Test Report

Verified code: 870855

Report No.: E202111252962-1-G1

Customer:	Hydrow, Inc.
Address:	10 Summer St, Floor 5, Boston, MA 02110, USA
Sample Name:	Hydrow Touchscreen Monitor
Sample Model:	CVC15101
Receive Sample Date:	Nov.26,2021
Test Date:	Dec.03,2021 ~ Dec.21,2021
Reference Document:	CFR 47, FCC Part 15 Subpart C RADIO FREQUENCY DEVICES:Subpart C—Intentional Radiators
Test Result:	Pass

Prepared by: Yang Zhaoyun Reviewed by: Jiang Tao Approved by: Xiao Liang

GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-03-29

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Statement

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2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.

3. When there are reports in both Chinese and English, the Chinese version will prevail when the language problems are inconsistent.

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5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202111252962-1	Original Issue	2022/02/23
2.0	E202111252962-1-G1	Update	2022/03/28

Version 2.0:

1. On the basis of the original report, update the description of test items in the report.
2. This report instead the report E202111252962-1, and from the date of issuance of this report, the report which being replaced become invalid.

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1. TEST RESULT SUMMARY

Standard	Item	Limit / Severity	Result
CFR 47, FCC Part 15 Subpart C (§15.247)	Antenna Requirement	§15.203	PASS
	Conducted Emissions	§15.207 (a)	PASS
	Radiated Spurious Emission	§15.247(d) §15.205 §15.209	PASS
	6 dB Bandwidth	§15.247 (a)(2)	PASS
	Maximum Peak Output Power	§15.247(b)(3)	PASS
	Power Spectral Density	§15.247(e)	PASS
	Conducted band edges and Spurious Emission	§15.247(d)	PASS
	Restricted bands of operation	§15.205 §15.209 §15.247(d)	PASS

The EUT have two antennas. The antenna is Internal antenna.
The max gain of Antenna is 3.5dBi ,which accordance 15.203 is considered sufficient to comply with the provisions of this section.

———— The following blanks ————

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name:	Hydrow, Inc.
Address:	10 Summer St, Floor 5, Boston, MA 02110, USA

2.2 MANUFACTURER

Name:	Chengdu Vantron Technology Co., Ltd.
Address:	No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

2.3 FACTORY

Name:	Chengdu Vantron Technology Co., Ltd.
Address:	No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name:	Hydrow Touchscreen Monitor
Product Model:	CVC15101
Adding Model:	/
Trade Name:	Hydrow
FCC ID:	2A3HV-CVC15A
Power Supply:	DC12V Power supplied by adapter
Adapter Specification:	Model No: WT1205000 In put:100-240V~50/60Hz 1.6A Out put:12V ⎓ 5.0A
Frequency Band:	2412MHz-2462MHz for 802.11b/g/n HT20 2422MHz-2452MHz: 802.11n HT40
Modulation Type:	DSSS for 802.11b mode; OFDM for 802.11g/n mode
Antenna Specification:	Internal antenna 1 with 3.5dBi gain (Max) Internal antenna 2 with 3.5dBi gain (Max)
Temperature Range:	-20℃~85℃
Hardware Version:	V1.1
Software Version:	V1.0
Sample submitting way:	■Provided by customer □Sampling
Sample No:	E202111252962-0001，E202111252962-0002
Note:	/

2.5 CHANNEL LIST

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n HT20 CH03 – CH09 for IEEE 802.11n HT40							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

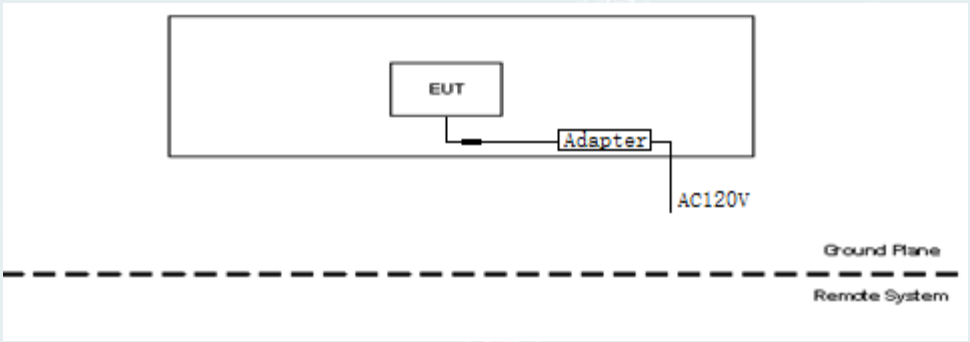
2.6 TEST OPERATION MODE

Mode No.	Description of the modes
1	2.4G Wi-Fi TX mode

2.7 LOCAL SUPPORTIVE INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Note
Adapter	Wen Tong	WT1205000	A211014000600	/
Cable				
AC cable (DC power)	/	/	/	UnShielded, 1.0m
DC cable (DC power)	/	/	/	Shielded, 1.0m

2.8 CONFIGURATION OF SYSTEM UNDER TEST



Test software:

Software version
ADB

Power Setting:

Mode	Date Rate	Frequecy (MHz)	Power Setting
802.11b	1M	2412	7
		2437	6
		2462	5
802.11g	6M	2412	14
		2437	14
		2462	14
802.11n HT20	MCS8	2412	15
		2437	15
		2462	15
802.11n HT40	MCS8	2422	13
		2437	15
		2452	15

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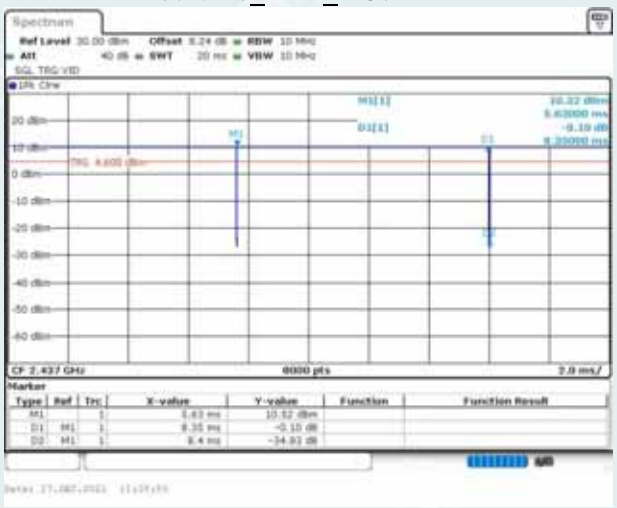
2.9 DUTY CYCLE

