

Electromagnetic Emission

FCC MEASUREMENT REPORT

CERTIFICATION OF COMPLIANCE

FCC Part 15 Certification Measurement

PRODUCT : MONITOR
MODEL/TYPE NO : P278DPL / P278UPMAA7B 00005
FCC ID : PJIP278DPL
MULTIPLE MODEL : -
BRAND NAME : **HYUNDAI**
APPLICANT : HYUNDAI IBT CORP.
106, Apogongdan-gil, Gimcheon-si,
Gyeongsangbuk-do, 740-862, South Korea
Attn.: Young Sil, Yoon / Assistance Manager
MANUFACTURER : HYUNDAI IBT CORP.
106, Apogongdan-gil, Gimcheon-si,
Gyeongsangbuk-do, 740-862, South Korea
FCC CLASSIFICATION : JBP - Part 15 Class B Personal computers and peripherals
RULE PART(S) : FCC Part 15 Subpart B
TEST PROCEDURE : ANSI C63.4-2014
TEST REPORT No. : ETLE180110.0037
DATES OF TEST : February 09, 2018 to February 13, 2018
REPORT ISSUE DATE : February 27, 2018
TEST LABORATORY : ETL Inc. (FCC Designation Number: KR0022)

This MONITOR, Model P278DPL has been tested in accordance with the measurement procedures specified in ANSI C63.4-2014 at the ETL/EMC Test Laboratory and has been shown to be complied with the electromagnetic radiated emission limits specified in FCC Rule Part15 Subpart B:

I attest to the accuracy of data. All measurement herein was performed by me or was made under my supervision and is correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Prepared by:

Sang Yeol, Yun (Test Engineer)

February 27, 2018

Reviewed by:

Hyung Min, Choi (Chief Engineer)

February 27, 2018

ETL Inc.

Head office: #371-51, Gasan-dong, Geumcheon-gu, Seoul, 153-803, Korea

Open site: #499-1, Sagot-ri, Seosin-myeon, Hwaseong-si, Gyeonggi-do, 445-882, Korea

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The test report merely corresponds to the test sample(s).

This report shall not be reproduced, in whole or in part without the written approval of ETL Inc.

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FCC MEASUREMENT REPORT

Scope – Measurement and determination of electromagnetic emission(EME) of radio frequency devices including intentional radiators and/or unintentional radiators for compliance with the technical rules and regulations of the U.S Federal Communications Commission(FCC)

General Information

Applicant Name : HYUNDAI IBT CORP.

**Address : 106, Apogongdan-gil, Gimcheon-si,
Gyeongsangbuk-do, 740-862, South Korea**

Attention : Young Sil, Yoon / Assistance Manager

- **EUT Type :** MONITOR
- **Model Number :** P278DPL
- **S/N :** P278UPMAA7B 00005
- **Rule Part(s) :** FCC Part 15 Subpart B
- **Test Procedure :** ANSI C63.4-2014
- **FCC Classification :** JBP - Part 15 Class B Personal computers and peripherals
- **Dates of Tests :** February 09, 2018 to February 13, 2018
- **Environmental of Tests:**
Temperature: $(9.4 \pm 13.4) ^\circ\text{C}$
Humidity: $(51 \pm 12) \% \text{ R.H.}$
Atmospheric Pressure: $(101.6 \pm 0.6) \text{ kPa}$
- **Place of Tests :** ETL Inc. Testing Lab. (FCC Designation Number : KR0022)

Radiated Emission test 1;
#499-1, Sagot-ri, Seosin-myeon, Hwaseong-si,
Gyeonggi-do, 445-882, Korea

Radiated Emission test 2 and Conducted Emission test;
#371-51, Gasan-dong, Geumcheon-gu, Seoul, 153-803, Korea
- **Test Report No. :** ETLE180110.0037

1. INTRODUCTION

The measurement tests for radiated and conducted emission test were conducted at the ETL Inc. The site is constructed in conformance with the requirements of the ANSI C63.4-2014 and CISPR Publication 16. The ETL has site descriptions on file with the FCC for 3 m and 10 m site configurations. Detailed description of test facility was found to be in compliance with the requirements of Section 2.948 FCC Rules according to the ANSI C63.4-2014 and registered to the Federal Communications Commission (FCC Designation Number : KR0022).

The measurement procedure described in American National Standard for Method of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (ANSI C63.4-2014) was used in determining radiated and conducted emissions from the HYUNDAI IBT CORP., Model: P278DPL.

2. PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the MONITOR (model: P278DPL).

The model P278DPL is basic model that was tested.

