

TECHNICAL REPORT



Report No.: TW2007313E
File reference No.: 2020-08-07

Applicant: Galcon Bakarim Agricultural Cooperative Society, Ltd.

Product: Programmable Irrigation Controller

Model No.: Series 8XXXBT

Brand Name: GALCON

Test Standards: FCC Part 15.249

Test result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10&FCC Part 15 Subpart C, Paragraph 15.249 regulations for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: August 07, 2020

**Results appearing herein relate only to the sample tested
The technical reports is issued errors and omissions exempt and is subject to withdrawal at**

SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 744189

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

Industry Canada (IC) —Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

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Test Report Conclusion

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1.0 General Details

1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TESTING LABORATORIES.
Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China
Telephone: (755) 83448688
Fax: (755) 83442996
Site on File with the Federal Communications Commission – United States
Registration Number: 744189
For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: Galcon Bakarim Agricultural Cooperative Society, Ltd.
Address: Kibbutz Kfar Blum 1215000 Israel
Telephone: 972-46900222
Fax: --

1.3 Description of EUT

Product:	Programmable Irrigation Controller
Manufacturer:	Galcon Bakarim Agricultural Cooperative Society, Ltd.
Address:	Kibbutz Kfar Blum 1215000 Israel
Brand Name:	GALCON
Model Number:	Series 8XXXBT
Additional Model Name	N/A
Input Voltage:	120V~, 60Hz
Modulation Type:	GFSK, Pi/4D-QPSK, 8DPSK (Bluetooth)
Operation Frequency:	2402-2480MHz
Channel Separate:	1MHz
Channel Number:	79
Antenna Designation	PCB antenna with gain -0.58dBi Max

1.4 Submitted Sample: 1 Sample

1.5 Test Duration

2020-07-24 to 2020-08-06

1.6 Test Uncertainty

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Conducted Emissions Uncertainty =3.6dB
Radiated Emissions below 1GHz Uncertainty =4.7dB
Radiated Emissions above 1GHz Uncertainty =6.0dB
Conducted Power Uncertainty =6.0dB
Occupied Channel Bandwidth Uncertainty =5%
Conducted Emissions Uncertainty =3.6dB

1.7 Test Engineer

A handwritten signature in black ink that reads "Terry Tang".

The sample tested by _____

Print Name: Terry Tang

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2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2020-06-23	2021-06-22
LISN	R&S	EZH3-Z5	100294	2020-06-23	2021-06-22
LISN	R&S	EZH3-Z5	100253	2020-06-23	2021-06-22
Ultra Broadband ANT	R&S	HL562	100157	2020-06-23	2021-06-22
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2020-06-23	2021-06-22
Loop Antenna	EMCO	6507	00078608	2018-06-25	2021-06-24
Spectrum	R&S	FSIQ26	100292	2020-06-23	2021-06-22
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2020-06-23	2021-06-22
Horn Antenna	R&S	BBHA 9120D	9120D-631	2018-07-09	2021-07-08
Power meter	Anritsu	ML2487A	6K00003613	2019-08-22	2020-08-21
Power sensor	Anritsu	MA2491A	32263	2019-08-22	2020-08-21
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2018-07-04	2021-07-03
9*6*6 Anechoic	--	--	N/A	2018-02-07	2021-02-06
EMI Test Receiver	RS	ESVB	826156/011	2020-06-23	2021-06-22
EMI Test Receiver	RS	ESH3	860904/006	2020-06-23	2021-06-22
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2020-06-23	2021-06-22
Spectrum	HP/Agilent	E4407B	MY50441392	2020-06-23	2021-06-22
Spectrum	RS	FSP	1164.4391.38	2020-01-16	2021-01-15
RF Cable	Zhengdi	ZT26-NJ-NJ-8 M/FA	--	2020-06-23	2021-06-22
RF Cable	Zhengdi	7m	--	2020-06-23	2021-06-22
RF Switch	EM	EMSW18	060391	2020-06-23	2021-06-22
Pre-Amplifier	Schwarebeck	BBV9743	#218	2020-06-23	2021-06-22
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2020-06-23	2021-06-22
LISN	SCHAFFNER	NNB42	00012	2020-01-07	2021-01-06

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3.0 Technical Details

3.1 Summary of test results

The EUT has been tested according to the following specifications:			
Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.207	Conducted Emission Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	PASS	Complies
FCC Part 15, Paragraph 15.209 and RSS-210	Radiated Emission Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	PASS	Complies

3.2 Test Standards

FCC Part 15 Subpart C, Paragraph 15.249 , ANSI C63.4 :2014 and ANSI C63.10 :2013

4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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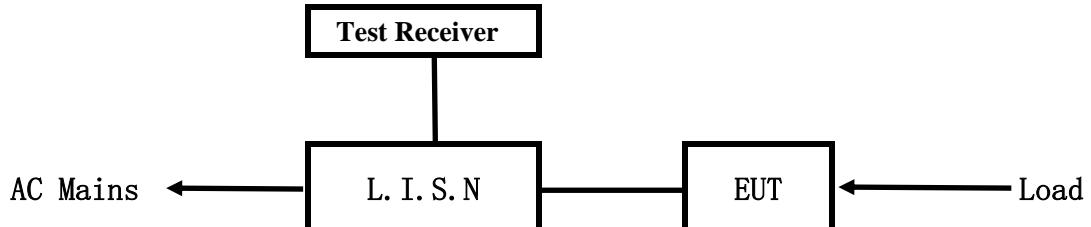
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5. Power Line Conducted Emission Test

5.1 Schematics of the test

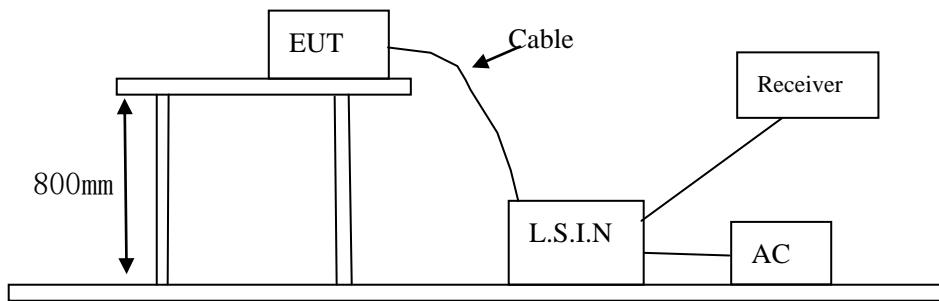


EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2014.

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2014. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

One channels are provided to the EUT

A. EUT

Device	Manufacturer	Model	FCC ID
Programmable Irrigation Controller	Galcon Bakarim Agricultural Cooperative Society, Ltd.	Series 8XXXBT	SZ890BTA

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B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	Rating
N/A			

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

- A Setup the EUT and simulators as shown on follow
B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency(MHz)	Limits (dB μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The tighter limit shall apply at the transition frequencies

5.6 Test Results:

Pass

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A: Conducted Emission on Live Terminal (150kHz to 30MHz)

EUT Operating Environment

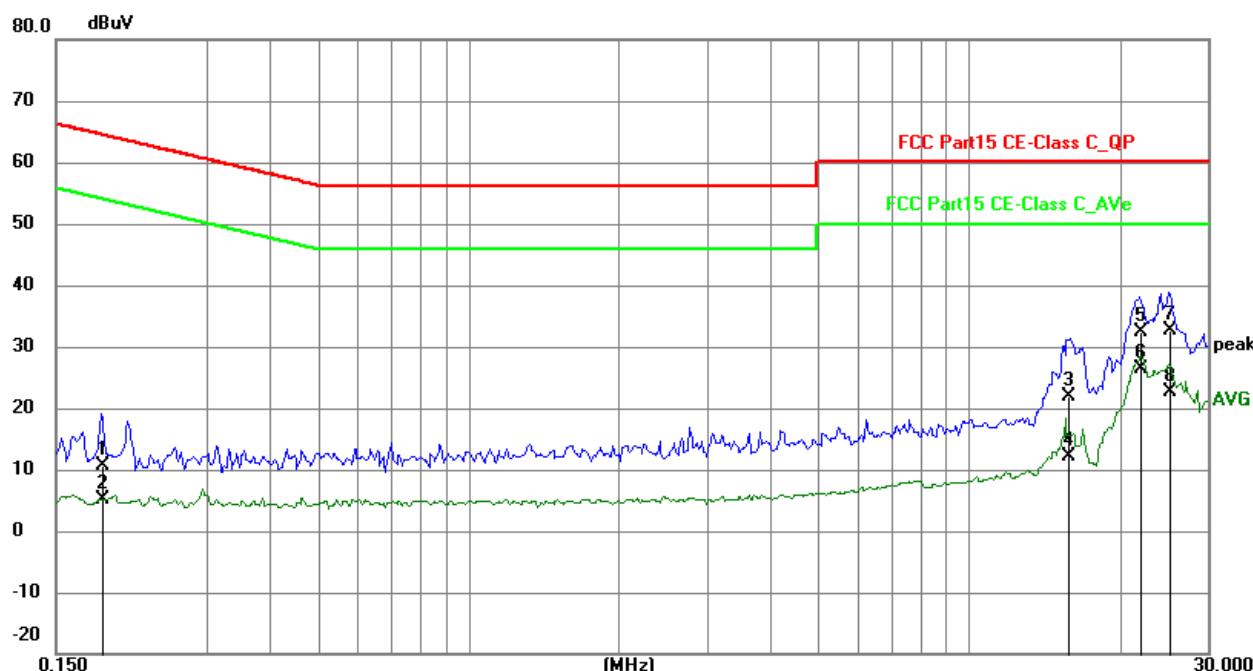
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Communication by Bluetooth