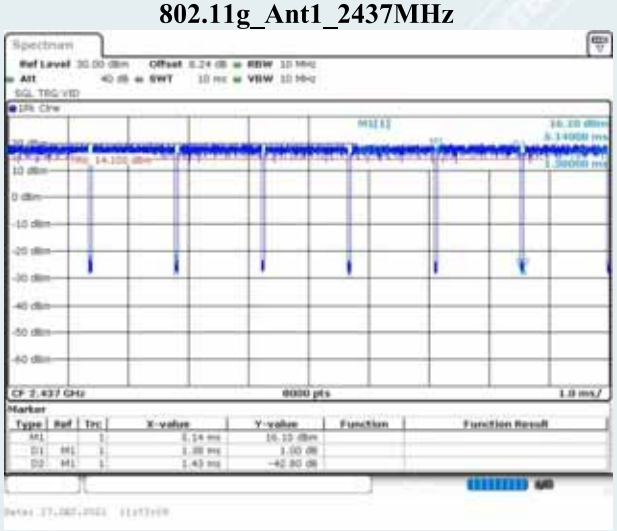
EUT Name	Hydrow Touchscreen Monitor	Model	CVC15101
Environmental Conditions	23.5℃/48%RH	Test Voltage	AC120V/60Hz
Tested By	Lu Wei	Tested Date	2021/12/17

Test Mode	Antenna	Frequency (MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	T [s]
802.11b	Ant1	2437	8.35	8.40	99.40	0.00835
802.11g	Ant1	2437	1.38	1.43	96.50	0.00138
802.11n	Ant1	2437	1.29	1.34	96.27	0.00129
802.11n	Ant1	2437	0.64	0.70	91.43	0.000640

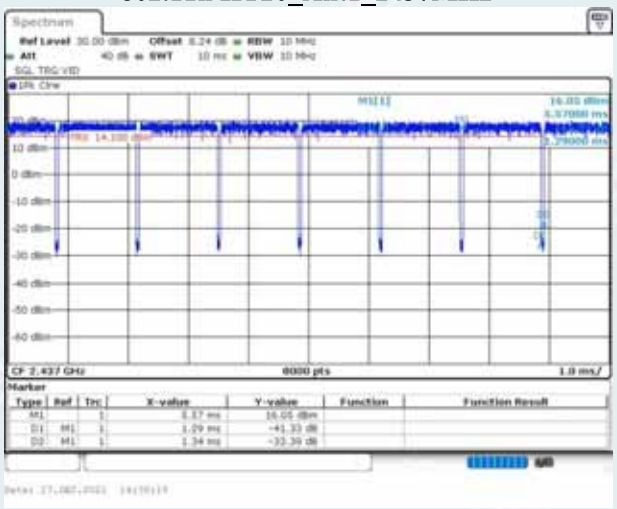
802.11b_Ant1_2437MHz



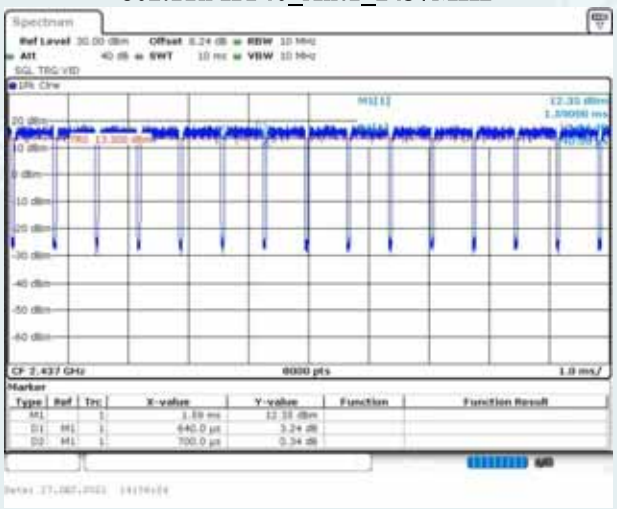
802.11g_Ant1_2437MHz



802.11n HT20_Ant1_2437MHz



802.11n HT40_Ant1_2437MHz



3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add	:	No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District Shenzhen, 518110, People's Republic of China
P.C.	:	518000
Tel	:	0755-61180008
Fax	:	0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	A2LA(Certificate#:2861.01)
China	CNAS(L0446)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	ISED (Company Number: 24897, CAB identifier:CN0069)
USA	FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site, http://www.grgtest.com

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3.3 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 Emission	Horizontal	9kHz～30MHz	4.46dB
		30MHz～1000MHz	4.30dB
		1GHz～18GHz	5.60dB
		18GHz～26.5GHz	3.65dB
	Vertical	9kHz～30MHz	4.46dB
		30MHz～1000MHz	4.30dB
		1GHz～18GHz	5.60dB
		18GHz～26.5GHz	3.65dB
Conduction Emission		9 kHz～150kHz	2.80dB
		150kHz～10MHz	2.80dB
		10MHz～30MHz	2.20dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.78 dB
Occupied channel bandwidth	0.4 dB
Unwanted emission, conducted	0.68 dB
Humidity	6 %
Temperature	2℃

This uncertainty represents an expanded uncertainty factor of k=2.

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4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conducted Emissions				
EZ-EMC	EZ	CCS-3A1-CE	/	/
EMI Receiver	R&S	ESCI	100783	2022-09-13
LISN(EUT)	R&S	ENV216	101543	2022-03-21
Radiated Spurious Emission&Restricted bands of operation				
Test S/W	EZ	CCS-2ANT		
Loop Antenna	TESEQ	HLA6121	52599	2022-04-21
Test Receiver	R&S	ESR7	102444	2022-09-22
Preamplifier	EMEC	EM330	/	2022-03-21
Bi-log Antenna	TESEQ	CBL6143A	32399	2022-11-25
Spectrum Analyzer	Agilent	N9010A	MY52221469	2022-04-16
Horn Antenna	Schwarzbeck	BBHA9120D(1201)	02143	2022-10-22
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2022-10-16
Amplifier	Tonscend	TAP01018048	AP20E8060075	2022-06-07
Amplifier	Tonscend	TAP184050	AP20E806071	2022-05-17
Test S/W	Tonscend	JS32-RE/2.5.1.5		
6 dB Bandwidth				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Output Power				
Pulse power sensor	Agilent	MA2411B	1126150	2022-03-21
Power meter	Anritsu	ML2495A	1204003	2022-03-21
Conducted band edges and Spurious Emission				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Power Spectral Density				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10

Note: The calibration interval of the above test instruments is 12 months.