2.2 General Specification

Item		Specification
LCD	Visible Screen Area	596.16 mm (H) x 335.34 mm (V)
	Pixel Pitch	155.25 um (H) x 155.25 um (V)
	Recommended Resolution	3 840 x 2 160 @ 60 Hz
	Maximum Visible Angle	178°/178° (H/V)
	Displayed Color	1.07 Billion
	Brightness	300 cd/m ²
	Contrast Ratio	1 000:1
	Response Time	12 ms
Input Signal	Horizontal Frequency	31 kHz – 133.5 kHz
	Vertical Frequency	56 Hz – 75 Hz
	Video Signal	DVI, HDMI 1 (60 Hz), HDMI 2 (30 Hz), Display port (60 Hz)
	Connector	29pin DVI, 19pin HDMI, 20pin Display port
Power	Power Consumption	45 W (Max), 32 W (Typ)
	Stand by Power	0.5 W
	Input Power (Adapter)	AC 110 V – 240 V; 50 Hz/60 Hz; 1.5 A
		DC 24 V; 5 A
Multimedia Speakers		Yes (Option), Headphone out (Option)
Operating Environment	Operation	Temperature: (25 ± 15) °C
		Humidity: (50 ± 30) % (non-condensing)
	Storage	Temperature: (20 ± 30) °C
		Humidity: (50 ± 40) % (non-condensing)
High Internal Frequency		Display clock → 554 MHz

3. DESCRIPTION OF TESTS

3.1 Conducted Emission Measurement

Conducted emissions measurements were made in accordance with section 11, "Measurement of Information Technology Equipment" of ANSI C63.4-2014. The measurements were performed over the frequency range of 0.15 MHz to 30 MHz using a 50 Ω /50 μ H LISN as the input transducer to a Spectrum Analyzer or a Test Receiver. The measurements were made with the detector set for "Peak" amplitude within a bandwidth of 9 kHz or for "quasi-peak" within a bandwidth of 9 kHz.

The line-conducted emission test is conducted inside a shielded anechoic chamber room with 1 m x 1.5 m x 0.8 m wooden table which is placed 40 cm away from the vertical wall and 1.5 m away from the side wall of the chamber room. Two LISN are bonded to the shielded room. The EUT is powered from the LISN and the support equipment is powered from the other LISN. Power to the LISNs are filtered by a noise cut power line filters. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and these supply lines will be connected to the LISN. Non-inductive bundling to a 1 m length shortened all interconnecting cables more than 1 m. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the EMI Test Receiver to determine the frequency producing the maximum emission from the EUT. The frequency producing the maximum level was reexamined using to set Quasi-Peak mode by manual, after scanned by automatic Peak mode from 0.15 MHz to 30 MHz. The bandwidth of the spectrum analyzer was set to 9 kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission.

Photographs of the worst-case emission can be seen in photographs of conducted emission test setup in Appendix B.

3.2 Radiated Emission Measurement

Radiated emission measurements were made in accordance with section 11, "Measurement of Information Technology Equipment" of ANSI C63.4-2014. The measurements were performed over the frequency range of 30 MHz to 40 GHz (or 5th harmonic of the highest frequency) in using antenna as the input transducer to a spectrum analyzer or a field intensity meter. The measurements below 1 GHz were made with the detector set for "Quasi-peak" within a bandwidth of 120 kHz. The measurements above 1 GHz were made with the detector set for "Peak and Average" within a bandwidth of 1 MHz.

Preliminary measurements were made at 3 m using broadband antennas, and spectrum analyzer to determined the frequency producing the maximum emission in shielded room. Appropriate precaution was taken to ensure that all emission from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth and height with respect to the antenna were noted for each frequency found. The spectrum was scanned from 30 MHz to 1 000 MHz using Log-Bicon antenna. Above 1 GHz, linearly polarized double ridge horn antennas were used. Final measurements were made open site or SVSWR chamber at 3 m. The test equipment was placed on a styrofoam table. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. Each frequency found during pre-scan measurements was re-examined by manual. The EUT, support equipment and interconnecting cables were re-configured to the set-up producing the maximum emission for the frequency and were placed on top of a 0.8 m high nonmetallic 1 m x 1.5 m table. The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each emission. The turntable containing the system was rotated; the antenna height was varied 1 m to 4 m and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by: varying the mode of operation to the EUT and/or support equipment and changing the polarity of the antenna, whichever determined the worst-case emission.

Photographs of the worst-case emission can be seen in Photographs of the worst-case emission test setup can be seen in Appendix B.

4. TEST CONDITION

4.1 Test Configuration

The device was configured for testing in a typical fashion (as a customer would normally use it). During the tests, the EUT and the supported equipments were installed to meet FCC requirement and operated in a manner which tends to maximize its emission level in a typical application.

4.2 EUT operation

The equipment under test was operated during the measurement under following conditions:

	Conditions	Remark
■	The EUT was connected as user's guide. And during the executed test program for EMI program with "H" pattern display on monitor. (BurnIn Test program)	DVI mode (worst case)
■	The EUT was connected as user's guide. And during the executed test program for EMI program with "H" pattern display on monitor. (BurnIn Test program)	HDMI mode
■	The EUT was connected as user's guide. And during the executed test program for EMI program with "H" pattern display on monitor. (BurnIn Test program)	DP mode