Equipment Level: Class B

Results: PASS

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1850	0.88	9.76	10.64	64.26	-53.62	QP	P
2	0.1850	-4.73	9.76	5.03	54.26	-49.23	AVG	P
3	15.8014	11.36	10.43	21.79	60.00	-38.21	QP	P
4	15.8014	1.66	10.43	12.09	50.00	-37.91	AVG	P
5	21.9852	21.54	10.80	32.34	60.00	-27.66	QP	P
6	21.9852	15.46	10.80	26.26	50.00	-23.74	AVG	P
7	25.1559	21.62	11.00	32.62	60.00	-27.38	QP	P
8	25.1559	11.56	11.00	22.56	50.00	-27.44	AVG	P

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B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

EUT Operating Environment

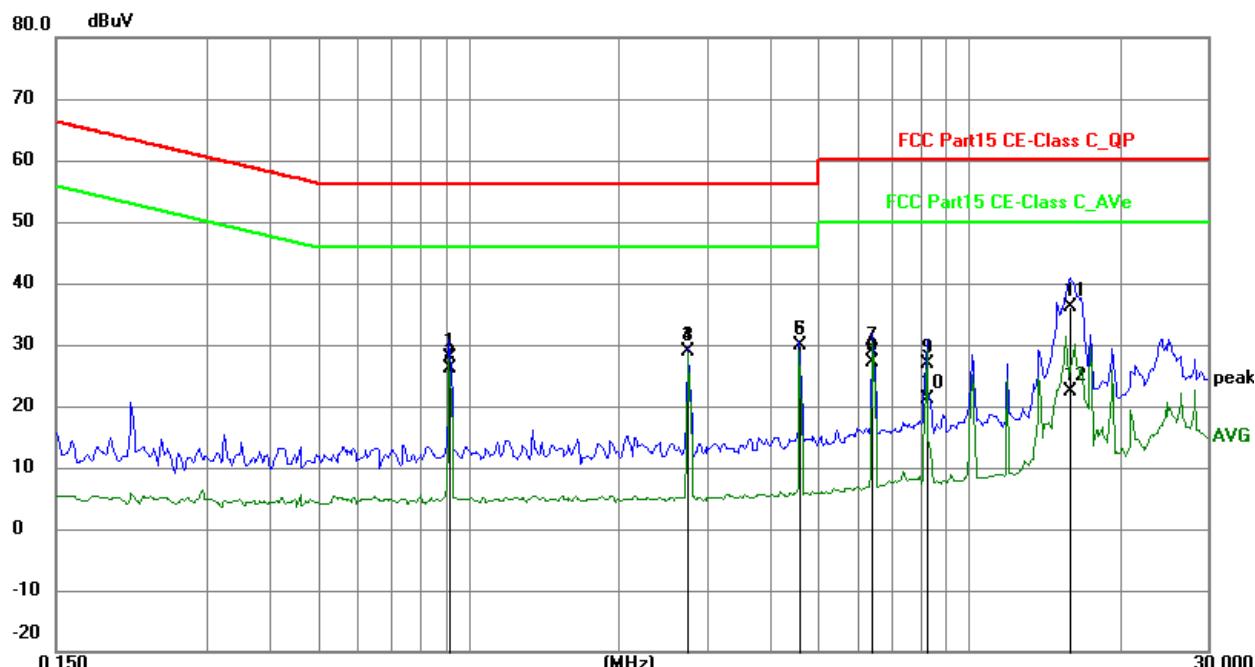
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: Communication by Bluetooth

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.9183	18.06	9.79	27.85	56.00	-28.15	QP	P
2	0.9183	16.23	9.79	26.02	46.00	-19.98	AVG	P
3	2.7473	19.00	9.83	28.83	56.00	-27.17	QP	P
4	2.7473	19.09	9.83	28.92	46.00	-17.08	AVG	P
5	4.5795	20.09	9.91	30.00	56.00	-26.00	QP	P
6	4.5795	20.04	9.91	29.95	46.00	-16.05	AVG	P
7	6.4125	18.84	9.99	28.83	60.00	-31.17	QP	P
8	6.4125	17.04	9.99	27.03	50.00	-22.97	AVG	P
9	8.2455	16.70	10.07	26.77	60.00	-33.23	QP	P
10	8.2455	11.08	10.07	21.15	50.00	-28.85	AVG	P
11	15.9558	25.61	10.44	36.05	60.00	-23.95	QP	P
12	15.9558	11.94	10.44	22.38	50.00	-27.62	AVG	P

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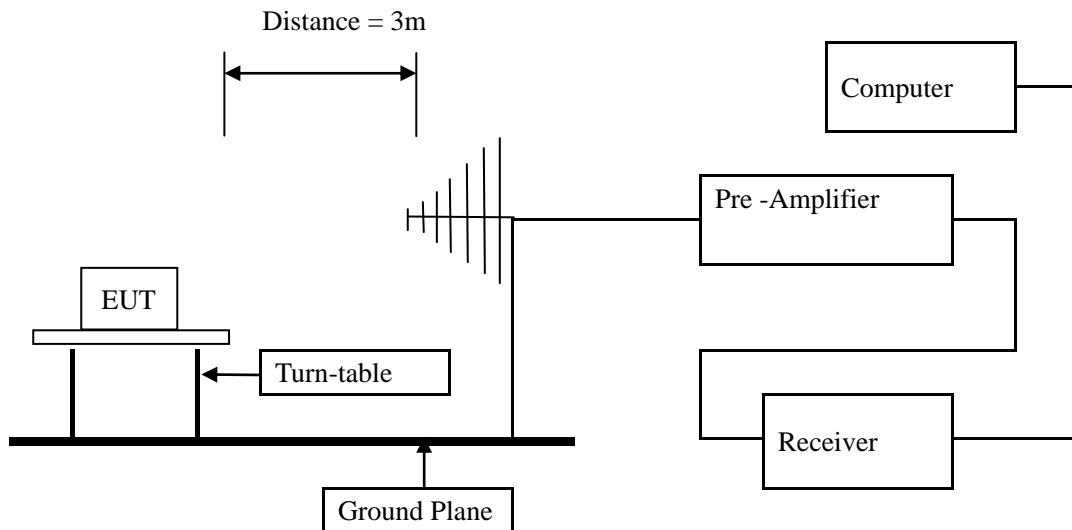


6 Radiated Emission Test

6.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz (Note: for Fundamental frequency radiated emission measurement, RBW=3MHz, VBW=10MHz). Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup



6.2 Configuration of The EUT

Same as section 5.3 of this report

6.3 EUT Operating Condition

Same as section 5.4 of this report.

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6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Fundamental Frequency (MHz)	Field Strength of Fundamental (3m)			Field Strength of Harmonics (3m)		
	mV/m	dBuV/m		uV/m	dBuV/m	
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)

Note:

1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)
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. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz. As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.
5. The three modulation modes of GFSK, Pi/4D-QPSK, and 8DPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.

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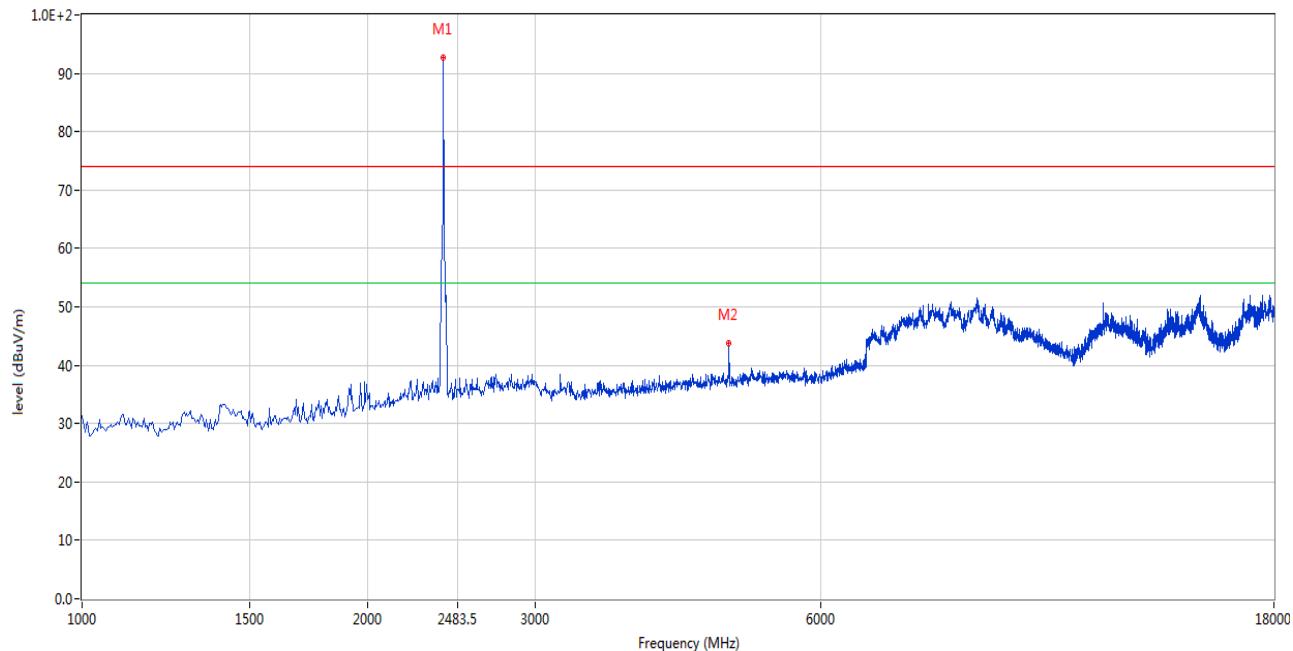
6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2402MHz

Horizontal

FCC_FCC Part 15C Class B 1GHz-18GHz - 2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.149	92.62	-3.57	114.0	-21.28	Peak	115.00	100	H	Pass
2	4802.799	43.76	3.12	74.0	-30.24	Peak	360.00	100	H	Pass

Note: the measured PK value less than the AV limit, so no necessary to record the AV measurement level.

