



Test report No: 2370318R-E3012110001-A

FCC TEST REPORT

Compliance with Canada Interference-Causing Equipment Standard ICES-003

Product Name	Celer, Celer-5G, Celer-LTE1, Celer-LTE2
Trademark	Windbit
Model and /or type reference	TLDPH00P1, TLDPH01P1, TLDPH02P1, TLDPH03P1
FCC ID	YUATLDPH00P1
Applicant's name / address	Teldat S.A. / Parque Tecnológico de Madrid c/ Isaac Newton, Tres Cantos, 28760 Spain
Manufacturer's name / address	Teldat S.A. / Parque Tecnológico de Madrid c/ Isaac Newton, Tres Cantos, 28760 Spain
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart B:2021, Class B ICES-003 Issue 7:2020, Class B
Verdict Summary	IN COMPLIANCE
Documented By (Senior Engineering Adm. Specialist / Anita Chou)	<i>Anita Chou</i>
Approved By (Director / Vincent Lin)	<i>Vincent Lin</i>
Date of Report	2023/07/11
Date of Issue	2024/03/22
Report No.	2370318R-E3012110001-A
Report Version	V1.0

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Product Photos: Please refer to the file: 2370318R-Product Photos

Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Report No.	Version	Description	Issued Date
2370318R-E3012110001-A	V1.0	Initial issue of report.	2024-03-22

1. General Information

1.1. EUT Description

Product Name	Celer, Celer-5G, Celer-LTE1, Celer-LTE2		
Trademark	Windbit		
Model No.	TLDPH00P1, TLDPH01P1, TLDPH02P1, TLDPH03P1		
EUT Max Frequency	5GHz		
EUT Rated Voltage	Input: 9-36 VDC, (12-24V nominal).		
Test Voltage	DC 12V By Adapter		
Difference of Models	Function and marketing purpose		
	<p>The difference between the 4 models except marketing purpose and also contains with different WWAN module as below. For testing purpose: The max configuration was used. For US, model TLDPH01P1 and TLDPH03P1 were tested, and for CE, model TLDPH01P1 and TLDPH02P1 were tested.</p>		
	Product name	Model name	Contains WWAN module
	Celer	TLDPH00P1	w/o WWAN module
	Celer-5G	TLDPH01P1	5G module (Model: RM520N-GL, FCC ID: XMR2022RM520NGL)
Celer-LTE1	TLDPH02P1	4G module (Model: EM06-E)	
Celer-LTE2	TLDPH03P1	4G module (Model: EM06-A, FCC ID:XMR201906EM06A)	

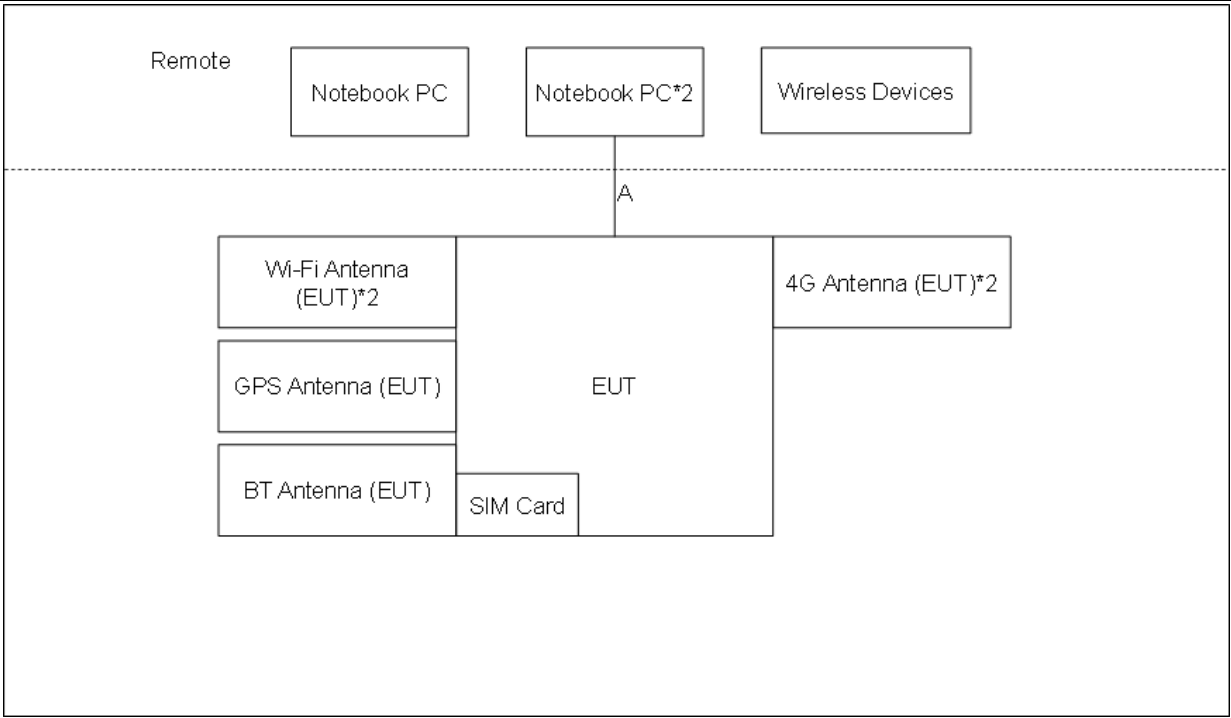
No	Accessories	Brand Name	Model Name	Remark
1	Molex cable	Dong Wei	DWE-EJ-382	1.8m

1.2. Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

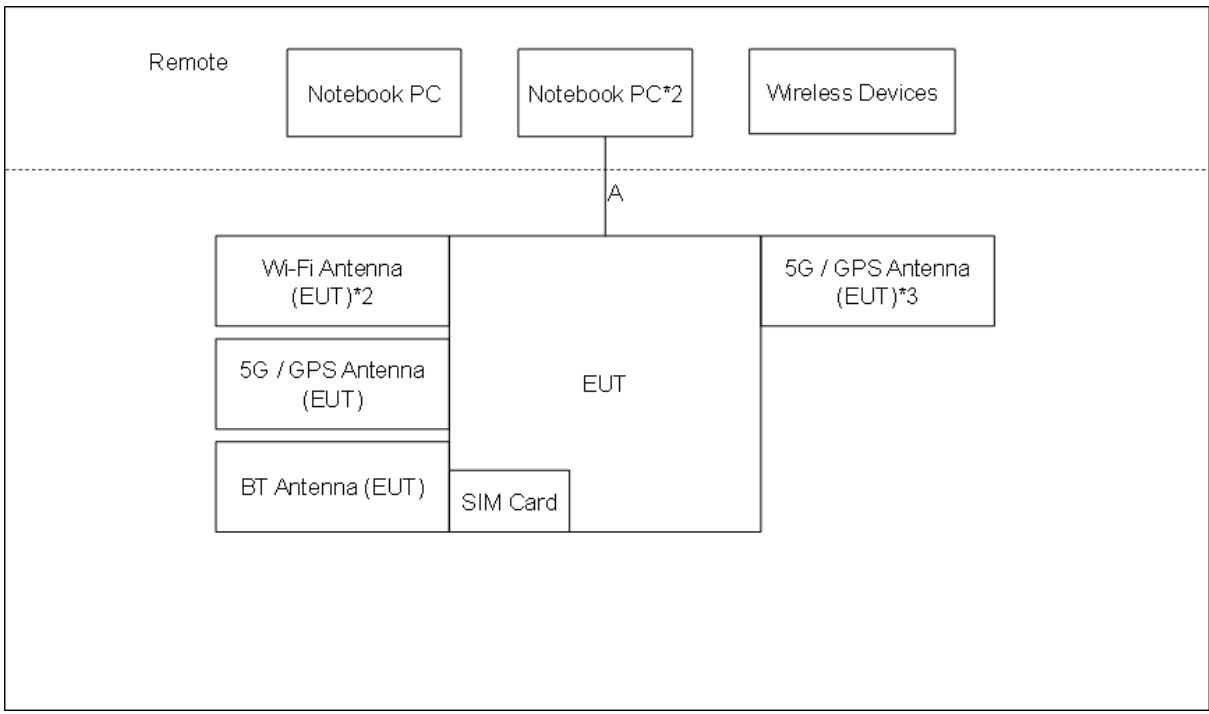
Pre-Test Mode	
Mode 1: 4G SKU, WWAN Module: EM06-A, Normal Operation(WiFi 2.4G + WiFi 5G + BT + GPS + WWAN LTE B4 Link, Sim Card Slot-1, DC 12V By Adapter: WA-36N12R	
Mode 2: 4G SKU, WWAN Module: EM06-A, Normal Operation(WiFi 2.4G + WiFi 5G + BT + GPS + WWAN LTE B4 Link, Sim Card Slot-2, DC 24V	
Mode 3: 5G SKU, WWAN Module: RM520N-GL, Normal Operation(WiFi 2.4G + WiFi 5G + BT + GPS + WWAN 5G NR n78, NSA Link, Sim Card Slot-1, DC 12V By Adapter: WA-36N12R	
Mode 4: 5G SKU, WWAN Module: RM520N-GL, Normal Operation(WiFi 2.4G + WiFi 5G + BT + GPS + WWAN 5G NR n78, SA Link, Sim Card Slot-2, DC 24V	
Mode 5: 4G SKU, WWAN Module: EM06-A, Normal Operation(WiFi 2.4G + WiFi 5G + BT + GPS + WWAN LTE B5 Link, Sim Card Slot-1, DC 12V By Adapter: WA-36N12R	
Mode 6: 5G SKU, WWAN Module: RM520N-GL, Normal Operation(WiFi 2.4G + WiFi 5G + BT + GPS + WWAN 5G NR n5, NSA Link, Sim Card Slot-1, DC 12V By Adapter: WA-36N12R	
Final Test Mode	
Emission	Mode 1 Mode 3

1.3. Configuration & Details of Tested System

Test Mode	Mode 1			
Connection Diagram				
				
Tested System Details				
Product	Manufacturer	Model No.	No.	Cable Type & Description
Notebook PC*2	Lenovo	TP00116D	A	LAN *2 , non-shielded 10m
Wi-Fi Antenna (EUT)*2	N/A	N/A		
GPS Antenna(EUT)	N/A	N/A		
4G Antenna(EUT)*2	N/A	N/A		
BT Antenna(EUT)	N/A	N/A		
Notebook PC	Lenovo	IdeaPad 3 14ALC6		
SIM Card	N/A	N/A		
Wireless Devices Inf.				
Product	Manufacturer	Model No.		
Base Station	R&S	CMW500		
UXM 5G Wireless Test Platform	Keysight	E7515B		
GPS Simulator	Oroila	GSG-5		
Mobile Phone	Realme	RMX3235		

Note:

- Use Full system setup configuration determines Worst-Case Mode.
- Use 2dB law program determines Max. Cable Configuration and Worst-Case Mode.
- Radiated emission item test: Performed using the Horn Antenna 3dB Beamwidth to 3m from the EUT size sufficient to cover the procedure.
- Radiated emission item test: Performed using the Horn Antenna 3dB Beamwidth non 3m distance sufficient to cover the size of the EUT program.