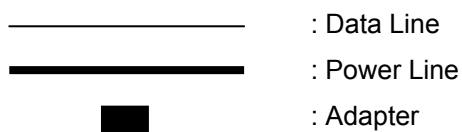
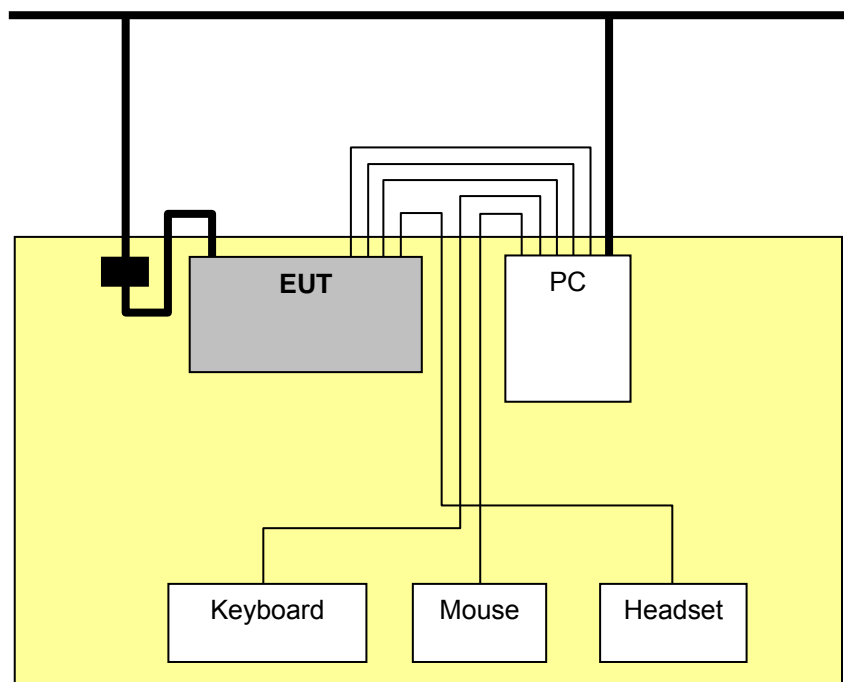
4.3 Support Equipment Used

Description	Model Name	Serial No.	Manufacturer	FCC
Adapter (for EUT)	WTS-2405W	13F	Welltronics	DoC
PC	NONE	NONE	NONE	-
Keyboard	SKP-800B	TAKG902798 M	Monterey International Corp	-
Mouse	SKP-800B	TAKG902791 A	Monterey International Corp	-
Headset	SHS-100V	NONE	Samsung Electronics Co., Ltd.	-

4.4 Type of Cables Used

Device from	Device to	Type of I/O port	Length [m]	Type of shield	Used ferrite core
EUT	PC	DVI	1.5	Shielded	O
EUT	PC	HDMI	1.5	Shielded	X
EUT	PC	DP	1.5	Shielded	X
EUT	Headset	Audio Out	1.5	Shielded	X
EUT	Adapter	DC Input	1.2	Shielded	O
PC	Keyboard	USB	1.2	Shielded	X
PC	Mouse	USB	1.2	Shielded	X
PC	Power socket	AC Input	1.5	Unshielded	X

4.5 The setup drawing(s)



5. TEST RESULTS

5.1 Summary of Test Results

The measurement results were obtained with the EUT tested in the conditions described in this report. Detailed measurement data and plots showing the maximum emission of the EUT are reported.

FCC Rule	Measurement Required	Result
15.107(a)	Conducted Emission Measurement	Passed by 4.08 dB
15.109(a)	Radiated Emission Measurement (Below 1 GHz)	Passed by 4.77 dB
15.109(a)	Radiated Emission Measurement (Above 1 GHz)	Passed by 11.36 dB

The data collected shows that the **HYUNDAI IBT CORP. / MONITOR / P278DPL** complied with technical requirements of above rules part 15.107(a) and 15.109(a) Class B Limits.

The equipment is not modified anything, mechanical or circuits to improve EMI status during a measurement. No EMI suppression device(s) was added and/or modified during testing.

5.2 Conducted Emissions Measurement

5.2.1 Conducted Emissions Data

EUT	MONITOR / P278DPL (S/N: P278UPMAA7B 00005)
Limit apply to	FCC Part 15.107(a) Class B
Test Date	February 13, 2018
Environmental of Test	(22.7 ± 0.1) °C, (39 ± 0) % R.H., (102.1 ± 0.0) kPa
Operating Condition	The EUT was connected as user's guide. And during the executed test program for EMI program with "H pattern" display on monitor. (BurnIn Test program) - DVI mode (worst case)
Result	Passed by 4.08 dB

Conducted Emission Test Data

The following data and graph shows the highest levels of conducted emissions on both polarizations of hot and neutral line.

Detector mode: CISPR Quasi-Peak mode (6 dB Bandwidth: 9 kHz)

NOTES:

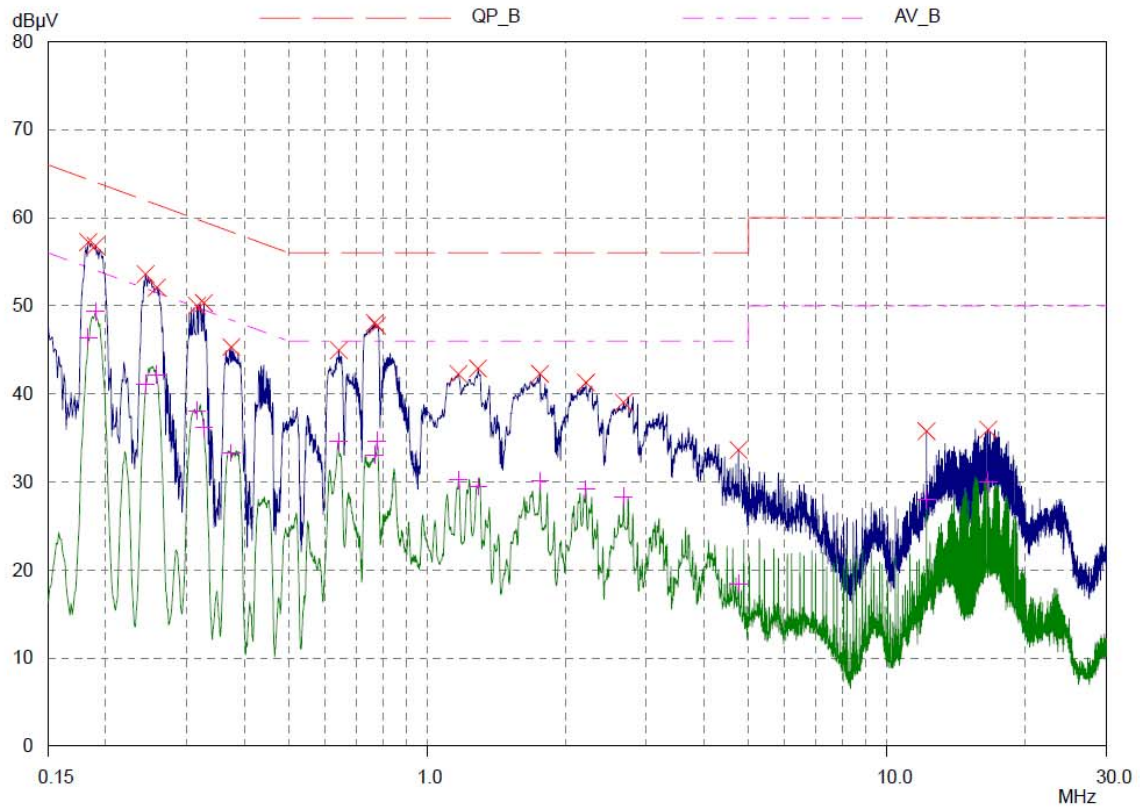
1. Please see the measured data and graph in next page.
2. The Level (Result) value was included the reading, LISN factor and cable loss.
3. Delta (Margin) value = Limit - Level (Result)
4. Measurement were performed at the AC Power Inlet in the frequency band of 150 kHz ~ 30 MHz according to the FCC Part 15.107(a) Class B.
5. If the Quasi-Peak limit is met when using a Peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the Quasi-Peak detector receiver is unnecessary.
6. If the average limit is met when using a Quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

Line: HOT

ETL EMC Laboratory
Conducted Emission Test Result

EUT: ETLE180110.0037
Manuf:
Op Cond:
Operator:
Test Spec:
Comment: HOT

Prescan Measurement:	Detectors:	X PK / + AV
	Meas Time:	see scan settings
	Peaks:	16
	Acc Margin:	10 dB



ETL EMC Laboratory

Conducted Emission Test Result

EUT: ETLE180110.0037

Manuf:

Op Cond:

Operator:

Test Spec:

Comment: HOT

Prescan Measurement: Detectors: X PK / + AV
Meas Time: see scan settings
Peaks: 16
Acc Margin: 10 dB

Peak Search Results

Frequency MHz	PK Level dB μ V	PK Limit dB μ V	PK Delta dB
0.183	57.22	64.35	7.13
0.19	56.83	64.04	7.21
0.244	53.59	61.96	8.37
0.258	52.06	61.50	9.44
0.316	49.99	59.81	9.82
0.327	50.32	59.53	9.21
0.375	45.29	58.39	13.10
0.642	44.96	56.00	11.04
0.769	48.07	56.00	7.93
0.778	47.73	56.00	8.27
1.17	42.25	56.00	13.75
1.29	42.87	56.00	13.13
1.76	42.26	56.00	13.74
2.215	41.28	56.00	14.72
2.675	39.03	56.00	16.97
4.755	33.62	56.00	22.38
12.19	35.77	60.00	24.23
16.61	35.93	60.00	24.07

Frequency MHz	AV Level dB μ V	AV Limit dB μ V	AV Delta dB
0.183	46.36	54.35	7.99
0.19	49.35	54.04	4.69
0.244	41.08	51.96	10.88
0.258	42.16	51.50	9.34
0.316	38.07	49.81	11.74
0.327	36.17	49.53	13.36
0.375	33.30	48.39	15.09
0.642	34.59	46.00	11.41
0.769	33.06	46.00	12.94
0.778	34.66	46.00	11.34

* limit exceeded

Peak Search Results (continued)

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
1.17	30.21	46.00	15.79
1.29	29.47	46.00	16.53
1.76	30.06	46.00	15.94
2.215	29.18	46.00	16.82
2.675	28.29	46.00	17.71
4.755	18.43	46.00	27.57
12.19	27.98	50.00	22.02
16.61	30.03	50.00	19.97