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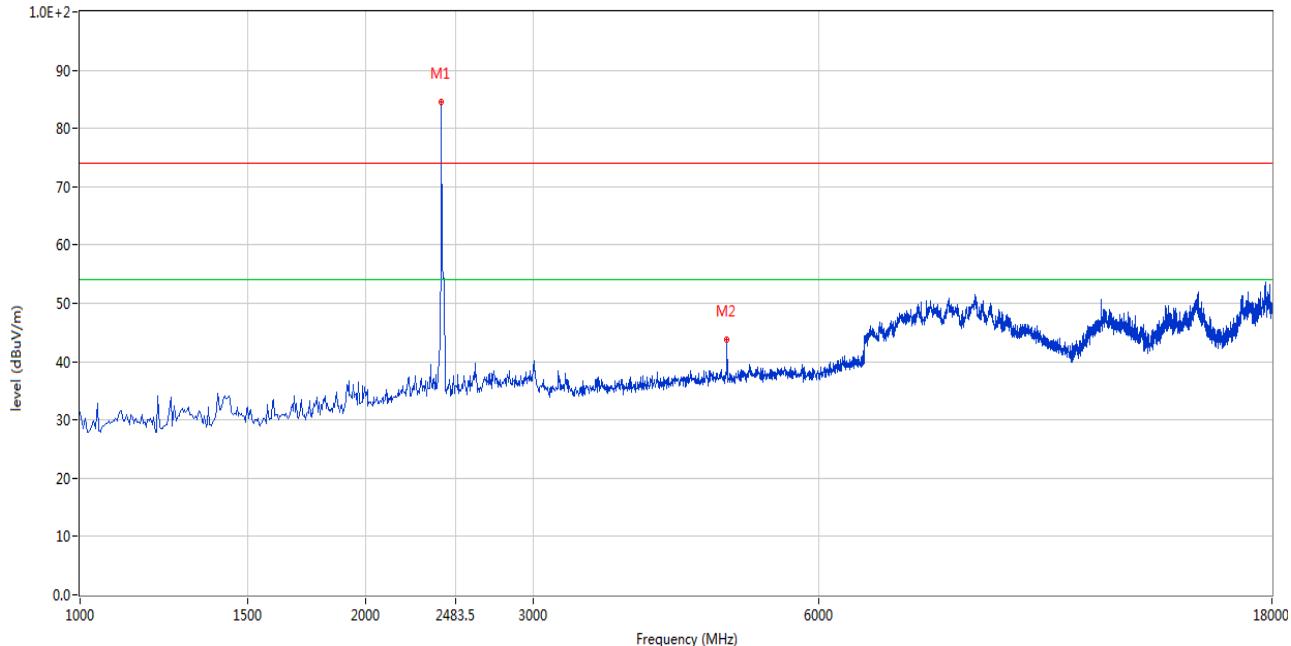
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Vertical

FCC_FCC Part 15C Class B 1GHz-18GHz - 2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.149	86.62	-3.57	114.0	-27.38	Peak	115.00	100	V	Pass
2	4802.799	43.76	3.12	74.0	-30.24	Peak	360.00	100	V	Pass

Note: the measured PK value less than the AV limit, so no necessary to record the AV measurement level.

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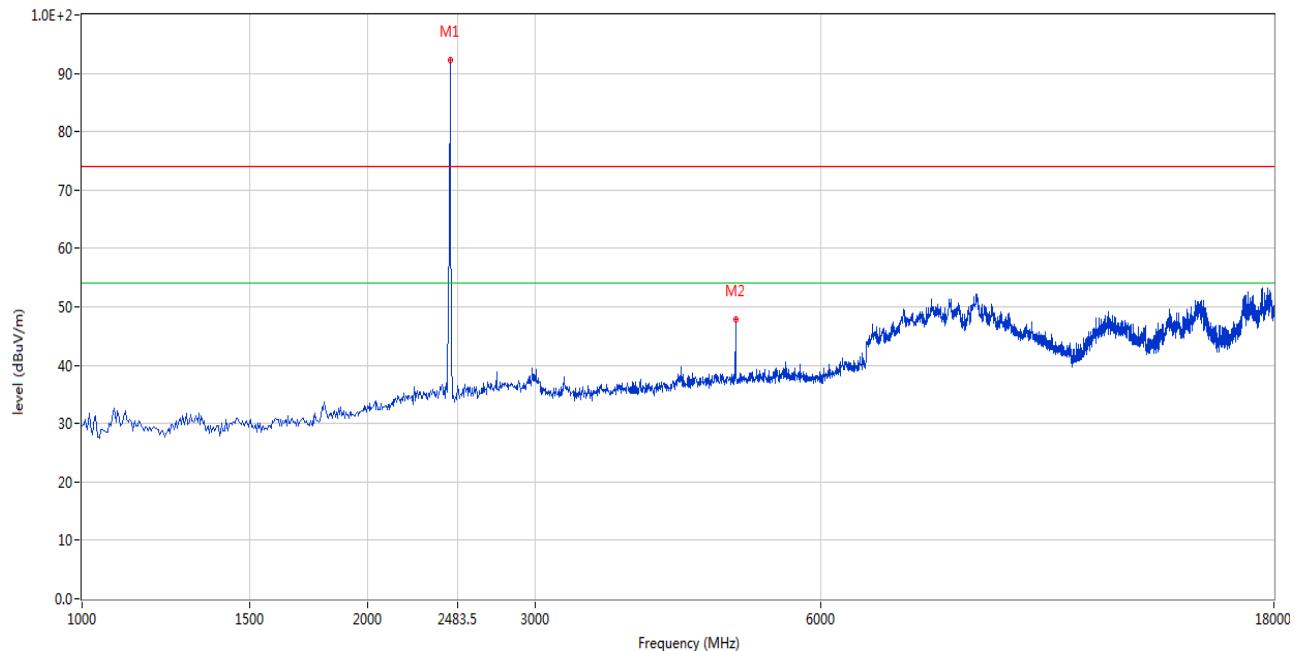
In the event of the improper use of the report, The SHENZHEN TIMEWAY TESTING LABORATORIES, reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



Please refer to the following test plots for details: Middle Channel-2441MHz

Horizontal

FCC_FCC Part 15C Class B 1GHz-18GHz - 2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2440.390	92.27	-3.57	114.0	-21.73	Peak	135.00	100	H	Pass
2	4883.529	47.79	3.20	74.0	-26.21	Peak	139.00	100	H	Pass

Note: the measured PK value less than the AV limit, so no necessary to record the AV measurement level.

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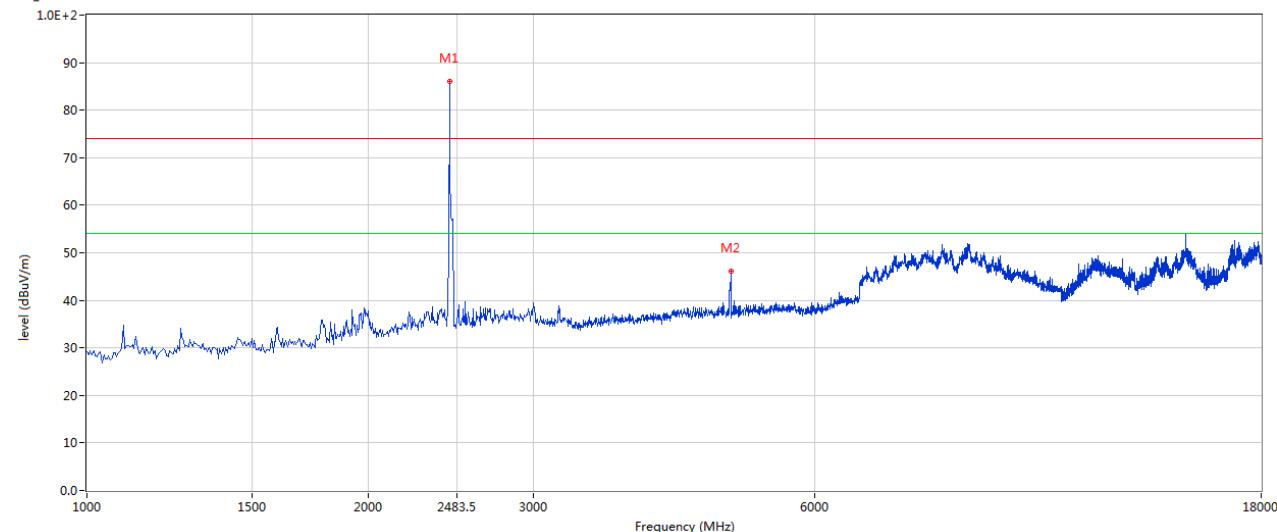
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Vertical