Test Mode	Mode 3			
Connection Diagram				
				
Tested System Details				
Product	Manufacturer	Model No.	No.	Cable Type & Description
Notebook PC*2	Lenovo	TP00116D	A	LAN *2 , non-shielded 10m
Wi-Fi Antenna (EUT) *2	N/A	N/A		
5G / GPS Antenna(EUT) *4	N/A	N/A		
BT Antenna(EUT)	N/A	N/A		
Notebook PC	Lenovo	IdeaPad 3 14ALC6		
SIM Card	N/A	N/A		
Wireless Devices Inf.				
Product	Manufacturer	Model No.		
Base Station	R&S	CMW500		
UXM 5G Wireless Test Platform	Keysight	E7515B		
GPS Simulator	Oroila	GSG-5		
Mobile Phone	Realme	RMX3235		

Note:

- Use Full system setup configuration determines Worst-Case Mode.
- Use 2dB law program determines Max. Cable Configuration and Worst-Case Mode.
- Radiated emission item test: Performed using the Horn Antenna 3dB Beamwidth to 3m from the EUT size sufficient to cover the procedure.
- Radiated emission item test: Performed using the Horn Antenna 3dB Beamwidth non 3m distance sufficient to cover the size of the EUT program.

1.4. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.3.
2	Turn on the power of all equipment.
3	All the features of the EUT operation normally.

2. Technical Test

2.1. Summary of Test Result

- No deviations from the test standards
 Deviations from the test standards as below description:

Emission				
Performed Item	Normative References	Test Performed	Test Site	Verdict
Conducted Emission	FCC CFR Title 47 Part 15 Subpart B:2021, Class B ICES-003 Issue 7:2020, Class B CISPR 22:2008, ANSI C63.4-2014 ANSI C63.4a-2017, CAN/CSA-CISPR 32:17	Yes	HY-SR09	Pass
Radiated Emission	FCC CFR Title 47 Part 15 Subpart B:2021, Class B ICES-003 Issue 7:2020, Class B CISPR 22:2008, ANSI C63.4-2014 ANSI C63.4a-2017, CAN/CSA-CISPR 32:17	Yes	HY-CB05	Pass

Note:

1. Test Site information refers to test Laboratory Information.

USA	FCC Registration Number: TW1134
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Site Description	Accredited by TAF
	Accredited Number: 3023

Test Laboratory:	DEKRA Testing and Certification Co., Ltd. Linkou Laboratory
Address:	No.5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan, R.O.C
Phone number:	+886-2-8601-3788
Fax number:	+886-2-8601-3789
Test Site	
LK:	No.5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan, R.O.C
FS:	No.6, Lane 75, Wenlin St., Linkou Dist., New Taipei City, 244017, Taiwan, R.O.C
HY:	No.26, Huaya 1 st Rd., Guishan Dist., Taoyuan City 333411, Taiwan, R.O.C

2.2. List of Test Equipment

Conducted Emission / HY-SR09

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Due Date
EMI TEST RECEIVER	R&S	ESR3	102917	2022/12/16	2023/12/15
V-LISN	Schwarzbeck	NNLK 8122	00164	2023/3/24	2024/3/23
Two-Line V-Network	R&S	ENV216	101492	2022/12/21	2023/12/20
Impedance Stabilization Network	TESEQ	ISN T800	61676	2023/6/17	2024/6/16
Impedance Stabilization Network	TESEQ	ISN T8-Cat6	61286	2023/6/15	2024/6/14
Impedance Stabilization Network	TESEQ	ISN ST08	61833	2023/6/19	2024/6/18
Coaxial Cable	SUHNER	RG 400	HC001-RG	2023/5/31	2024/5/30

Note : ISN T800 for LAN 10Mbps to 1Gbps, T8-Cat6 for LAN above 1Gbps, ST08 for Shielded LAN

Test Software version : E3 210616 Dekra, V9(C) Audix

Note:Test Receiver Detector:Quasipeak and Average Bandwidth:9kHz

Radiated Emission / HY-CB05

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Due Date
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	1398	2023/6/5	2024/6/4
EMI Test Receiver	R&S	ESR7	102502	2023/3/28	2024/3/27
Coaxial Cable	ROSNOL	R-Test EW0630	HC003R	2023/6/19	2024/6/18
Coaxial Cable	ROSNOL	R-Test EW0630	HC005R	2023/6/19	2024/6/18
Preamplifier	SGH	SGH0301-P	20220411-1	2023/6/26	2024/6/25
NSA	DEKRA	N/A	N/A	2022/9/1	2023/8/31

Test Software version : E3 210616 Dekra, V9(C) Audix

Note:Test Receiver Detector:Quasipeak Bandwidth:120kHz

Radiated Emission (Above 1GHz) / HY-CB05

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Due Date
Double Ridged Guide Horn Antenna	ETS-Lindgren	3117	00240055	2022/10/27	2023/10/26
Horn Antenna	COM-POWER	AH-840	101088	2021/9/27	2023/9/26
EMI Test Receiver	R&S	ESR7	102502	2023/3/28	2024/3/27
Signal Analyzer	R&S	FSV3044	101245	2023/4/17	2024/4/16
Coaxial Cable	ROSNOL	R-Test EW0630	HC003R	2023/6/19	2024/6/18
Coaxial Cable	ROSNOL	R-Test EW0630	HC005R	2023/6/19	2024/6/18
Coaxial Cable	ROSNOL	R-Test EW0630	HC004R	2023/6/19	2024/6/18
Preamplifier	SGH	SGH118-HS	20220411-2	2023/4/26	2024/4/25
Microwave Preamplifier with cable	SGH	SGH184	20220411-3	2023/4/26	2024/4/25
VSWR	DEKRA	N/A	N/A	2022/10/4	2023/10/3

Test Software version : E3 210616 Dekra, V9(C) Audix

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 3.47 dB.

Radiated Emission(Under 1GHz)

The measurement uncertainty is evaluated as ± 4.17 dB.

Radiated Emission(Above 1GHz)

The measurement uncertainty is evaluated as ± 4.22 dB.

2.4. Test Environment

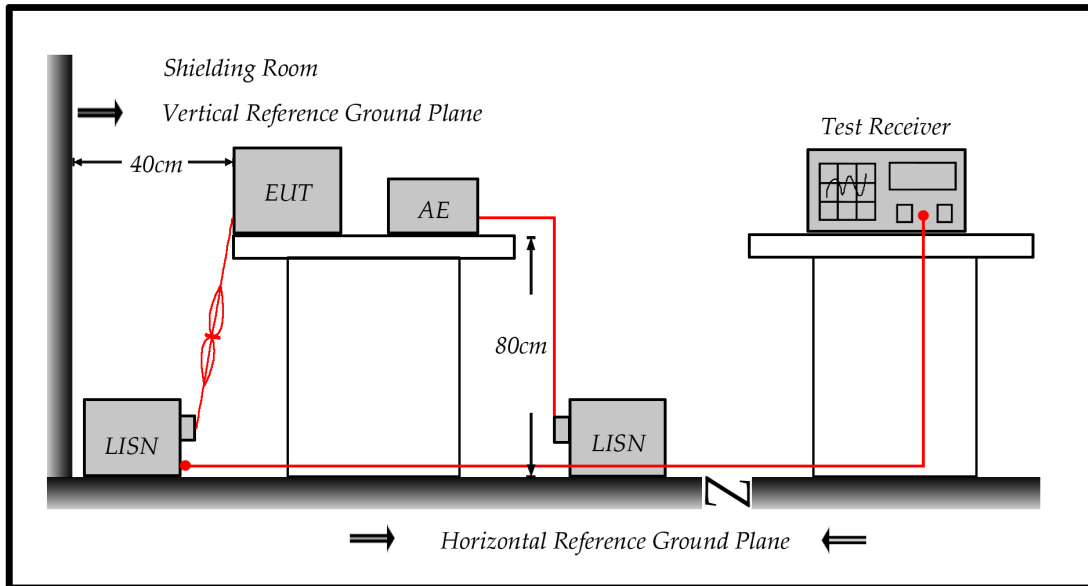
Performed Item	Items	Required
Conducted Emission	Temperature (°C)	10-40
	Humidity (%RH)	10-90
Radiated Emission	Temperature (°C)	10-40
	Humidity (%RH)	10-90

3. Conducted Emission

3.1. Test Specification

According to Standard : FCC Part 15 Subpart B & ICES-003 Issue 7

3.2. Test Setup



3.3. Limit

Conducted emissions limits (AC mains power terminals)				
Frequency range (MHz)	Class A Quasi-peak (dBuV)	Class A Average (dBuV)	Class B Quasi-peak (dBuV)	Class B Average (dBuV)
0.15 – 0.5	79	66	66 to 56	56 to 46
0.5 – 5	73	60	56	46
5 – 30	73	60	60	50

Note:

- The more stringent limit applies at transition frequencies.
- The limit level in dBuV decreases linearly with the logarithm of frequency

