

RADIO PERFORMANCE TEST REPORT

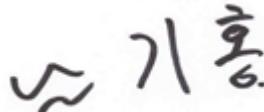
Test Report No. : OT-218-RWD-092
Reception No. : 2108003797
Applicant : INSOPACK. CO., LTD.
Address : (Gajeong-dong, 708) 708, 218, Gajeong-ro Yuseong-gu, Daejeon, Korea
Manufacturer : INSOPACK. CO., LTD.
Address : (Gajeong-dong, 708) 708, 218, Gajeong-ro Yuseong-gu, Daejeon, Korea
Type of Equipment : ACRO-S2
FCC ID. : RGN-ACRO-S2
Model Name : ACRO-S2
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 37 pages (including this page)
Date of Incoming : August 23, 2021
Date of issue : August 27, 2021

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.



Tested by

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ONETECH Corp.

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ONETECH Corp.

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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-218-RWD-092	August 27, 2021	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : INSOPACK. CO., LTD.

Address : (Gajeong-dong, 708) 708, 218, Gajeong-ro Yuseong-gu, Daejeon, Korea

Contact Person : Jeong Hyun Cho / Manager

Telephone No. : +82-31-695-8404

FCC ID : RGN-ACRO-S2

Model Name : ACRO-S2

Brand Name : -

Serial Number : N/A

Date : August 27, 2021

EQUIPMENT CLASS	DTS – DIGITAL TRANSMISSION SYSTEM
E.U.T. DESCRIPTION	ACRO-S2
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2020
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT	Certification
AUTHORIZATION REQUESTED	
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SUBPART C Section 15.247 558074 D01 15.247 Meas Guidance v05r02
Modifications on the Equipment to 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 INSOPACK. CO., LTD., Model ACRO-S2 (referred to as the EUT in this report) is an ACRO-S2, Product specification information described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	ACRO-S2
OPERATING FREQUENCY	902.975 MHz ~ 927.025 MHz
MODULATION TYPE	4GFSK
RF OUTPUT POWER	15.72 dBm
NUMBER OF CHANNEL	38 Channel
ANTENNA TYPE	FPCB Antenna
ANTENNA GAIN	0.43 dBi
Rated Supply Voltage	DC 3.7 V
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	12 MHz

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	INSOPACK. CO., LTD.	N/A	N/A
Sub Board	INSOPACK. CO., LTD.	N/A	N/A
Battery	SHENZHEN KAYO BATTERY Co.,Ltd	KPL704050	N/A

5.2 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

Model	Manufacturer	Description	Connected to
ACRO-S2	INSOPACK. CO., LTD.	ACRO-S2 (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 902.975 MHz, 914.675 MHz, and 927.025 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 "XZ" axis, but the worst data was recorded in this report.

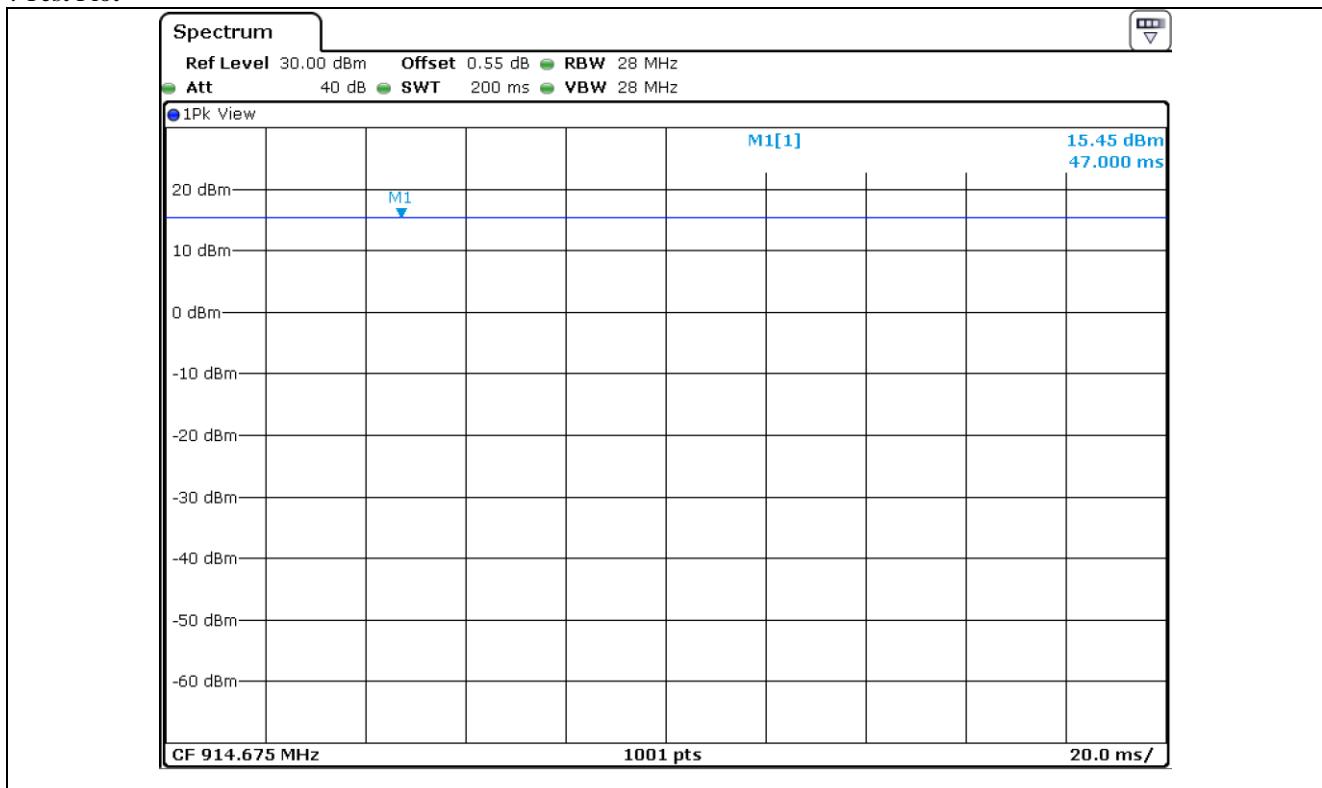
- Duty Cycle

Mode	Tx On Time [ms]	Tx Off Time [ms]	Duty Cycle [%]	Correction Factor [dB]
900 MHz	-	-	100	-

Note – Duty Cycle : $(\text{Tx On Time} / (\text{Tx On Time} + \text{Tx Off Time})) * 100$

Correction Factor : $10 * \text{Log}(1 / (\text{Duty Cycle} / 100))$

- Test Plot



-. Channel List

900 MHz			
Channel	Frequency [MHz]	Channel	Frequency [MHz]
1	902.975	20	915.325
2	903.625	21	915.975
3	904.275	22	916.625
4	904.925	23	917.275
5	905.575	24	917.925
6	906.225	25	918.575
7	906.875	26	919.225
8	907.525	27	919.875
9	908.175	28	920.525
10	908.825	29	921.175
11	909.475	30	921.825
12	910.125	31	922.475
13	910.775	32	923.125
14	911.425	33	923.775
15	912.075	34	924.425
16	912.725	35	925.075
17	913.375	36	925.725
18	914.025	37	926.375
19	914.675	38	927.025

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: 2013 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 FPCB Antenna inside 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	X

