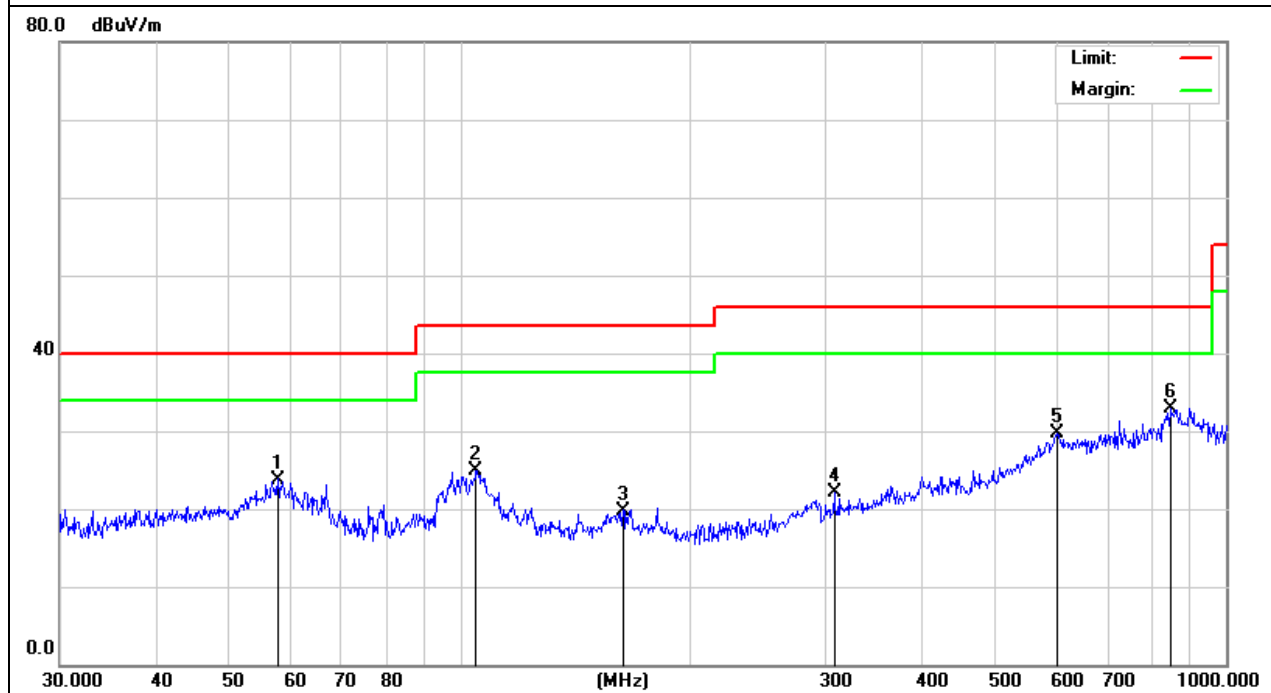


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	RX	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
57.7961	34.20	-10.40	23.80	40.00	-16.20	Quasi-Peak
104.9033	38.37	-13.37	25.00	43.50	-18.50	Quasi-Peak
163.1818	33.93	-14.13	19.80	43.50	-23.70	Quasi-Peak
307.8312	31.35	-9.29	22.06	46.00	-23.94	Quasi-Peak
601.4265	30.61	-0.89	29.72	46.00	-16.28	Quasi-Peak
845.0878	31.76	1.14	32.90	46.00	-13.10	Quasi-Peak

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Test result: The unit does meet the NCC requirements.

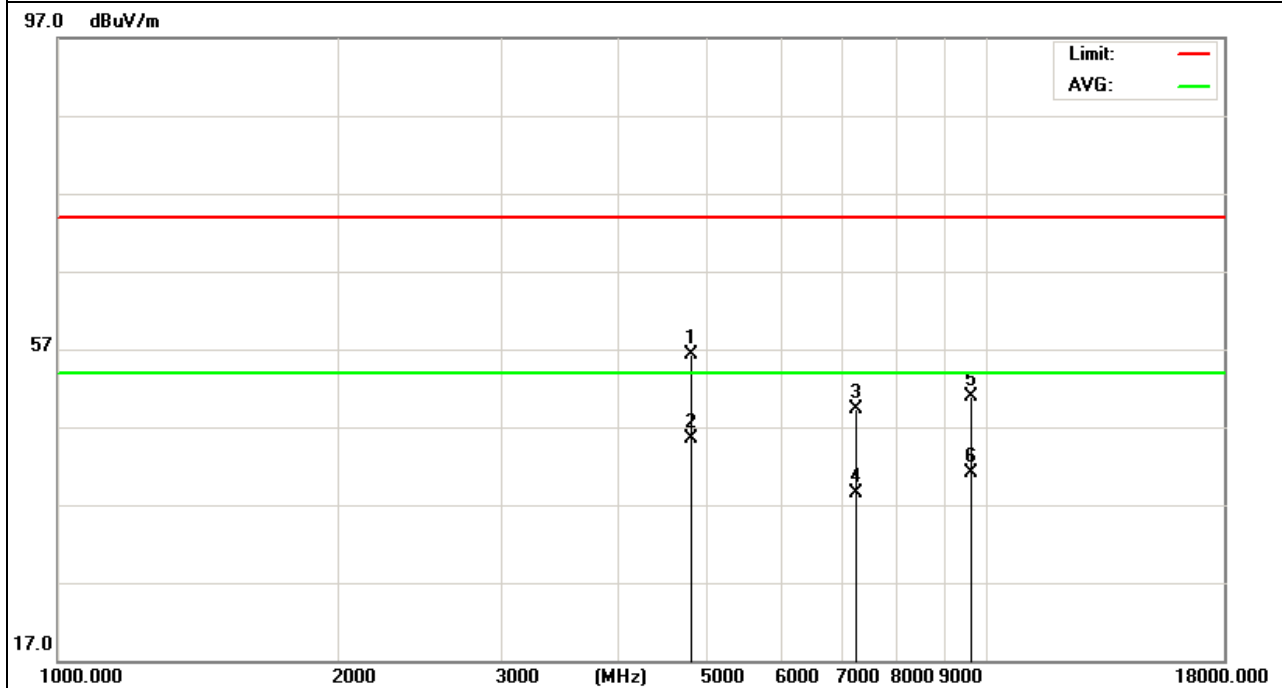
3.2.7 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(TX-2402MHz)	Polarization :	Horizontal
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4804.000	51.60	5.06	56.66	74.00	-17.34	peak
4804.000	41.37	5.06	46.43	54.00	-7.57	AVG
7206.000	43.79	7.03	50.82	74.00	-23.18	peak
7206.000	33.48	7.03	40.51	54.00	-13.49	AVG
9608.000	42.08	10.63	52.71	74.00	-21.29	peak
9608.000	31.80	10.63	42.43	54.00	-11.57	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

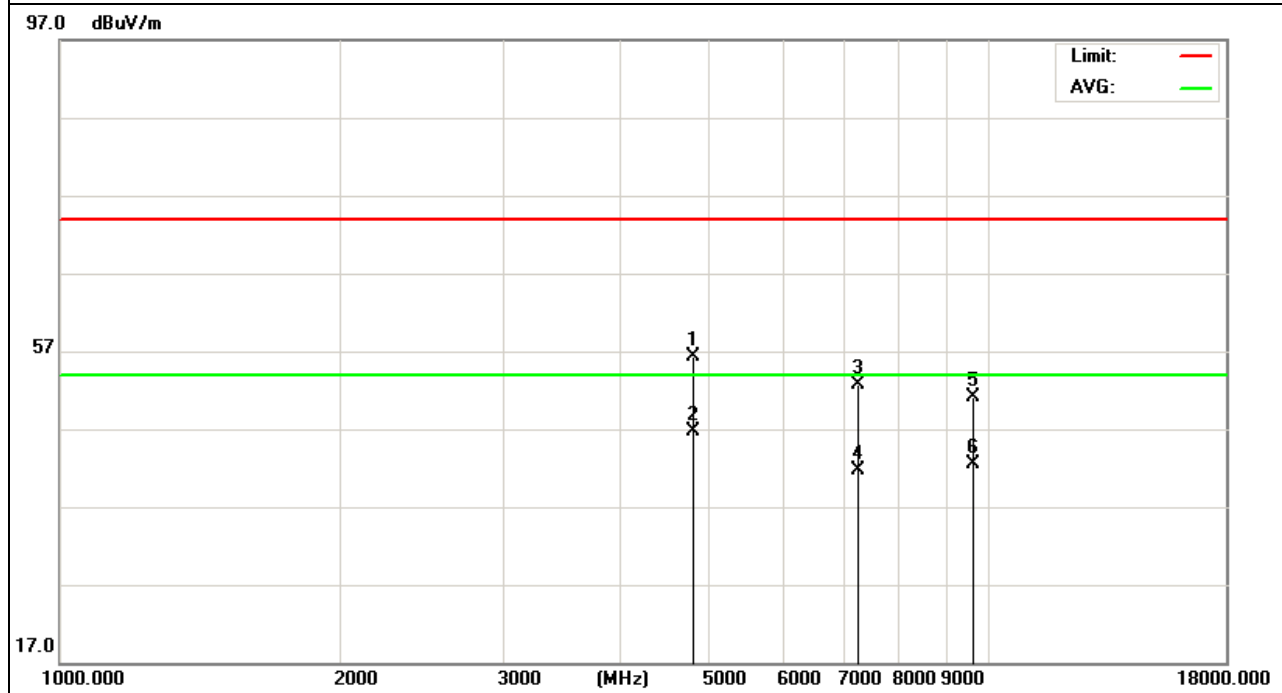


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(TX-2402MHz)	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4804.000	53.54	5.06	58.60	74.00	-15.40	peak
4804.000	42.68	5.06	47.74	54.00	-6.26	AVG
7206.000	47.59	7.03	54.62	74.00	-19.38	peak
7206.000	36.75	7.03	43.78	54.00	-10.22	AVG
9608.000	43.15	10.63	53.78	74.00	-20.22	peak
9608.000	33.93	10.63	44.56	54.00	-9.44	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Note:

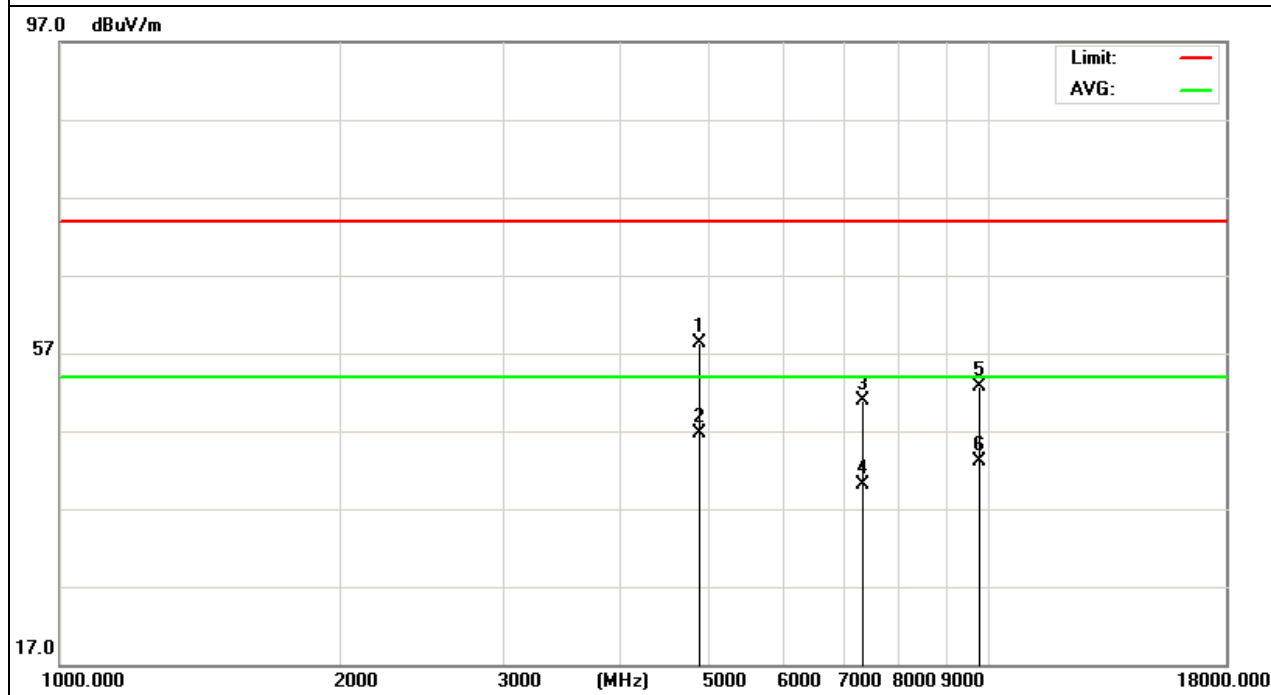
The disturbance above 18GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(TX-2440MHz)	Polarization :	Horizontal
Test Power :	DC 12V supplied by the adapter		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4880.000	54.13	5.14	59.27	74.00	-14.73	peak
4880.000	43.14	5.14	48.28	54.00	-5.72	AVG
7320.000	44.82	7.54	52.36	74.00	-21.64	peak
7320.000	34.12	7.54	41.66	54.00	-12.34	AVG
9764.000	42.79	11.39	54.18	74.00	-19.82	peak
9764.000	33.47	11.39	44.86	54.00	-9.14	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

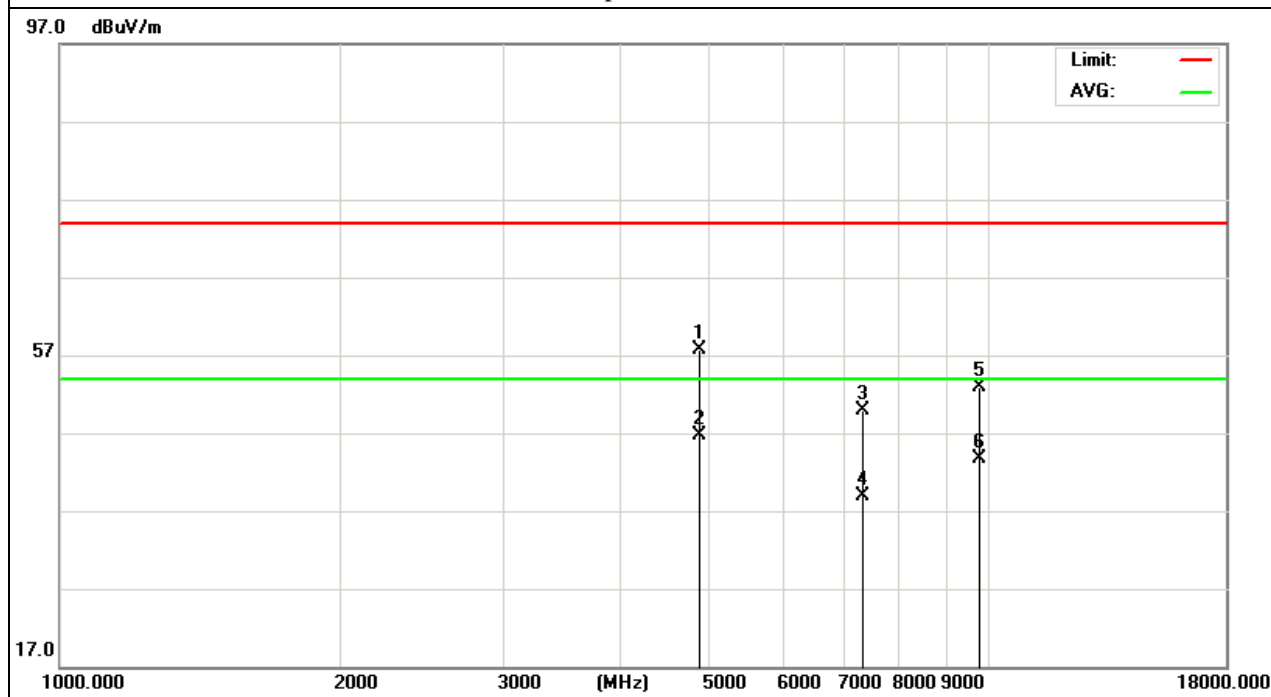


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(TX-2440MHz)	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4882.000	53.96	5.14	59.10	74.00	-14.90	peak
4882.000	43.59	5.14	48.73	54.00	-5.27	AVG
7323.000	43.87	7.54	51.41	74.00	-22.59	peak
7323.000	33.13	7.54	40.67	54.00	-13.33	AVG
9764.000	42.58	11.39	53.97	74.00	-20.03	peak
9764.000	34.09	11.39	45.48	54.00	-8.52	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Note:

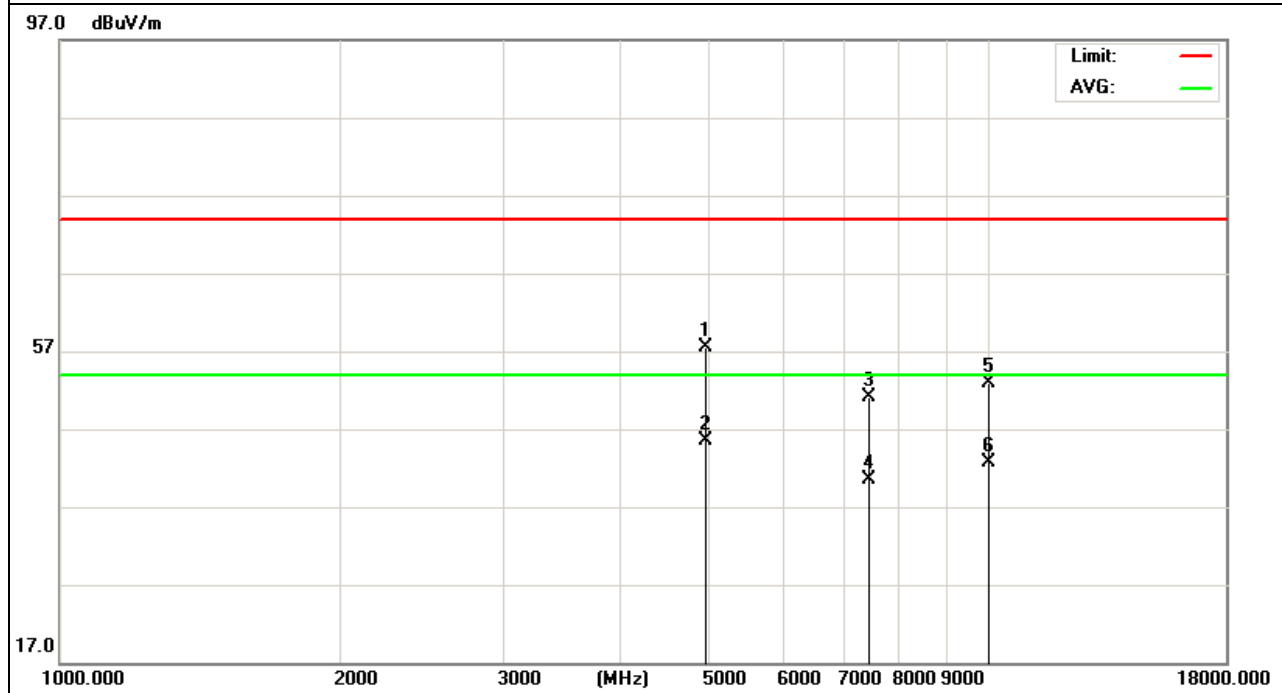
The disturbance above 18GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(TX-2480MHz)	Polarization :	Horizontal
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4960.000	53.93	5.22	59.15	74.00	-14.85	peak
4960.000	41.77	5.22	46.99	54.00	-7.01	AVG
7440.000	44.10	8.06	52.16	74.00	-21.84	peak
7440.000	33.23	8.06	41.29	54.00	-12.71	AVG
9920.000	43.17	12.10	55.27	74.00	-18.73	peak
9920.000	31.80	12.10	43.90	54.00	-10.10	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