3.4. Test Procedure

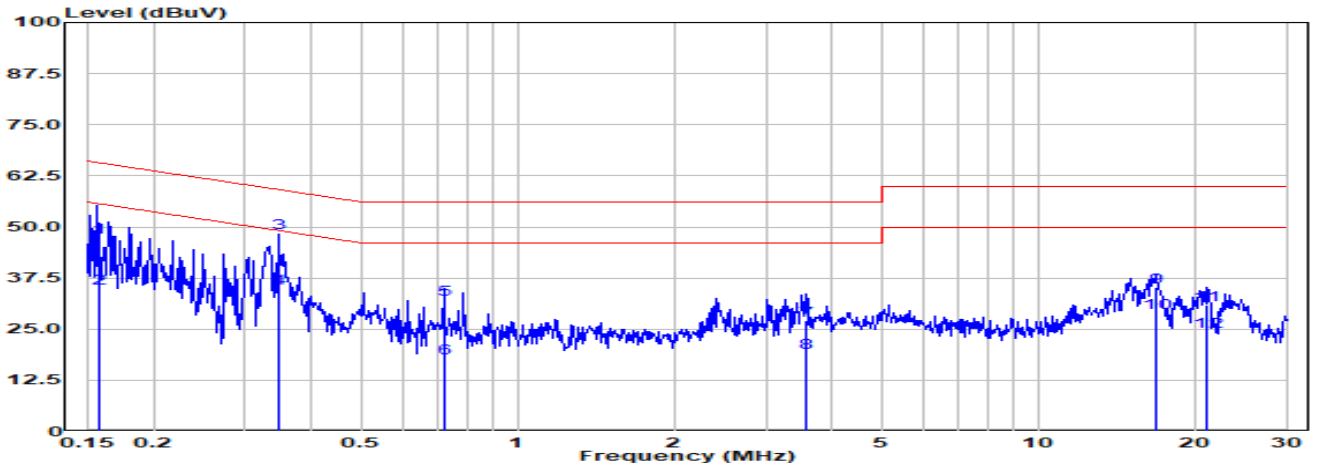
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Test Result

Model No	TLDPH01P1	Site	HY-SR09
Test Voltage	DC 12V By Adapter	Test Date	2023-08-08
Test Mode	Mode1	Engineer	Leto Chen
Phase	Line	Temperature (°C)	25
Test Condition	--	Humidity (%RH)	66

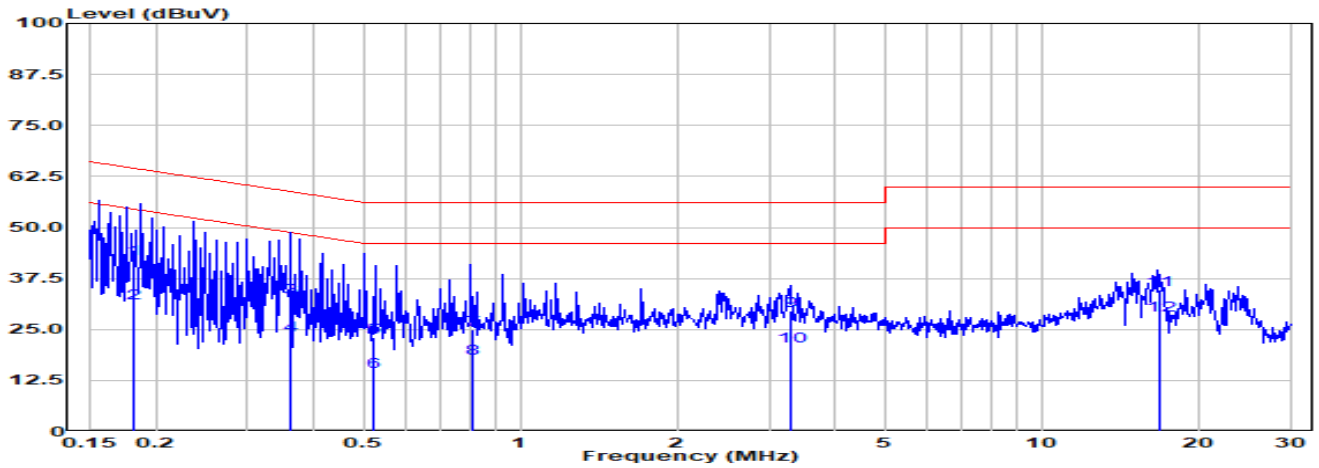


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.156	47.30	65.65	-18.35	37.66	9.64	QP
2	0.156	34.98	55.65	-20.67	25.34	9.64	Average
3	0.349	48.58	58.99	-10.41	38.93	9.64	QP
4	0.349	35.02	48.99	-13.97	25.38	9.64	Average
5	0.727	32.26	56.00	-23.74	22.60	9.67	QP
6	0.727	17.81	46.00	-28.19	8.15	9.67	Average
7	3.591	26.99	56.00	-29.01	17.20	9.78	QP
8	3.591	19.13	46.00	-26.87	9.34	9.78	Average
9	16.850	35.22	60.00	-24.78	25.13	10.09	QP
10	16.850	29.08	50.00	-20.92	18.99	10.09	Average
11	21.123	31.02	60.00	-28.98	20.89	10.13	QP
12	21.123	24.41	50.00	-25.59	14.28	10.13	Average

Remark:

1. "" means this data is the worst margin; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Emission Level-Limit

Model No	TLDPH01P1	Site	HY-SR09
Test Voltage	DC 12V By Adapter	Test Date	2023-08-08
Test Mode	Mode1	Engineer	Leto Chen
Phase	Neutral	Temperature (°C)	25
Test Condition	--	Humidity (%RH)	66

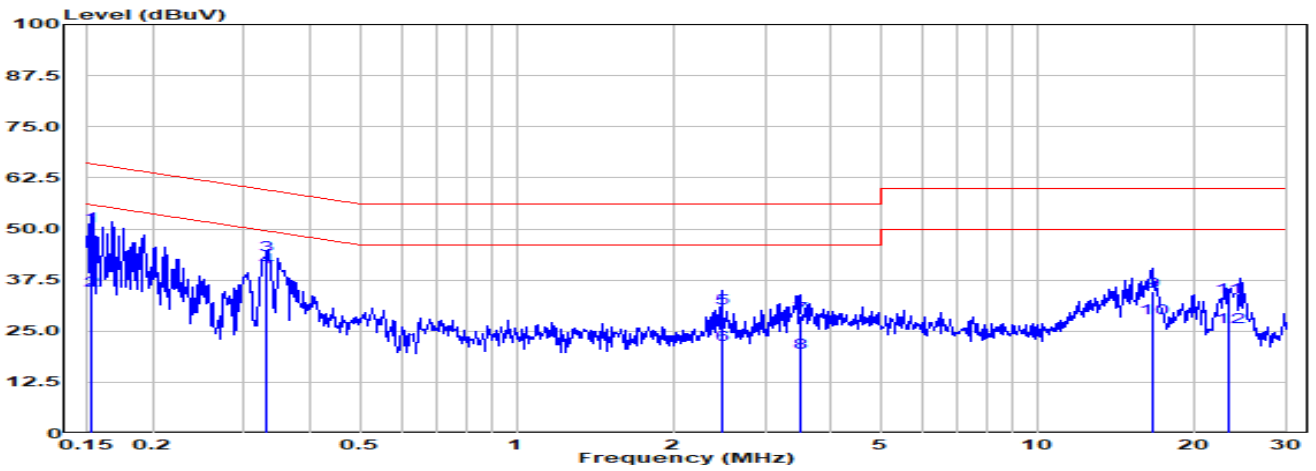


No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.182	42.41	64.41	-22.01	32.76	9.65	QP
2	0.182	31.35	54.41	-23.06	21.70	9.65	Average
3	0.362	32.73	58.68	-25.95	23.08	9.65	QP
4	0.362	23.54	48.68	-25.13	13.89	9.65	Average
5	0.522	23.05	56.00	-32.95	13.39	9.66	QP
6	0.522	14.67	46.00	-31.33	5.01	9.66	Average
7	0.811	24.94	56.00	-31.06	15.27	9.67	QP
8	0.811	18.02	46.00	-27.98	8.35	9.67	Average
9	3.317	29.64	56.00	-26.36	19.86	9.78	QP
10	3.317	20.79	46.00	-25.21	11.01	9.78	Average
11	16.805	34.59	60.00	-25.41	24.43	10.15	QP
12	16.805	28.44	50.00	-21.56	18.28	10.15	Average

Remark:

1. "" means this data is the worst margin;"!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Emission Level-Limit

Model No	TLDPH01P1	Site	HY-SR09
Test Voltage	DC 12V By Adapter	Test Date	2023-08-08
Test Mode	Mode 3	Engineer	Leto Chen
Phase	Line	Temperature (°C)	25
Test Condition	--	Humidity (%RH)	66

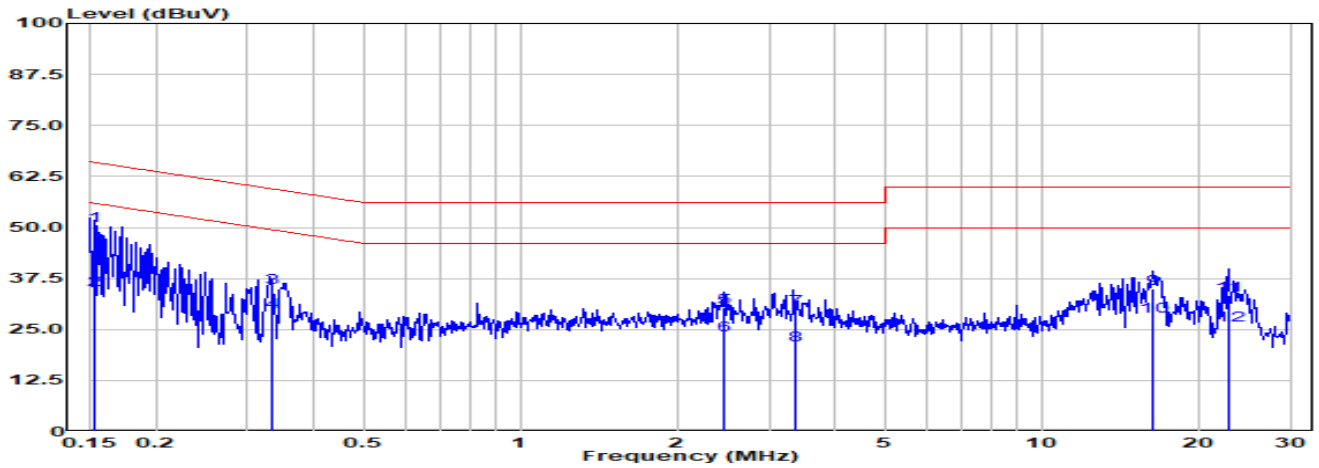


No	Frequency (MHz)	Emission Level (dBUV)	Limit (dBUV)	Margin (dB)	Reading Level (dBUV)	Correct Factor (dB)	Detector Type
1	0.153	50.75	65.83	-15.08	41.11	9.64	QP
2	0.153	35.08	55.83	-20.75	25.44	9.64	Average
3	0.331	43.72	59.44	-15.72	34.08	9.64	QP
4	0.331	40.57	49.44	-8.87	30.92	9.64	Average
5	2.487	30.50	56.00	-25.50	20.76	9.75	QP
6	2.487	21.57	46.00	-24.43	11.83	9.75	Average
7	3.501	28.78	56.00	-27.22	19.00	9.78	QP
8	3.501	19.80	46.00	-26.20	10.02	9.78	Average
9	16.666	34.64	60.00	-25.36	24.55	10.08	QP
10	16.666	28.13	50.00	-21.87	18.04	10.08	Average
11	23.329	33.32	60.00	-26.68	23.20	10.13	QP
12	23.329	26.15	50.00	-23.85	16.02	10.13	Average