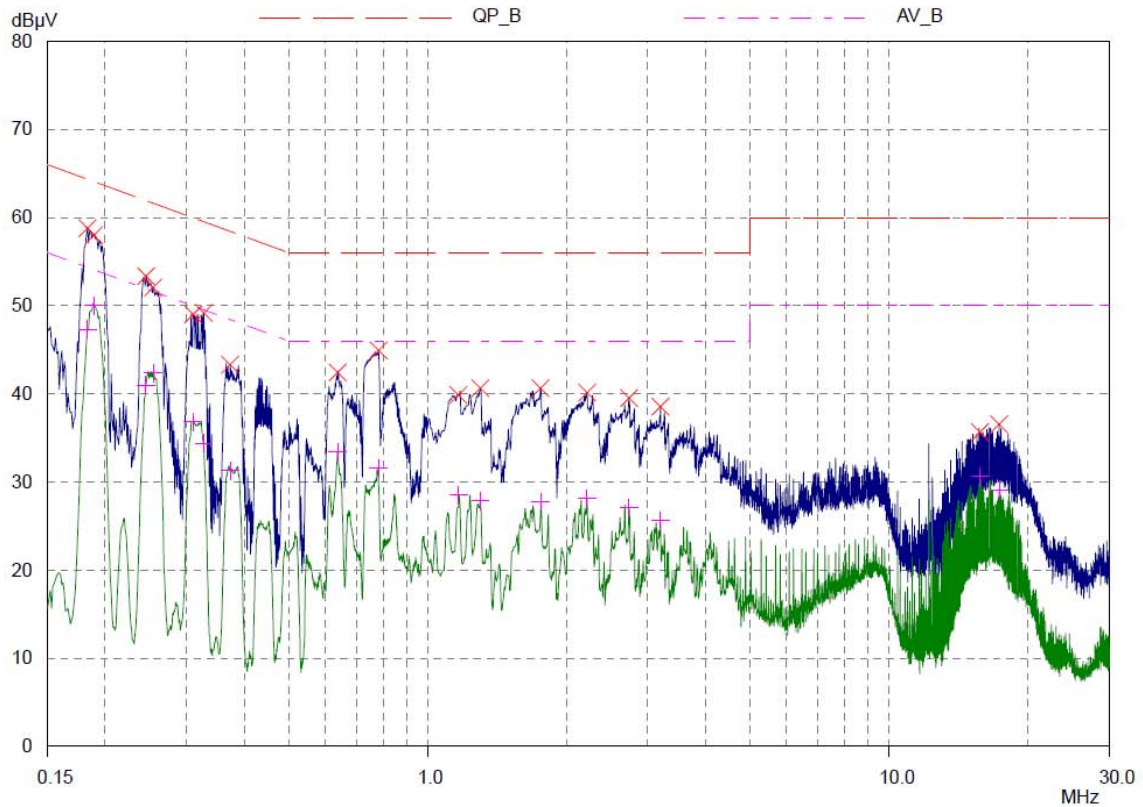
* limit exceeded

Line: Neutral

ETL EMC Laboratory Conducted Emission Test Result

EUT: ETLE180110.0037
Manuf:
Op Cond:
Operator:
Test Spec:
Comment: N

Prescan Measurement: Detectors: X PK / + AV
Meas Time: see scan settings
Peaks: 16
Acc Margin: 10 dB



ETL EMC Laboratory

Conducted Emission Test Result

EUT: ETLE180110.0037

Manuf:

Op Cond:

Operator:

Test Spec:

Comment: N

Prescan Measurement: Detectors: X PK / + AV
Meas Time: see scan settings
Peaks: 16
Acc Margin: 10 dB

Peak Search Results

Frequency MHz	PK Level dBμV	PK Limit dBμV	PK Delta dB
0.183	58.78	64.35	5.57
0.189	57.99	64.08	6.09
0.245	53.35	61.92	8.57
0.254	52.04	61.63	9.59
0.31	49.02	59.97	10.95
0.327	49.16	59.53	10.37
0.373	43.31	58.43	15.12
0.638	42.42	56.00	13.58
0.782	44.91	56.00	11.09
1.165	39.85	56.00	16.15
1.3	40.63	56.00	15.37
1.755	40.63	56.00	15.37
2.215	40.13	56.00	15.87
2.73	39.52	56.00	16.48
3.195	38.55	56.00	17.45
15.73	35.65	60.00	24.35
17.31	36.55	60.00	23.45

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
0.183	47.29	54.35	7.06
0.189	50.00	54.08	4.08
0.245	41.00	51.92	10.92
0.254	42.36	51.63	9.27
0.31	36.84	49.97	13.13
0.327	34.37	49.53	15.16
0.373	31.25	48.43	17.18
0.638	33.36	46.00	12.64
0.782	31.56	46.00	14.44
1.165	28.49	46.00	17.51
1.3	27.85	46.00	18.15

* limit exceeded

Peak Search Results (continued)

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
1.755	27.76	46.00	18.24
2.215	28.10	46.00	17.90
2.73	27.07	46.00	18.93
3.195	25.60	46.00	20.40
15.73	30.61	50.00	19.39
17.31	29.14	50.00	20.86

* limit exceeded

5.3 Radiated Emissions Measurement

5.3.1 Radiated Emissions Data

- Below 1 GHz

EUT	MONITOR / P278DPL (S/N: P278UPMAA7B 00005)
Limit apply to	FCC Part 15.109(a) Class B
Test Date	February 09, 2018
Environmental of Test	(-2.7 ± 1.3) °C, (61 ± 2) % R.H., (101.2 ± 0.1) kPa
Operating Condition	The EUT was connected as user's guide. And during the executed test program for EMI program with "H pattern" display on monitor. (BurnIn Test program) - DVI mode (worst case)
Result	Passed by 4.77 dB