5. CONDUCTED EMISSION MEASUREMENT

5.1 LIMITS

Frequency range	Limits (dBμV)	
	Quasi-peak	Average
150kHz～0.5MHz	66～56	56～46
0.5MHz～5MHz	56	46
5MHz～30MHz	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases in line with the logarithm of the frequency in the range of 150 kHz to 0.5MHz.

5.2 TEST PROCEDURES

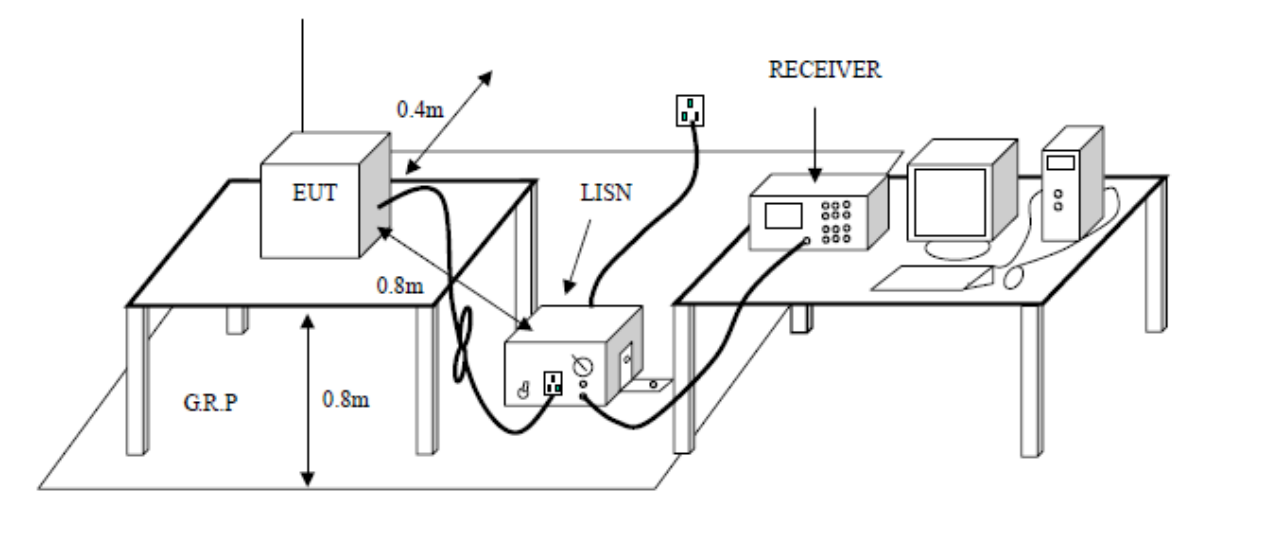
Procedure of Preliminary Test

Test procedures follow ANSI C63.10:2013.
For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:
– Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:
1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or
2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;
– All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;
– The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;
– Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.
– I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.
– Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.
The test mode(s) described in Item 2.6 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.6 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

5.3 TEST SETUP



5.4 DATA SAMPLE

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
Result = Quasi-peak Reading/ Average Reading + Factor
Limit = Limit stated in standard
Margin = Result (dBuV) – Limit (dBuV)

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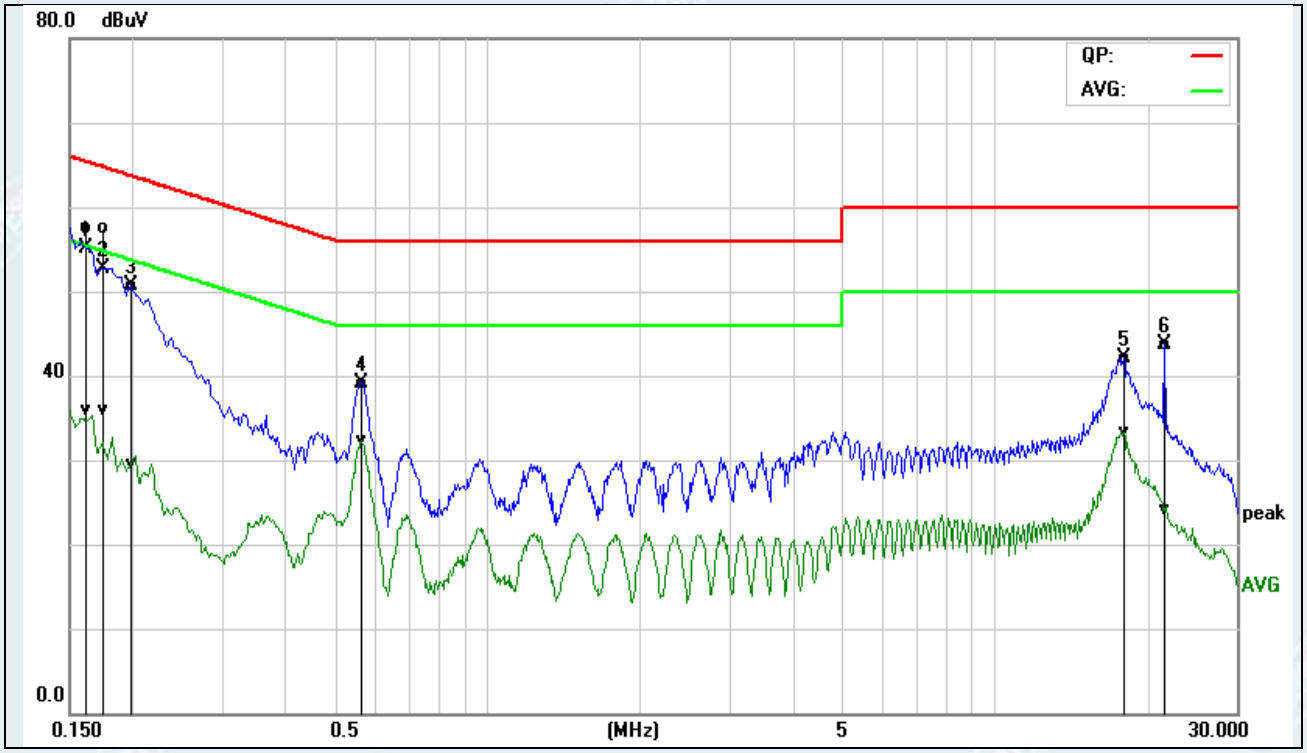
5.5 TEST RESULTS