Remark:

1. "*" means this data is the worst margin;"!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Emission Level-Limit

Model No	TLDPH01P1	Site	HY-SR09
Test Voltage	DC 12V By Adapter	Test Date	2023-08-08
Test Mode	Mode 3	Engineer	Leto Chen
Phase	Neutral	Temperature (°C)	25
Test Condition	--	Humidity (%RH)	66



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.152	50.41	65.89	-15.48	40.76	9.65	QP
2	0.152	34.74	55.89	-21.15	25.09	9.65	Average
3	0.333	35.28	59.39	-24.11	25.63	9.65	QP
4	0.333	29.21	49.39	-20.18	19.56	9.65	Average
5	2.457	30.45	56.00	-25.55	20.71	9.75	QP
6	2.457	23.48	46.00	-22.52	13.73	9.75	Average
7	3.362	30.03	56.00	-25.97	20.24	9.78	QP
8	3.362	21.15	46.00	-24.85	11.37	9.78	Average
9	16.367	34.85	60.00	-25.15	24.71	10.14	QP
10	16.367	28.08	50.00	-21.92	17.93	10.14	Average
11	22.828	33.37	60.00	-26.63	23.14	10.23	QP
12	22.828	25.99	50.00	-24.01	15.76	10.23	Average

Remark:

1. "" means this data is the worst margin;"!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Emission Level-Limit

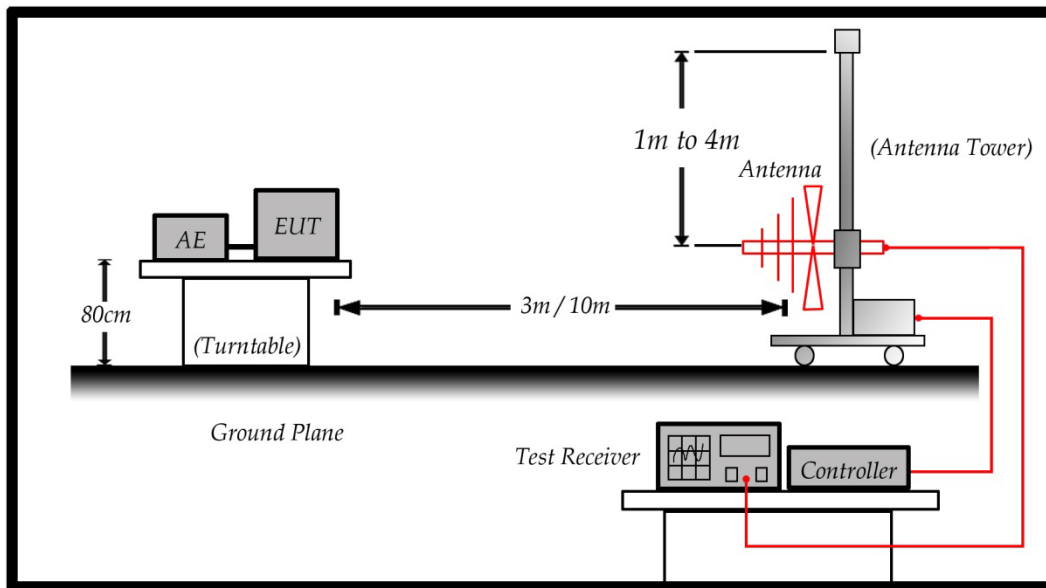
4. Radiated Emission

4.1. Test Specification

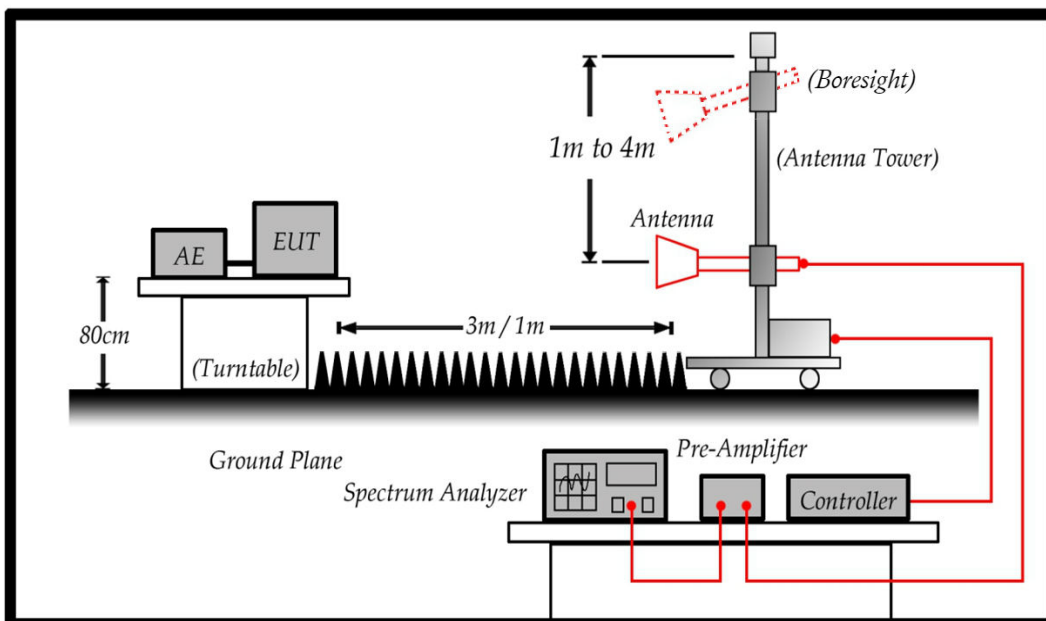
According to Standard : FCC Part 15 Subpart B & ICES-003 Issue 7

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Under 1GHz test shall not exceed the following value:

Limits		
Frequency (MHz)	Distance (m)	dBuV/m
30 – 230	10	30
230 – 1000	10	37

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Above 1GHz test shall not exceed the following value:

FCC Part 15 Subpart B Paragraph 15.109 Limits (dBuV/m)		
Frequency (MHz)	Distance (m)	dBuV/m
30-88	3	40
88-216	3	43.5
216-960	3	46.0
960-1000	3	54
1000-40000	3	54
18000-40000	1	63.5

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
3. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

ICES-003 Issue 7

Radiated emissions limits (30 MHz to 1 GHz)				
Frequency range (MHz)	Class A (3 m) Quasi-peak (dBuV/m)	Class A (10 m) Quasi-peak (dBuV/m)	Class B (3 m) Quasi-peak (dBuV/m)	Class B (10 m) Quasi-peak (dBuV/m)
30-88	50.0	40.0	40.0	30.0
88-216	54.0	43.5	43.5	33.1
216-230	56.9	46.4	46.0	35.6
230-960	57.0	47.0	47.0	37.0
960-1000	60.0	49.5	54.0	43.5

Note: The more stringent limit applies at transition frequencies.

Required highest measurement frequency for radiated emissions

Highest internal frequency (F_x)	Highest measured frequency
$F_x \leq 108$ MHz	1 GHz
$108 \text{ MHz} < F_x \leq 500$ MHz	2 GHz
$500 \text{ MHz} < F_x \leq 1$ GHz	5 GHz
$F_x > 1$ GHz	$5 \times F_x$ up to a maximum of 40 GHz

Note: F_x is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.

Radiated emission limits at 3 m distance (at and above 1 GHz)				
Frequency range (GHz)	Class A Average dB(uV/m)	Class A) Peak dB(uV/m)	Class B Average dB(uV/m)	Class B Peak dB(uV/m)
$1 - F_M$	60	80	54	74

Note:

- The highest measurement frequency, F_M , in GHz, shall be determined as per table 3.
- The measurement bandwidth shall be 1 MHz or greater.
- These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far field of the ITE or digital apparatus under test.
- The test site shall have been validated at the distance used for radiated emission measurements on the ITE or digital apparatus under test.

4.4. Test Procedure

FCC Part 15 Subpart B

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground.

The turn table can rotate 360 degrees to determine the position of the maximum emission level and the antenna (boresight antenna tower) can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement 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

On any frequency or frequencies below or equal to 1000MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and above 1GHz.

For class B, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (Test Receiver) is 120kHz and above 1GHz is 1MHz.