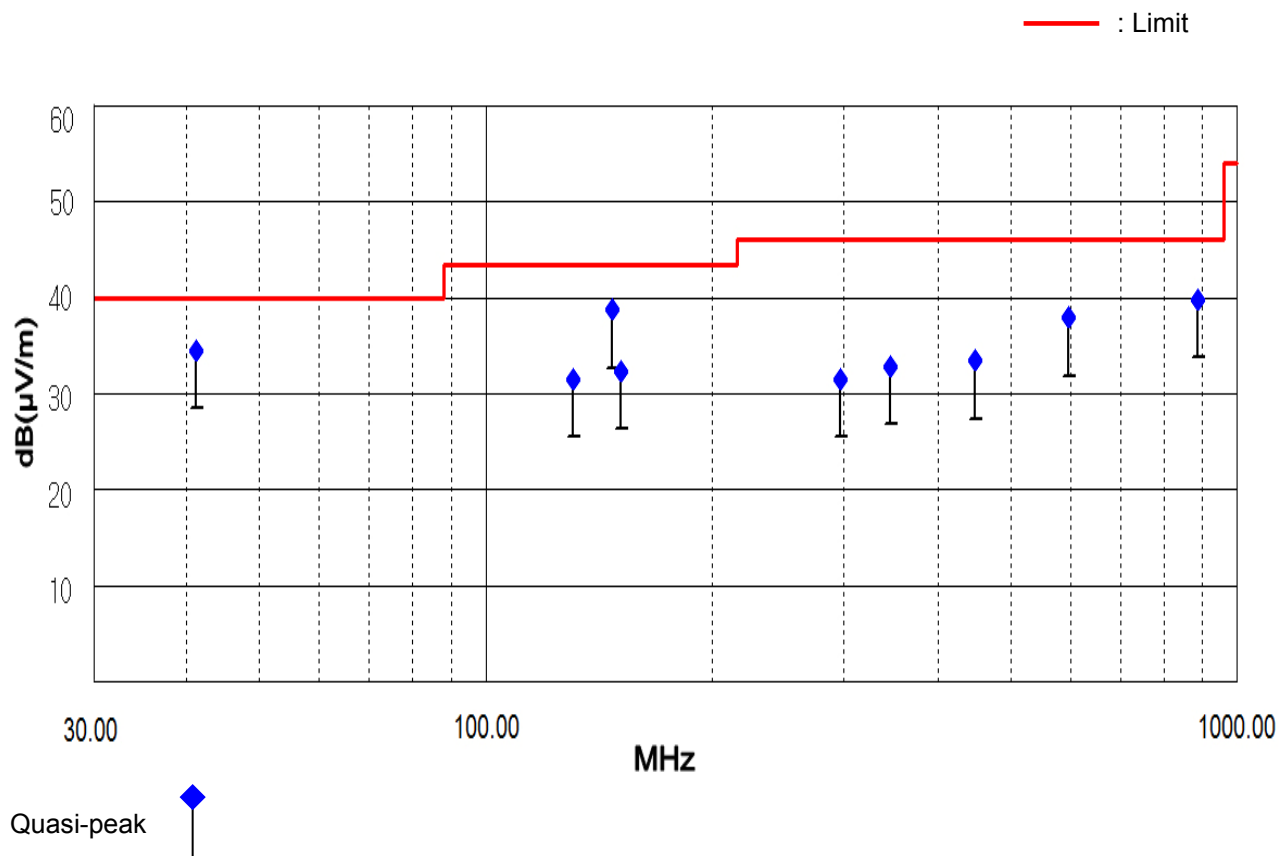
Radiated Emission Test Data

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.
Detector mode: CISPR Quasi-Peak mode (6 dB Bandwidth: 120 kHz)

Frequency [MHz]	Reading [dB(μV)]	Polarization (*H/**V)	Ant. Factor [dB/m]	Cable Loss [dB(μV)]	Height [cm]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]
41.24	54.56	V	12.51	-32.56	100	34.51	40.00	5.49
130.61	55.03	V	8.44	-32.01	121	31.46	43.50	12.04
147.55	62.66	V	7.92	-31.85	117	38.73	43.50	4.77
151.36	56.07	V	8.04	-31.82	123	32.29	43.50	11.21
296.73	49.59	V	13.64	-31.69	129	31.54	46.00	14.46
345.18	49.68	H	14.73	-31.55	141	32.86	46.00	13.14
448.42	47.78	H	16.79	-31.16	134	33.41	46.00	12.59
596.34	49.73	V	19.60	-31.44	145	37.89	46.00	8.11
887.05	45.00	V	23.59	-28.83	276	39.76	46.00	6.24

NOTES:

- * H : Horizontal polarization , ** V : Vertical polarization
- The cable loss value was included the Amp. Gain.
- Result = Reading + Antenna factor + Cable loss
- Margin value = Limit - Result
- The measurement was performed for the frequency range 30 MHz ~ 1 000 MHz according to the FCC Part 15.109(a) Class B.