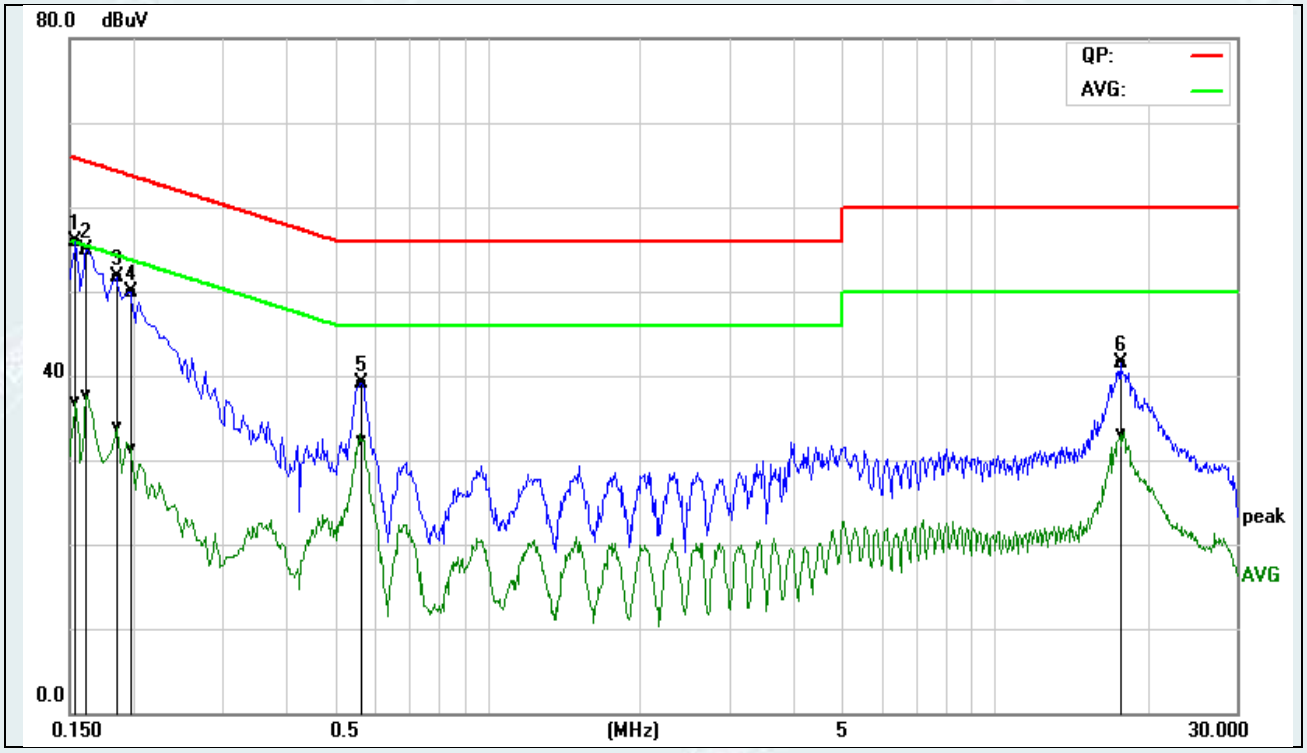
All models were pretested and only the worst modes and channels were recorded in this report. (IEEE 802.11g 2412MHz)

EUT Name	Hydrow Touchscreen Monitor	Model	CVC15101
Environmental Conditions	22.0℃/53%RH	Test Mode	Mode 1
Tested By	Zeng xianglong	Line	L
Tested Date	2021-12-21	Test Voltage	AC120V/60Hz



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1623	47.96	26.36	9.53	57.49	35.89	65.34	55.35	-7.85	-19.46	Pass
2*	0.1768	47.95	26.35	9.54	57.49	35.89	64.63	54.63	-7.14	-18.74	Pass
3	0.1980	41.23	19.93	9.54	50.77	29.47	63.69	53.69	-12.92	-24.22	Pass
4	0.5660	29.50	22.73	9.57	39.07	32.30	56.00	46.00	-16.93	-13.70	Pass
5	17.9860	32.26	23.41	9.89	42.15	33.30	60.00	50.00	-17.85	-16.70	Pass
6	21.6060	33.78	14.13	9.95	43.73	24.08	60.00	50.00	-16.27	-25.92	Pass

EUT Name	Hydrow Touchscreen Monitor	Model	CVC15101
Environmental Conditions	22.0℃/53%RH	Test Mode	Mode 1
Tested By	Zeng xianglong	Line	N
Tested Date	2021-12-21	Test Voltage	AC120V/60Hz



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1539	46.30	27.47	9.51	55.81	36.98	65.78	55.79	-9.97	-18.81	Pass
2	0.1620	45.47	28.19	9.52	54.99	37.71	65.36	55.36	-10.37	-17.65	Pass
3	0.1860	42.07	24.45	9.55	51.62	34.00	64.21	54.21	-12.59	-20.21	Pass
4	0.1980	40.41	21.76	9.57	49.98	31.33	63.69	53.69	-13.71	-22.36	Pass
5	0.5660	29.44	22.64	9.69	39.13	32.33	56.00	46.00	-16.87	-13.67	Pass
6	17.7260	31.51	23.10	9.92	41.43	33.02	60.00	50.00	-18.57	-16.98	Pass

6. RADIATED SPURIOUS EMISSIONS

6.1 LIMITS

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required.

Frequency (MHz)	Quasi-peak(μV/m)	Measurement distance(m)	Quasi-peak(dBμV/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30~88	100	3	40
88~216	150	3	43.5
216~960	200	3	46
Above 960	500	3	54

NOTE:

(1) The emission limits for the ranges 9-90kHz and 110-490kHz are based on measurements employing a linear average detector.

(2) The lower limit shall apply at the transition frequencies.