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	X

7. MINIMUM 6 dB BANDWIDTH

7.1 Operating environment

Temperature : 24 °C

Relative humidity : 48 % 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

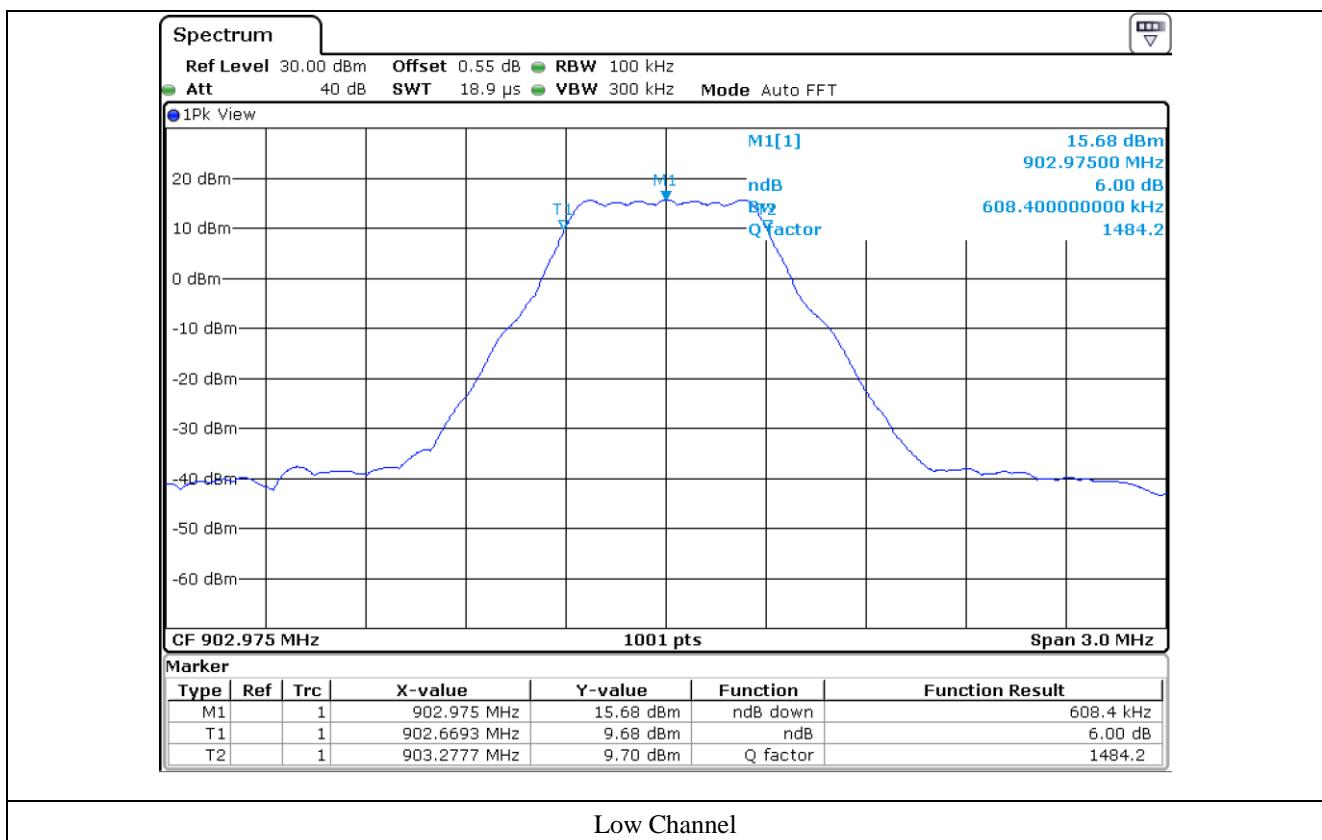
August 23, 2021 ~ August 26, 2021

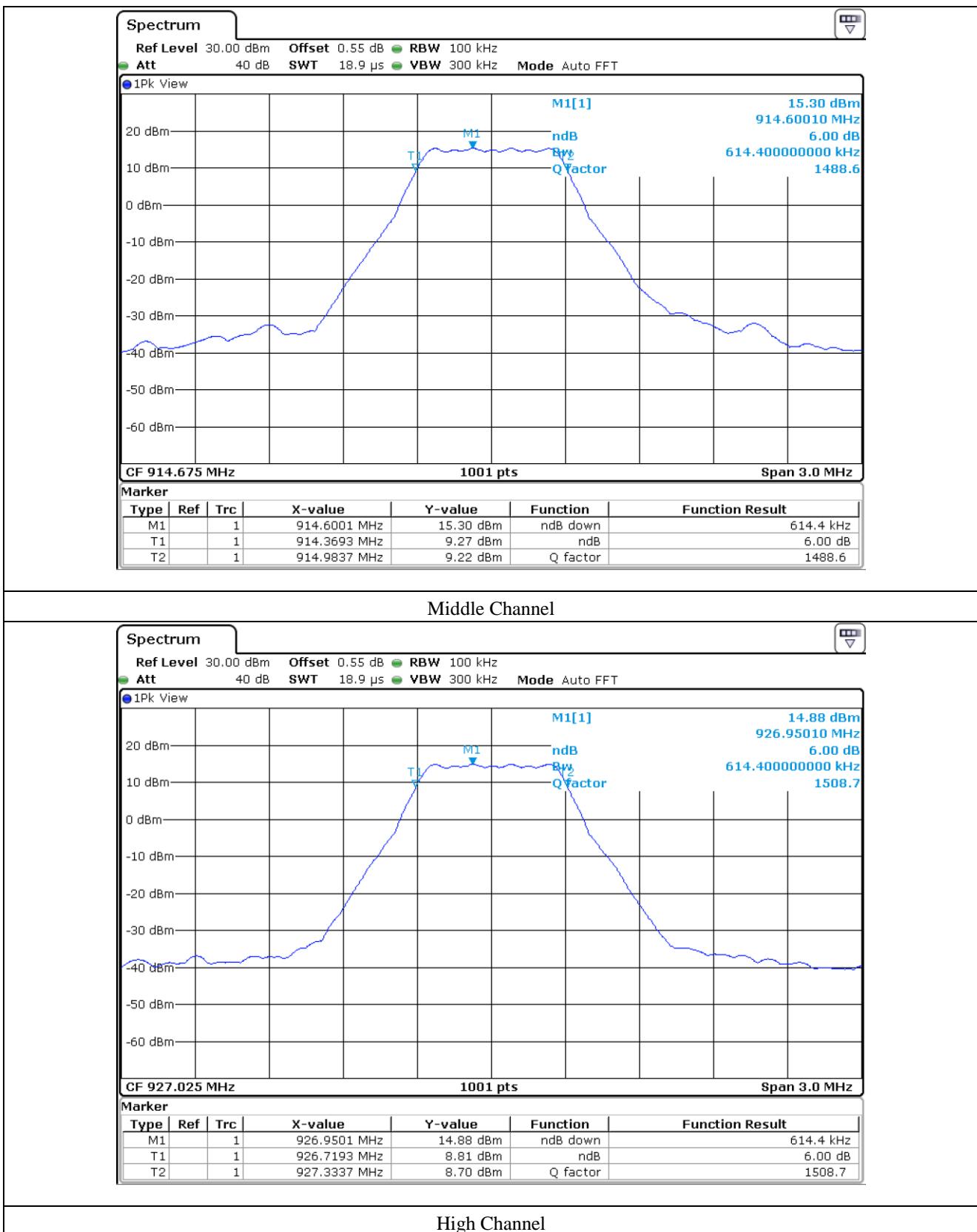
7.4 Test Data

- Test Result : Pass

Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)
Low	902.975	608.40	500.00	108.40
Middle	914.675	614.40	500.00	114.40
High	927.025	614.40	500.00	114.40

Remark. Margin = Measured Value - Limit





8. MAXIMUM PEAK OUTPUT POWER

8.1 Operating environment

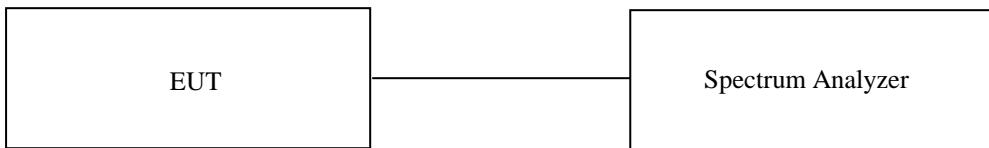
Temperature : 24 °C

Relative humidity : 48 % 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

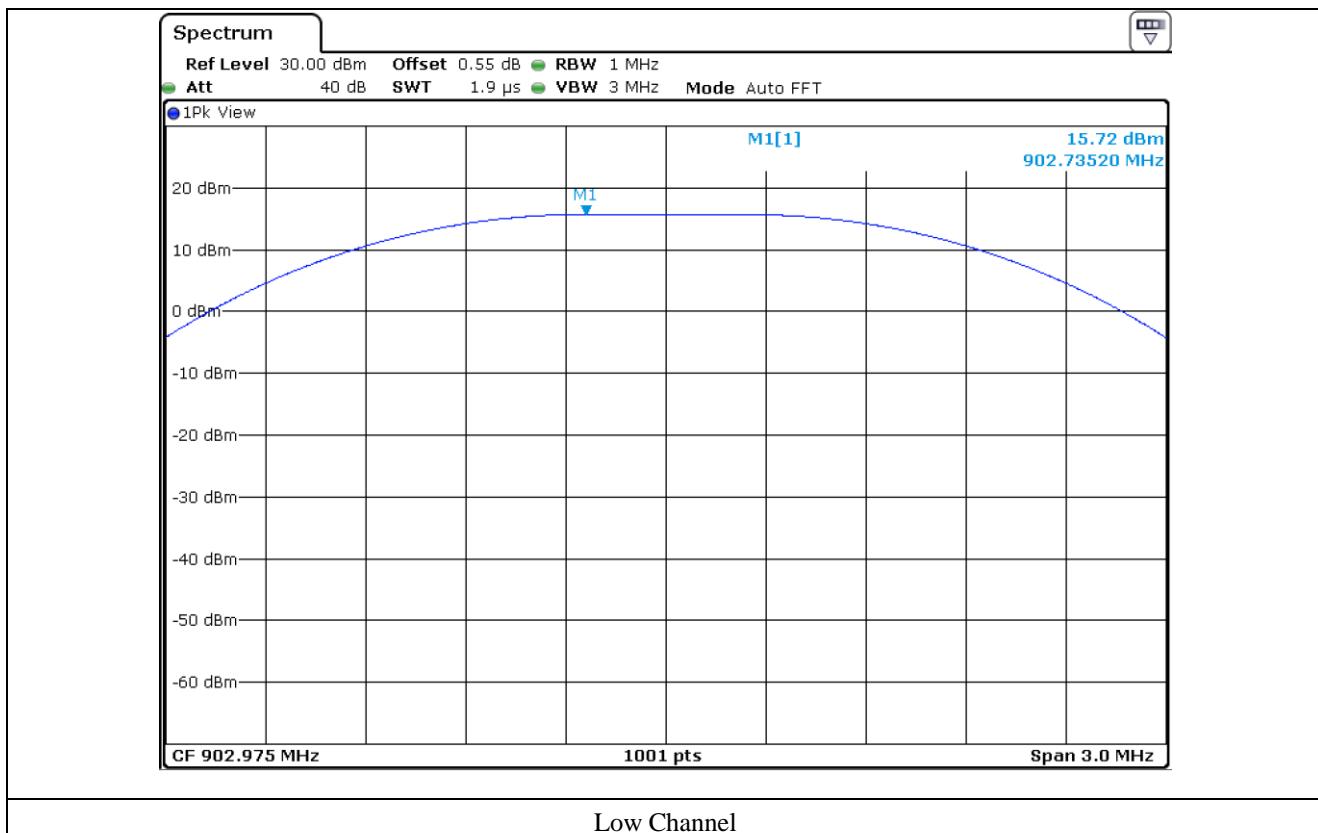
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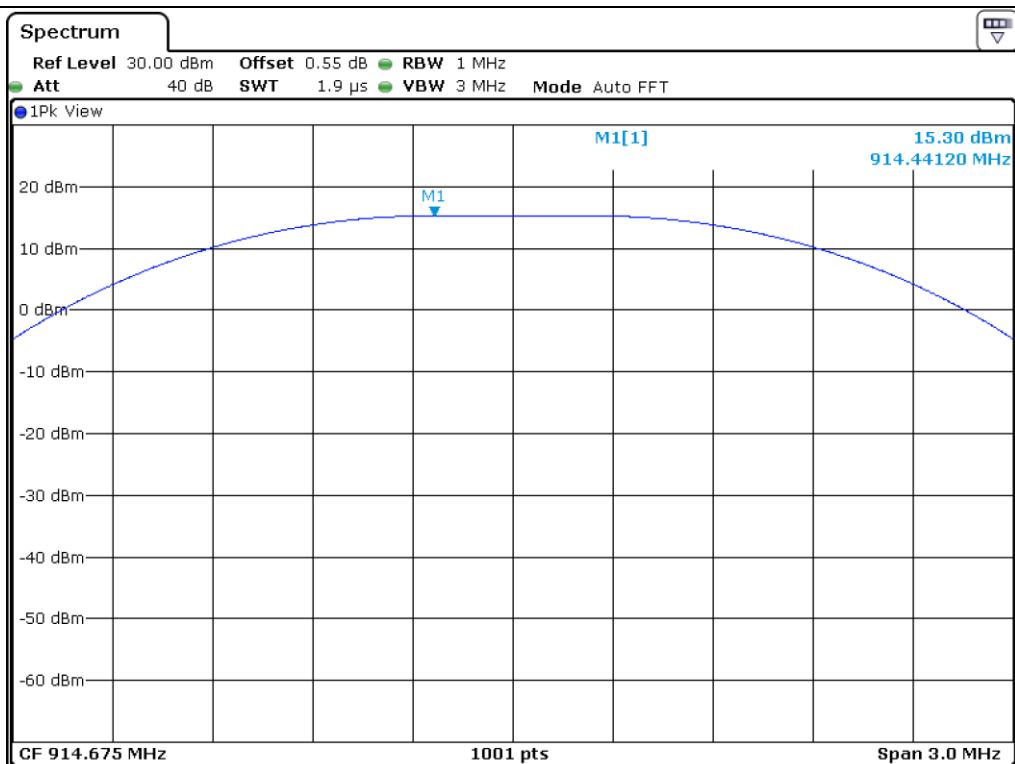
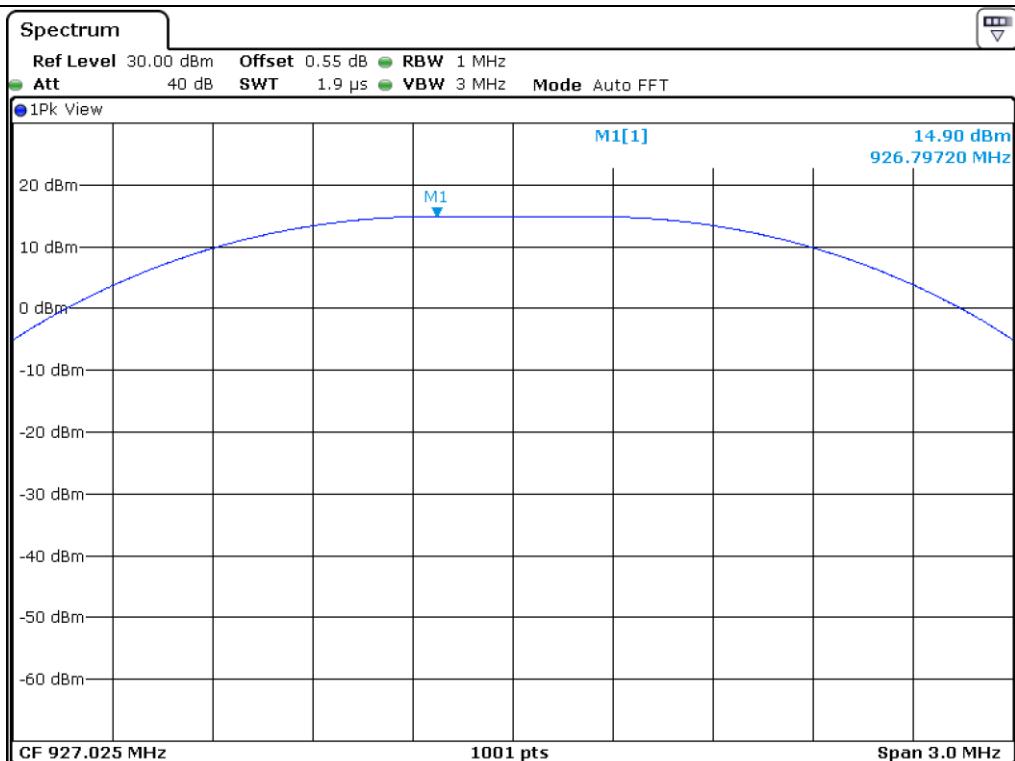
8.4 Test Data