FCC_FCC Part 15C Class B 1GHz-18GHz - 2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2440.390	86.08	-3.57	114.0	-27.92	Peak	12.00	100	V	N/A
2	4883.529	46.18	3.20	74.0	-27.82	Peak	360.00	100	V	Pass

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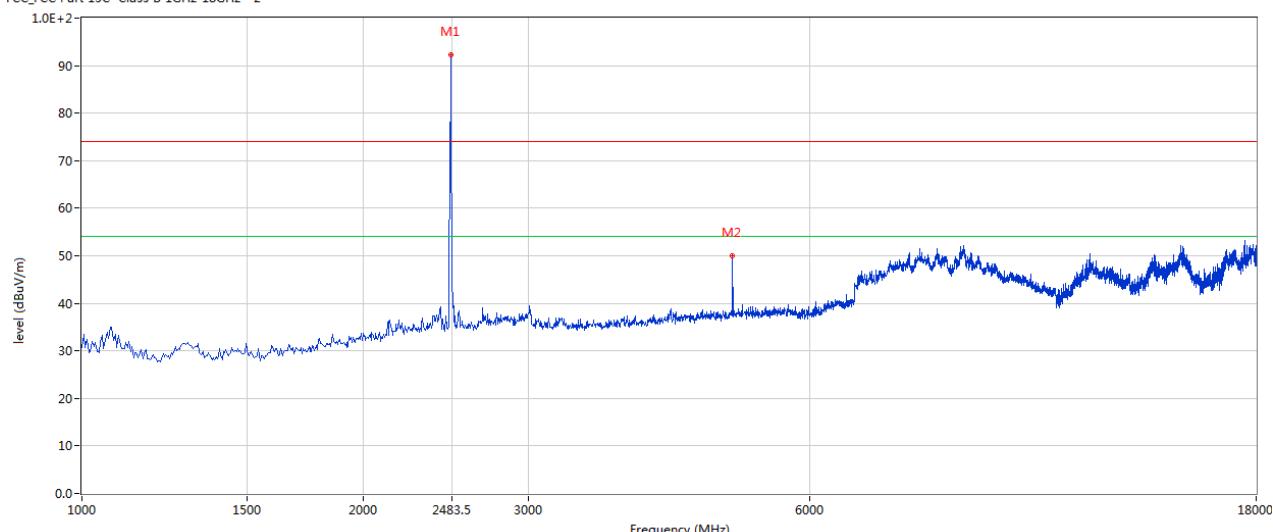
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Please refer to the following test plots for details: High Channel-2480MHz

Horizontal

FCC_FCC Part 15C Class B 1GHz-18GHz - 2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.630	93.36	-3.57	114.0	-20.64	Peak	272.00	100	H	Pass
1*	2479.630	82.19	-3.57	94.0	-11.81	AV	272.00	100	H	Pass
2	4960.010	49.98	3.36	74.0	-24.02	Peak	119.00	100	H	Pass

Note: for mark 2 the measured PK value less than the AV limit, so no necessary to record the AV measurement level.

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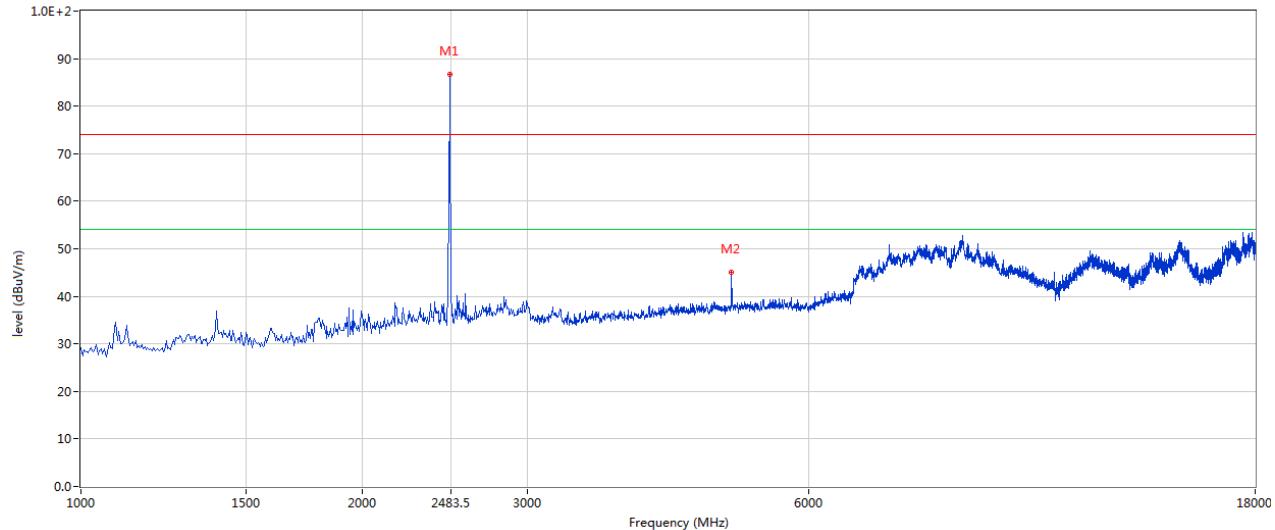
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Vertical

FCC_FCC Part 15C Class B 1GHz-18GHz - 2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.630	87.62	-3.57	114.0	-26.38	Peak	79.00	100	V	Pass
2	4960.010	45.01	3.36	74.0	-28.99	Peak	0.00	100	V	Pass

Note:

- (2) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier
- (3) Margin= Emission-Limits
- (4) According to section 15.35(b), the peak limit is 20dB higher than the average limit
- (5) For test purpose, keep EUT continuous transmitting
- (5) For emission above 18GHz and Below 30MHz, It is only the floor noise. No necessary to take down.
- (6) The measured PK value less than the AV limit, so no necessary to record the AV measurement level.

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B. General Radiated Emission Data

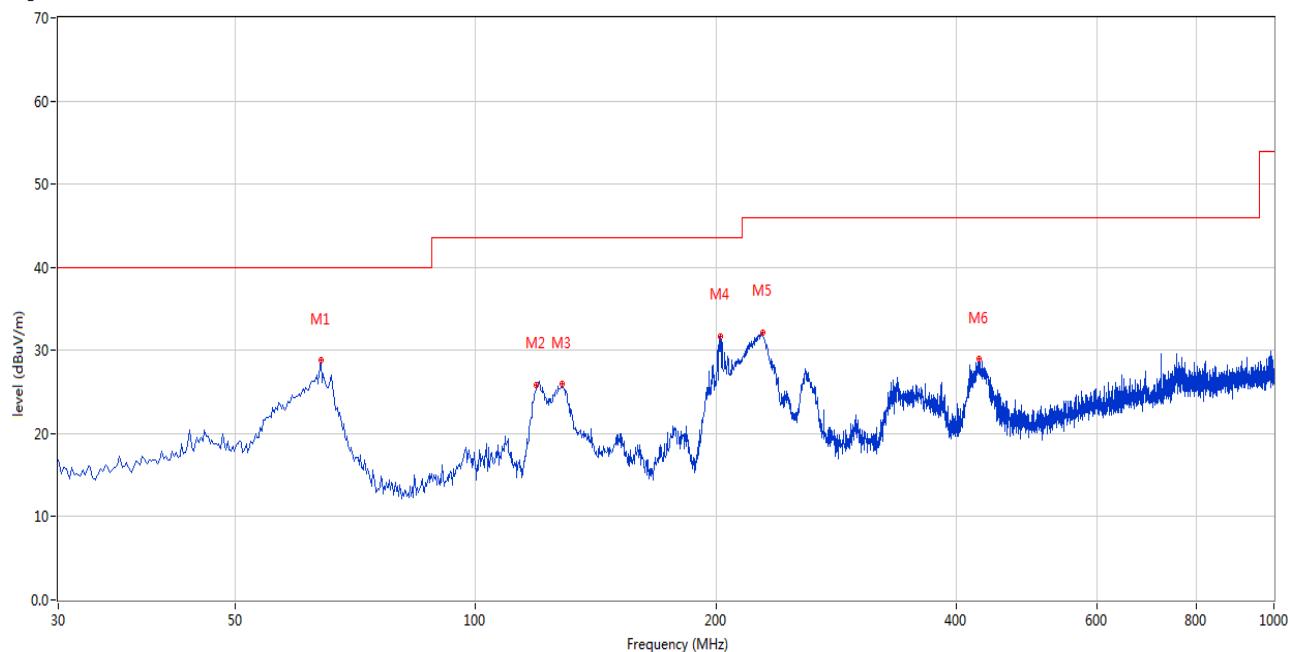
Radiated Emission In Horizontal (30MHz---1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual