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The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level and the antenna (boresight antenna tower) can move up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

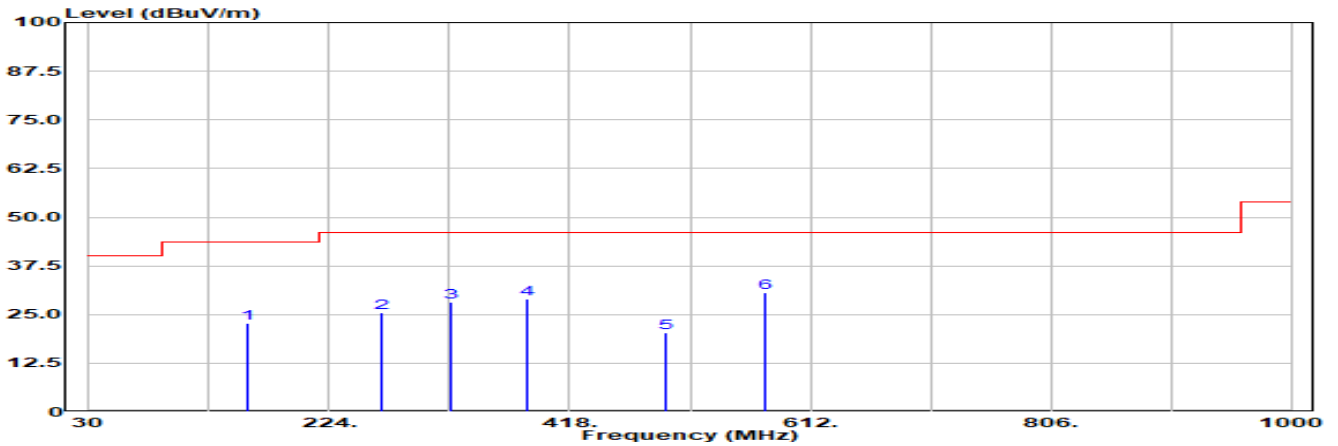
On any frequency or frequencies below or equal to 1000MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000MHz, the radiated limits shown are based measuring equipment employing an peak & average detector function.

The measurement distance between the EUT and antenna is 3 meters or 10 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (Test Receiver) is 120kHz and above 1GHz is 1MHz

4.5. Test Result

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 1	Engineer	Nat Cheng
Polarity	Horizontal	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

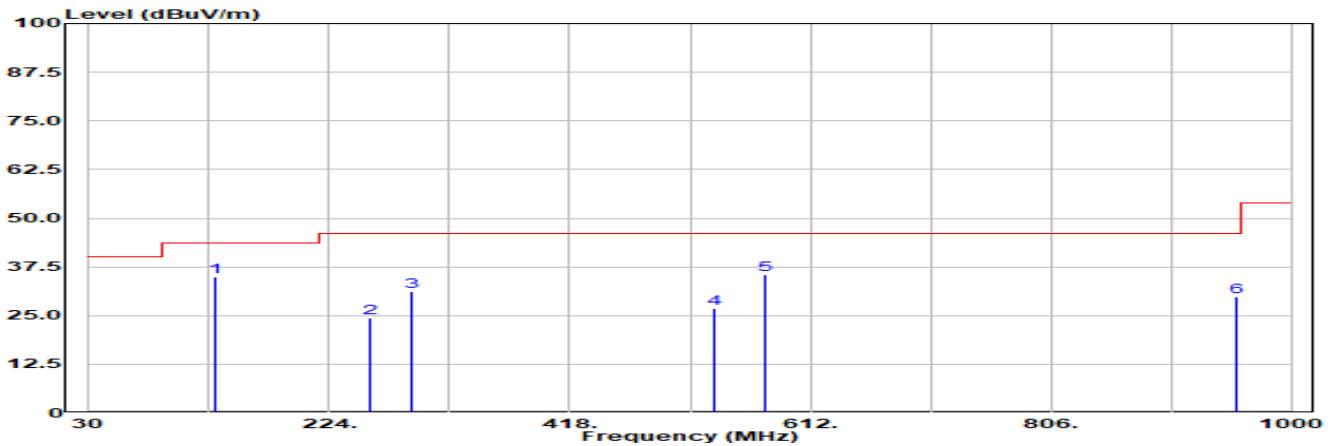


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	157.820	22.76	43.50	-20.74	46.70	-23.94	100	359	QP
2	265.690	25.58	46.00	-20.42	50.00	-24.42	100	243	QP
3	321.690	28.07	46.00	-17.93	51.00	-22.93	100	59	QP
4	384.020	28.99	46.00	-17.01	50.20	-21.21	100	248	QP
5	495.340	20.40	46.00	-25.60	38.80	-18.40	100	276	QP
6	576.000	30.71	46.00	-15.29	47.40	-16.69	100	157	QP

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 1	Engineer	Nat Cheng
Polarity	Vertical	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

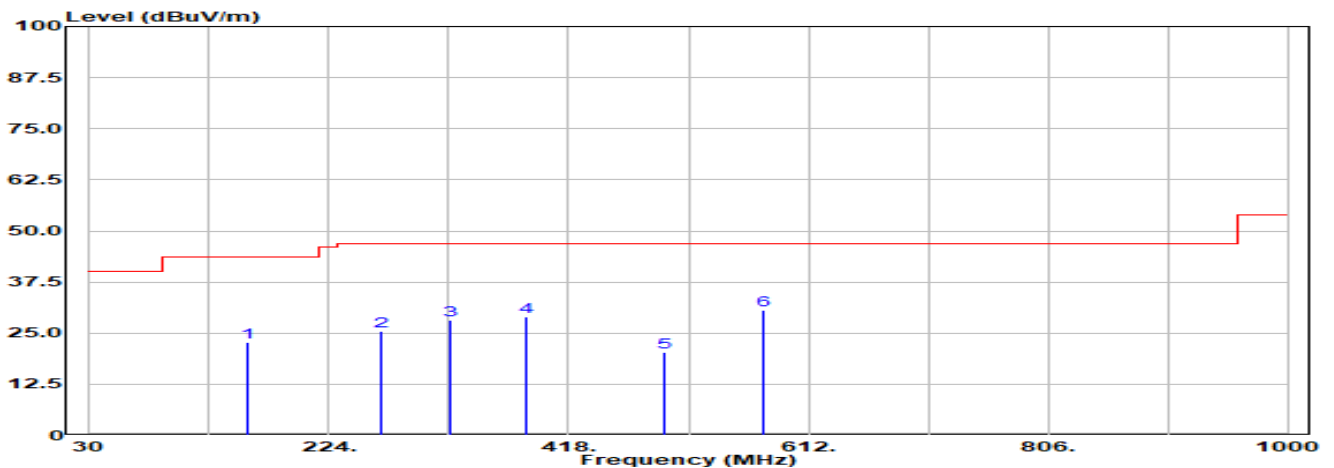


No	Frequency (MHz)	Emission Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Reading Level (dBUV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	132.470	34.88	43.50	-8.62	60.50	-25.62	100	331	QP
2	256.780	24.34	46.00	-21.66	49.30	-24.96	100	126	QP
3	290.910	31.12	46.00	-14.88	54.90	-23.78	100	200	QP
4	535.500	26.80	46.00	-19.20	44.40	-17.60	100	172	QP
5	576.000	35.61	46.00	-10.39	52.30	-16.69	100	360	QP
6	956.250	29.72	46.00	-16.28	41.10	-11.38	100	344	QP

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBUV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 1	Engineer	Nat Cheng
Polarity	Horizontal	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

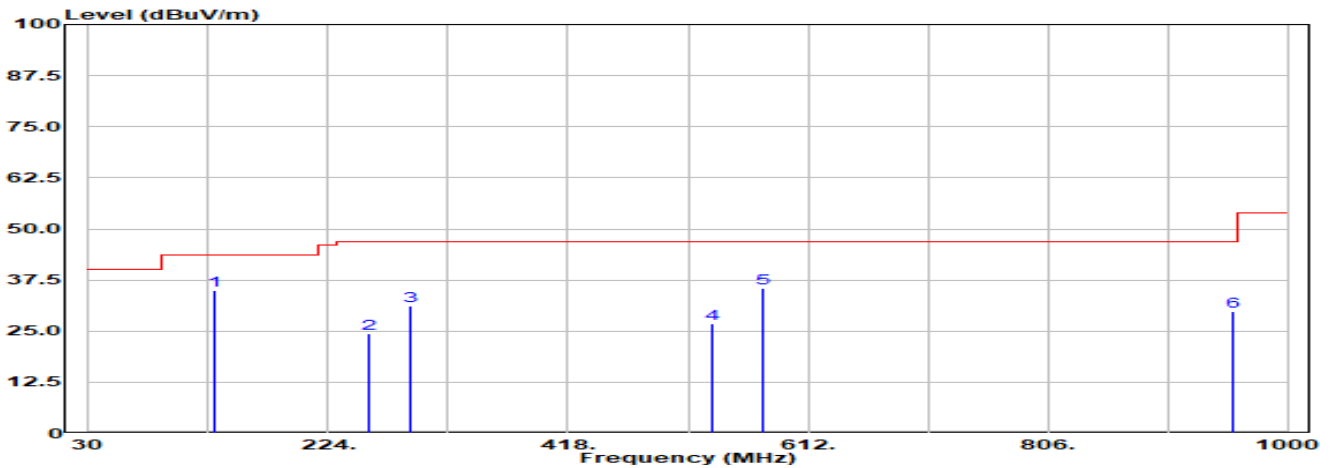


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	157.820	22.76	43.50	-20.74	46.70	-23.94	100	359	QP
2	265.690	25.58	47.00	-21.42	50.00	-24.42	100	243	QP
3	321.690	28.07	47.00	-18.93	51.00	-22.93	100	59	QP
4	384.020	28.99	47.00	-18.01	50.20	-21.21	100	248	QP
5	495.340	20.40	47.00	-26.60	38.80	-18.40	100	276	QP
6*	576.000	30.71	47.00	-16.29	47.40	-16.69	100	157	QP

Remark:

1. "*" means this data is the worst margin;"!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
3. Margin=Emission Level - Limit.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 1	Engineer	Nat Cheng
Polarity	Vertical	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

