

TEST REPORT

Applicant	TCL Technoly Electronics(Huizhou) Co., Ltd
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.

Manufacturer or Supplier	TCL Technoly Electronics(Huizhou) Co., Ltd
Address	Section 37, Zhongkai High-tech Development Zone, Huizhou City, Guang Dong Province, China, 516006.
Product	Sound bar System
Brand Name	VIZIO
Model	M21d-H8
Additional Model & Model Difference	M21d-H8R, see items 3.1
Date of tests	Mar. 16, 2020 ~ May 19, 2020 Jul. 10, 2020 ~ Jul. 17, 2020

the tests have been carried out according to the requirements of the following standards:

☒ **FCC Part 15, Subpart C, Section 15.247**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Lucas Chen Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	 Date: Jul. 22, 2020

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF200226N001-2	Original release	Jun. 04, 2020
RF200710N029	Based on the original report RF200226N001-2 changed the antenna(the antenna gain remain unchanged), turn off BLE permanently by software, it needed to be retest Radiated Emission item after engineer evaluated.	Jul. 22, 2020

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.247(d)& 15.209	Transmitter Radiated Emission	PASS	Meet the requirement of limit.

2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	9KHz ~ 30MHz	2.16dB
	30MHz ~ 1GMHz	3.60dB
	1GHz ~ 18GHz	4.82dB
	18GHz ~ 40GHz	5.00dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Sound bar System
MODEL NO.	M21d-H8
ADDITIONAL MODELS	M21d-H8R
FCC ID	ZVASB000022
POWER SUPPLY	AC 100-240V 50/60Hz
MODULATION TECHNOLOGY	FHSS
MODULATION TYPE	GFSK, $\pi/4$ DQPSK, 8DPSK
OPERATING FREQUENCY	2402MHz~2480MHz
NUMBER OF CHANNEL	79
PEAK OUTPUT POWER	5.321mW (Max. Measured)
ANTENNA TYPE	FPCB Antenna, 4.17dBi Gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	Refer to user's manual

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 200710N029) for detailed product photo.
4. Additional model M21d-H8R is identical with test model M21d-H8 except the model number for marketing purpose.

3.2 DESCRIPTION OF TEST MODES

79 channels are provided to this EUT:

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

3.2.1. CONFIGURATION OF SYSTEM UNDER TEST

Please see section 5 photograph of the test configuration for reference.

3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned on X axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE<1G	RE≥1G	PLC	APCM	
A	√	√	-	-	AC 120V/60Hz with BT link

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
APCM: Antenna Port Conducted Measurement

RADIATED EMISSION TEST (BELOW 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
A	0 to 78	39	FHSS	GFSK	DH5

For the test results, only the worst case was shown in test report.

RADIATED EMISSION TEST (ABOVE 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
A	0 to 78	0, 39, 78	FHSS	GFSK	DH5
	0 to 78	0, 39, 78	FHSS	8DPSK	3DH5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RE<1G	25deg. C, 55%RH	AC 120V 60Hz	Allen
RE≥1G	25deg. C, 55%RH	AC 120V 60Hz	Allen

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. Section 15.247

KDB 558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit without any other necessary accessory or support units.

4 TEST TYPES AND RESULTS

4.1. RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a). Other emissions shall be at least 20dB below the highest level of the desired power.

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 18,20	Mar. 17,21
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	May 14, 20	May 13, 21
Active Loop Antenna (9KHz -30MHz)	SCHWARZBECK	FMZB 1519B	1519B-045	May 28,20	May 27,21
Amplifier (9KHz -1GHz)	Burgeon	BPA-530	100210	Mar. 15,20	Mar. 14,21
Bilog Antenna (20MHz -2GHz)	Teseq	CBL 6111D	30643	May 30,20	May 29,21
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 30,20	May 29,21
Horn Antenna (18GHz -40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 10, 20	May 09, 21
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	May 23,20	May 22,21
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	May 09,20	May 08,21
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Mar. 04,20	Mar. 03,21
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	May 20,20	May 19,21

NOTES:

1. The test was performed in 966 Chamber.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GREGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 749762.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. For below 1GHz was used bilog antenna, and above 1GHz was used horn antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- g. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