FCC_FCC Part 15C Class B 30MHz-1GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	63.942	28.82	-13.32	40.0	-11.18	Peak	0.00	100	H	Pass
2	119.218	25.90	-15.13	43.5	-17.60	Peak	322.00	100	H	Pass
3	128.430	25.92	-16.75	43.5	-17.58	Peak	116.00	100	H	Pass
4	202.859	31.75	-13.42	43.5	-11.75	Peak	29.00	100	H	Pass
5	229.043	32.21	-12.71	46.0	-13.79	Peak	40.00	100	H	Pass
6	427.116	29.01	-8.18	46.0	-16.99	Peak	174.00	100	H	Pass

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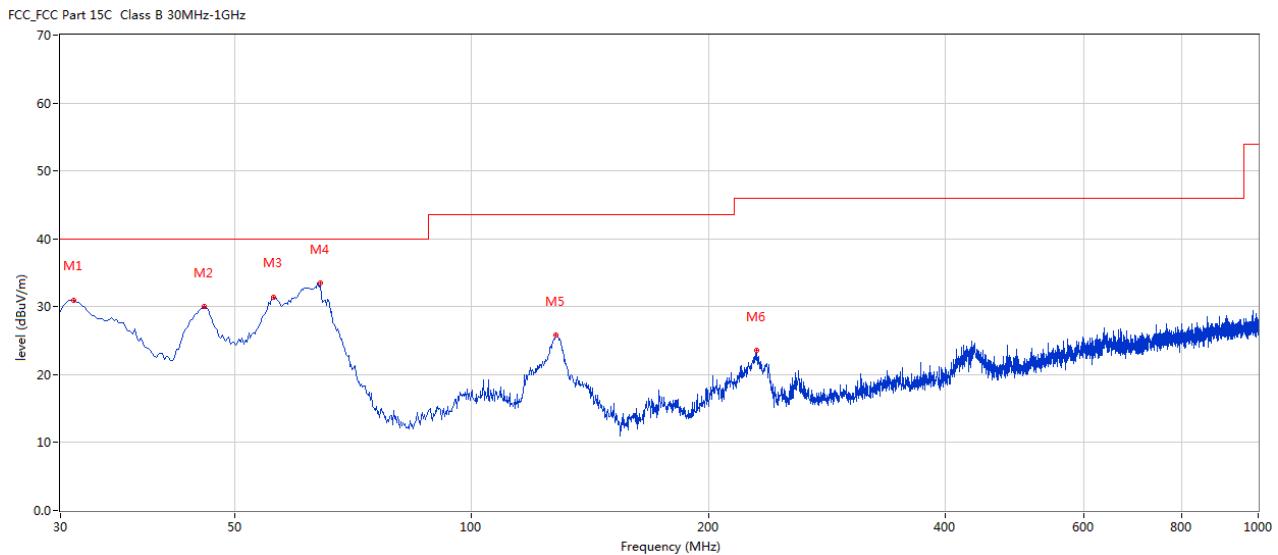


Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	31.212	31.00	-14.58	40.0	-9.00	Peak	56.00	100	V	Pass
2	45.759	30.03	-11.40	40.0	-9.97	Peak	332.00	100	V	Pass
3	55.941	31.44	-12.00	40.0	-8.56	Peak	348.00	100	V	Pass
4	64.184	33.50	-13.37	40.0	-6.50	Peak	260.00	100	V	Pass
5	127.946	25.83	-16.70	43.5	-17.67	Peak	50.00	100	V	Pass
6	230.255	23.58	-12.67	46.0	-22.42	Peak	50.00	100	V	Pass

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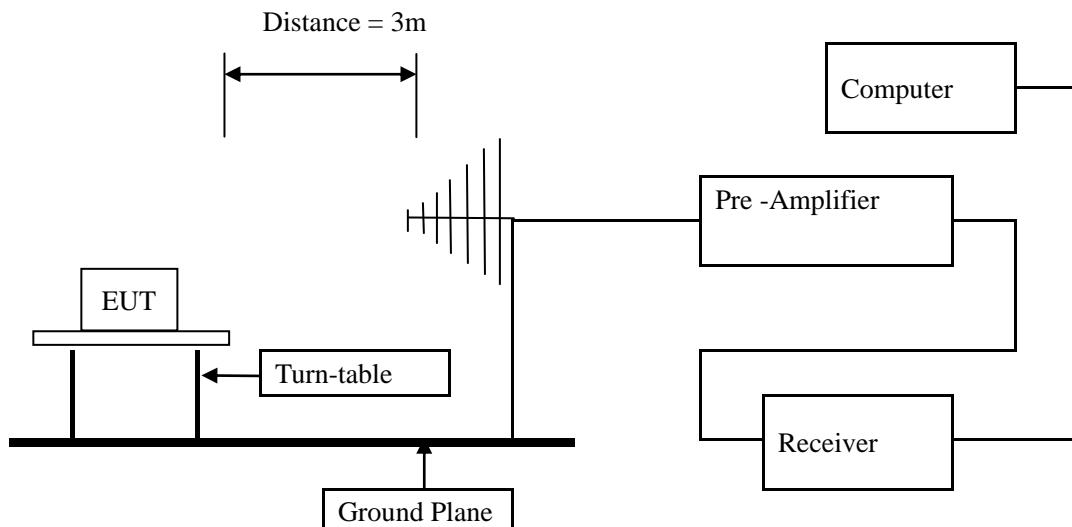


7. Band Edge

7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) Set Spectrum as RBW=1MHz, VBW=3MHz and Peak detector used for PK value. RBW=1MHz, VBW=10Hz and Peak detector used for AV value.
- (3) The antenna height is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

7.2 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing

7.3 Configuration of The EUT

Same as section 5.3 of this report

7.4 EUT Operating Condition

Same as section 5.4 of this report.

7.5 Band Edge Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

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7.6 Test Result

Product:	Programmable Irrigation Controller	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC_FCC Part 15C Class B 1GHz-18GHz - 2

level (dBuV/m)

Frequency (MHz)

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
2	2400.390	69.77	-3.57	74.0	-4.23	Peak	309.00	100	H	Pass
2*	2400.390	50.82	-3.57	54.0	-3.18	AV	309.00	100	H	Pass
3	2389.405	44.96	-3.53	74.0	-29.04	Peak	144.00	100	H	Pass

Note: for mark 3, the measured PK value less than the AV limit, so no necessary to record the AV measurement level.

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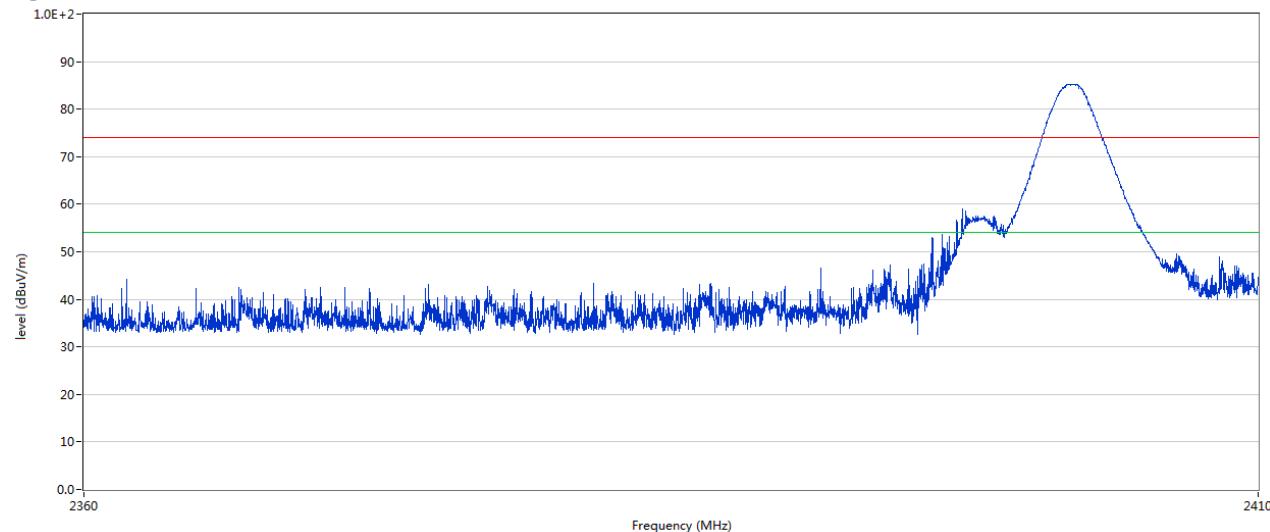
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Product:	Programmable Irrigation Controller	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC_FCC Part 15C Class B 1GHz-18GHz - 2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
2	2400.302	60.97	-3.57	74.0	-13.03	Peak	75.00	100	V	Pass
2*	2400.302	41.67	-3.57	54.0	-12.33	AV	75.00	100	V	Pass
3	2389.718	50.75	-3.53	74.0	-23.25	Peak	88.00	100	V	Pass

Note: for mark 3, the measured PK value less than the AV limit, so no necessary to record the AV measurement level.