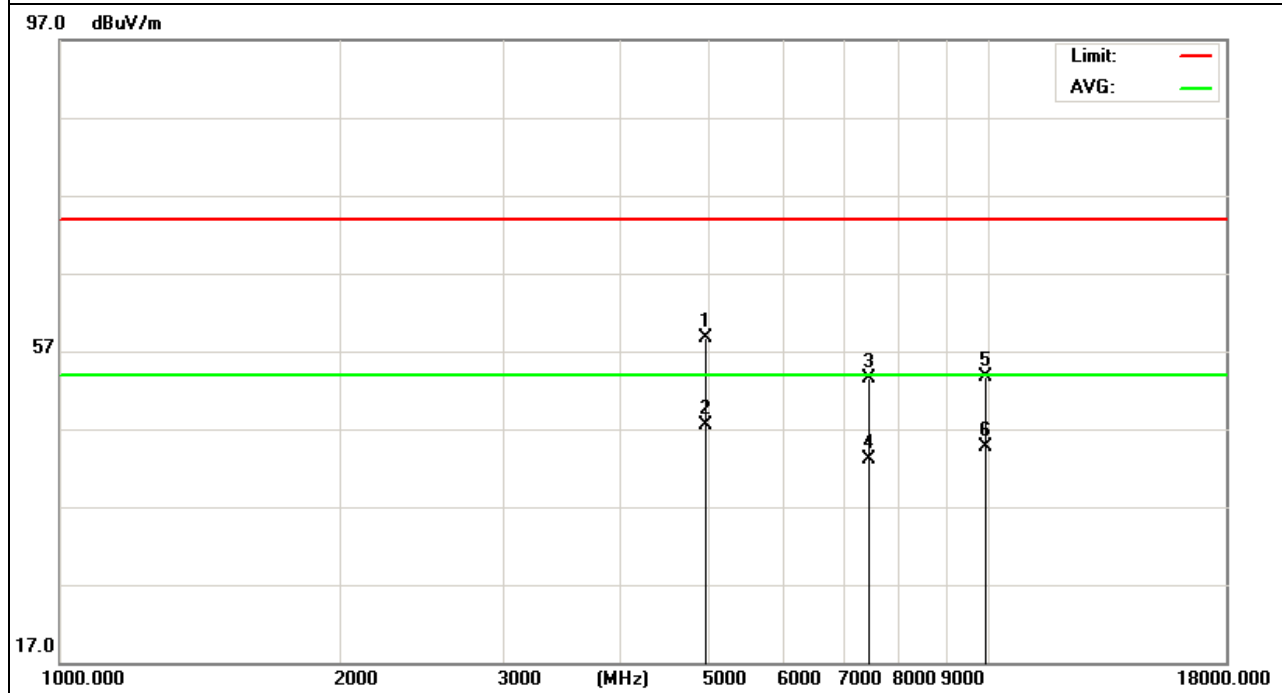


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(TX-2480MHz)	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4960.000	55.11	5.22	60.33	74.00	-13.67	peak
4960.000	43.43	5.22	48.65	54.00	-5.35	AVG
7440.000	46.65	8.06	54.71	74.00	-19.29	peak
7440.000	36.23	8.06	44.29	54.00	-9.71	AVG
9920.000	43.85	12.10	55.95	74.00	-18.05	peak
9920.000	34.77	12.10	46.87	54.00	-7.13	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Note:

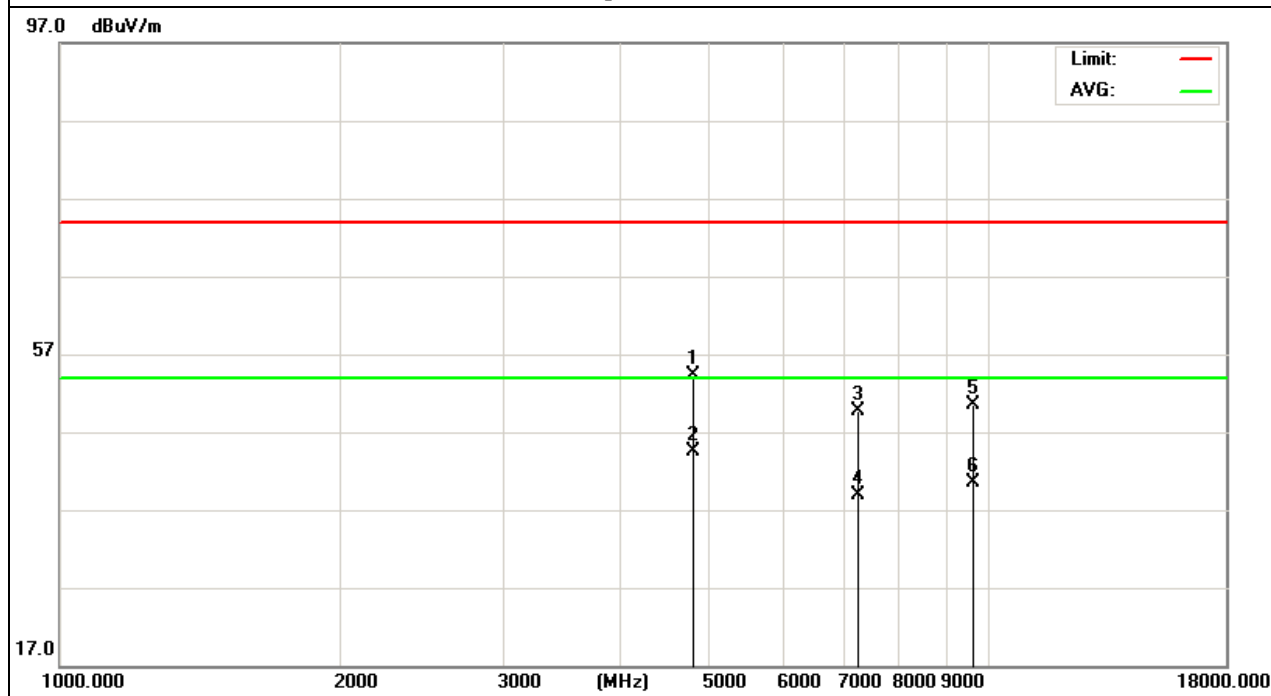
The disturbance above 18GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(RX-2402MHz)	Polarization :	Horizontal
Test Power :	DC 12V supplied by the adapter		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4804.000	50.79	5.06	55.85	74.00	-18.15	peak
4804.000	41.25	5.06	46.31	54.00	-7.69	AVG
7206.000	44.98	7.03	52.01	74.00	-21.99	peak
7206.000	33.26	7.03	40.29	54.00	-13.71	AVG
9608.000	41.26	10.63	51.89	74.00	-22.11	peak
9608.000	31.23	10.63	41.86	54.00	-12.14	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

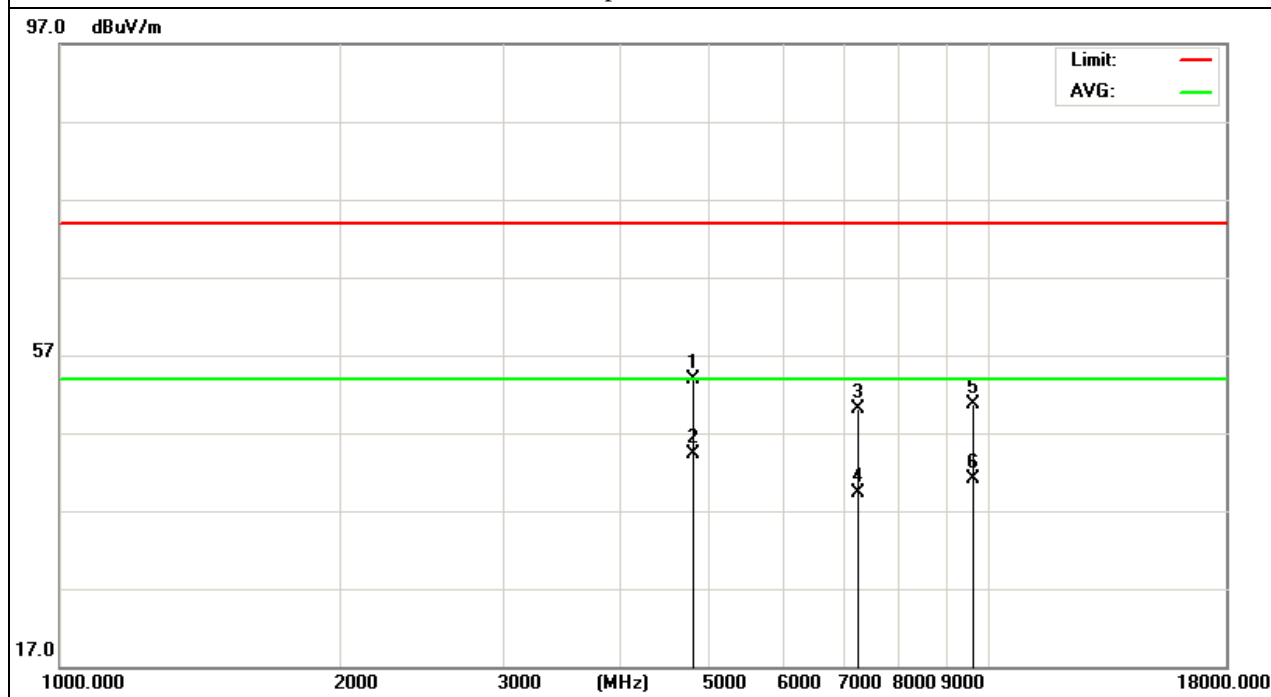


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(RX-2402MHz)	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4804.000	50.46	5.06	55.52	74.00	-18.48	peak
4804.000	40.45	5.06	45.51	54.00	-8.49	AVG
7206.000	44.94	7.03	51.97	74.00	-22.03	peak
7206.000	33.77	7.03	40.80	54.00	-13.20	AVG
9608.000	41.12	10.63	51.75	74.00	-22.25	peak
9608.000	32.53	10.63	43.16	54.00	-10.84	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Note:

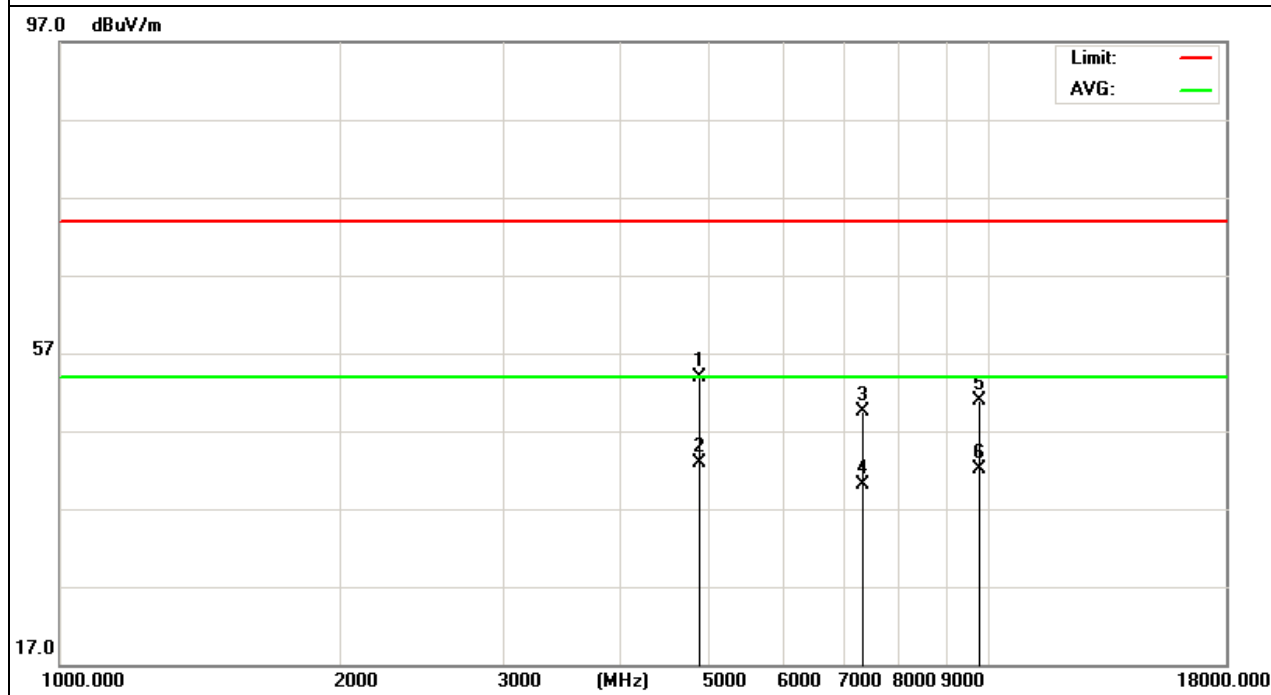
The disturbance above 18GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(RX-2440MHz)	Polarization :	Horizontal
Test Power :	DC 12V supplied by the adapter		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4882.000	49.42	5.14	54.56	74.00	-19.44	peak
4882.000	40.23	5.14	45.37	54.00	-8.63	AVG
7323.000	43.31	7.54	50.85	74.00	-23.15	peak
7323.000	33.04	7.54	40.58	54.00	-13.42	AVG
9764.000	40.62	11.39	52.01	74.00	-21.99	peak
9764.000	32.01	11.39	43.40	54.00	-10.60	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

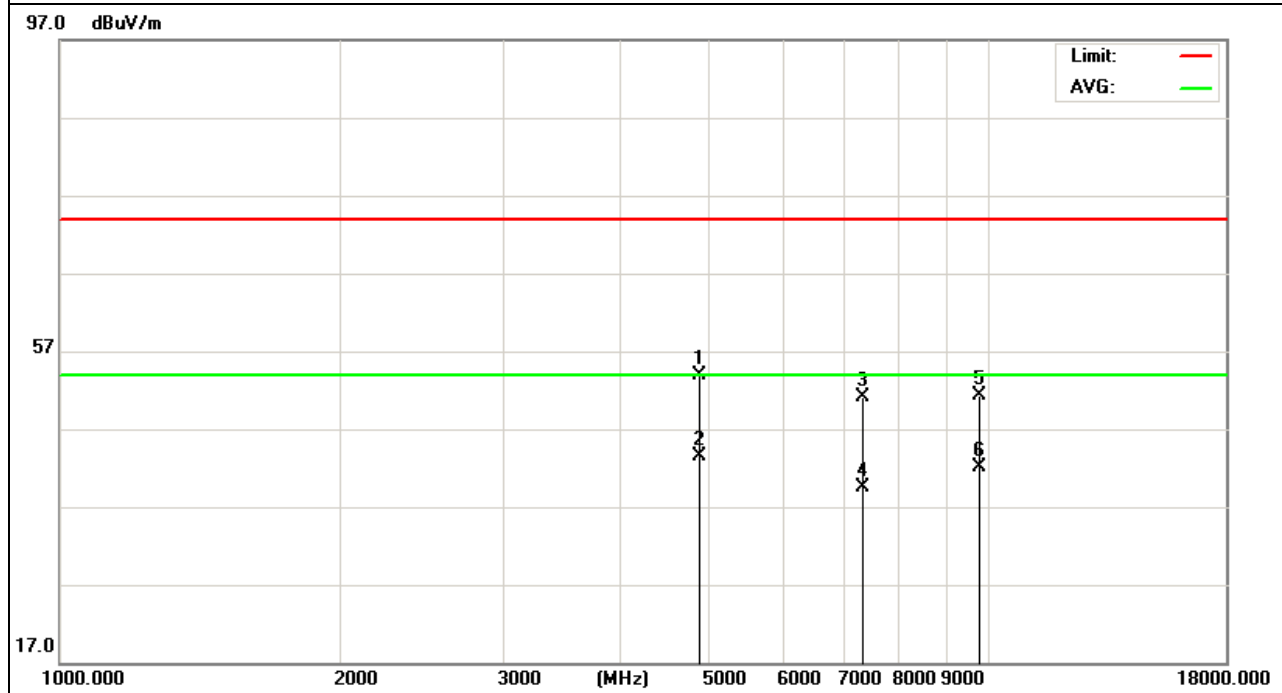


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(RX-2440MHz)	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4882.000	49.18	5.14	54.32	74.00	-19.68	peak
4882.000	39.55	5.14	44.69	54.00	-9.31	AVG
7323.000	44.92	7.54	52.46	74.00	-21.54	peak
7323.000	33.20	7.54	40.74	54.00	-13.26	AVG
9764.000	40.89	11.39	52.28	74.00	-21.72	peak
9764.000	31.92	11.39	43.31	54.00	-10.69	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Note:

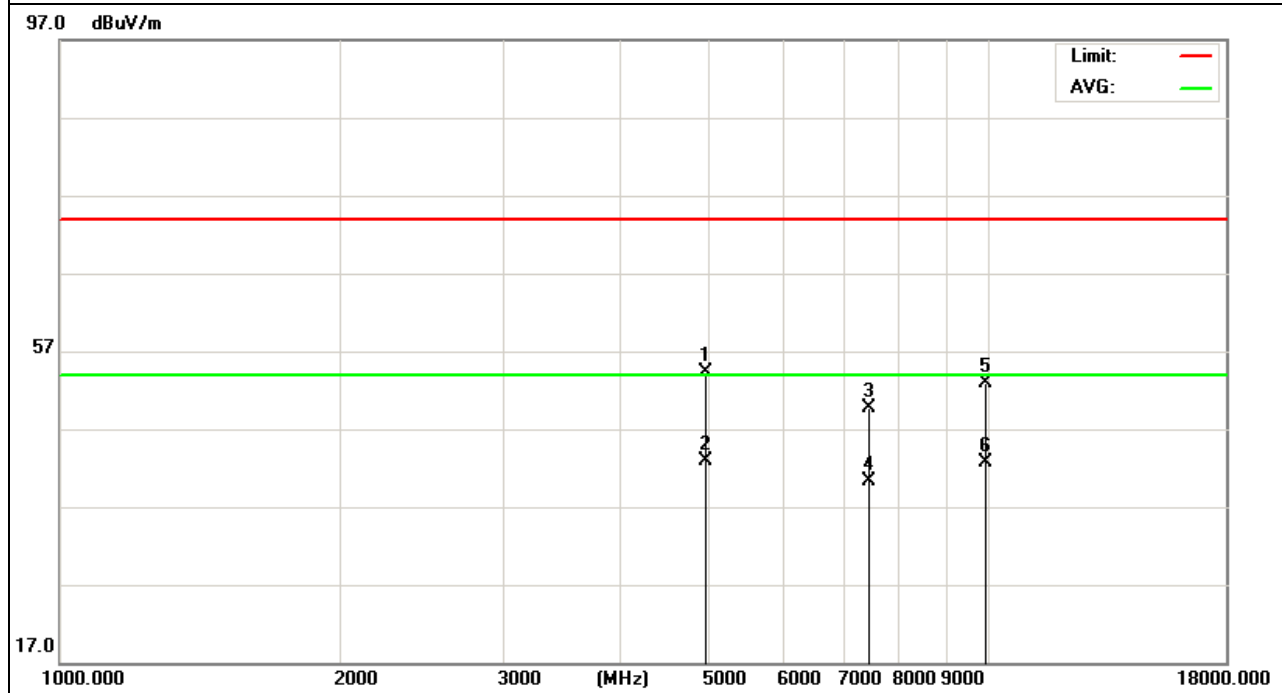
The disturbance above 18GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(RX-2480MHz)	Polarization :	Horizontal
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4960.000	51.31	5.22	56.53	74.00	-17.47	peak
4960.000	38.66	5.22	43.88	54.00	-10.12	AVG
7440.000	43.23	8.06	51.29	74.00	-22.71	peak
7440.000	33.92	8.06	41.98	54.00	-12.02	AVG
9920.000	42.95	12.10	55.05	74.00	-18.95	peak
9920.000	32.19	12.10	44.29	54.00	-9.71	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

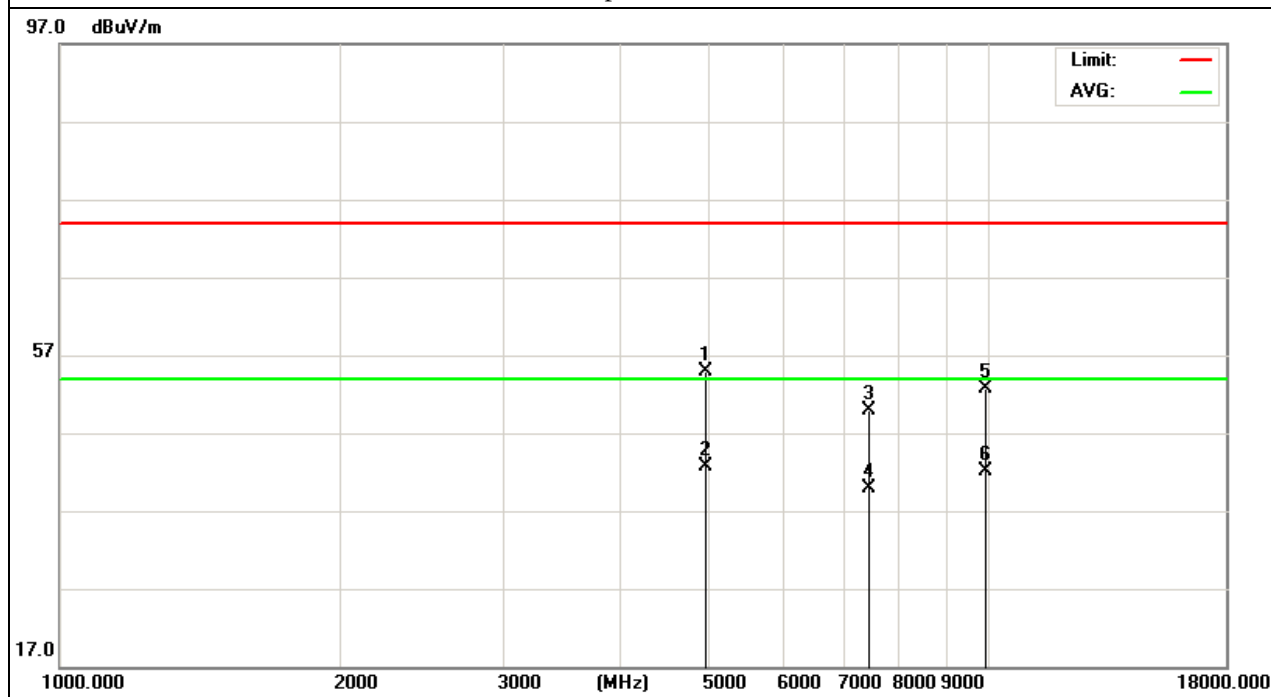


EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2021-02-26
Test Mode :	Mode1(RX-2480MHz)	Polarization :	Vertical
Test Power :	DC 12V supplied by the adapter		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4960.000	51.53	5.22	56.75	74.00	-17.25	peak
4960.000	39.50	5.22	44.72	54.00	-9.28	AVG
7440.000	43.48	8.06	51.54	74.00	-22.46	peak
7440.000	33.05	8.06	41.11	54.00	-12.89	AVG
9920.000	41.03	12.10	53.13	74.00	-20.87	peak
9920.000	31.78	12.10	43.88	54.00	-10.12	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Note:

The disturbance above 18GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

3.2.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Test Data	2021-03-02
Pressure :	1010 hPa	Relative Humidity:	54%
Test Mode :	Mode 1	Test Voltage :	DC 12V supplied by the adapter
Note :	1. The transmitter was setup to transmit at the lowest channel. Then the field strength was measured at 2310-2390 MHz. 2. The transmitter was setup to transmit at the highest channel. Then the field strength was measured at 2483.5-2500 MHz. 3. The data of 2390MHz and 2483.5MHz was the worst.		

Channel 0						Fundamental Frequency: 2402 MHz				
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2384.58	H	68.01	-14.06	53.95	Peak	74.00	54.00	-20.05	135	1.5
---	H	---	---	---	Ave	74.00	54.00	---	---	---
2383.38	V	67.66	-14.06	53.60	Peak	74.00	54.00	-20.40	268	1.5
---	V	---	---	---	Ave	74.00	54.00	---	---	---
Channel 39						Fundamental Frequency: 2480 MHz				
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2494.56	H	68.20	-13.8	54.40	Peak	74.00	54.00	-19.60	287	1.5
---	H	---	---	---	Ave	74.00	54.00	---	---	---
2490.04	V	67.94	-13.81	54.13	Peak	74.00	54.00	-19.87	161	1.5
---	V	---	---	---	Ave	74.00	54.00	---	---	---

Remark :

- (1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode
- (2) EUT Orthogonal Axis :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (3) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (4) Corr.Factor = Antenna Factor + Cable Loss – Pre-amplifier.

4. OCCUPIED BANDWIDTH TEST

4.1 APPLIED PROCEDURES / LIMIT

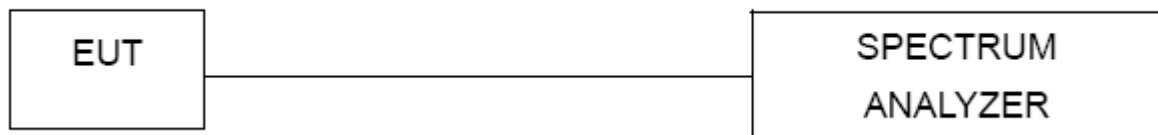
LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
4.10.1(6.2.1)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	$>$ Measurement Bandwidth or Channel Separation
RB	100 kHz (6dB Bandwidth) / 100 kHz (Channel Separation)
VB	300 kHz (6dB Bandwidth) / 300 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