- Test Result : Pass

Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
Low	902.975	608.40	15.72	30.00	14.28
Middle	914.675	614.40	15.30	30.00	14.70
High	927.025	614.40	14.90	30.00	15.10

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



**Middle Channel****High Channel**

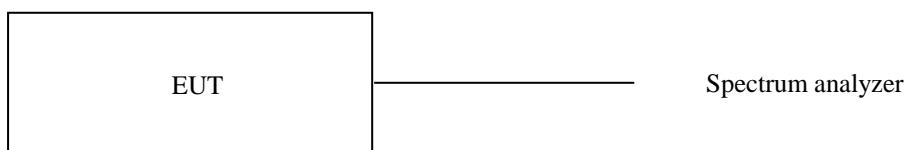
9. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

9.1 Operating environment

Temperature : 24 °C
Relative humidity : 48 % 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.



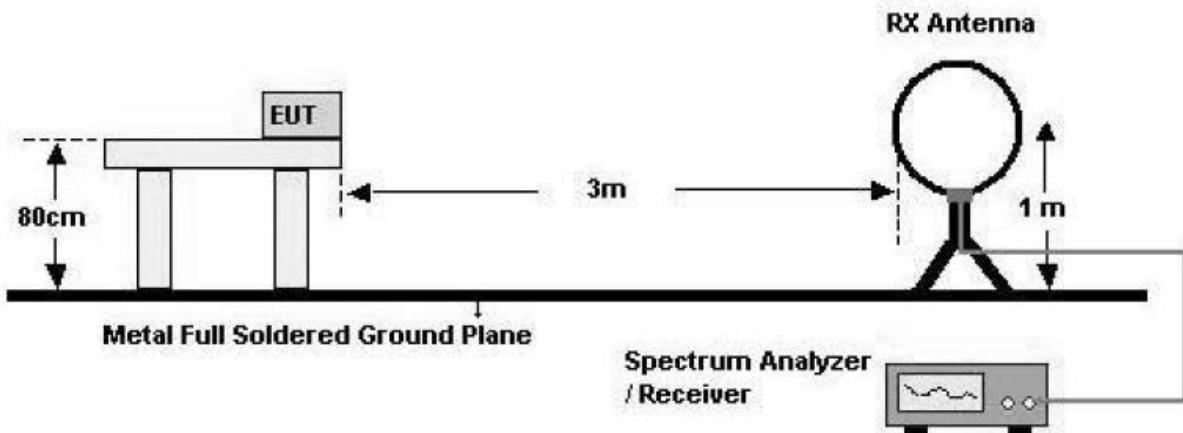
9.3 Test set-up for radiated measurement

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.

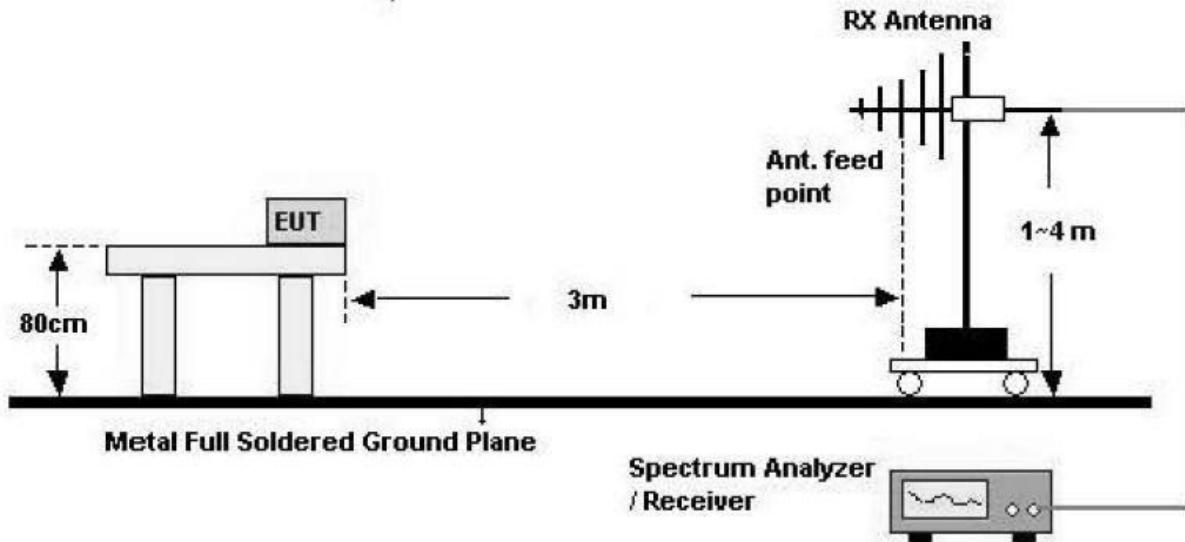
The frequency spectrum from 30 MHz to 10 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.