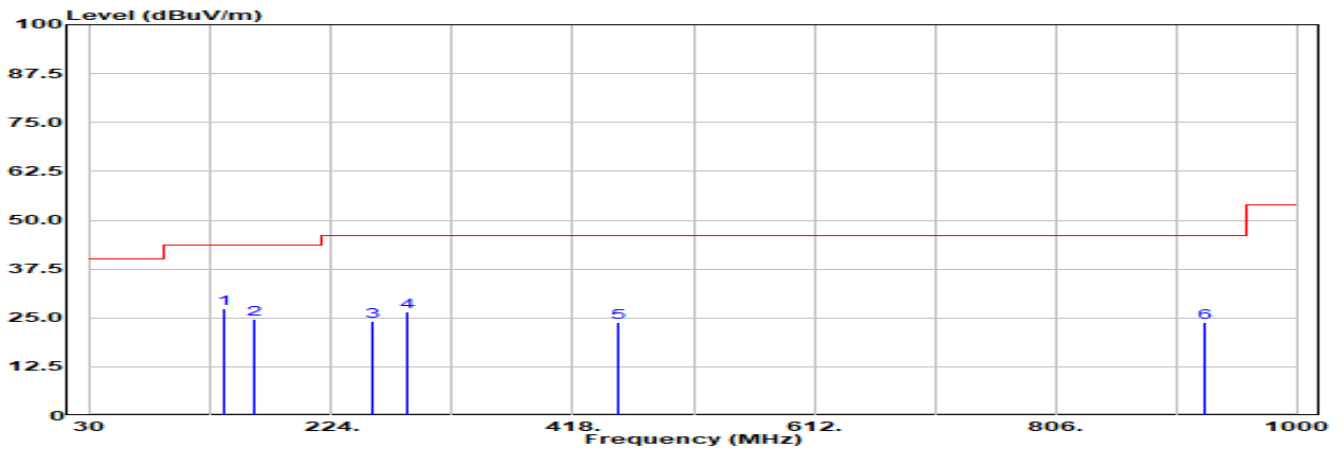


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1*	132.470	34.88	43.50	-8.62	60.50	-25.62	100	331	QP
2	256.780	24.34	47.00	-22.66	49.30	-24.96	100	126	QP
3	290.910	31.12	47.00	-15.88	54.90	-23.78	100	200	QP
4	535.500	26.80	47.00	-20.20	44.40	-17.60	100	172	QP
5	576.000	35.61	47.00	-11.39	52.30	-16.69	100	360	QP
6	956.250	29.72	47.00	-17.28	41.10	-11.38	100	344	QP

Remark:

1. "*" means this data is the worst margin; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
3. Margin=Emission Level - Limit.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 3	Engineer	Nat Cheng
Polarity	Horizontal	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

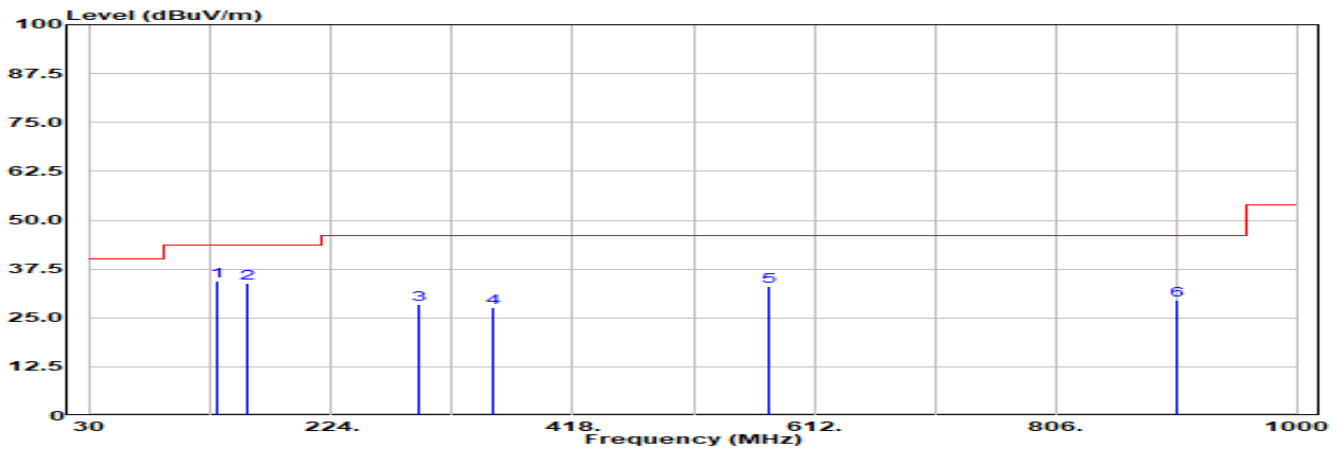


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	138.280	27.24	43.50	-16.26	52.10	-24.86	100	303	QP
2	161.990	24.69	43.50	-18.81	48.80	-24.11	100	84	QP
3	256.210	24.02	46.00	-21.98	49.00	-24.98	100	308	QP
4	285.590	26.62	46.00	-19.38	50.40	-23.78	100	333	QP
5	454.000	23.81	46.00	-22.19	42.90	-19.09	100	332	QP
6	926.040	23.93	46.00	-22.07	36.00	-12.07	100	273	QP

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 3	Engineer	Nat Cheng
Polarity	Vertical	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

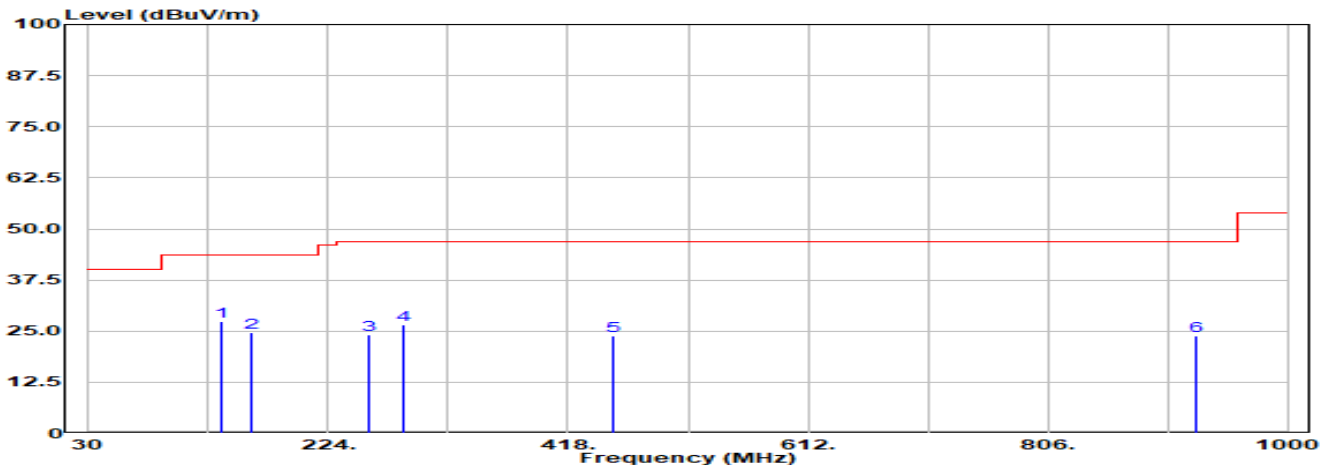


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	132.580	34.51	43.50	-8.99	60.10	-25.59	100	220	QP
2	155.510	33.77	43.50	-9.73	57.70	-23.93	100	117	QP
3	294.240	28.59	46.00	-17.41	52.30	-23.71	100	360	QP
4	353.720	27.74	46.00	-18.26	50.00	-22.26	100	291	QP
5	575.990	33.11	46.00	-12.89	49.80	-16.69	100	358	QP
6	903.000	29.66	46.00	-16.34	41.90	-12.24	100	360	QP

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 3	Engineer	Nat Cheng
Polarity	Horizontal	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

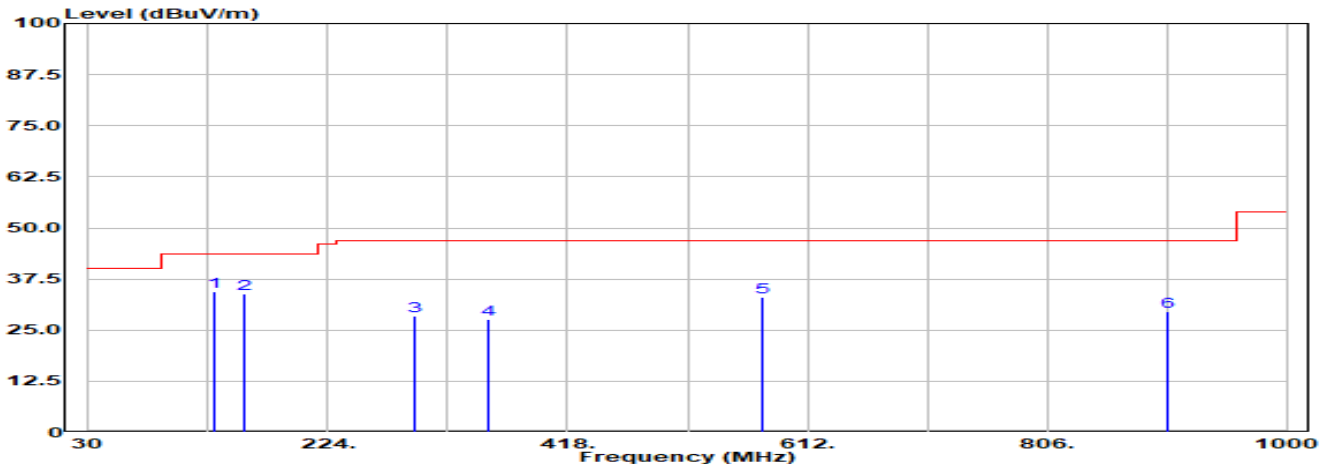


No	Frequenc y (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1*	138.280	27.24	43.50	-16.26	52.10	-24.86	100	303	QP
2	161.990	24.69	43.50	-18.81	48.80	-24.11	100	84	QP
3	256.210	24.02	47.00	-22.98	49.00	-24.98	100	308	QP
4	285.590	26.62	47.00	-20.38	50.40	-23.78	100	333	QP
5	454.000	23.81	47.00	-23.19	42.90	-19.09	100	332	QP
6	926.040	23.93	47.00	-23.07	36.00	-12.07	100	273	QP

Remark:

1. "*" means this data is the worst margin;"!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
3. Margin=Emission Level - Limit.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 3	Engineer	Nat Cheng
Polarity	Vertical	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