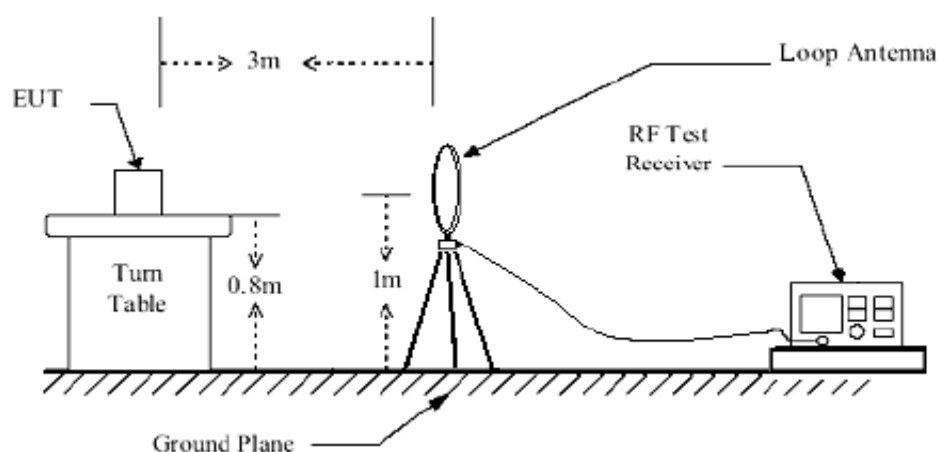
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

4.1.4 DEVIATION FROM TEST STANDARD

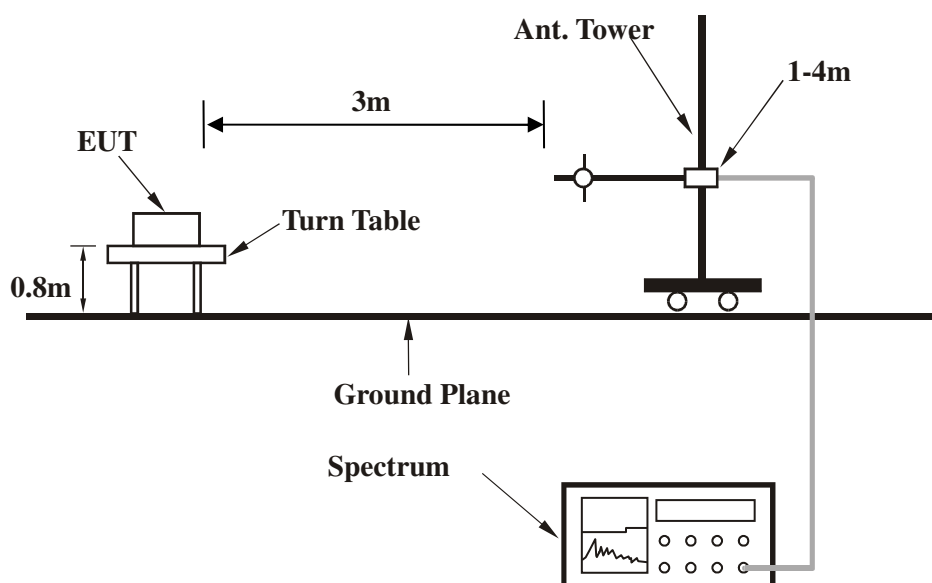
No deviation.