- Test Configuration

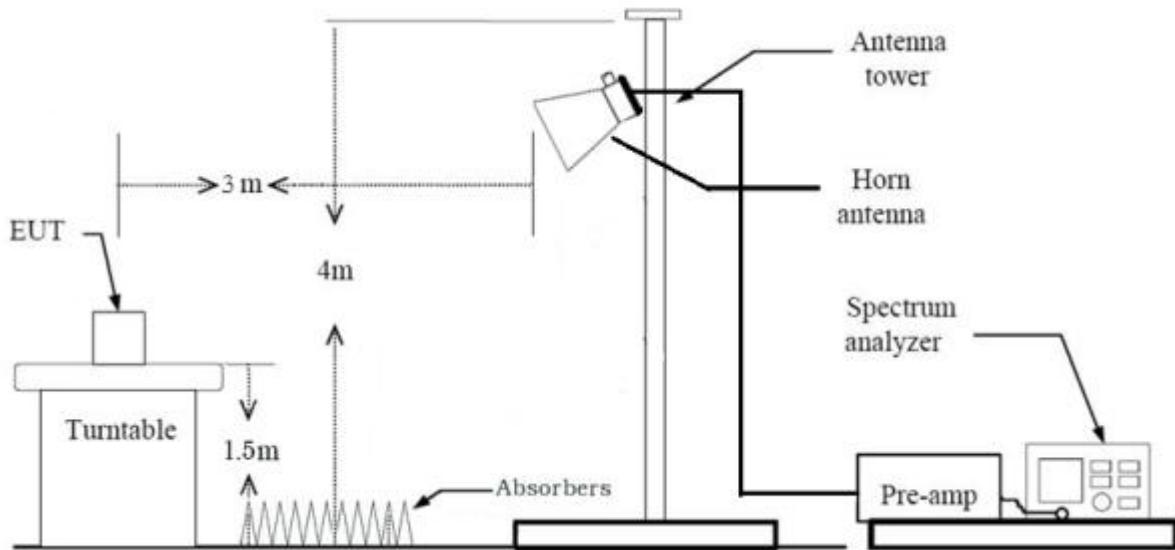
1. Below 30 MHz



2. 30 MHz - 1 GHz

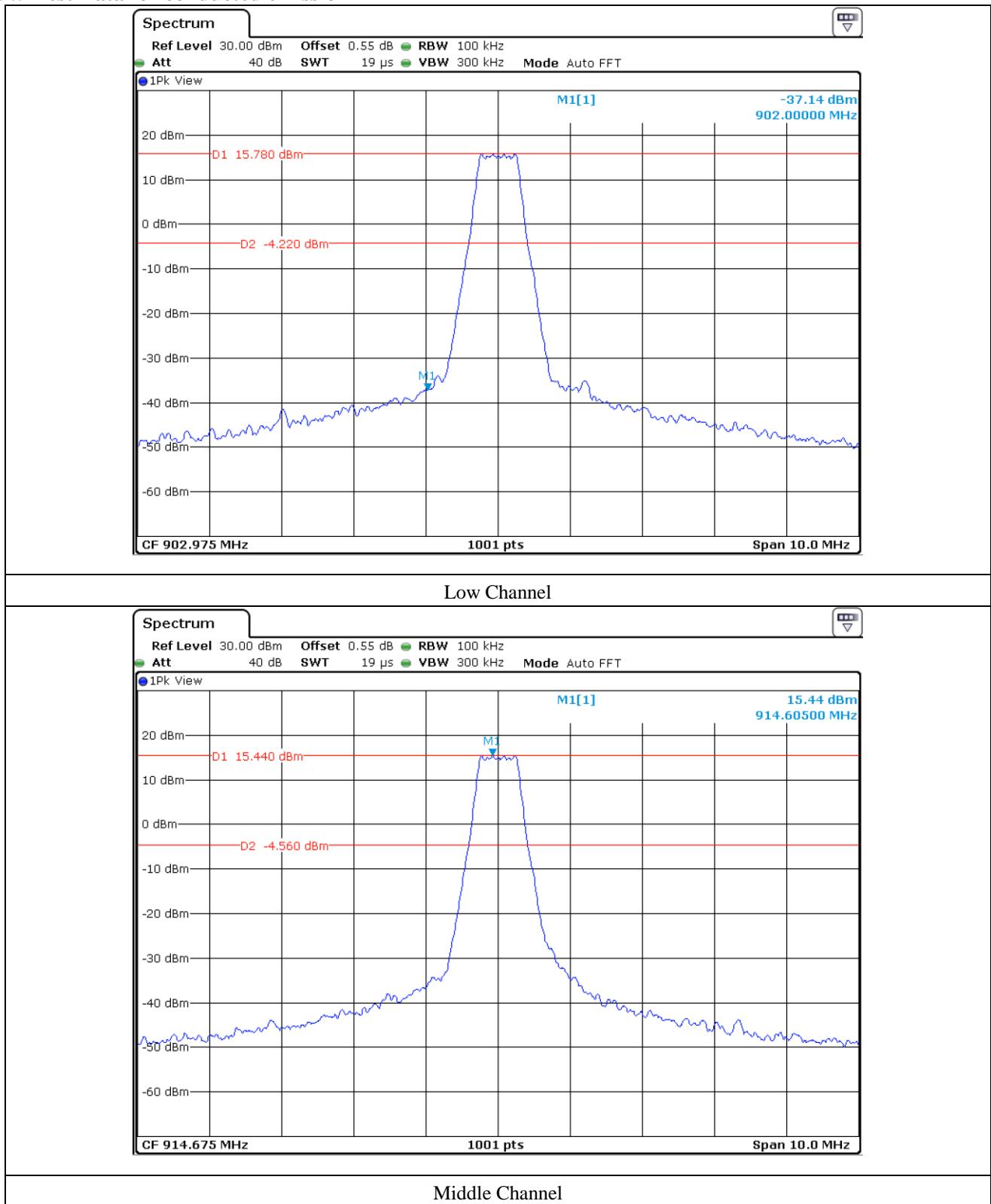


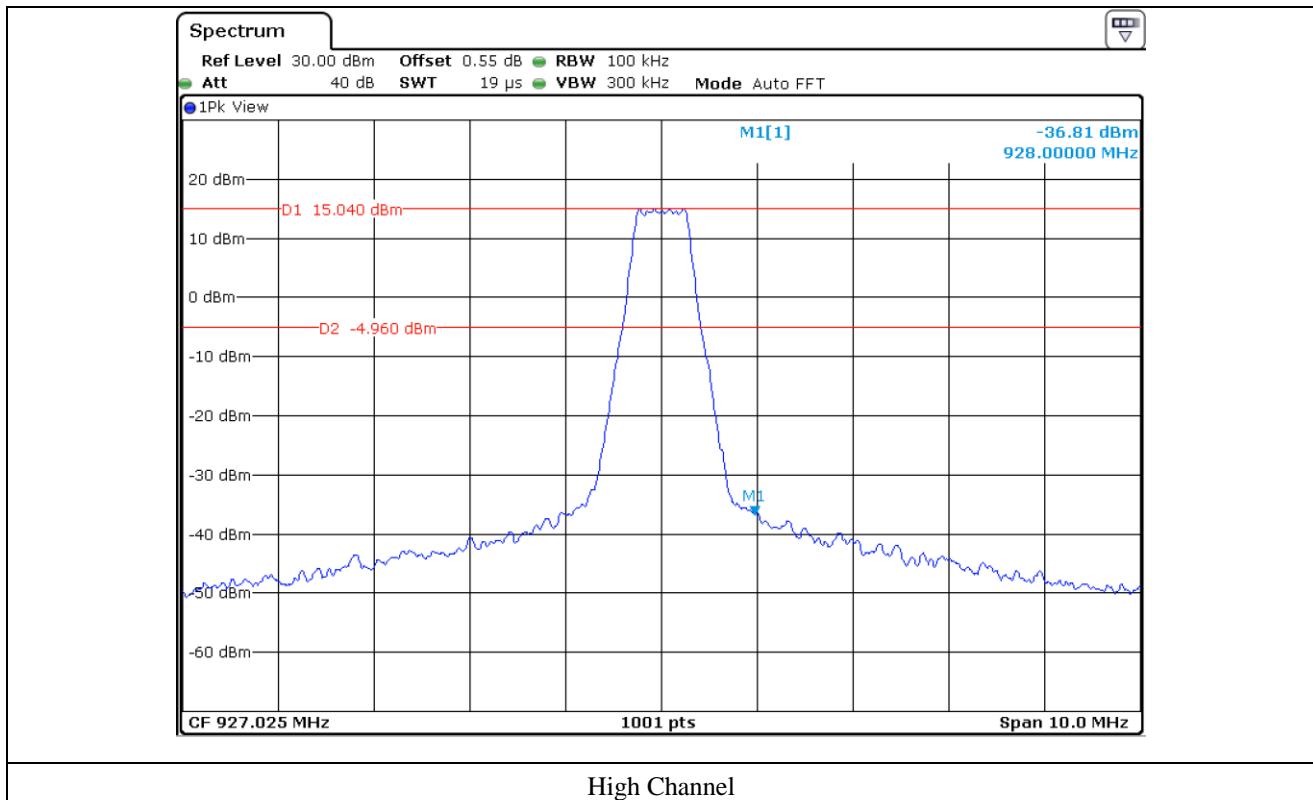
3. Above 1 GHz

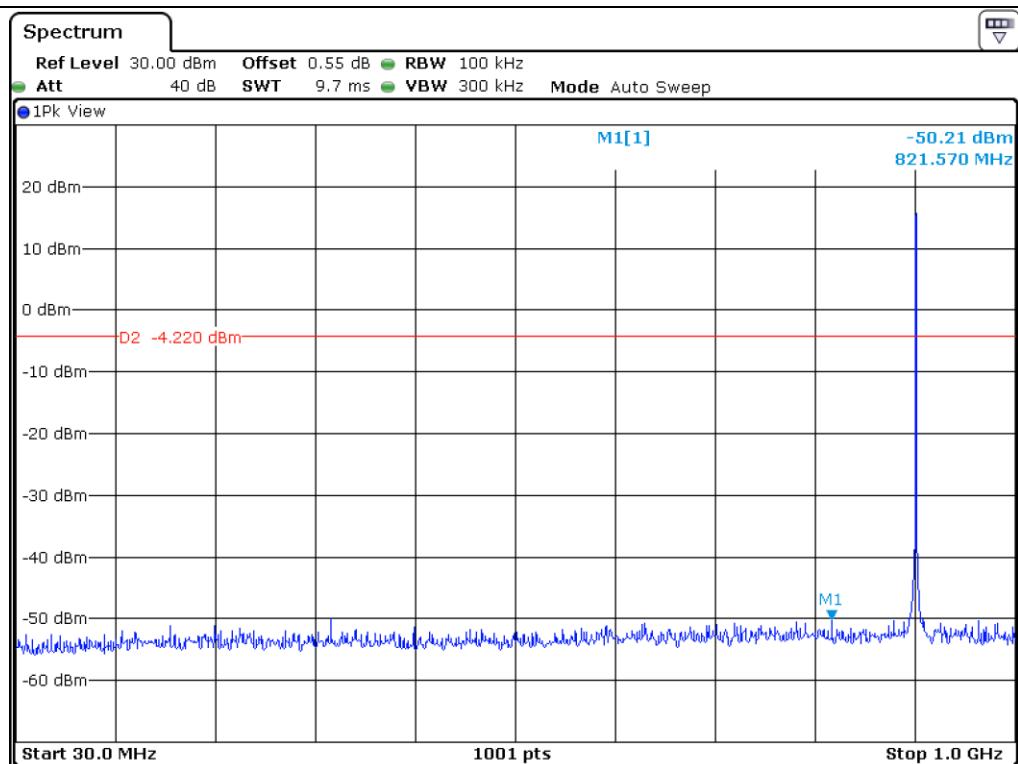
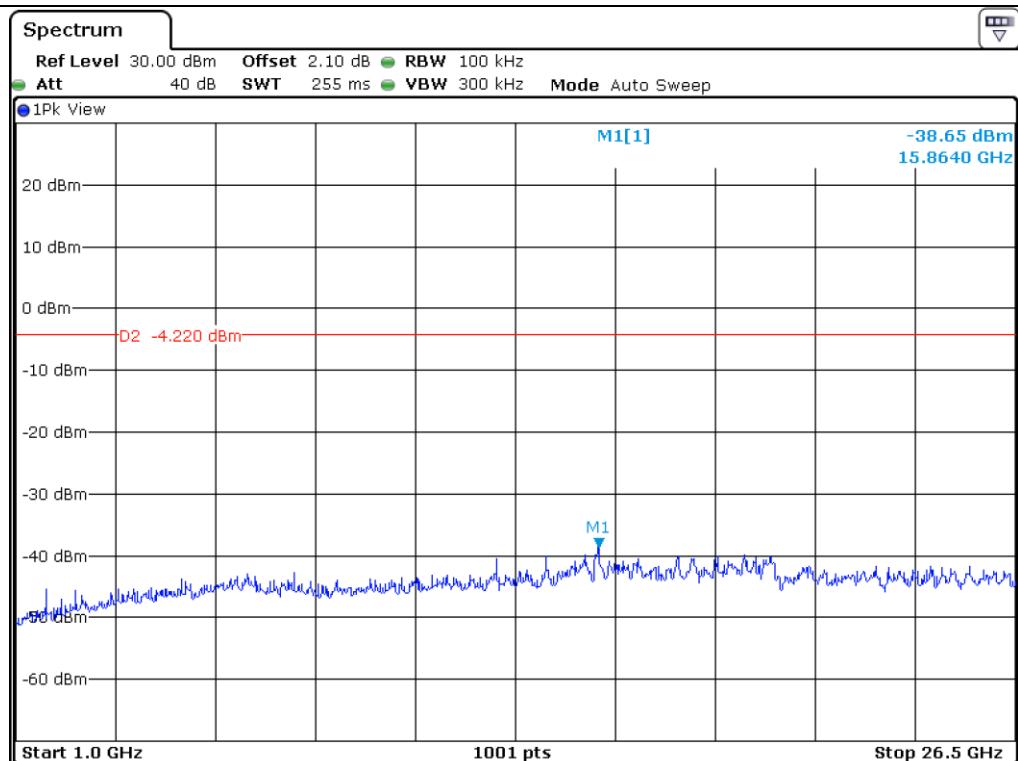