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Product:	Programmable Irrigation Controller	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC_FCC Part 15C Class B 1GHz-18GHz - 2

level (dBuV/m)

Frequency (MHz)

1.0E+2

90

80

70

60

50

40

30

20

10

0.0

2470 2483.5 2500

M2

54.0

74.0

No. Frequency (MHz) Results (dBuV/m) Factor (dB) Limit (dBuV/m) Over Limit (dB) Detector Table (o) Height (cm) ANT Verdict

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
2*	2483.5	36.89	-3.57	54.0	-17.11	AV	275.00	100	H	Pass
2	2483.5	55.10	-3.57	74.0	-18.90	Peak	275.00	100	H	Pass

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Product:	Programmable Irrigation Controller		Detector	Vertical						
Mode	Keeping Transmitting		Test Voltage	120V~						
Temperature	24 deg. C,		Humidity	56% RH						
Test Result:	Pass		--	--						
FCC_FCC Part 15C Class B 1GHz-18GHz - 2										
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
2*	2483.594	31.83	-3.57	54.0	-22.17	AV	77.00	100	V	Pass
2	2483.594	50.72	-3.57	74.0	-28.28	Peak	77.00	100	V	Pass

- Note: 1. The PK emission level less than the AV limit. No necessary to record the AV emission level.
 2. The three modulation modes of GFSK, Pi/4D-QPSK, and 8DPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.

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8.0 Antenna Requirement

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a PCB antenna. The antenna gain is -0.58dBi Max. It fulfills the requirement of this section.

Test Result: Pass

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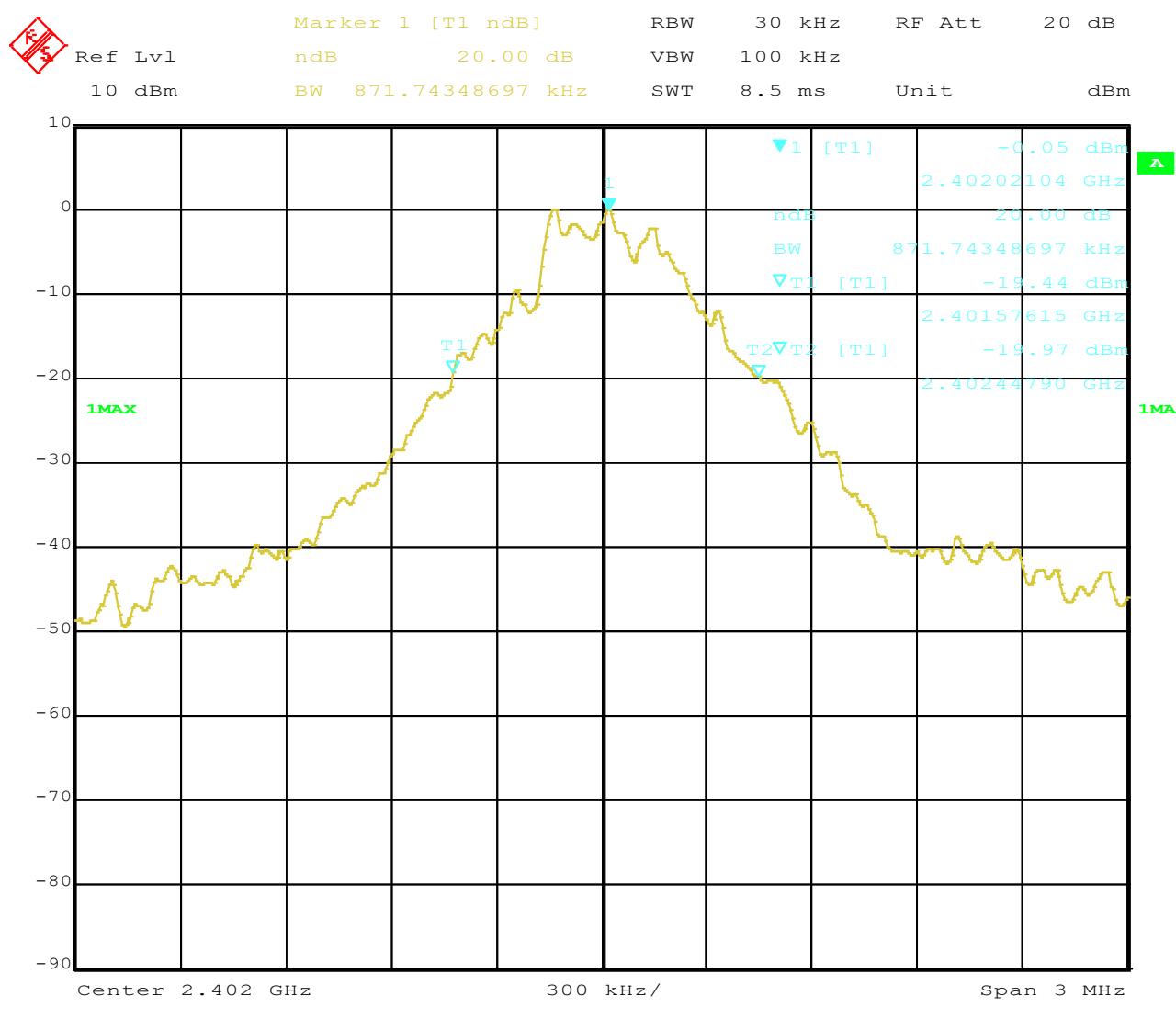
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9.0 20dB Bandwidth Measurement

GFSK Modulation

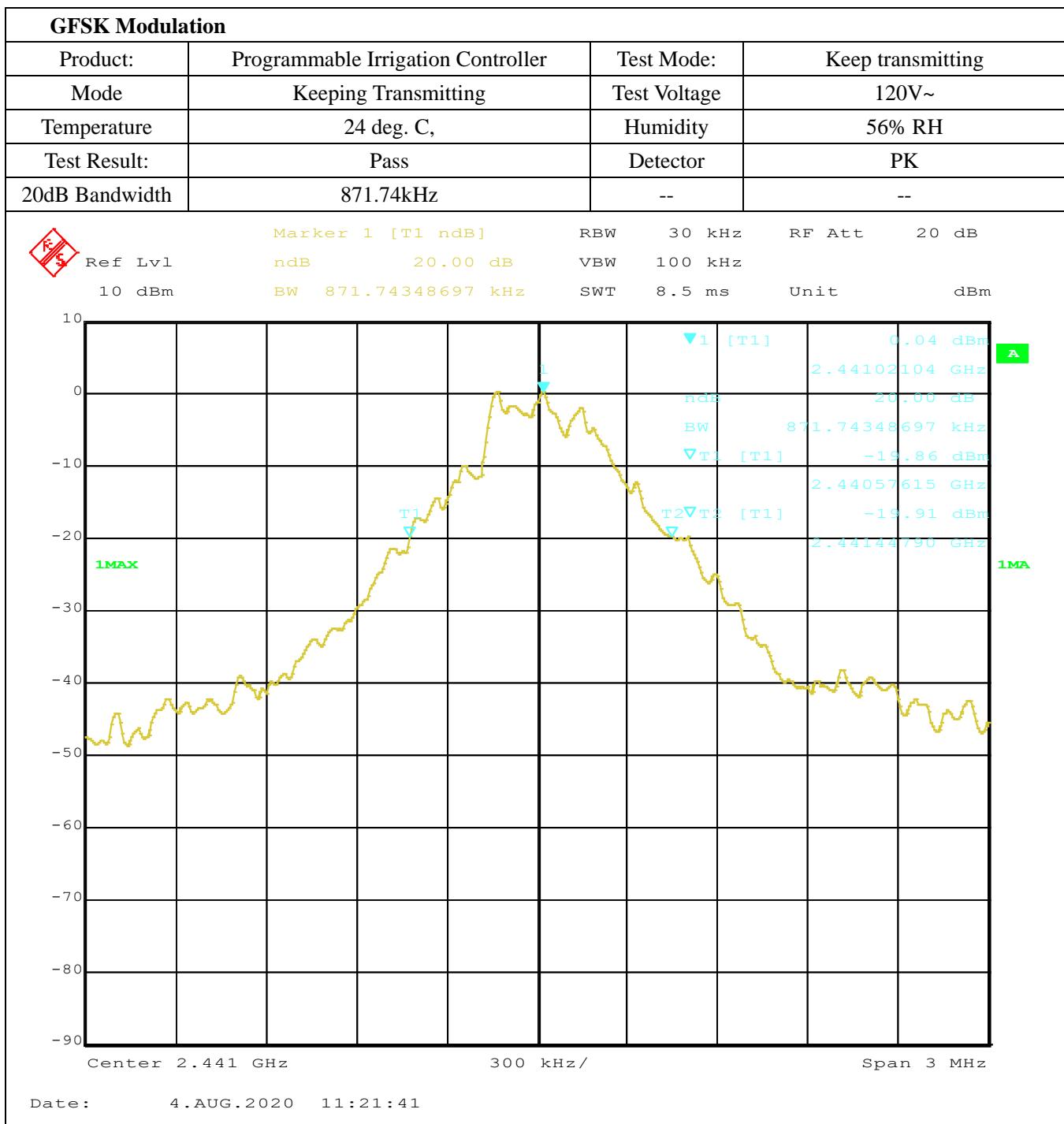
Product:	Programmable Irrigation Controller	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	871.74kHz	--	--