4.1.5 TEST SETUP

Below 30MHz test setup

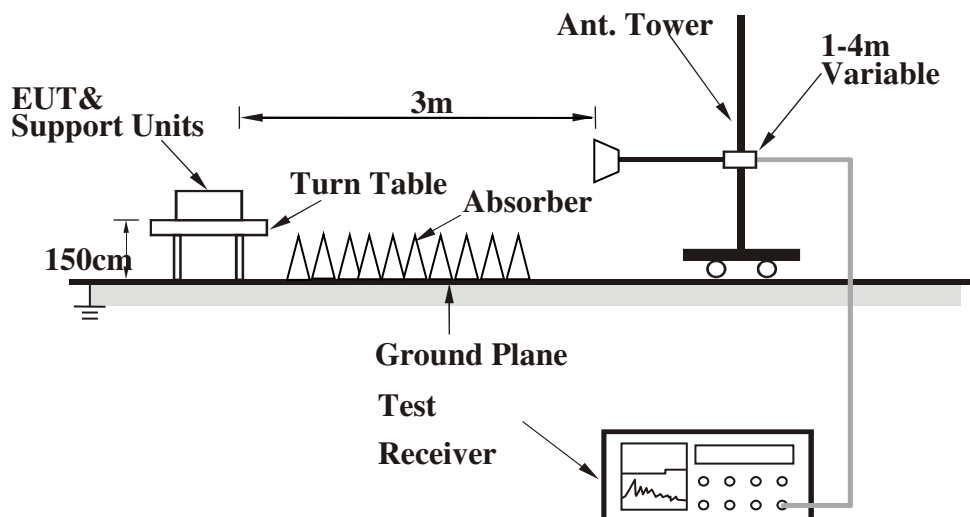


Below 1GHz test setup



Note: For the actual test configuration, please refer to the attached file (Test Setup Photo).

Above 1GHz test setup



Note: For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

- Set the EUT under full load condition and placed them on a testing table.
- Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.

4.1.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

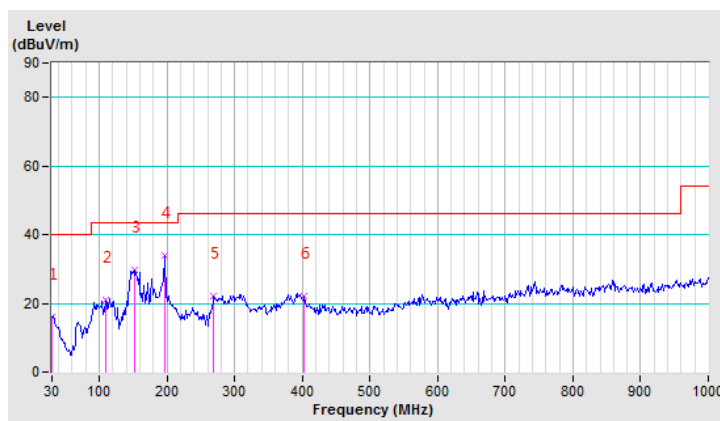
GFSK DH5

CHANNEL	Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTIO N FACTOR (dB/m)
1	30.00	15.93 QP	40.00	-24.07	1.00 H	215	28.07	-12.14
2	109.28	21.00 QP	43.50	-22.50	1.00 H	157	41.08	-20.08
3	152.80	29.76 QP	43.50	-13.74	1.00 H	36	47.30	-17.54
4	196.33	33.78 QP	43.50	-9.72	1.00 H	206	53.03	-19.25
5	269.39	22.00 QP	46.00	-24.00	1.00 H	87	37.60	-15.60
6	403.08	22.11 QP	46.00	-23.89	1.00 H	45	33.62	-11.51

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value

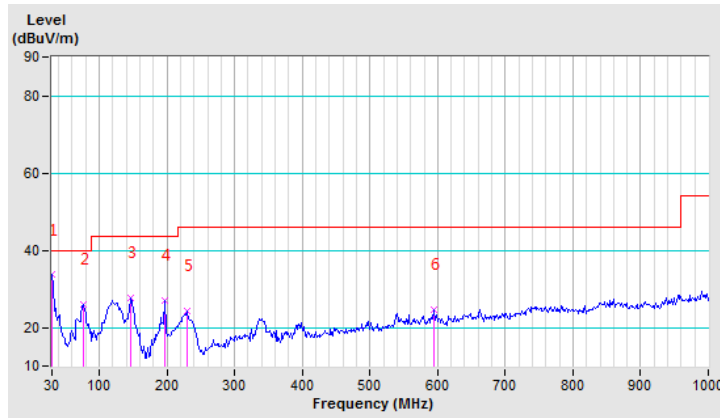


CHANNEL	Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTIO N FACTOR (dB/m)
1	30.00	33.59 QP	40.00	-6.41	1.00 V	227	45.73	-12.14
2	76.63	25.97 QP	40.00	-14.03	1.00 V	243	48.96	-22.99
3	146.59	27.67 QP	43.50	-15.83	1.00 V	252	45.67	-18.00
4	196.33	27.00 QP	43.50	-16.50	1.00 V	262	46.25	-19.25
5	230.53	24.35 QP	46.00	-21.65	1.00 V	271	42.97	-18.62
6	594.28	24.60 QP	46.00	-21.40	1.00 V	281	31.44	-6.84