(3) Above 18GHz test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).
The Avg Limit=54+20*log(3/1)=63.54 (dBμV/m).

6.2 TEST PROCEDURES

1) Sequence of testing 9kHz to 30MHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground.

--- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.

--- The EUT is placed on a desktop position in the center of the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0° to 360°.

--- The antenna height is 1.0 meter.

--- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

--- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30MHz to 1GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.

--- The EUT is placed on a desktop position in the center of the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0° to 360°.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 4 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0° to 360° and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1GHz to 18GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.

--- The EUT is placed on a desktop position in the center of the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0° to 360°.

--- The antenna is polarized vertical and horizontal.

--- The antenna height scan range is 1 meter to 4 meter.

--- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0° to 360° and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

--- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
--- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18GHz
Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.

--- The EUT is placed on a desktop position in the center of the turntable.

--- The measurement distance is 1 meter.

--- The EUT was set into operation.

Pre measurement:

--- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

NOTE:

(a).The frequency from 9kHz to 150kHz, Set RBW=300Hz(for Peak&AVG), RBW=300Hz(for Peak&AVG). the frequency from 150kHz to 30MHz, Set RBW=9kHz, RBW=9kHz, (for QP Detector).

(b).The frequency from 30MHz to 1GHz, Set RBW=120kHz, RBW=300kHz, (for QP Detector).

(c).The frequency above 1GHz, for Peak detector: Set RBW=1MHz, RBW=3MHz.

(d).The frequency above 1GHz, for Avg detector: Set RBW=1MHz, if the EUT is configured to transmit with duty cycle ≥98%，set VBW≤RBW/100 (i.e.,10kHz) but not less than 10Hz. if the EUT duty cycle is ＜98%，set VBW≥1/T, Where T is defined in section 2.9.