4.1.2 TEST SETUP



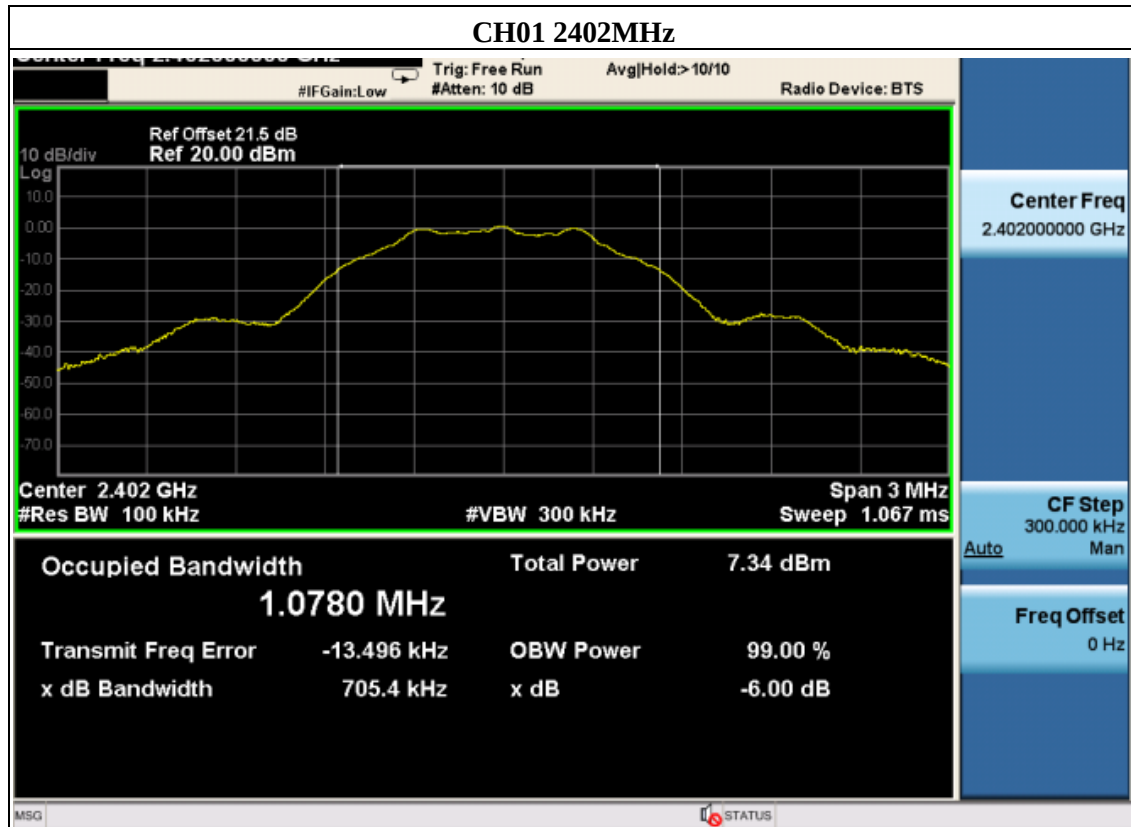
4.1.3 EUT OPERATION CONDITIONS

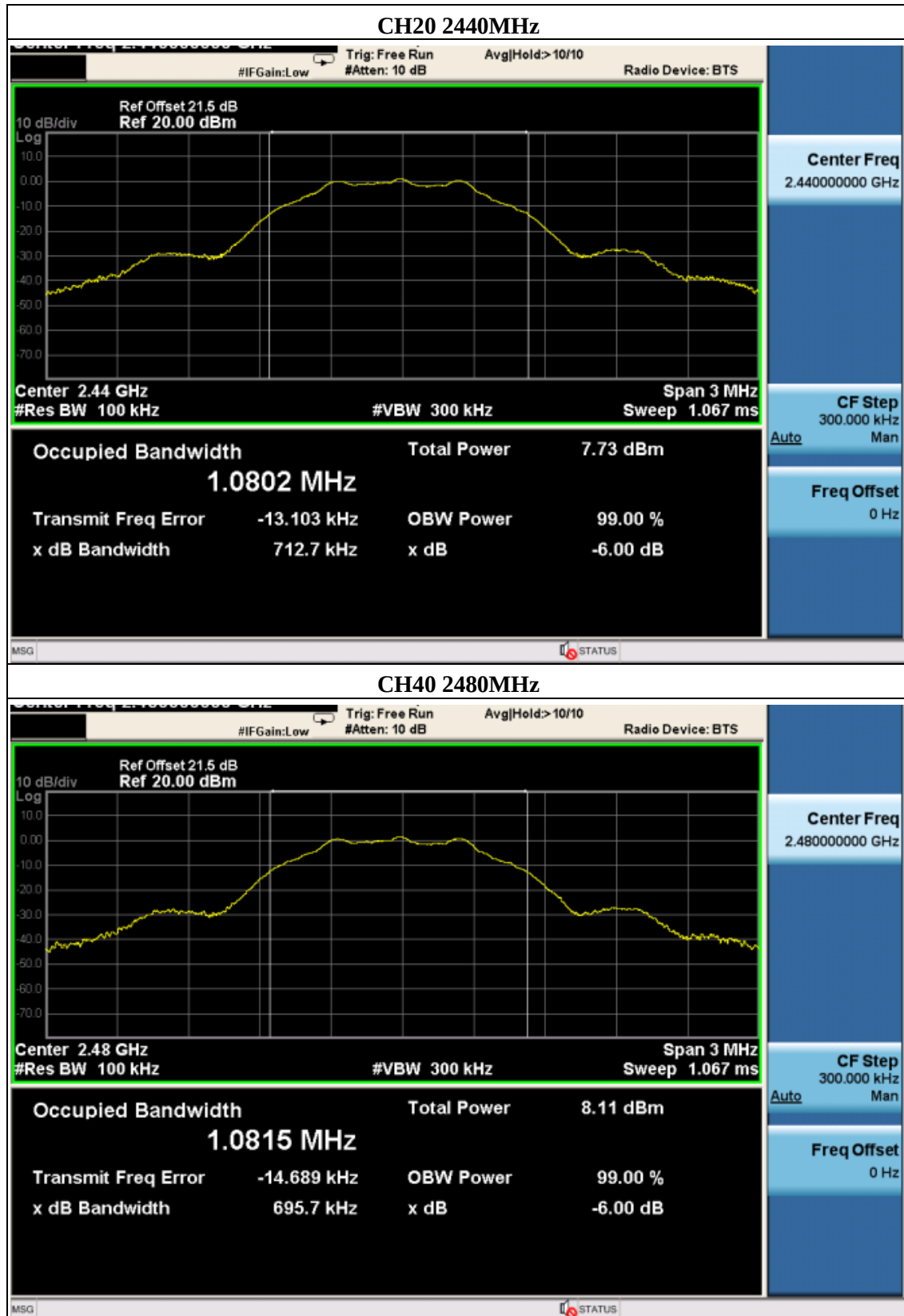
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.4 TEST RESULTS

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	53%
Pressure :	1010 hPa	Test Power :	DC 12V supplied by the adapter
Test Mode :	Mode 1		
Test Data	2021-03-02		

	Test Channel	Frequency (MHz)	6 dB Bandwidth (KHz)	Limit (kHz)
Mode 1	CH01	2402	705.4	≥ 500
	CH20	2440	712.7	≥ 500
	CH40	2480	695.7	≥ 500





Center Freq
2.440000000 GHz

CF Step
300.000 kHz
Auto Man

Freq Offset
0 Hz

Center Freq
2.480000000 GHz

CF Step
300.000 kHz
Auto Man

Freq Offset
0 Hz

5. POWER DENSITY

5.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
4.10.1(6.2.2)	Power density	8dBm	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	3 kHz
VB	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 3KHz, VBW=10KHz.