- Above 1 GHz

EUT	MONITOR / P278DPL (S/N: P278UPMAA7B 00005)
Limit apply to	FCC Part 15.109(a) Class B
Test Date	February 09, 2018
Environmental of Test	(-2.4 ± 1.1) °C, (58 ± 2) % R.H., (101.1 ± 0.1) kPa
Operating Condition	The EUT was connected as user's guide. And during the executed test program for EMI program with "H pattern" display on monitor. (BurnIn Test program) - DVI mode (worst case)
Result	Passed by 11.36 dB

Radiated Emission Test Data

The following data and graph shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Detector mode: CISPR Peak mode, Average mode

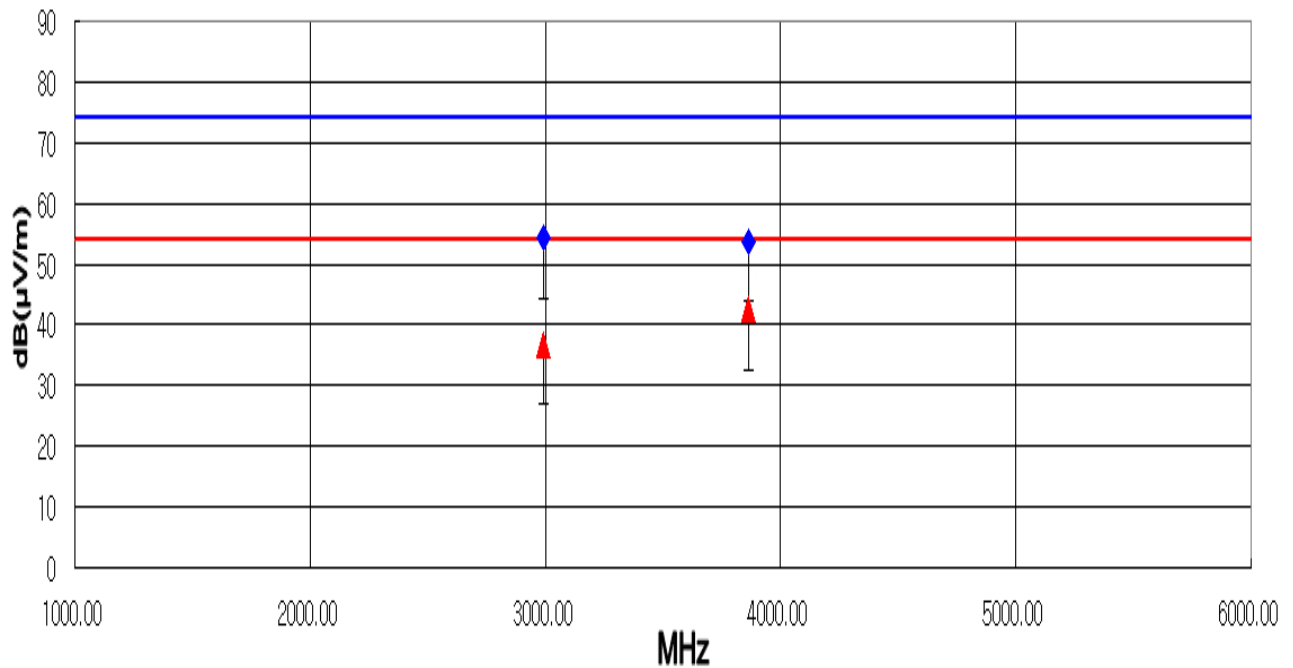
Frequency [MHz]	Reading [dB(μV)]		Polarity (*H/**V)	Height [cm]	Ant. Factor [dB/m]	Cable Loss [dB]	Result [dB(μV/m)]		Limit [dB(μV/m)]		Margin [dB]	
	Peak	Average					Peak	Average	Peak	Average	Peak	Average
1 215.31	67.27	45.51	V	100	24.99	-39.92	52.34	30.58	74.00	54.00	21.66	23.42
2 018.56	65.76	42.35	V	110	26.13	-38.72	53.17	29.76	74.00	54.00	20.83	24.24
2 227.60	65.39	47.97	V	110	26.82	-38.37	53.84	36.42	74.00	54.00	20.16	17.58
2 498.38	62.87	45.91	V	100	27.72	-37.92	52.67	35.71	74.00	54.00	21.33	18.29
2 994.26	62.83	45.37	H	120	28.40	-36.92	54.31	36.85	74.00	54.00	19.69	17.15
3 863.15	60.08	48.90	H	130	29.25	-35.51	53.82	42.64	74.00	54.00	20.18	11.36
4 156.43	61.20	43.09	V	120	29.86	-35.15	55.91	37.80	74.00	54.00	18.09	16.20
4 453.70	59.22	40.90	V	130	30.46	-34.82	54.86	36.54	74.00	54.00	19.14	17.46

NOTES:

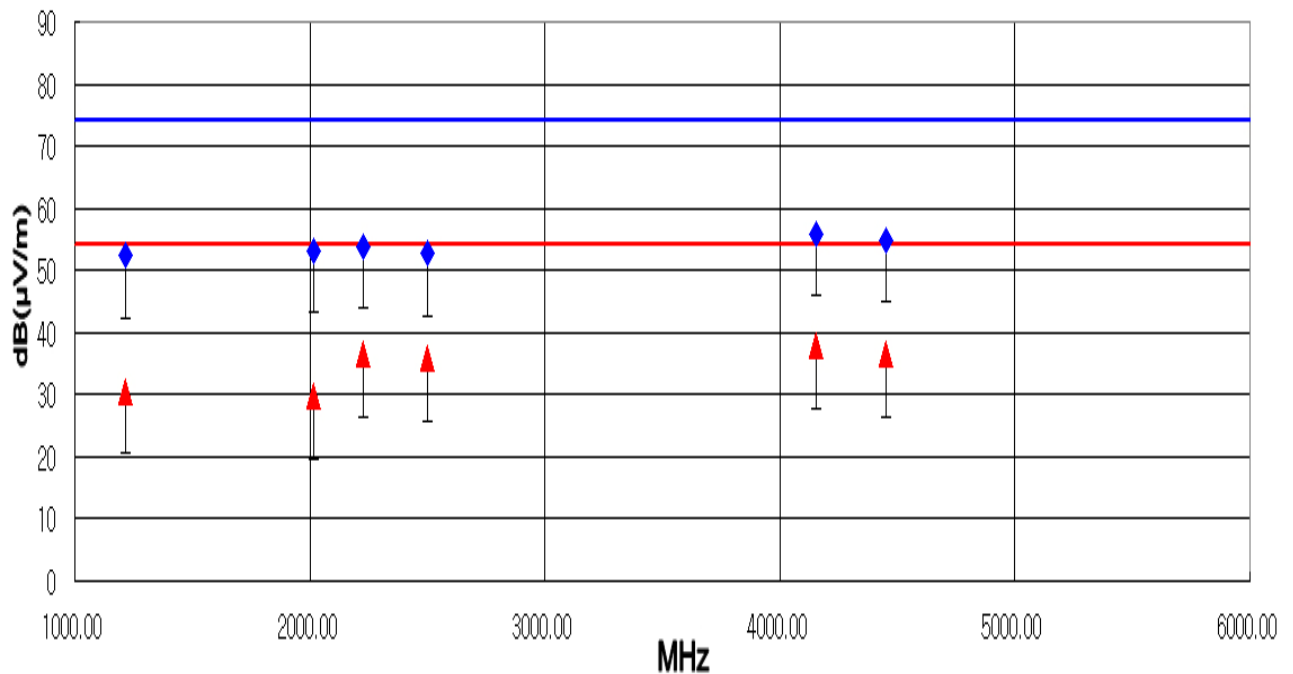
1. H : Horizontal polarization , V : Vertical polarization
2. The cable loss value was included the Amp. Gain.
3. Result = Reading + Antenna factor + Cable loss
4. Margin value = Limit - Result
5. The measurement was performed for the frequency range 1 GHz ~ 6 GHz according to FCC Part 15.109(a) Class B.
6. Upper frequency of measurement range: 5th harmonic of the highest frequency.



Polarization: Horizontal

Limit : — Peak
— Average



Polarization: Vertical



Peak  Average 

6. SAMPLE CALCULATION

Sample Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor.
The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF$$

Where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor - Preamplifier Factor

$$dB(\mu V) = 20 \log_{10} (\mu V) : \text{Equation}$$

$$dB(\mu V) = dBm + 107$$

Example : @ 147.55 MHz

$$\text{Class B Limit} = 43.50 \text{ dB}(\mu V/m)$$

$$\text{Reading} = 62.66 \text{ dB}(\mu V)$$

$$\text{Antenna Factor} + (\text{Cable Loss} - \text{Amp. Gain.}) = 7.92 + (-31.85) = -23.93 \text{ dB}(\mu V/m)$$

$$\text{Total} = 38.73 \text{ dB}(\mu V/m)$$

$$\text{Margin} = 43.50 - 38.73 = 4.77 \text{ dB}$$

$$= 4.77 \text{ dB below Limit}$$

7. List of test equipments used for measurements

	Test Equipment	Model	Mfg.	Serial No.	Cal. Date	Cal. Due Date
<input checked="" type="checkbox"/>	EMI Test Receiver	ESPI3	R&S	100478	17.08.31	18.08.31
<input checked="" type="checkbox"/>	EMI Test Receiver	ESCS30	R&S	100087	17.03.13	18.03.13
<input checked="" type="checkbox"/>	EMI Test Receiver	ESCI7	R&S	100851	17.08.31	18.08.31
<input checked="" type="checkbox"/>	Amplifier	BLWA 0310-1	BONN Elektronik	045672	18.01.31	19.01.31
<input checked="" type="checkbox"/>	Two-Line V-Network	ENV216	R&S	102055	17.03.13	18.03.13
<input checked="" type="checkbox"/>	Two-Line V-Network	ENV216	R&S	101715	17.03.14	18.03.14
<input checked="" type="checkbox"/>	Horn Antenna	BBHA 9120D	Schwarzbeck	277	16.10.12	18.10.12
<input checked="" type="checkbox"/>	Amplifier	TK-PA18	TESTEK.	120020	17.09.01	18.09.01
<input checked="" type="checkbox"/>	Bi-Log Antenna	VULB9163	Schwarzbeck	01069	17.02.17	19.02.17
<input checked="" type="checkbox"/>	Turn-Table	TT 1.35 SI	SES	-	N/A	N/A
<input checked="" type="checkbox"/>	Antenna Master	AM 4.5	SES	-	N/A	N/A