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value



ABOVE 1GHz DATA

BT_GFSK

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	48.03 PK	74.00	-25.97	1.00 H	256	44.50	3.53
2	2390.00	37.20 AV	54.00	-16.80	1.00 H	256	33.67	3.53
3	*2402.00	102.00 PK			1.00 H	37	98.40	3.60
4	*2402.00	101.28 AV			1.00 H	37	97.68	3.60
5	4804.00	54.18 PK	74.00	-19.82	1.00 H	339	46.20	7.98
6	4804.00	44.20 AV	54.00	-9.80	1.00 H	339	36.22	7.98
7	#7206.00	56.93 PK	74.00	-17.07	1.00 H	67	43.46	13.47
8	#7206.00	45.96 AV	54.00	-8.04	1.00 H	67	32.49	13.47
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	46.97 PK	74.00	-27.03	1.00 V	20	43.44	3.53
2	2390.00	36.94 AV	54.00	-17.06	1.00 V	20	33.41	3.53
3	*2402.00	95.39 PK			1.00 V	96	91.79	3.60
4	*2402.00	94.19 AV			1.00 V	96	90.59	3.60
5	4804.00	52.50 PK	74.00	-21.50	1.00 V	246	44.52	7.98
6	4804.00	40.83 AV	54.00	-13.17	1.00 V	246	32.85	7.98
7	#7206.00	56.75 PK	74.00	-17.25	1.00 V	246	43.28	13.47
8	#7206.00	45.99 AV	54.00	-8.01	1.00 V	246	32.52	13.47

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2441.00	101.63 PK			1.00 H	345	97.84	3.79
2	*2441.00	100.98 AV			1.00 H	345	97.19	3.79
3	4882.00	52.65 PK	74.00	-21.35	1.00 H	345	44.40	8.25
4	4882.00	42.87 AV	54.00	-11.13	1.00 H	345	34.62	8.25
5	7323.00	57.05 PK	74.00	-16.95	1.00 H	195	43.22	13.83
6	7323.00	46.33 AV	54.00	-7.67	1.00 H	195	32.50	13.83
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2441.00	90.91 PK			1.00 V	89	87.12	3.79
2	*2441.00	90.19 AV			1.00 V	89	86.40	3.79
3	4882.00	52.20 PK	74.00	-21.80	1.00 V	89	43.95	8.25
4	4882.00	40.96 AV	54.00	-13.04	1.00 V	89	32.71	8.25
5	7323.00	57.91 PK	74.00	-16.09	1.00 V	224	44.08	13.83
6	7323.00	46.34 AV	54.00	-7.66	1.00 V	224	32.51	13.83

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency.

CHANNEL	TX Channel 78	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	96.03 PK			1.00 H	100	92.05	3.98
2	*2480.00	95.50 AV			1.00 H	100	91.52	3.98
3	2483.50	60.21 PK	74.00	-13.79	1.00 H	100	56.21	4.00
4	2483.50	49.95 AV	54.00	-4.05	1.00 H	100	45.95	4.00
5	4960.00	51.20 PK	74.00	-22.80	1.00 H	100	42.67	8.53
6	4960.00	37.99 AV	54.00	-16.01	1.00 H	100	29.46	8.53
7	7440.00	55.84 PK	74.00	-18.16	1.00 H	27	41.63	14.21
8	7440.00	41.81 AV	54.00	-12.19	1.00 H	27	27.60	14.21
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	86.67 PK			1.00 V	219	82.69	3.98
2	*2480.00	85.84 AV			1.00 V	219	81.86	3.98
3	2483.50	48.53 PK	74.00	-25.47	1.00 V	219	44.53	4.00
4	2483.50	41.31 AV	54.00	-12.69	1.00 V	219	37.31	4.00
5	4960.00	50.18 PK	74.00	-23.82	1.00 V	313	41.65	8.53
6	4960.00	36.47 AV	54.00	-17.53	1.00 V	313	27.94	8.53
7	7440.00	55.74 PK	74.00	-18.26	1.00 V	147	41.53	14.21
8	7440.00	41.71 AV	54.00	-12.29	1.00 V	147	27.50	14.21