5.1.2 TEST SETUP



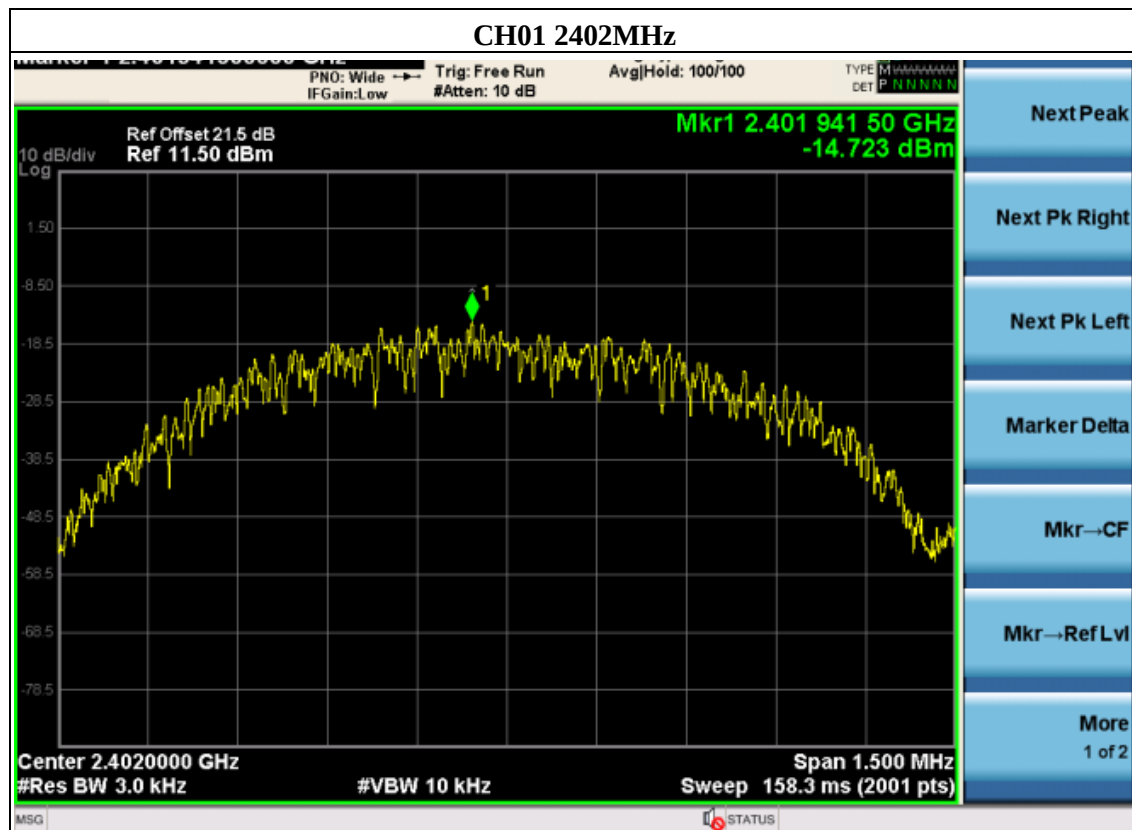
5.1.3 EUT OPERATION CONDITIONS

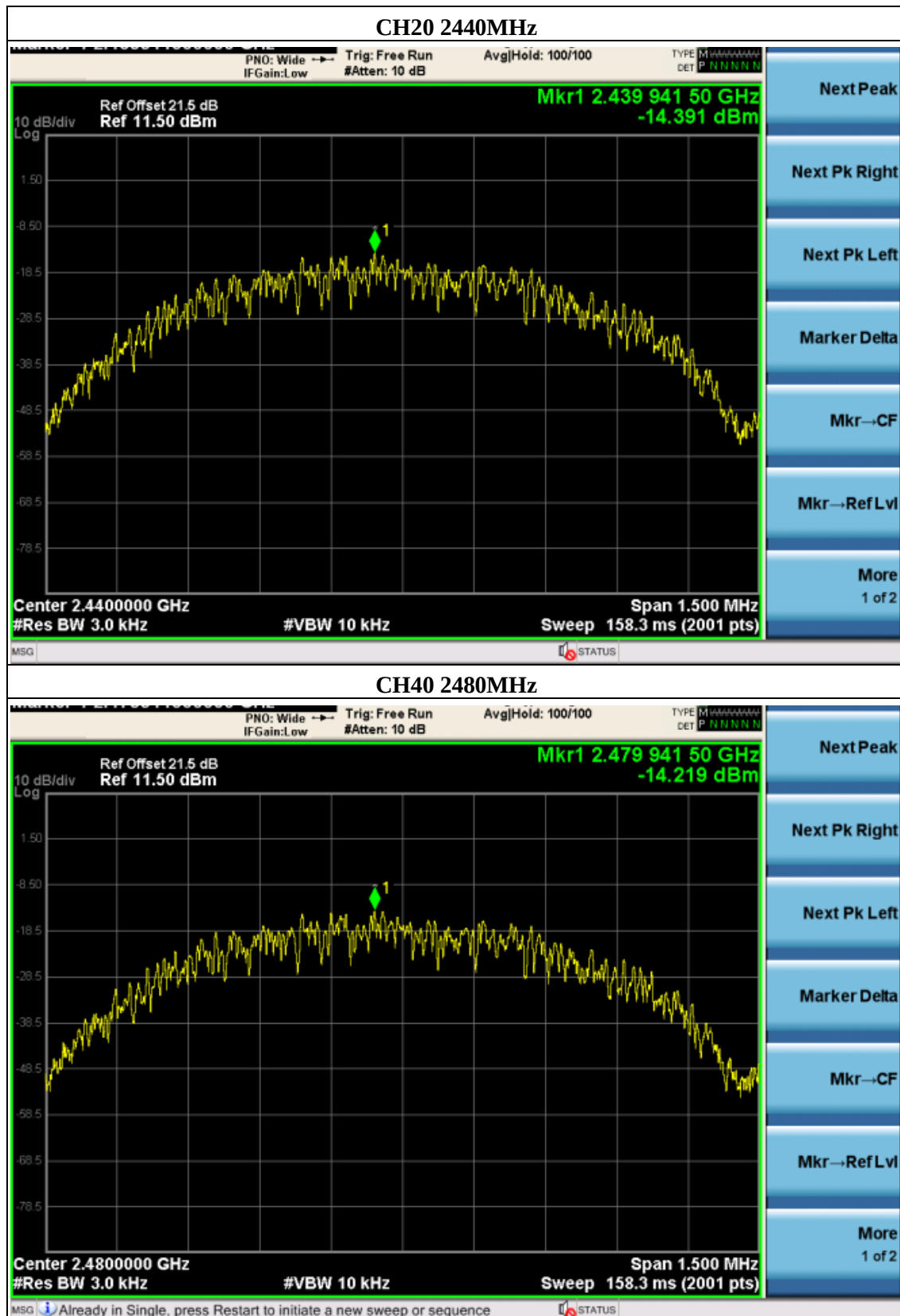
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.4 TEST RESULTS

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	53%
Pressure :	1010 hPa	Test Voltage :	DC 12V supplied by the adapter
Test Mode :	Mode 1		
Test Data	2021-03-02		

Test Channel	Frequency(MHz)	Power Density(dBm)	LIMIT(dBm)
CH01	2402 MHz	-14.72	8.00
CH20	2440 MHz	-14.39	8.00
CH40	2480 MHz	-14.22	8.00





6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
4.10.1(2)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

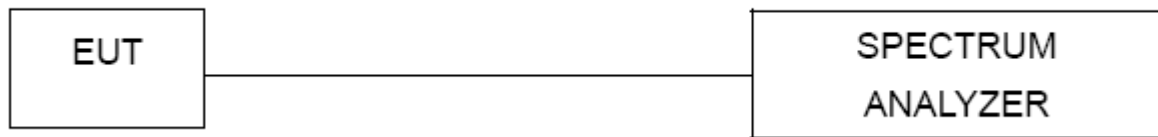
6.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 1 MHz, VBW= 3 MHz, Sweep time = Auto.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

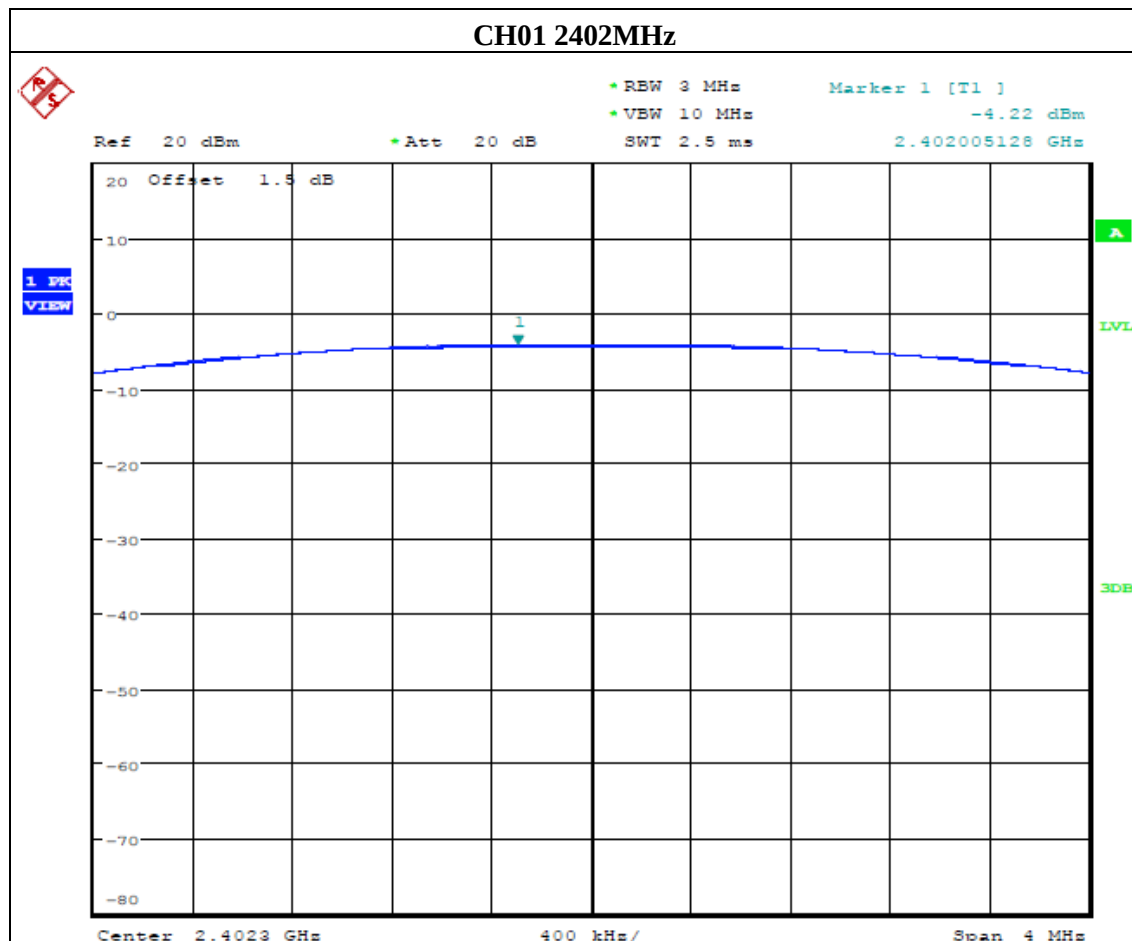
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