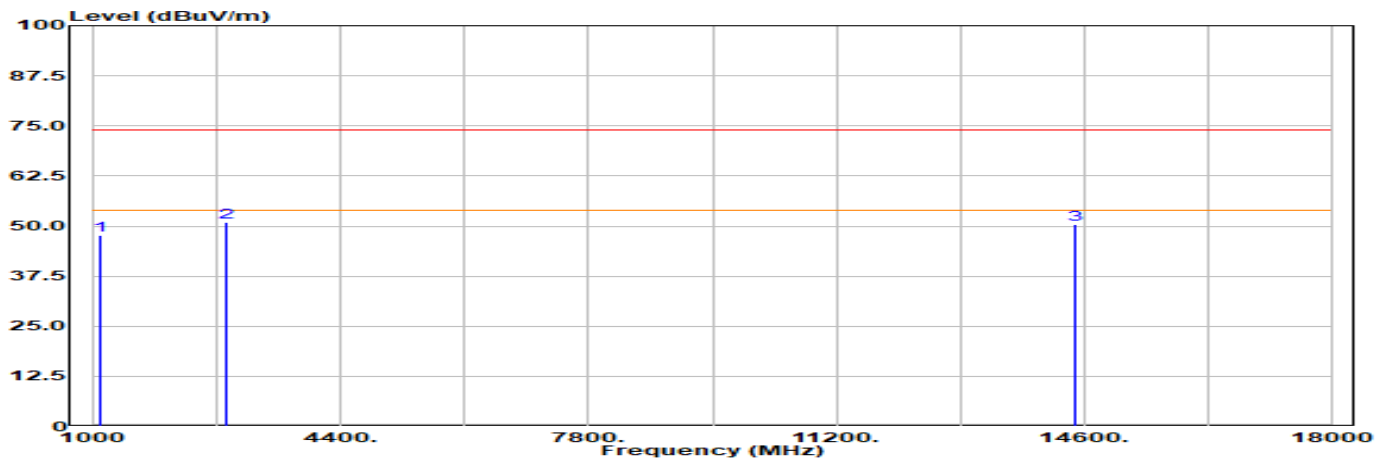


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1*	132.580	34.51	43.50	-8.99	60.10	-25.59	100	220	QP
2	155.510	33.77	43.50	-9.73	57.70	-23.93	100	117	QP
3	294.240	28.59	47.00	-18.41	52.30	-23.71	100	360	QP
4	353.720	27.74	47.00	-19.26	50.00	-22.26	100	291	QP
5	575.990	33.11	47.00	-13.89	49.80	-16.69	100	358	QP
6	903.000	29.66	47.00	-17.34	41.90	-12.24	100	360	QP

Remark:

1. "*" means this data is the worst margin; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
3. Margin=Emission Level - Limit.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 1	Engineer	Nat Cheng
Polarity	Horizontal	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

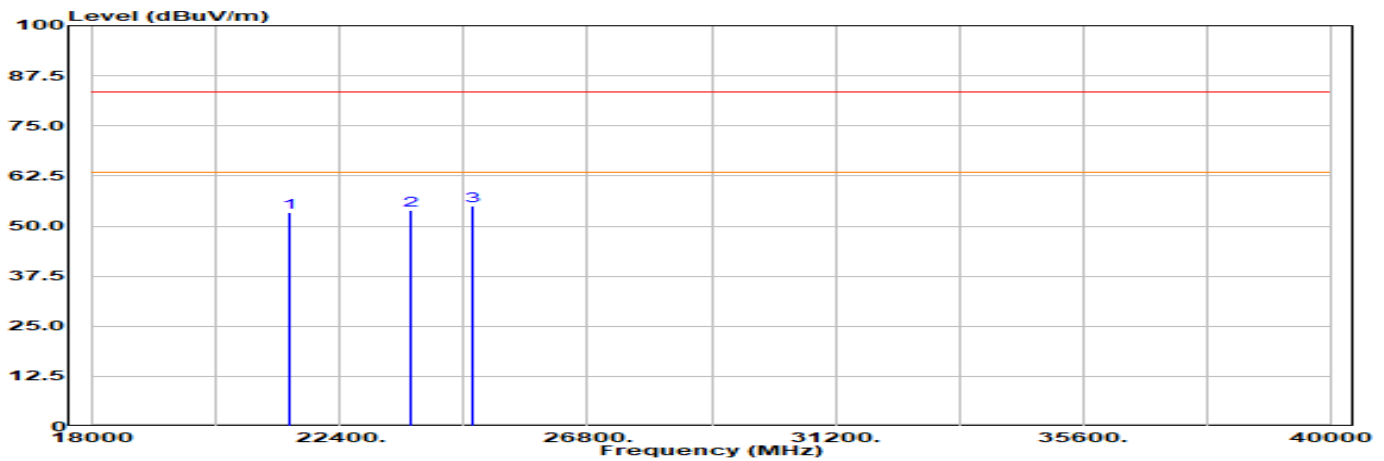


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	1070.000	47.74	74.00	-26.26	59.99	-12.26	100	12	Peak
2	2820.000	51.00	74.00	-23.00	57.55	-6.55	100	360	Peak
3	14472.000	50.34	74.00	-23.66	44.05	6.28	100	1	Peak

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 1	Engineer	Nat Cheng
Polarity	Horizontal	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

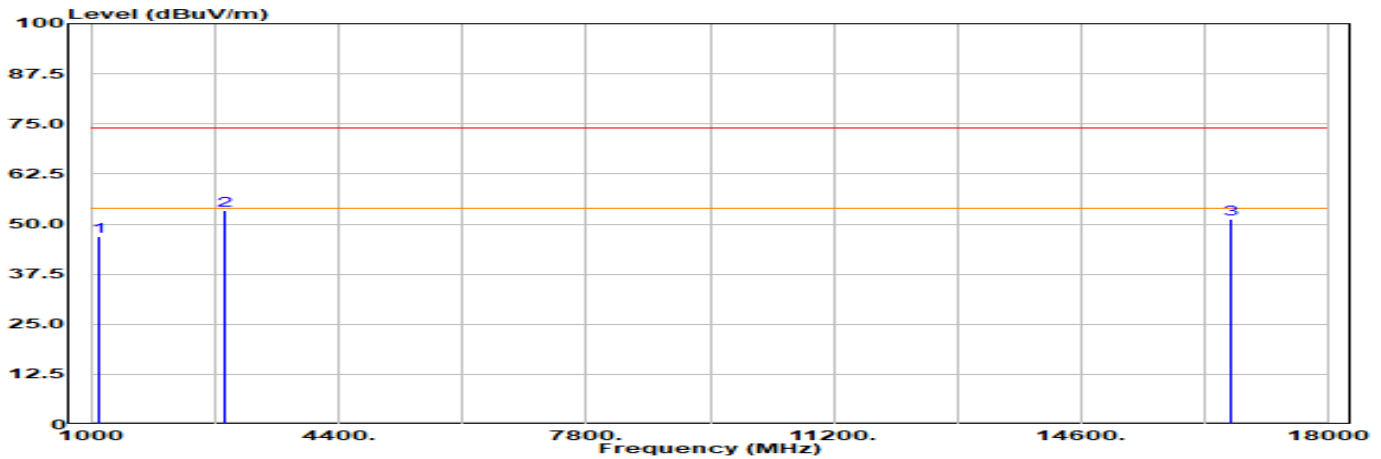


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	21498.000	53.28	83.50	-30.22	42.28	11.00	100	21	Peak
2	23665.000	53.95	83.50	-29.55	40.88	13.06	100	114	Peak
3	24754.000	54.88	83.50	-28.62	41.37	13.51	100	342	Peak

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 1	Engineer	Nat Cheng
Polarity	Vertical	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

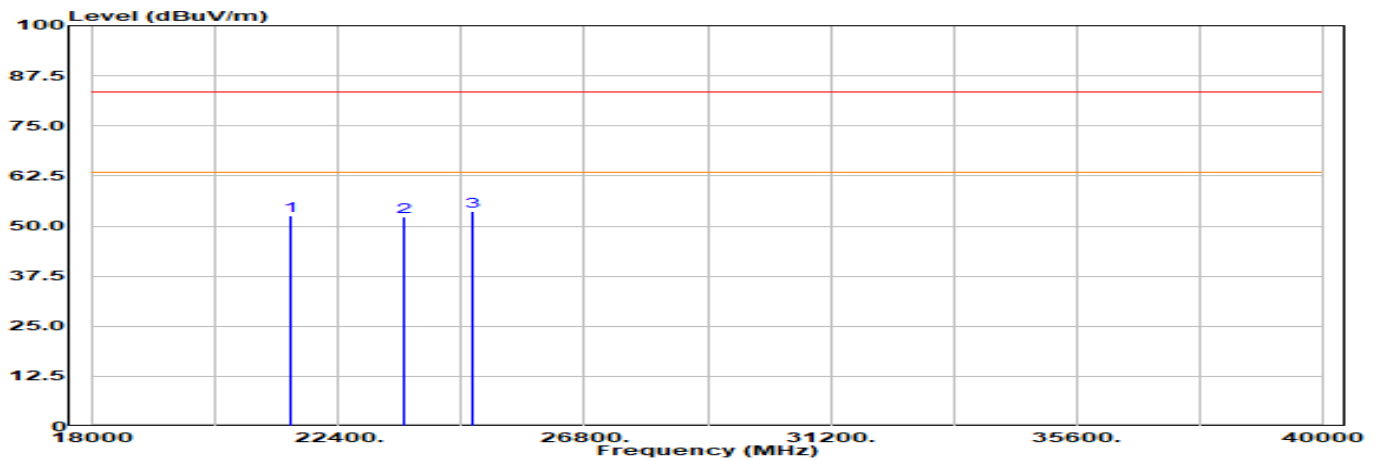


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	1070.000	46.99	74.00	-27.01	59.25	-12.26	100	4	Peak
2	2815.000	53.27	74.00	-20.73	59.84	-6.57	100	251	Peak
3	16668.000	51.33	74.00	-22.67	42.13	9.19	100	352	Peak

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 1	Engineer	Nat Cheng
Polarity	Vertical	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