———— The following blanks ————

6.3 TEST SETUP

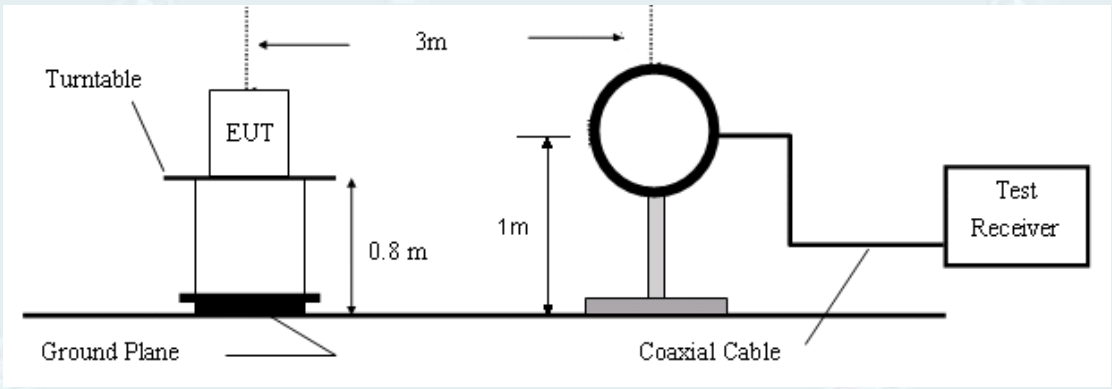


Figure 1. 9kHz to 30MHz radiated emissions test configuration

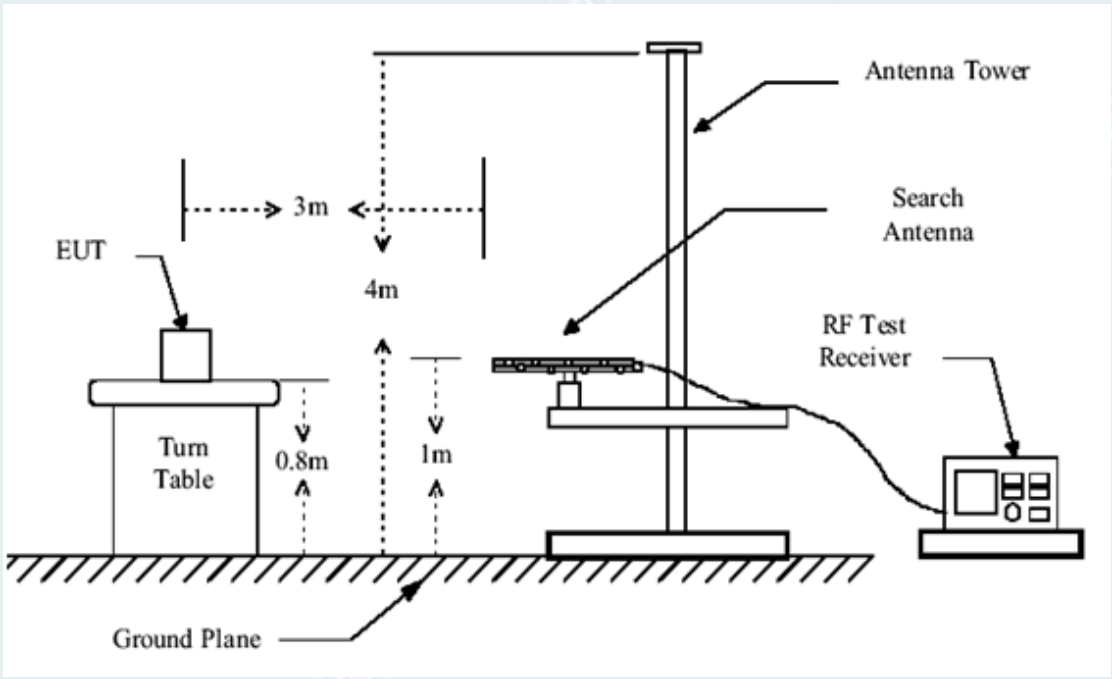


Figure 2. 30MHz to 1GHz radiated emissions test configuration

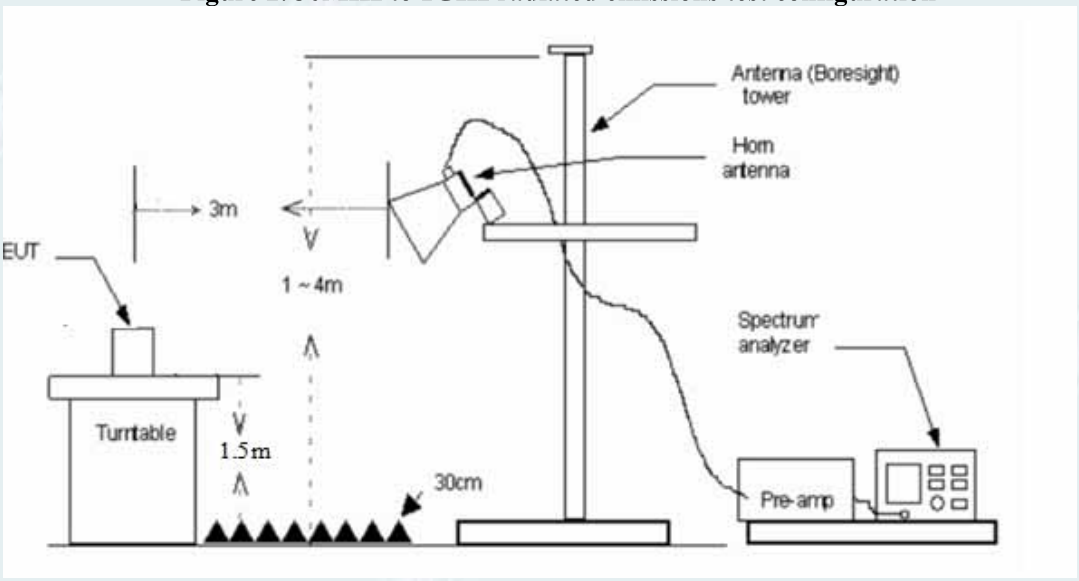


Figure 3. 1GH to 18GHz radiated emissions test configuration

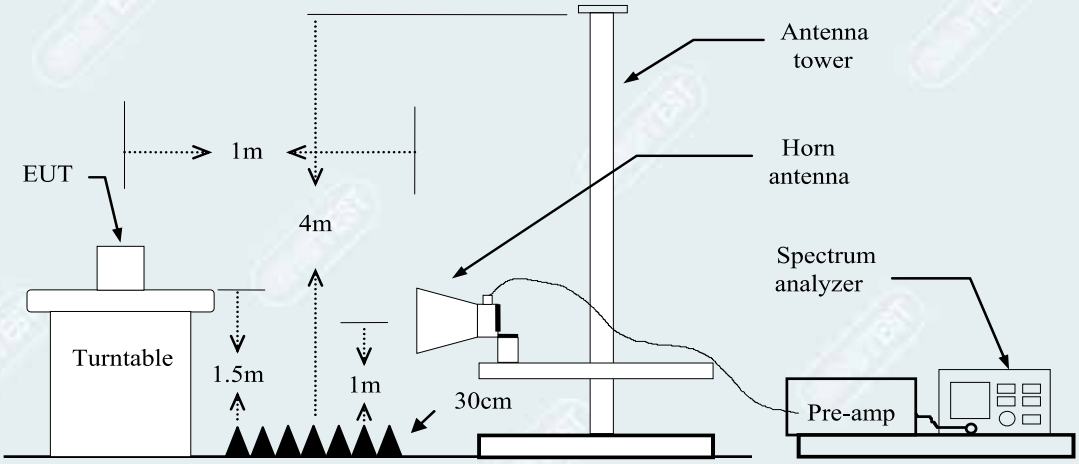


Figure 4. 18GHz to 26.5GHz radiated emissions test configuration

6.4 DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

1GHz-18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

Above 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz) = Emission frequency in MHz

Ant.Pol. (H/V) = Antenna polarization

Reading (dBuV) = Uncorrected Analyzer / Receiver reading

Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain

Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Remark Result (dBuV/m) – Limit (dBuV/m)