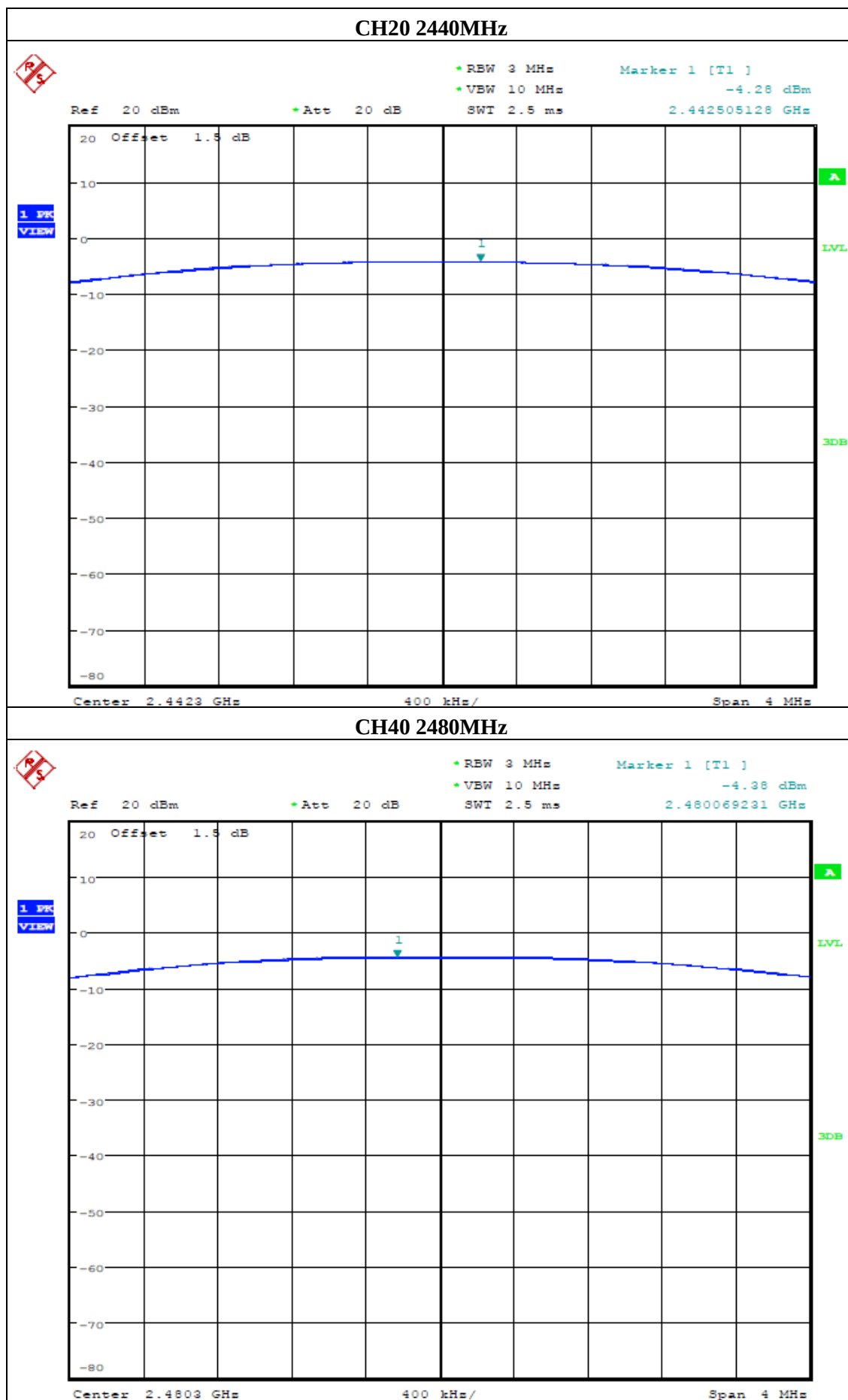
6.1.5 TEST RESULTS

EUT :	M1 Control module	Model Name :	10198774
Temperature :	24 °C	Relative Humidity :	53%
Pressure :	1010 hPa	Test Voltage :	DC 12V supplied by the adapter
Test Mode :	Mode 1		
Test Data	2021-02-25		

Frequency (MHz)	Reading (dBm)	Cable lose (dB)	Peak Output Power (dBm)	LIMIT (dBm)
2402	-4.22	1.0	-3.22	30
2440	-4.28	1.0	-3.28	30
2480	-4.38	1.0	-3.38	30

Note : cable loss=1.0 dB





7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in Section 3.6.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

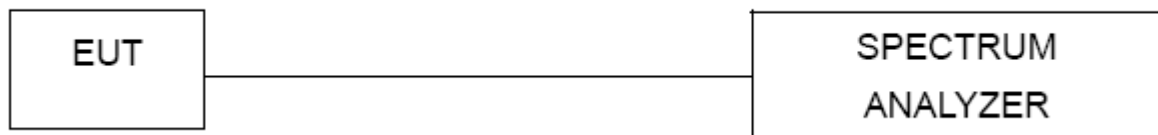
The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (other emission)	100 KHz /300 KHz for Peak

7.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

7.1.2 TEST SETUP



7.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.4 TEST RESULTS

EUT :	M1 Control module	Model Name :	10198774
Temperature :	25 °C	Relative Humidity :	53%
Pressure :	1010 hPa	Test Voltage :	DC 12V supplied by the adapter
Test Mode:	Mode 1		
Test Data	2021-02-25		

in any 100kHz bandwidth outside the low frequency band	in any 100 kHz bandwidth outside the high frequency band
Pass	Pass
Result	
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.	



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

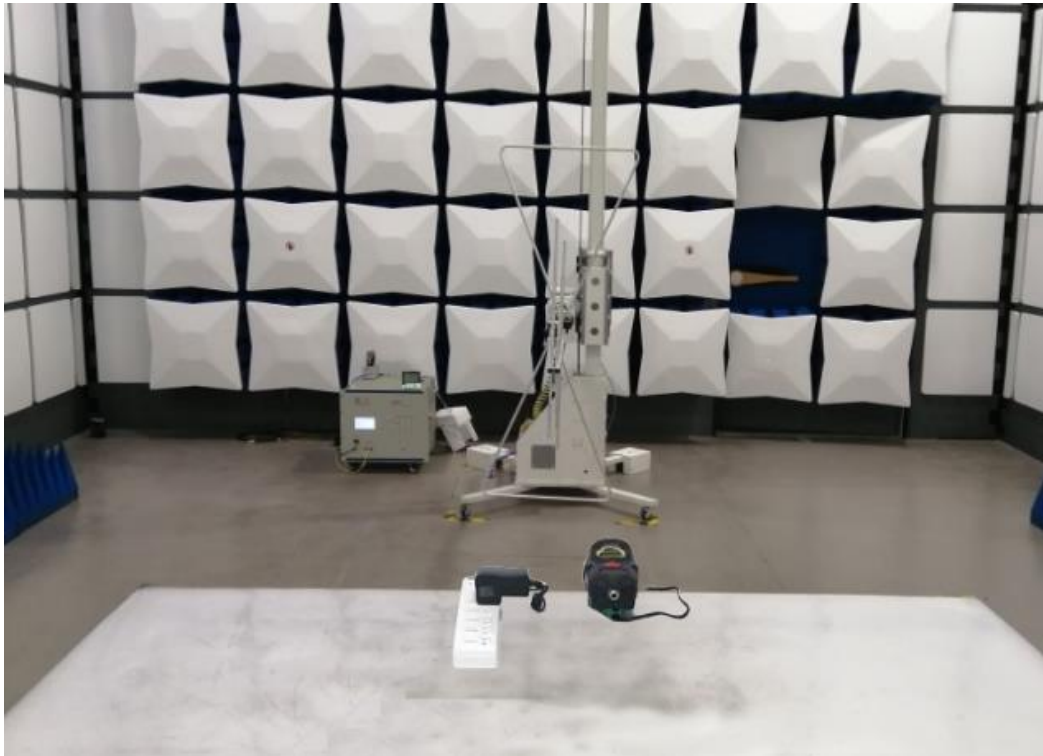
4.10.1(3) requirement: Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

8.2 EUT ANTENNA

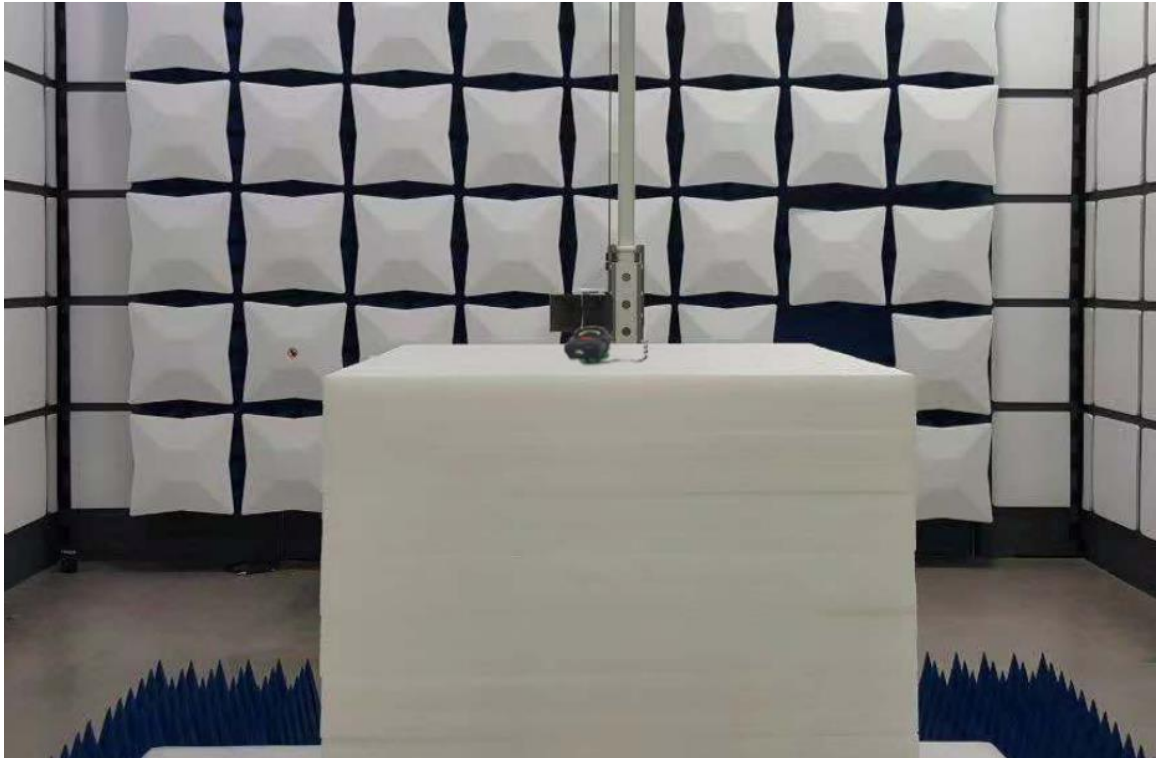
The antenna is a Chip Antenna and no consideration of replacement. Antenna max gain is 1.69dBi from 2.4GHz to 2.5GHz.

9. EUT TEST PHOTO

Radiated Measurement Photos 30MHz-1GHz



**Radiated Measurement Photos
Above 1GHz**



Conducted Measurement Photos