9.4 Test Date

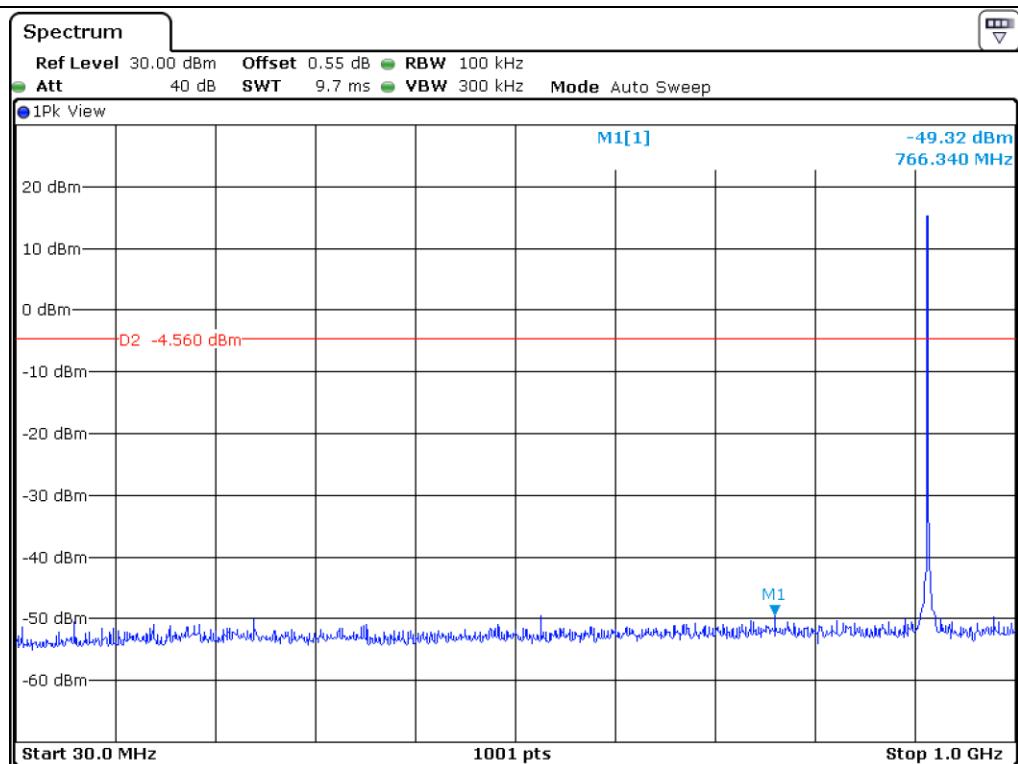
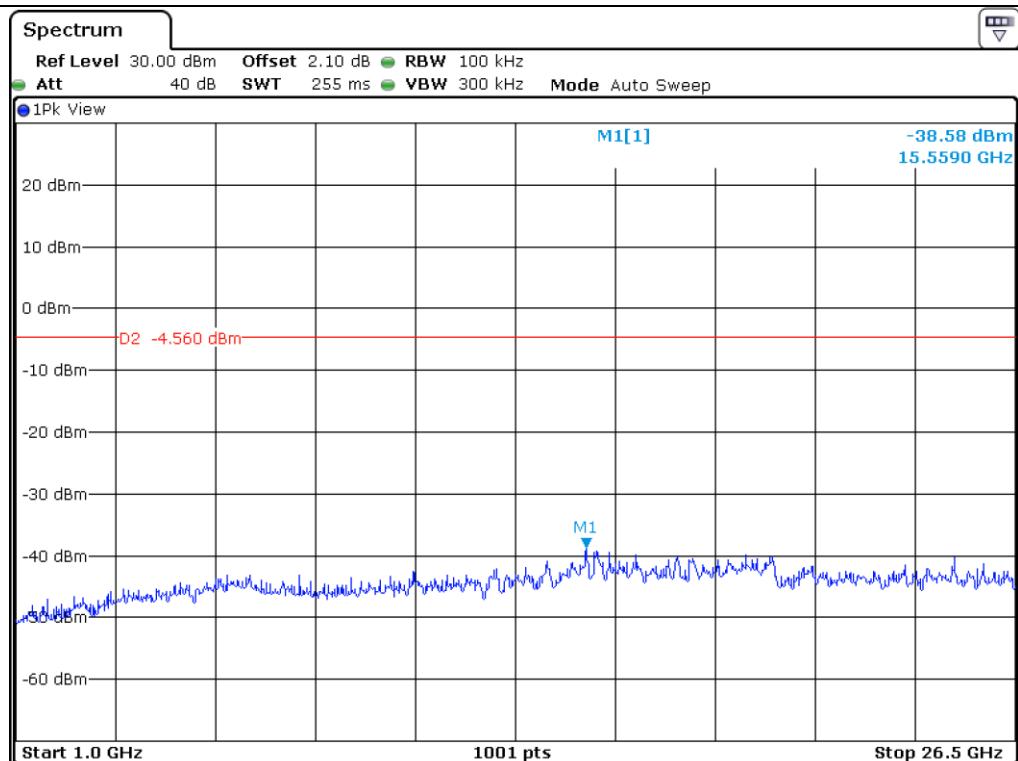
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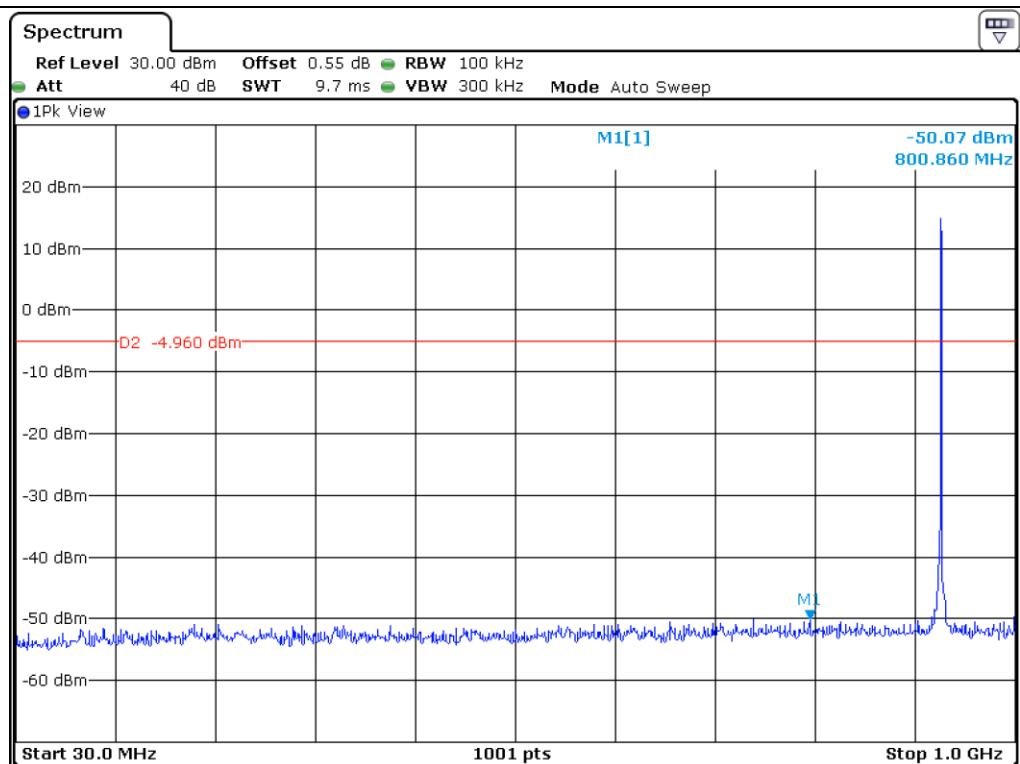
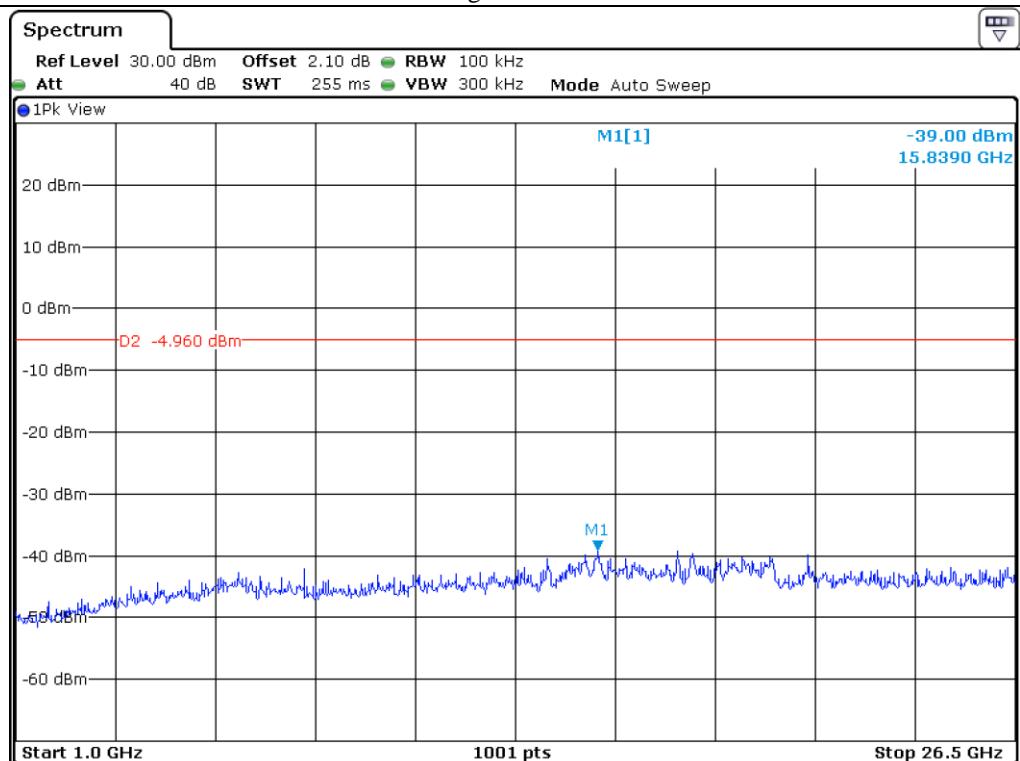
9.5 Test Data for conducted emission