Peak = Peak Reading

QP = Quasi-peak Reading

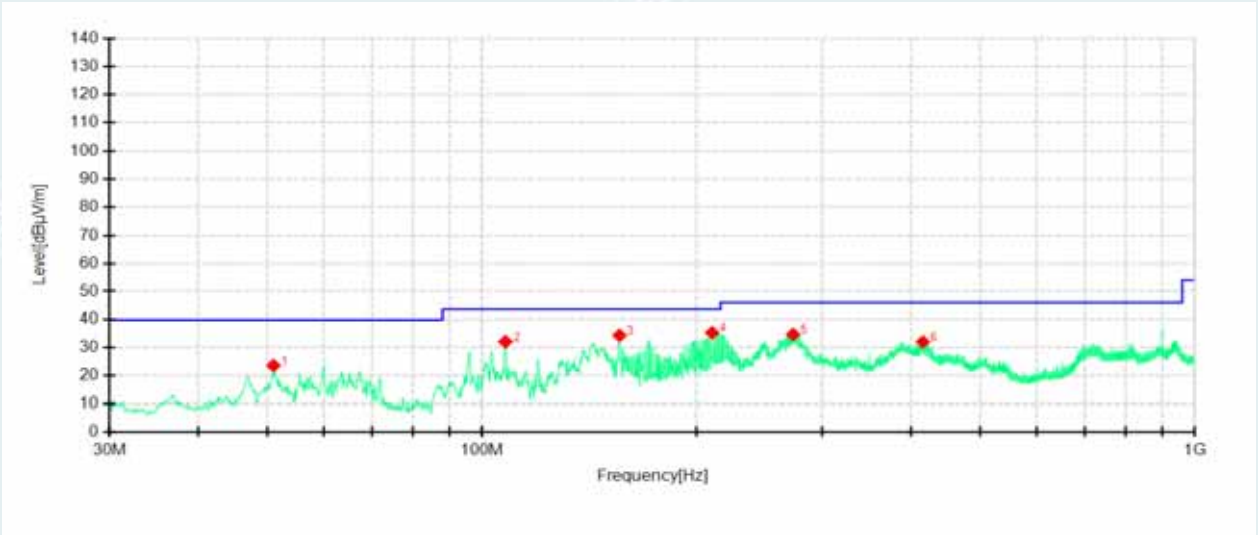
AVG = Average Reading

6.5 TEST RESULTS

Below 1GHz

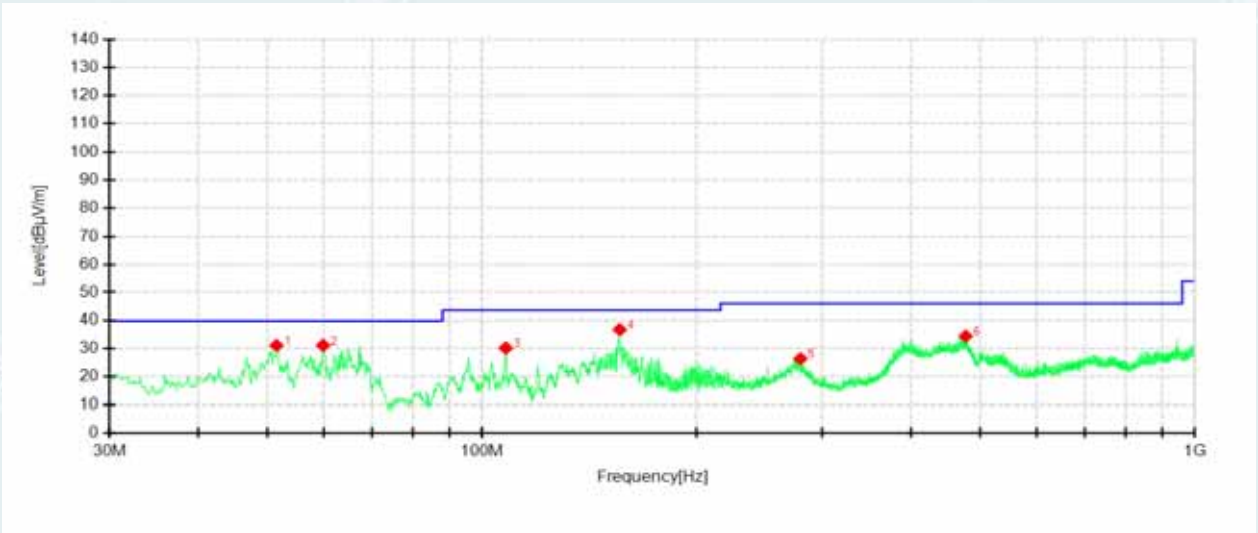
All models were pretested and only the worst modes and channels were recorded in this report. (IEEE 802.11g 2412MHz-Ant 2)

EUT Name	Hydrow Touchscreen Monitor	**Model**	CVC15101
Environmental Conditions	25℃/60%RH	**Test Voltage**	AC120V/60Hz
Test Mode	IEEE 802.11g Frequency (2412MHz-Ant 2)	**Polarity**	Horizontal
Tested By	Lu Qiang	**Tested Date**	2021/12/13



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	50.9789	51.42	23.60	-27.82	40.00	16.40	100	233	Horizontal
2	107.8522	60.49	32.17	-28.32	43.50	11.33	161	34	Horizontal
3	155.8732	65.46	34.44	-31.02	43.50	9.06	100	233	Horizontal
4	210.3213	63.59	35.41	-28.18	43.50	8.09	210	185	Horizontal
5	273.1366	61.10	34.78	-26.32	46.00	11.22	320	143	Horizontal
6	415.5019	54.48	32.09	-22.39	46.00	13.91	100	315	Horizontal

EUT Name	Hydrow Touchscreen Monitor	Model	CVC15101
Environmental Conditions	25℃/60%RH	Test Voltage	AC120V/60Hz
Test Mode	IEEE 802.11g Frequency (2412MHz-Ant 2)	Polarity	Vertical
Tested By	Lu Qiang	Tested Date	2021/12/13



NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	51.4639	59.06	31.16	-27.90	40.00	8.84	100	108	Vertical
2	59.8312	60.46	31.21	-29.25	40.00	8.79	200	277	Vertical
3	107.9735	58.56	30.24	-28.32	43.50	13.26	100	53	Vertical
4	155.9945	67.90	36.89	-31.01	43.50	6.61	130	356	Vertical
5	279.6850	52.53	26.41	-26.12	46.00	19.59	200	210	Vertical
6	477.1046	55.74	34.53	-21.21	46.00	11.47	100	19	Vertical

Remark:

1 No emission found between lowest internal used/generated frequency to 30MHz.

2 Radiated emissions measured in frequency range from 9 kHz to 1GHz were made with an instrument using Quasi-peak detector mode.

3 Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 The IF bandwidth of Receiver between 30MHz to 1GHz was 120 kHz.

1GHz-18GHz:
For Radiated emission 1G~18GHz, Ant 2 is the worst case for 802.11b/g SISO mode. So recorded the worst case results in this report.

Mode: IEEE 802.11b-Ant 2
Lowest Frequency (2412MHz) Date: 2021-12-17
Environment: 25℃/60%RH Voltage: AC120V/60Hz
Tested By: Lu Qiang

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1003.2504	63.22	38.07	-25.15	74.00	35.93	200	128	Horizontal
2	1738.0923	63.36	40.94	-22.42	74.00	33.06	200	225	Horizontal
3	2699.9625	64.92	46.53	-18.39	74.00	27.47	200	152	Horizontal
4	3575.6970	59.59	44.46	-15.13	74.00	29.54	100	135	Horizontal
5	4824.6031	62.37	52.66	-9.71	74.00	21.34	200	4	Horizontal
6	5400.3000	55.92	45.42	-10.50	74.00	28.58	200	246	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4823.9759	-9.71	60.81	51.10	54.00	2.90	200	11	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1050.5063	64.73	39.66	-25.07	74.00	34.34	100	274	Vertical
2	1741.8427	63.25	40.82	-22.43	74.00	33.18	200	185	Vertical
3	2576.1970	65.59	46.55	-19.04	74.00	27.45	200	259	Vertical
4	2700.2125	62.63	44.24	-18.39	74.00	29.76	200	218	Vertical
5	3215.6520	59.98	43.90	-16.08	74.00	30.10	200	298	Vertical
6	4824.6031	55.46	45.75	-9.71	74.00	28.25	200	118	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4823.9759	-9.71	54.42	44.71	54.00	9.29	200	124	Vertical

Mode: IEEE 802.11b-Ant 2
Middle Frequency (2437MHz)
Environment: 25℃/60%RH
Tested By: Lu Qiang