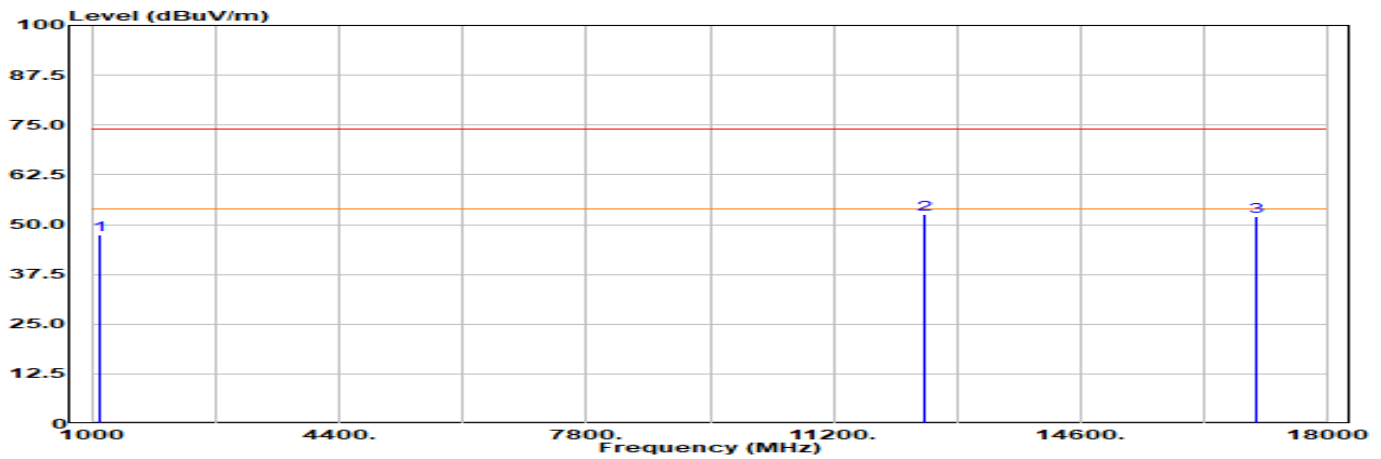


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	21542.000	52.48	83.50	-31.02	41.62	10.86	100	12	Peak
2	23555.000	52.38	83.50	-31.12	39.60	12.78	100	353	Peak
3	24787.000	53.70	83.50	-29.80	40.23	13.47	100	22	Peak

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 3	Engineer	Nat Cheng
Polarity	Horizontal	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

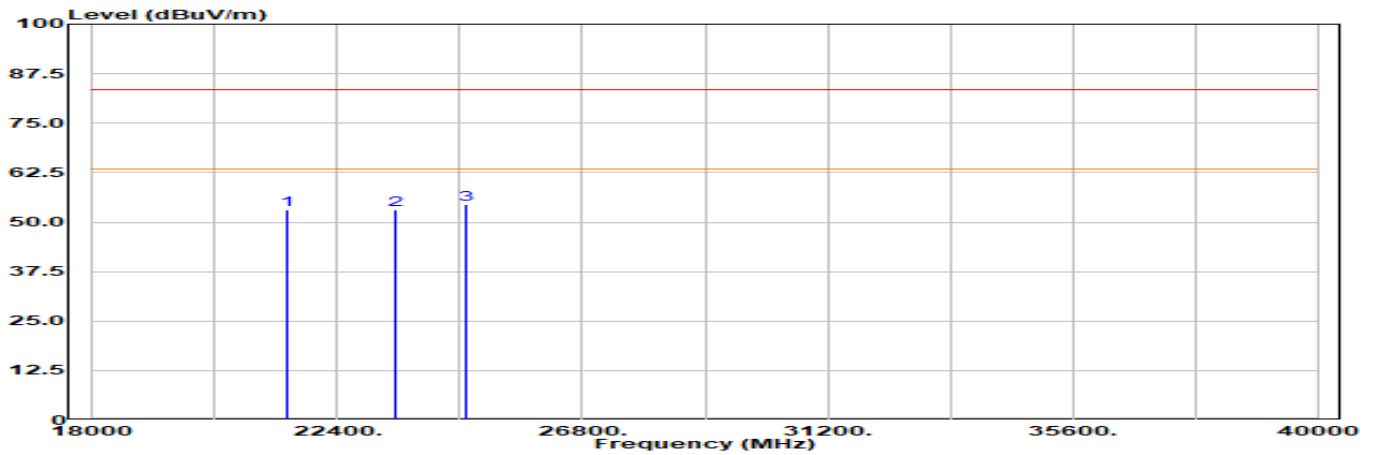


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	1070.000	47.38	74.00	-26.62	59.64	-12.26	100	12	Peak
2	12456.000	52.61	74.00	-21.39	46.74	5.87	100	81	Peak
3	17040.000	52.12	74.00	-21.88	41.47	10.65	100	31	Peak

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 3	Engineer	Nat Cheng
Polarity	Horizontal	Temperature (°C)	23
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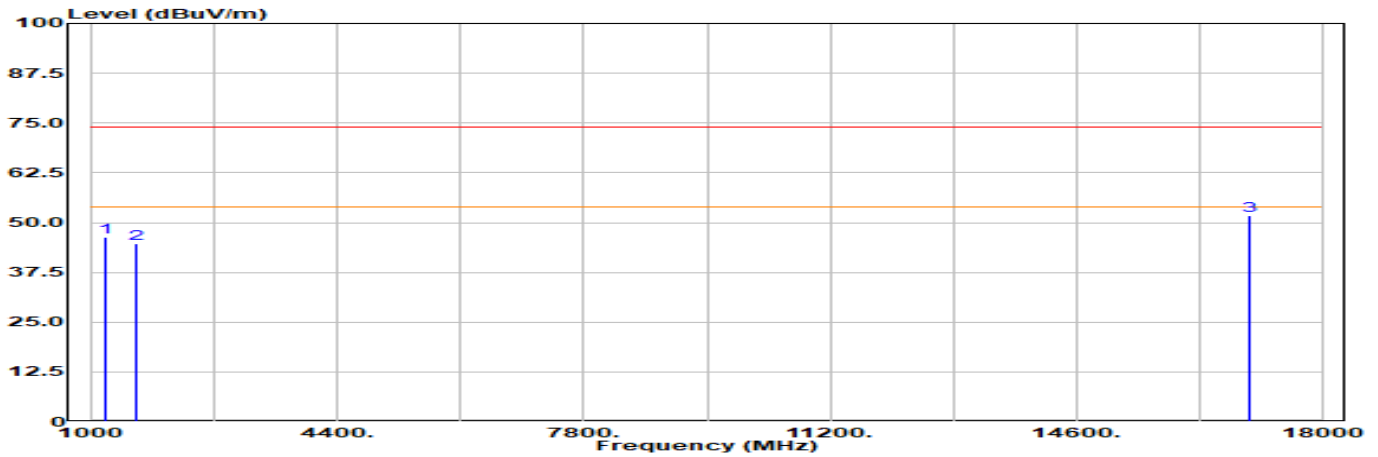


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	21476.000	52.99	83.50	-30.51	42.03	10.95	100	352	Peak
2	23445.000	53.09	83.50	-30.41	40.42	12.66	100	21	Peak
3	24721.000	54.37	83.50	-29.13	40.80	13.57	100	62	Peak

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 3	Engineer	Nat Cheng
Polarity	Vertical	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53

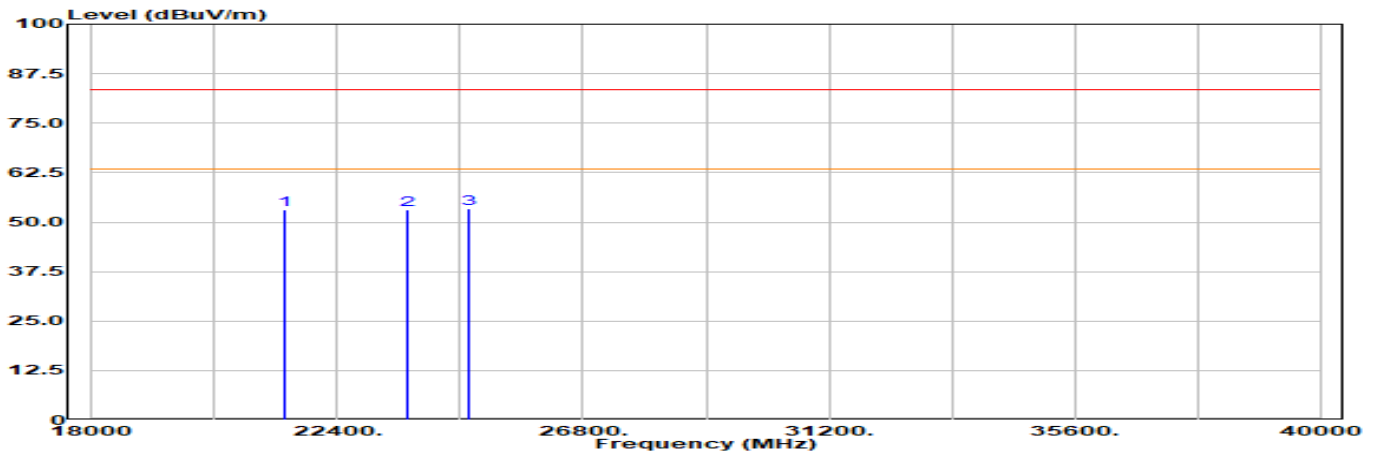


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	1180.000	46.44	74.00	-27.56	57.81	-11.38	100	14	Peak
2	1605.000	44.81	74.00	-29.19	55.87	-11.06	100	338	Peak
3	17016.000	51.67	74.00	-22.33	40.87	10.80	100	17	Peak

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.

Model No	TLDPH01P1	Site	HY-CB05
Test Voltage	DC 12V By Adapter	Test Date	2023-08-11
Test Mode	Mode 3	Engineer	Nat Cheng
Polarity	Vertical	Temperature (°C)	23
Test Condition	--	Humidity (%RH)	53



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB/m)	Ant Pos (cm)	TT Pos (deg)	Detector Type
1	21454.000	53.25	83.50	-30.25	42.34	10.91	100	11	Peak
2	23643.000	53.08	83.50	-30.42	40.07	13.01	100	32	Peak
3	24732.000	53.32	83.50	-30.18	39.77	13.55	100	352	Peak

Remark:

- 1.Emission Level=Reading Level + Correct Factor(Correct Factor=Ant Factor+Cable Loss-Pre Amp).
- 2.Margin=Emission Level - Limit.
- 3.The above 1 GHz test. When PEAK measures level less than AV limit by 20 dBuV, its average is not measured separately.