**Low Channel****Low Channel**

**Middle Channel****Middle Channel**

**High Channel****High Channel**

9.6 Test data for radiated emission

9.6.1 Spurious & Harmonic Radiated Emission

- 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 : 100 %
- Result : PASSED

Frequency (MHz)	Reading (dB μ V)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	Amp Gain	Duty Factor(dB)	Total (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)
1 805.950	53.24	Peak	H	26.60	7.20	46.10	0.00	40.94	74.00	33.06
1 805.950	44.94	Average	H	26.60	7.20	46.10	0.00	32.64	54.00	21.36
1 805.950	50.55	Peak	V	26.60	7.20	46.10	0.00	38.25	74.00	35.75
1 505.950	42.66	Average	V	26.60	7.20	46.10	0.00	30.36	54.00	23.64
2 708.925	48.05	Peak	H	29.30	8.70	46.15	0.00	39.90	74.00	34.10
2 708.925	39.13	Average	H	29.30	8.70	46.15	0.00	30.98	54.00	23.02
2 708.925	49.73	Peak	V	29.30	8.70	46.15	0.00	41.58	74.00	32.42
2 708.925	39.09	Average	V	29.30	8.70	46.15	0.00	30.94	54.00	23.06
1 829.350	51.52	Peak	H	26.90	7.20	46.10	0.00	39.52	74.00	34.48
1 829.350	42.31	Average	H	26.90	7.20	46.10	0.00	30.31	54.00	23.69
1 829.350	49.74	Peak	V	26.90	7.20	46.10	0.00	37.74	74.00	36.26
1 829.350	40.75	Average	V	26.90	7.20	46.10	0.00	28.75	54.00	25.25
2 744.025	49.46	Peak	H	29.40	8.80	46.15	0.00	41.51	74.00	32.49
2 744.025	39.85	Average	H	29.40	8.80	46.15	0.00	31.90	54.00	22.10
2 744.025	49.62	Peak	V	29.40	8.80	46.15	0.00	41.67	74.00	32.33
2 744.025	40.07	Average	V	29.40	8.80	46.15	0.00	32.12	54.00	21.88
1 855.350	49.42	Peak	H	26.90	7.30	46.10	0.00	37.52	74.00	36.48
1 855.350	40.70	Average	H	26.90	7.30	46.10	0.00	28.80	54.00	25.20
1 855.350	49.49	Peak	V	26.90	7.30	46.10	0.00	37.59	74.00	36.41
1 855.350	40.61	Average	V	26.90	7.30	46.10	0.00	28.71	54.00	25.29
2 775.075	48.06	Peak	H	29.50	8.80	46.15	0.00	40.21	74.00	33.79
2 775.075	39.40	Average	H	29.50	8.80	46.15	0.00	31.55	54.00	22.45
2 775.075	49.82	Peak	V	29.50	8.80	46.15	0.00	41.97	74.00	32.03
2 775.075	39.28	Average	V	29.50	8.80	46.15	0.00	31.43	54.00	22.57

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

Margin (dB) = Limits (dB μ V/m) - Total Level (dB μ V/m)

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

10. PEAK POWER SPECTRAL DENSITY

10.1 Operating environment

Temperature : 24 °C

Relative humidity : 48 % 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 $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$, the video bandwidth is set to 3 times the resolution bandwidth.



10.3 Test Date

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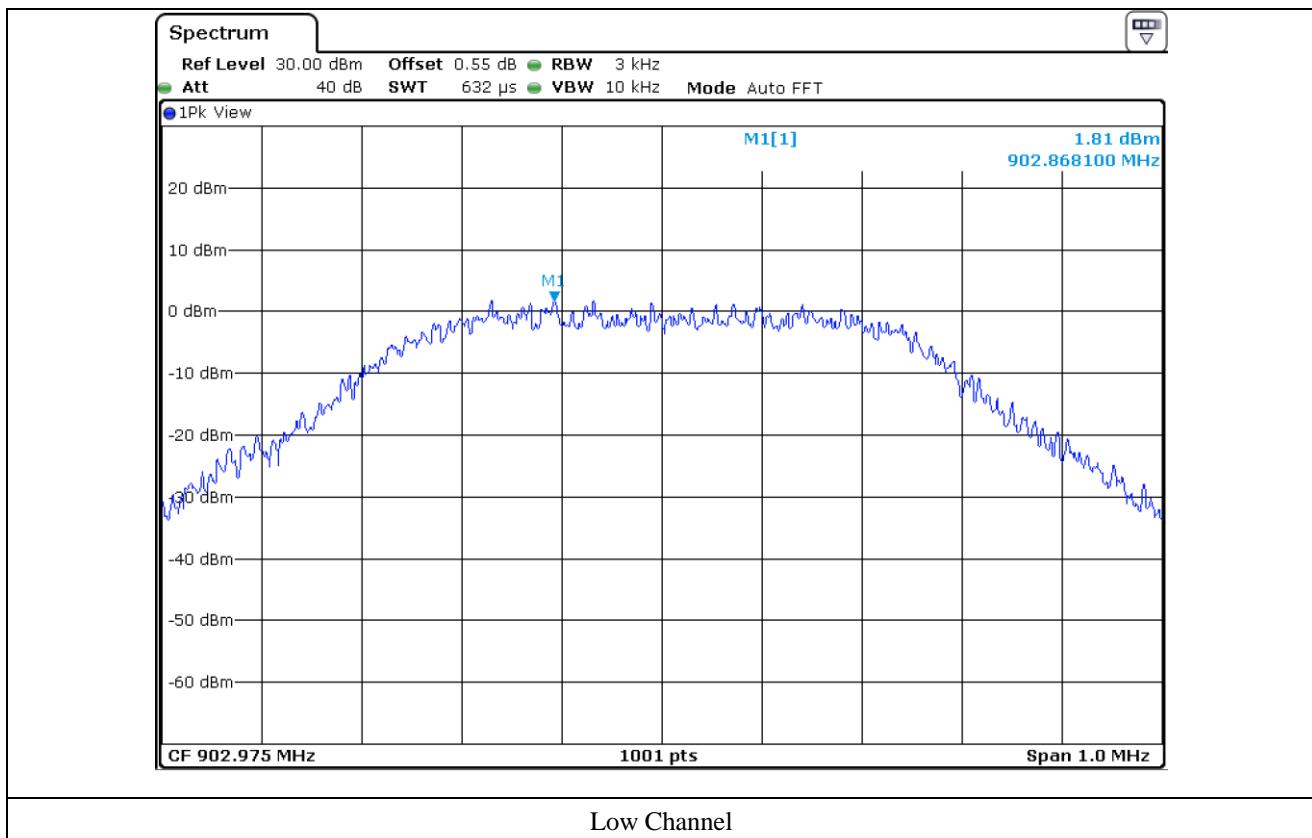
10.4 Test Data

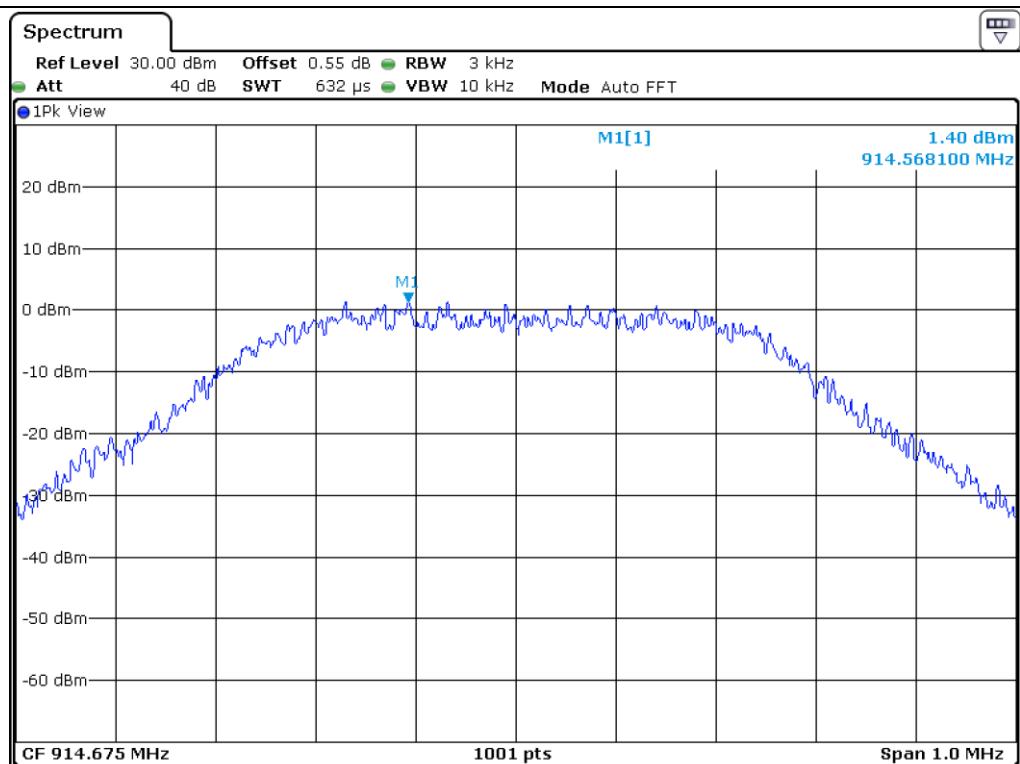
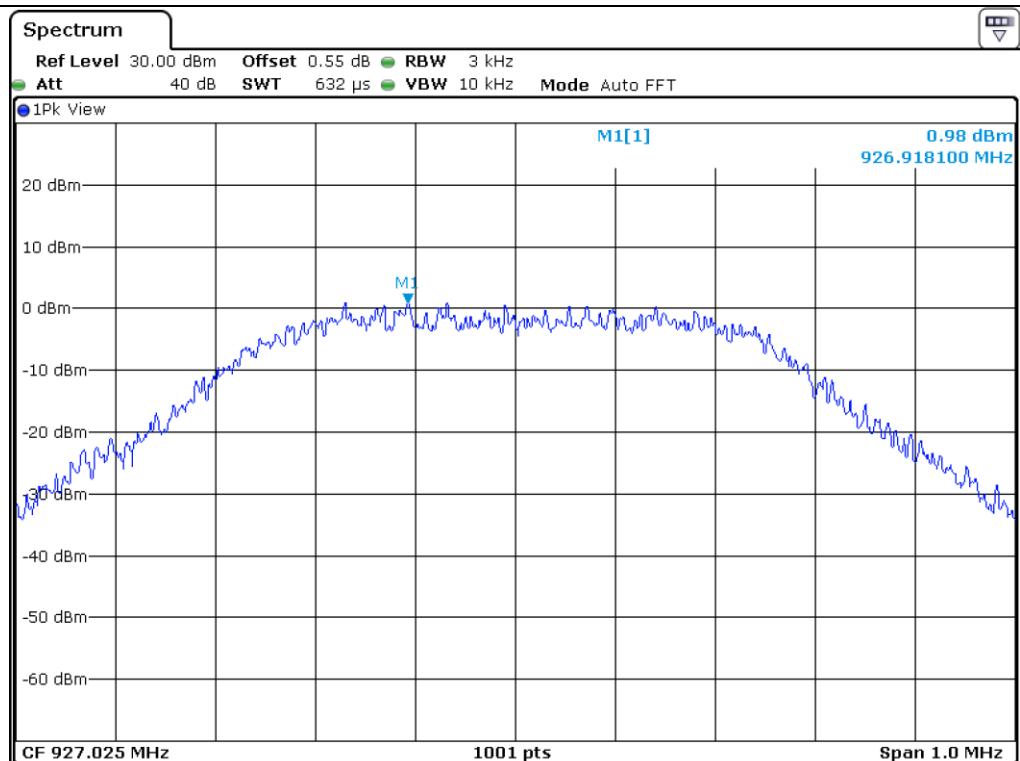
- Test Result : Pass