Date: 2021-12-17
Voltage: AC120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1176.2720	65.27	40.71	-24.56	74.00	33.29	200	135	Horizontal
2	1495.8120	63.86	40.95	-22.91	74.00	33.05	200	8	Horizontal
3	1736.3420	63.13	40.71	-22.42	74.00	33.29	200	216	Horizontal
4	3675.0844	60.68	45.90	-14.78	74.00	28.10	200	184	Horizontal
5	4873.3592	62.08	52.26	-9.82	74.00	21.74	200	0	Horizontal
6	5400.3000	55.91	45.41	-10.50	74.00	28.59	200	249	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4873.9440	-9.83	61.48	51.65	54.00	2.35	179	11	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1008.2510	66.08	40.93	-25.15	74.00	33.07	200	192	Vertical
2	1504.3130	62.53	39.64	-22.89	74.00	34.36	200	143	Vertical
3	1734.8419	64.10	41.68	-22.42	74.00	32.32	200	184	Vertical
4	4873.3592	55.55	45.73	-9.82	74.00	28.27	200	120	Vertical
5	5400.3000	54.24	43.74	-10.50	74.00	30.26	200	209	Vertical
6	6499.1874	51.65	45.13	-6.52	74.00	28.87	100	274	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4873.8953	-9.83	53.29	43.46	54.00	10.54	197	122	Vertical

Mode: IEEE 802.11b-Ant 2
Highest Frequency (2462MHz)
Environment: 25℃/60%RH
Tested By: Lu Qiang

Date: 2021-12-17
Voltage: AC120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1191.0239	65.25	40.71	-24.54	74.00	33.29	200	142	Horizontal
2	1743.5929	63.26	40.83	-22.43	74.00	33.17	200	226	Horizontal
3	3577.5722	59.01	43.95	-15.06	74.00	30.05	100	138	Horizontal
4	4923.9905	61.35	51.28	-10.07	74.00	22.72	200	8	Horizontal
5	5400.3000	55.75	45.25	-10.50	74.00	28.75	200	249	Horizontal
6	7206.1508	50.02	46.83	-3.19	74.00	27.17	100	105	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4923.9413	-10.07	60.89	50.82	54.00	3.18	191	4	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1052.0065	65.35	40.29	-25.06	74.00	33.71	200	267	Vertical
2	1738.8424	62.58	40.16	-22.42	74.00	33.84	200	185	Vertical
3	3609.4512	58.08	43.73	-14.35	74.00	30.27	200	0	Vertical
4	4923.9905	54.11	44.04	-10.07	74.00	29.96	200	101	Vertical
5	5400.3000	54.75	44.25	-10.50	74.00	29.75	200	199	Vertical
6	6564.8206	51.22	45.29	-5.93	74.00	28.71	100	287	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4923.9413	-10.07	53.07	43.00	54.00	11.00	200	101	Vertical

Mode: IEEE 802.11g-Ant 2
Lowest Frequency (2412MHz)
Environment: 25℃/60%RH
Tested By: Chen XiaoCong

Date: 2021-12-16
Voltage: AC120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1592.8000	71.88	48.97	-22.91	74.00	25.03	100	28	Horizontal
2	2700.2000	63.79	45.40	-18.39	74.00	28.60	200	157	Horizontal
3	3679.5000	59.09	44.30	-14.79	74.00	29.70	200	181	Horizontal
4	4824.0000	69.25	59.54	-9.71	74.00	14.46	200	2	Horizontal
5	5401.5000	54.38	43.88	-10.50	74.00	30.12	200	119	Horizontal
6	7240.5000	53.88	50.30	-3.58	74.00	23.70	200	188	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4821.9498	-9.71	57.48	47.77	54.00	6.23	177	11	Horizontal
2	7235.2506	-3.59	42.10	38.51	54.00	15.49	131	44	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1599.6000	71.96	49.04	-22.92	74.00	24.96	200	76	Vertical
2	2578.2000	73.53	54.46	-19.07	74.00	19.54	200	323	Vertical
3	3216.0000	62.78	46.70	-16.08	74.00	27.30	200	291	Vertical
4	4821.0000	61.18	51.46	-9.72	74.00	22.54	200	120	Vertical
5	5989.5000	53.71	46.13	-7.58	74.00	27.87	100	106	Vertical
6	7239.0000	54.23	50.67	-3.56	74.00	23.33	200	154	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2572.8631	-19.06	60.29	41.23	54.00	12.77	198	2	Vertical
2	4825.7969	-9.72	47.18	37.46	54.00	16.54	197	139	Vertical
3	7235.3805	-3.57	43.08	39.51	54.00	14.49	146	204	Vertical

Mode: IEEE 802.11g-Ant 2
Middle Frequency (2437MHz)
Environment: 25℃/60%RH
Tested By: Chen XiaoCong

Date: 2021-12-16
Voltage: AC120V/60Hz

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1594.6000	71.36	48.45	-22.91	74.00	25.55	200	55	Horizontal
2	2700.0000	64.12	45.73	-18.39	74.00	28.27	200	164	Horizontal
3	2991.4000	62.70	45.00	-17.70	74.00	29.00	100	96	Horizontal
4	3672.0000	59.18	44.41	-14.77	74.00	29.59	200	182	Horizontal
5	4872.0000	68.23	58.42	-9.81	74.00	15.58	200	325	Horizontal
6	7308.0000	52.54	48.19	-4.35	74.00	25.81	200	127	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4869.4909	-9.81	56.80	46.99	54.00	7.01	200	28	Horizontal
2	7310.7770	-4.35	41.70	37.35	54.00	16.65	198	209	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1596.6000	75.46	52.54	-22.92	74.00	21.46	200	76	Vertical
2	2600.8000	75.44	56.14	-19.30	74.00	17.86	200	260	Vertical
3	3249.0000	62.97	46.37	-16.60	74.00	27.63	200	243	Vertical
4	4876.5000	59.64	49.79	-9.85	74.00	24.21	200	113	Vertical
5	6000.0000	55.45	47.96	-7.49	74.00	26.04	100	106	Vertical
6	7306.5000	53.86	49.49	-4.37	74.00	24.51	200	154	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1600.5835	-22.91	40.80	17.89	54.00	36.11	188	32	Vertical
2	2598.3813	-19.30	57.91	38.61	54.00	15.39	174	2	Vertical
3	4871.9405	-9.85	55.61	45.76	54.00	8.24	188	349	Vertical
4	7310.7012	-4.37	39.68	35.31	54.00	18.69	198	84	Vertical