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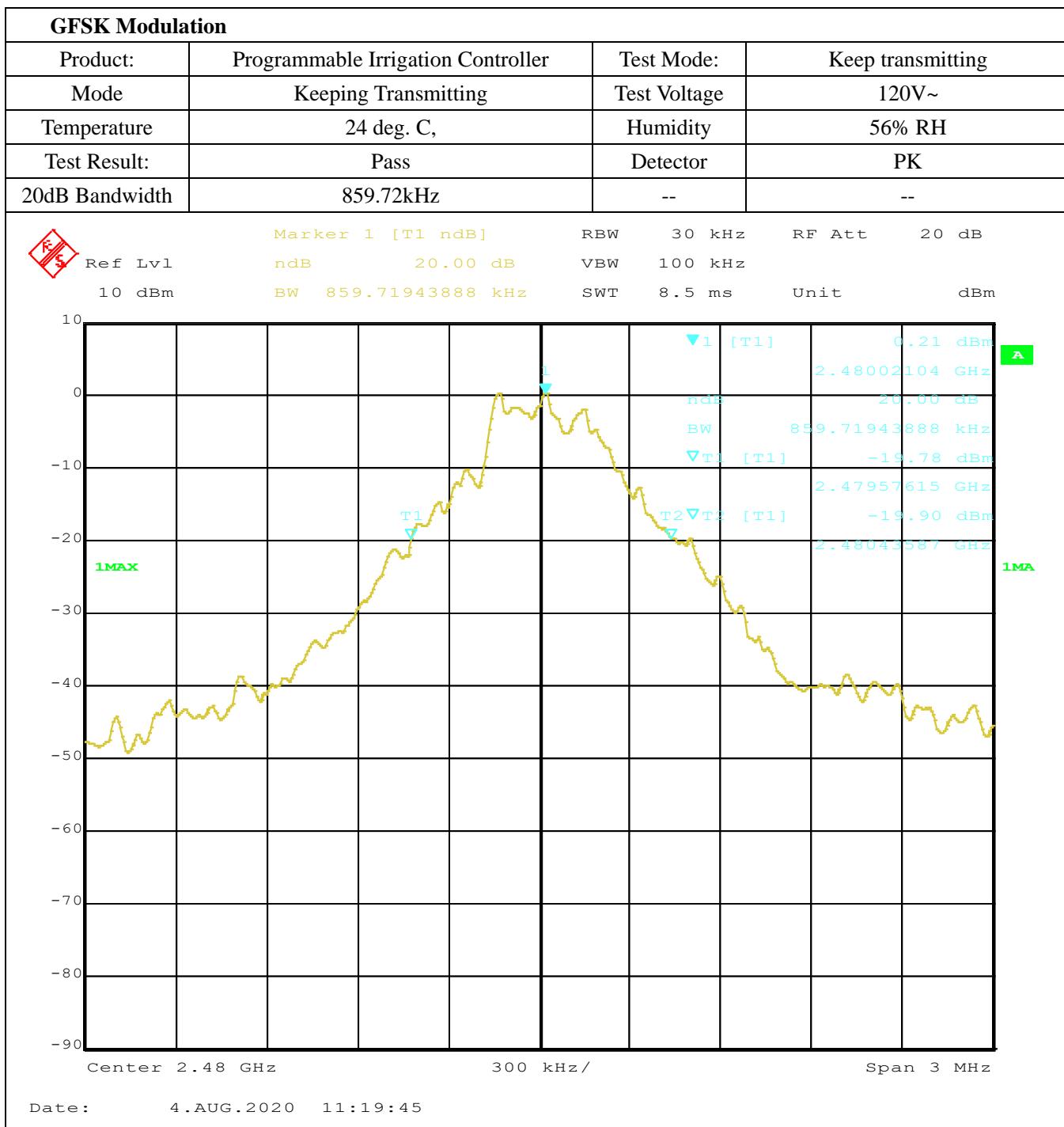
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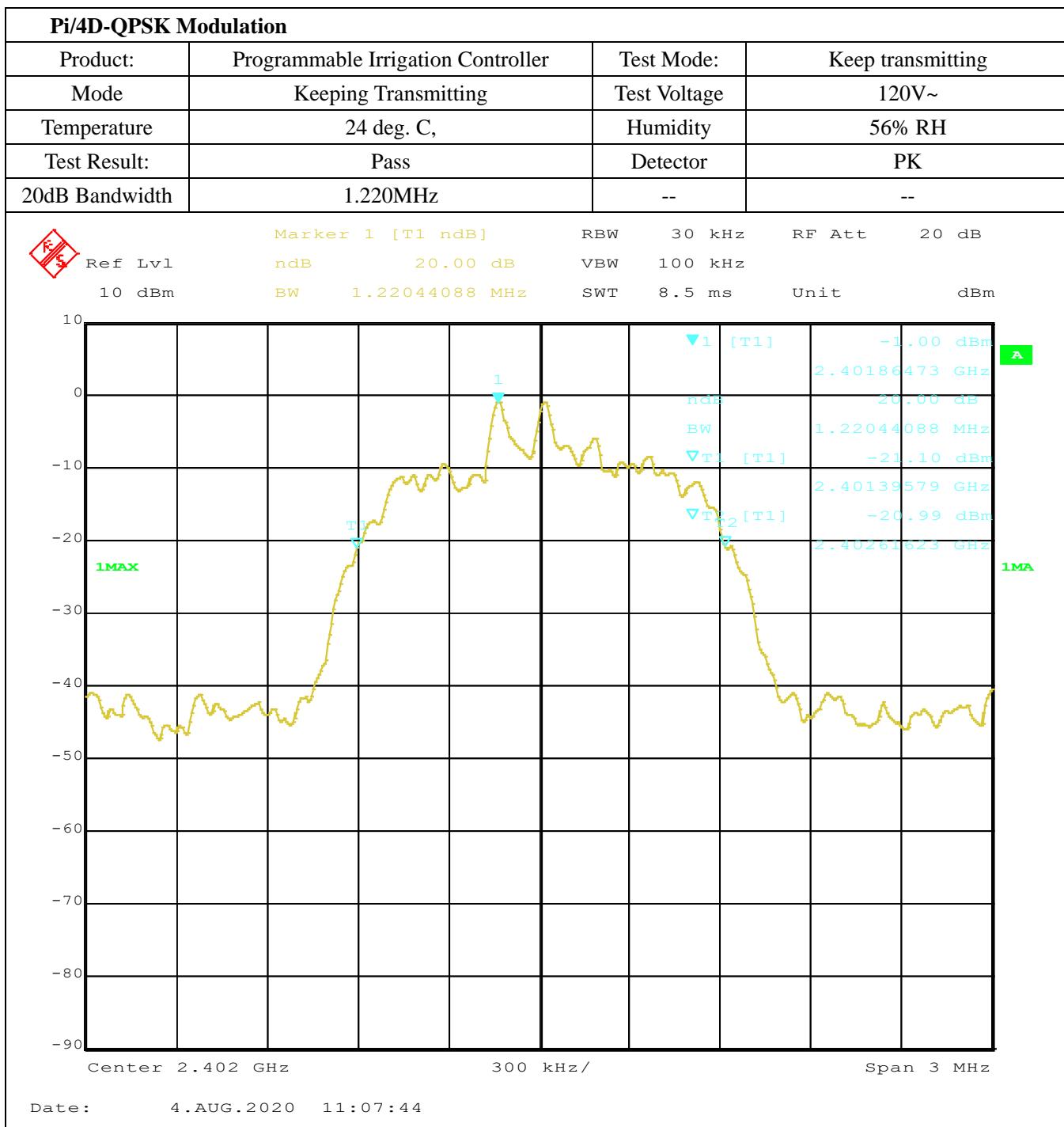
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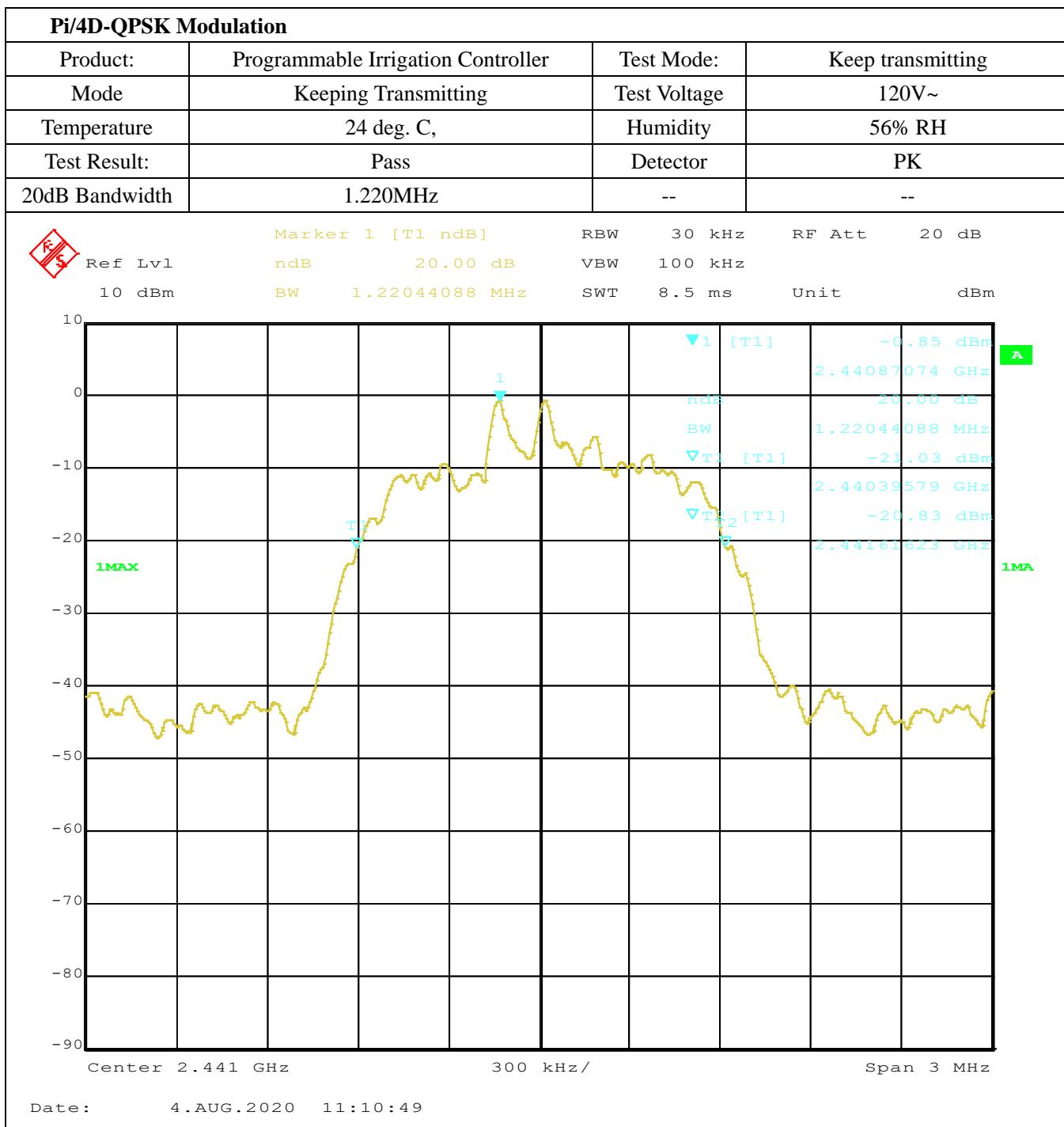