- Operating Condition : Continuous transmitting mode

Channel	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
Low	902.975	1.81	8.00	6.19
Middle	914.675	1.40	8.00	6.60
High	927.025	0.98	8.00	7.02

Remark. Margin = Limit – Measured value



**Middle Channel****High Channel**

11. RADIATED EMISSION TEST

11.1 Operating environment

Temperature : 24 °C

Relative humidity : 48 % R.H.

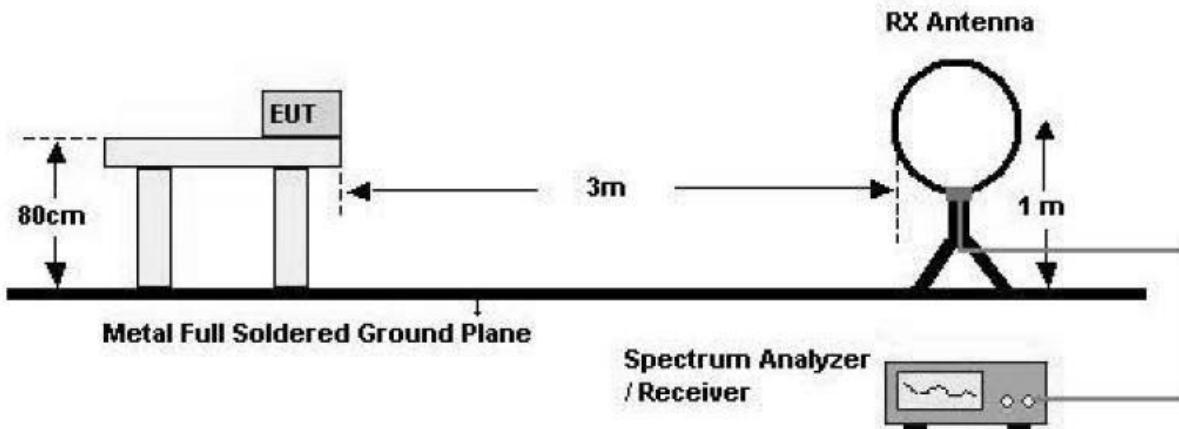
11.2 Test set-up

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.

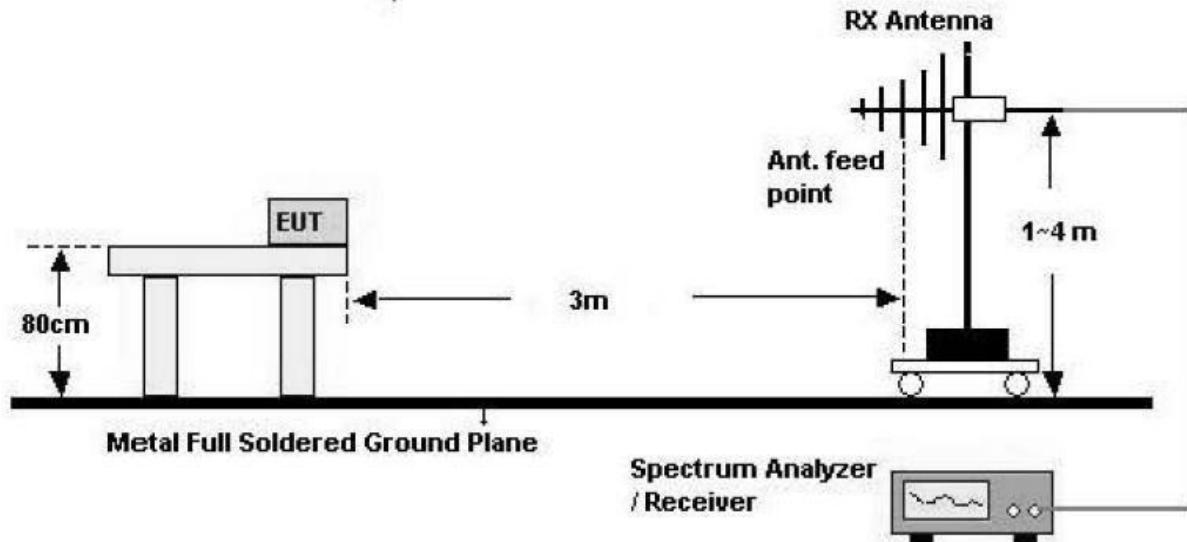
The frequency spectrum from 30 MHz to 10 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

- Test Configuration

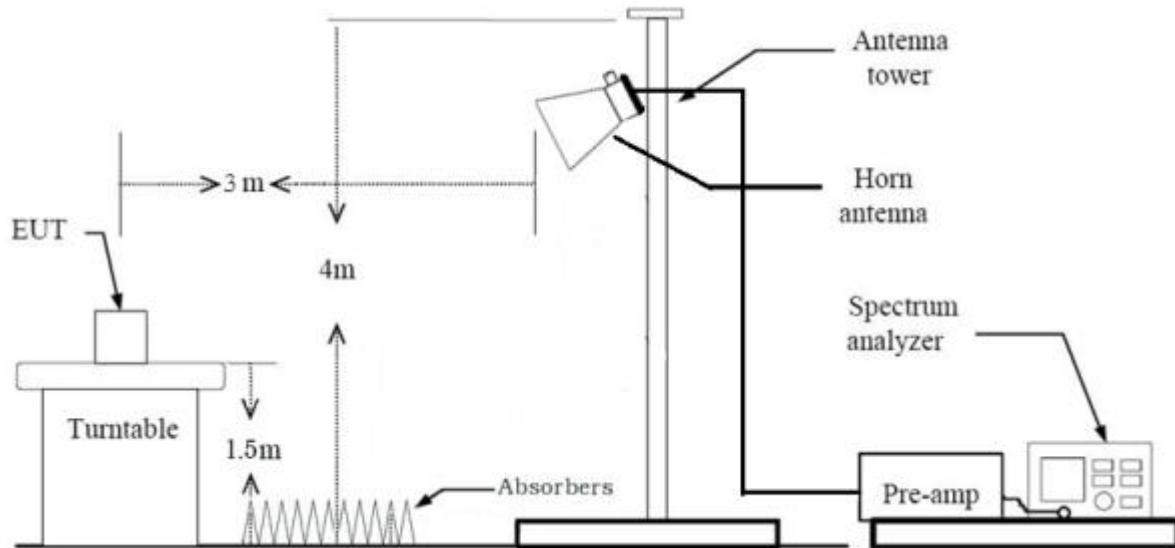
1. Below 30 MHz



2. 30 MHz - 1 GHz



3. Above 1 GHz



11.3 Test Date

August 23, 2021 ~ August 26, 2021

11.4 Test Data

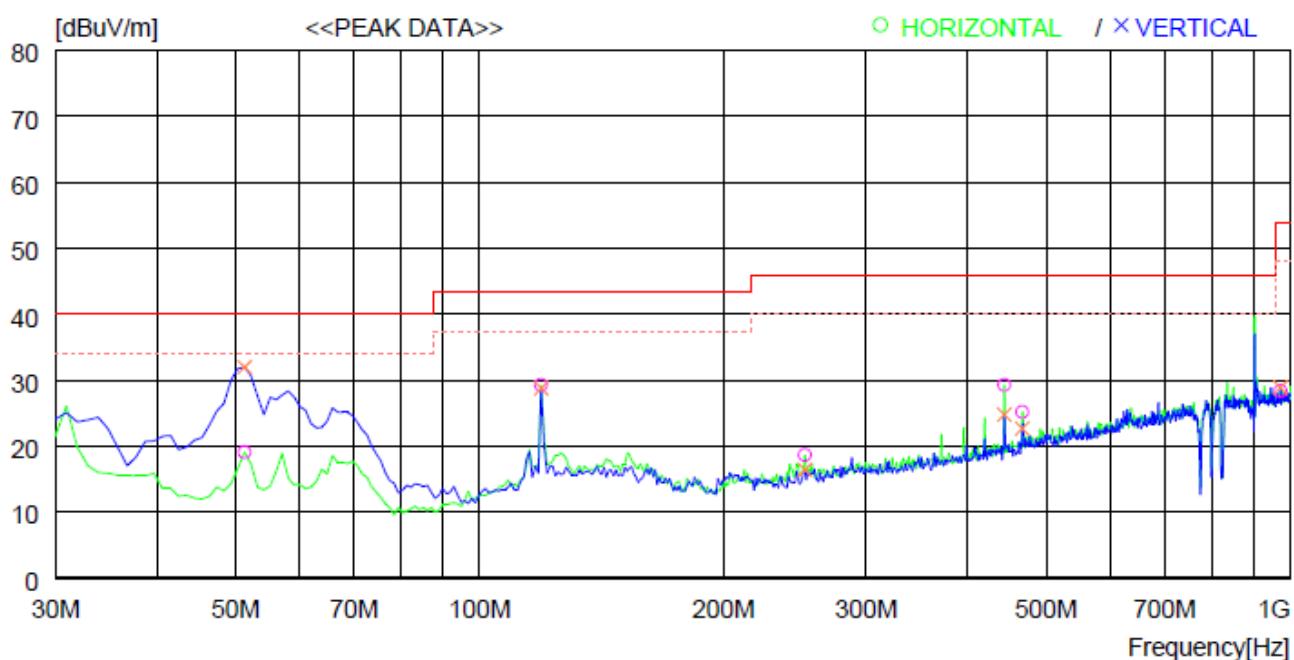
11.4.1 Test data for 30 MHz ~ 1 GHz

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : ACRO-S2

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)