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

BT_8DPSK

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	47.91 PK	74.00	-26.09	1.00 H	137	44.38	3.53
2	2390.00	37.24 AV	54.00	-16.76	1.00 H	137	33.71	3.53
3	*2402.00	101.86 PK			1.00 H	137	98.26	3.60
4	*2402.00	96.63 AV			1.00 H	137	93.03	3.60
5	4804.00	53.17 PK	74.00	-20.83	1.00 H	166	45.19	7.98
6	4804.00	42.08 AV	54.00	-11.92	1.00 H	166	34.10	7.98
7	#7206.00	56.97 PK	74.00	-17.03	1.00 H	118	43.50	13.47
8	#7206.00	46.05 AV	54.00	-7.95	1.00 H	118	32.58	13.47

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	47.26 PK	74.00	-26.74	1.00 V	117	43.73	3.53
2	2390.00	37.18 AV	54.00	-16.82	1.00 V	117	33.65	3.53
3	*2402.00	92.90 PK			1.00 V	117	89.30	3.60
4	*2402.00	87.85 AV			1.00 V	117	84.25	3.60
5	4804.00	52.48 PK	74.00	-21.52	1.00 V	135	44.50	7.98
6	4804.00	41.45 AV	54.00	-12.55	1.00 V	135	33.47	7.98
7	#7206.00	57.25 PK	74.00	-16.75	1.00 V	71	43.78	13.47
8	#7206.00	46.02 AV	54.00	-7.98	1.00 V	71	32.55	13.47

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2441.00	102.00 PK			1.00 H	157	98.21	3.79
2	*2441.00	97.60 AV			1.00 H	157	93.81	3.79
3	4882.00	55.74 PK	74.00	-18.26	1.00 H	199	47.49	8.25
4	4882.00	44.58 AV	54.00	-9.42	1.00 H	199	36.33	8.25
5	7323.00	57.53 PK	74.00	-16.47	1.00 H	11	43.70	13.83
6	7323.00	46.36 AV	54.00	-7.64	1.00 H	11	32.53	13.83
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2441.00	94.33 PK			1.00 V	203	90.54	3.79
2	*2441.00	89.62 AV			1.00 V	203	85.83	3.79
3	4882.00	52.35 PK	74.00	-21.65	1.00 V	313	44.10	8.25
4	4882.00	41.10 AV	54.00	-12.90	1.00 V	313	32.85	8.25
5	7323.00	57.35 PK	74.00	-16.65	1.00 V	55	43.52	13.83
6	7323.00	46.37 AV	54.00	-7.63	1.00 V	55	32.54	13.83

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 78	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	96.97 PK			1.00 H	156	92.99	3.98
2	*2480.00	92.14 AV			1.00 H	156	88.16	3.98
3	2483.50	58.28 PK	74.00	-15.72	1.00 H	156	54.28	4.00
4	2483.50	48.70 AV	54.00	-5.30	1.00 H	156	44.70	4.00
5	4960.00	52.18 PK	74.00	-21.82	1.00 H	136	43.65	8.53
6	4960.00	41.53 AV	54.00	-12.47	1.00 H	136	33.00	8.53
7	7440.00	57.34 PK	74.00	-16.66	1.00 H	38	43.13	14.21
8	7440.00	46.73 AV	54.00	-7.27	1.00 H	38	32.52	14.21
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	86.91 PK			1.00 V	220	82.93	3.98
2	*2480.00	82.22 AV			1.00 V	220	78.24	3.98
3	2483.50	50.38 PK	74.00	-23.62	1.00 V	220	46.38	4.00
4	2483.50	40.45 AV	54.00	-13.55	1.00 V	220	36.45	4.00
5	4960.00	52.34 PK	74.00	-21.66	1.00 V	344	43.81	8.53
6	4960.00	41.28 AV	54.00	-12.72	1.00 V	344	32.75	8.53
7	7440.00	57.59 PK	74.00	-16.41	1.00 V	33	43.38	14.21
8	7440.00	46.67 AV	54.00	-7.33	1.00 V	33	32.46	14.21

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency.

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

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