No.	FREQ [MHz]	READING PEAK [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	51.340	36.8	13.0	1.4	32.1	19.1	40.0	20.9	400	0
2	119.240	40.8	18.5	2.0	32.0	29.3	43.5	14.2	200	64
3	252.130	30.0	17.9	2.8	32.0	18.7	46.0	27.3	100	255
4	444.191	36.0	21.8	3.7	32.2	29.3	46.0	16.7	100	156
5	467.471	31.4	22.3	3.7	32.2	25.2	46.0	20.8	300	238
6	972.827	26.0	28.2	5.5	31.3	28.4	54.0	25.6	200	304
----- Vertical -----										
7	51.340	49.7	13.0	1.4	32.1	32.0	40.0	8	100	296
8	119.240	40.3	18.5	2.0	32.0	28.8	43.5	14.7	100	352
9	252.130	27.7	17.9	2.8	32.0	16.4	46.0	29.6	200	6
10	444.191	31.5	21.8	3.7	32.2	24.8	46.0	21.2	100	0
11	467.471	28.9	22.3	3.7	32.2	22.7	46.0	23.3	100	227
12	972.827	26.5	28.2	5.5	31.3	28.9	54.0	25.1	100	172

11.4.2 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 (MHz)	Reading (dB μ V)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dB μ V/m)	Limits (dB μ V/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.									

11.4.3 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 ~ 10 GHz
- Measurement distance : 3 m
- Operating mode : Transmitting mode

Frequency (MHz)	Reading (dB μ V)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dB μ V/m)	Limits (dB μ V/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.									

12. CONDUCTED EMISSION TEST

12.1 Operating environment

Temperature : 24 °C

Relative humidity : 48 % R.H.

12.2 Test set-up

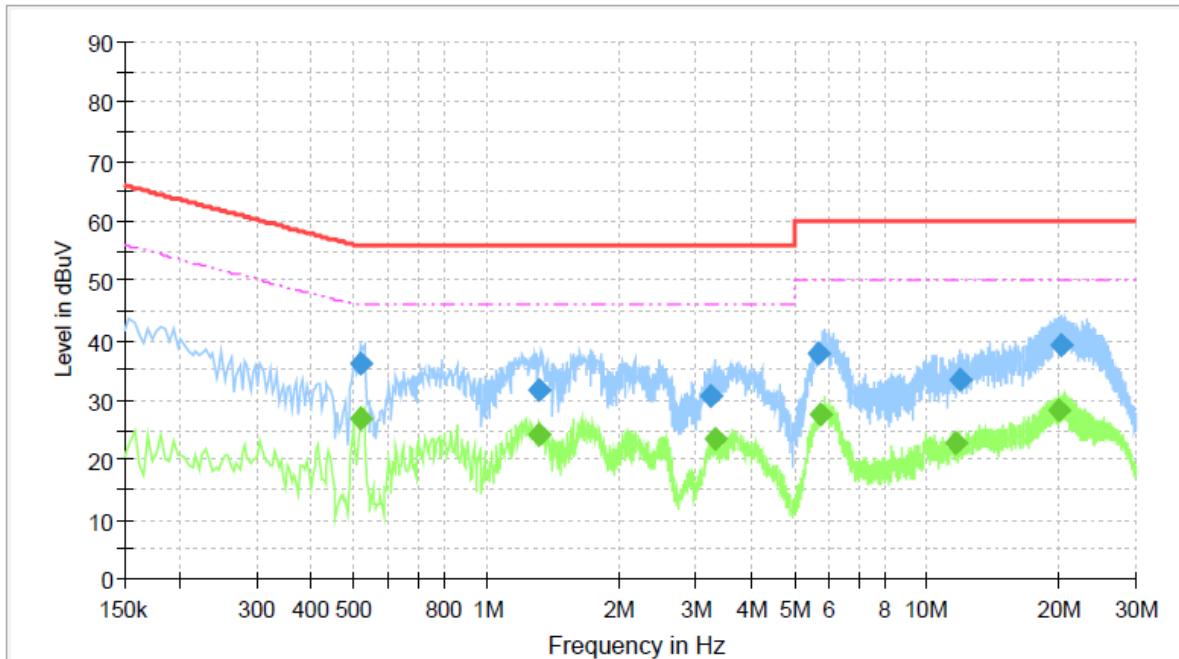
The EUT was placed on a wooden table, 0.8 m height above the floor. Power was fed to the EUT through a $50 \Omega / 50 \mu\text{H} + 5 \Omega$ Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

12.3 Test Date

August 23, 2021 ~ August 26, 2021

12.4 Test data

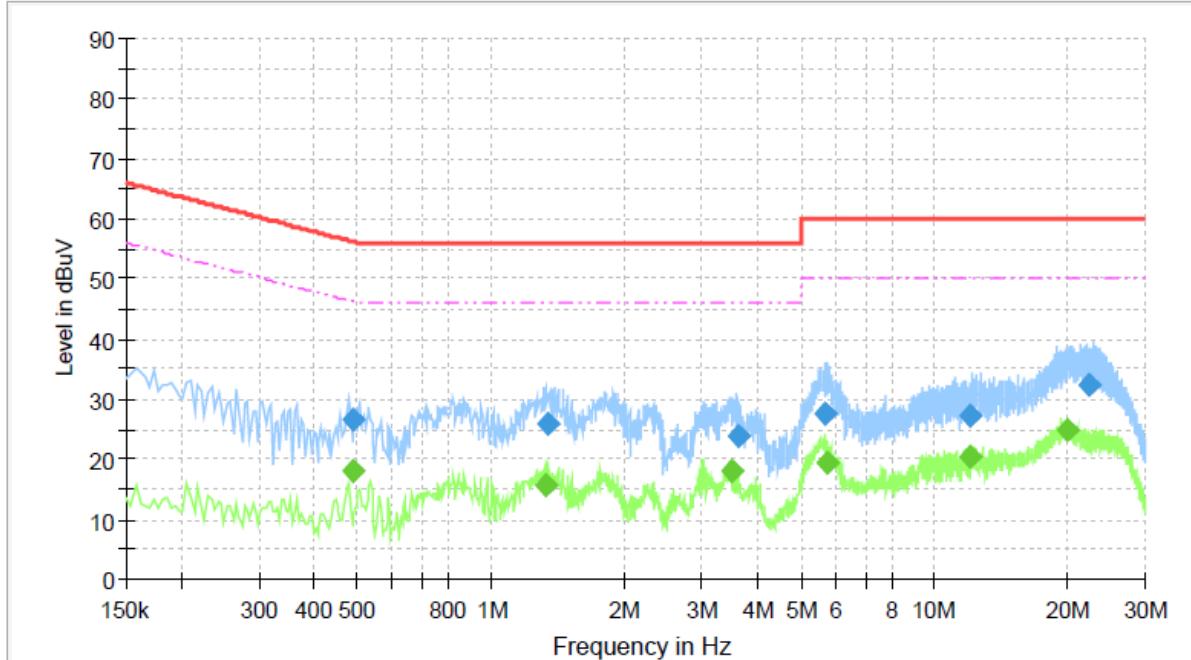
- . Operating mode : Transmitting mode
- . Channel : Low Channel
- . Resolution bandwidth : 9 kHz
- . Frequency range : 0.15 MHz ~ 30 MHz
- . Tested Line : HOT LINE



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.519	---	26.78	46.00	19.22	9.0	L1	9.93
0.519	36.29	---	56.00	19.71	9.0	L1	9.93
1.312	---	24.21	46.00	21.79	9.0	L1	9.98
1.320	31.78	---	56.00	24.22	9.0	L1	9.98
3.232	30.64	---	56.00	25.36	9.0	L1	10.03
3.316	---	23.53	46.00	22.47	9.0	L1	10.03
5.686	37.73	---	60.00	22.27	9.0	L1	10.10
5.749	---	27.49	50.00	22.51	9.0	L1	10.10
11.621	---	22.84	50.00	27.16	9.0	L1	10.40
11.892	33.35	---	60.00	26.65	9.0	L1	10.41
20.091	---	28.38	50.00	21.62	9.0	L1	10.64
20.150	39.12	---	60.00	20.88	9.0	L1	10.64

- . Operating mode : Transmitting mode
- . Channel : Low Channel
- . Resolution bandwidth : 9 kHz
- . Frequency range : 0.15 MHz ~ 30 MHz
- . Tested Line : NEUTRAL LINE



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.488	---	18.13	46.21	28.08	9.0	N	9.94
0.488	26.71	---	56.21	29.50	9.0	N	9.94
1.331	---	15.70	46.00	30.30	9.0	N	10.00
1.344	26.04	---	56.00	29.96	9.0	N	10.00
3.503	---	18.13	46.00	27.87	9.0	N	10.06
3.639	23.83	---	56.00	32.17	9.0	N	10.06
5.685	27.53	---	60.00	32.47	9.0	N	10.13
5.761	---	19.28	50.00	30.72	9.0	N	10.14
12.029	27.26	---	60.00	32.74	9.0	N	10.51
12.041	---	20.39	50.00	29.61	9.0	N	10.51
19.971	---	24.90	50.00	25.10	9.0	N	10.78
22.481	32.28	---	60.00	27.72	9.0	N	10.79

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.

13. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV40-N	Rohde & Schwarz	Signal Analyzer	101457	Apr. 16, 2021 (1Y)
ESW	Rohde & Schwarz	EMI Test Receiver	101851	Mar. 23, 2021 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	392756	Oct. 16, 2020 (1Y)
SCU18	Rohde & Schwarz	Signal Conditioning unit	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 RF Solutions	Hybrid Antenna	131316	Feb. 27, 2020 (2Y)
AH-118	Com-Power	Horn Antenna	10050061	Oct. 15, 2020 (1Y)
FMZB 1513	Schwarzbeck	Loop Antenna	1513-235	Mar. 24, 2020(2Y)
ESR3	Rohde & Schwarz	EMI Test Receiver	102602	Mar. 15, 2021 (1Y)
ESH3Z2	Rohde & Schwarz	PULSE LIMITER	357.8810.52	Mar. 15, 2021 (1Y)
NSLK8126	Schwarzbeck	LISN	8126-479	Oct. 19, 2020 (1Y)
WRCT 890/960-5/40-8SSK	Wainwright Instruments GmbH	Band Reject Filter	7	Jul. 14, 2021 (1Y)