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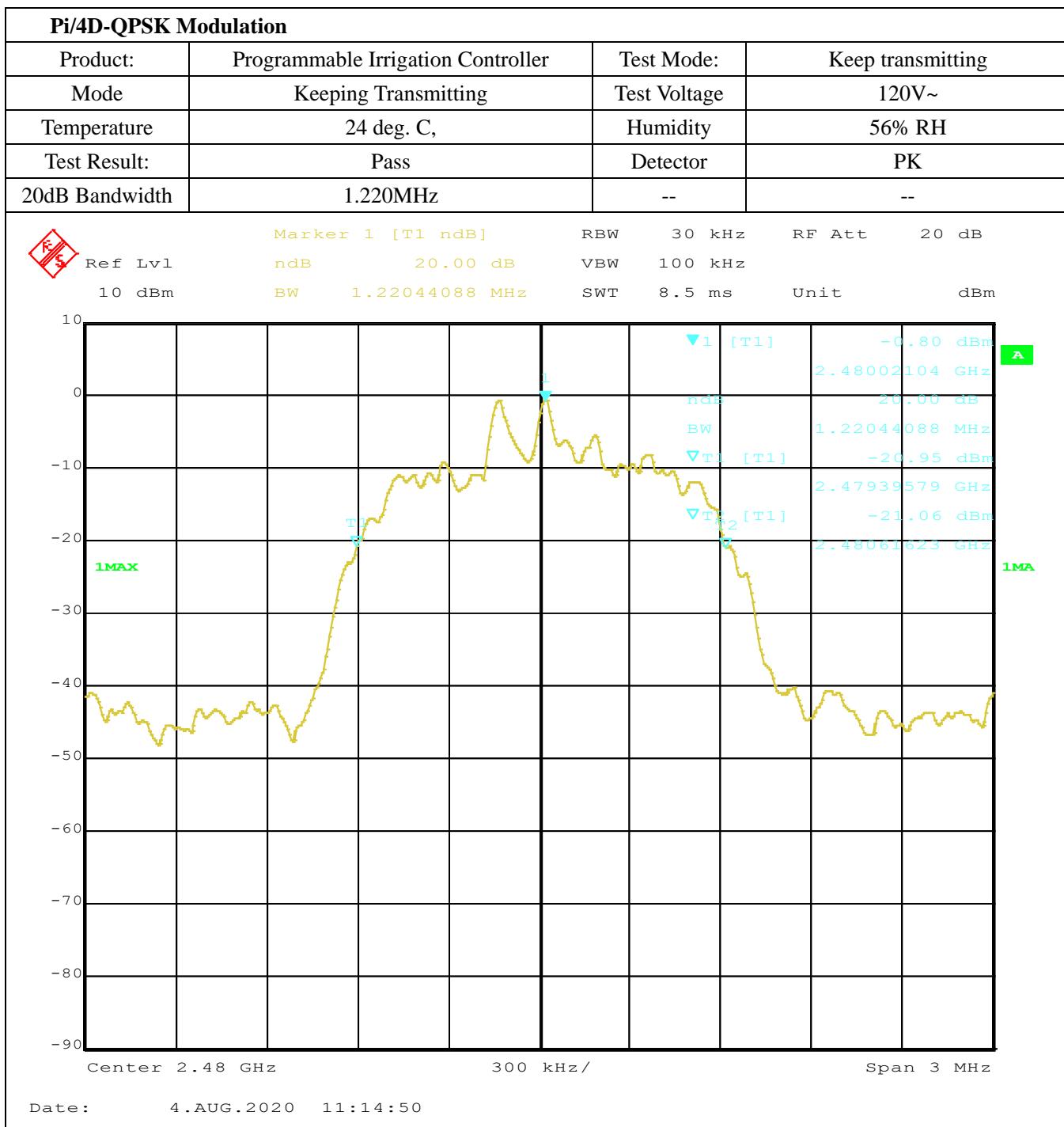
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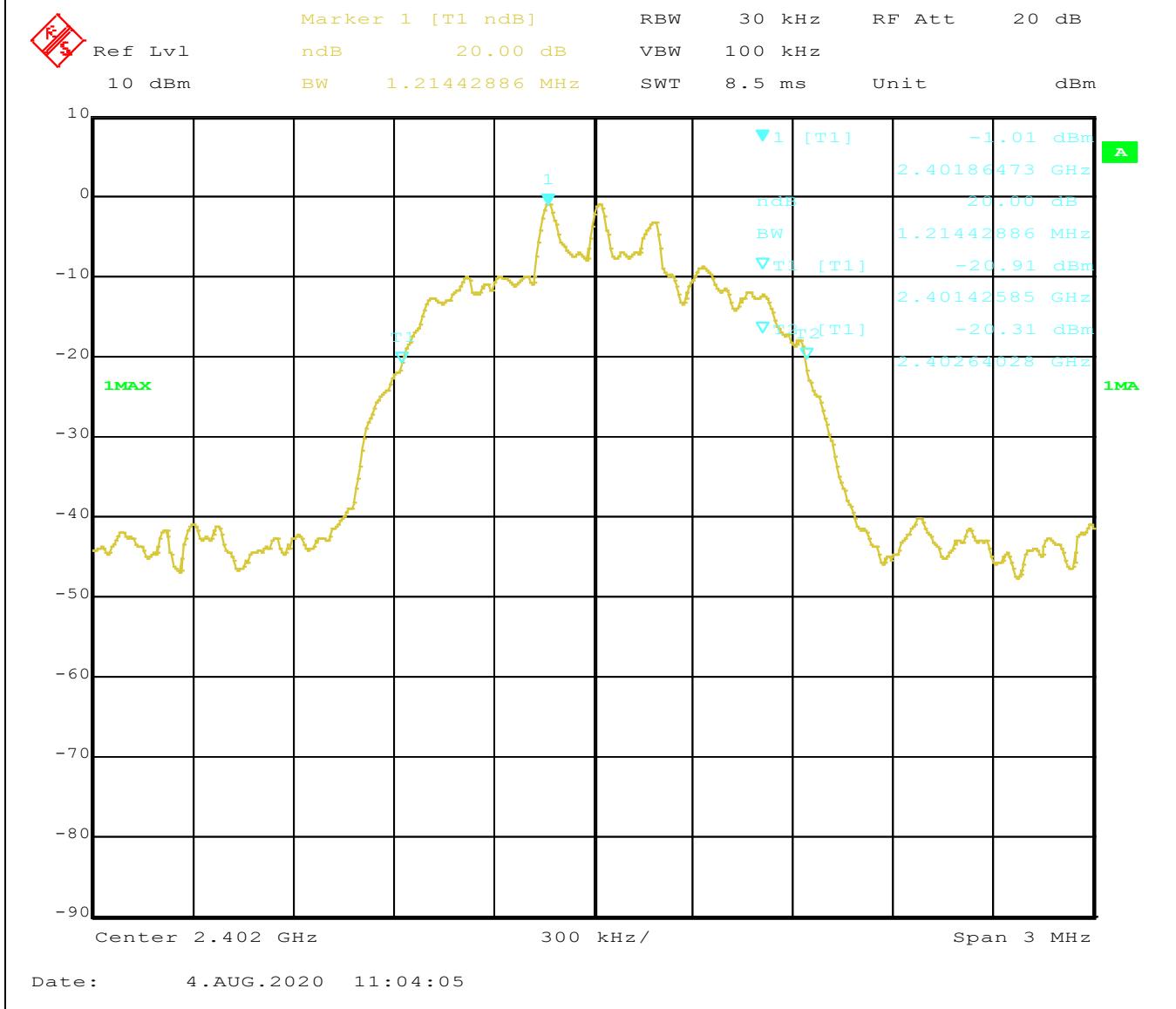
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8QPSK Modulation

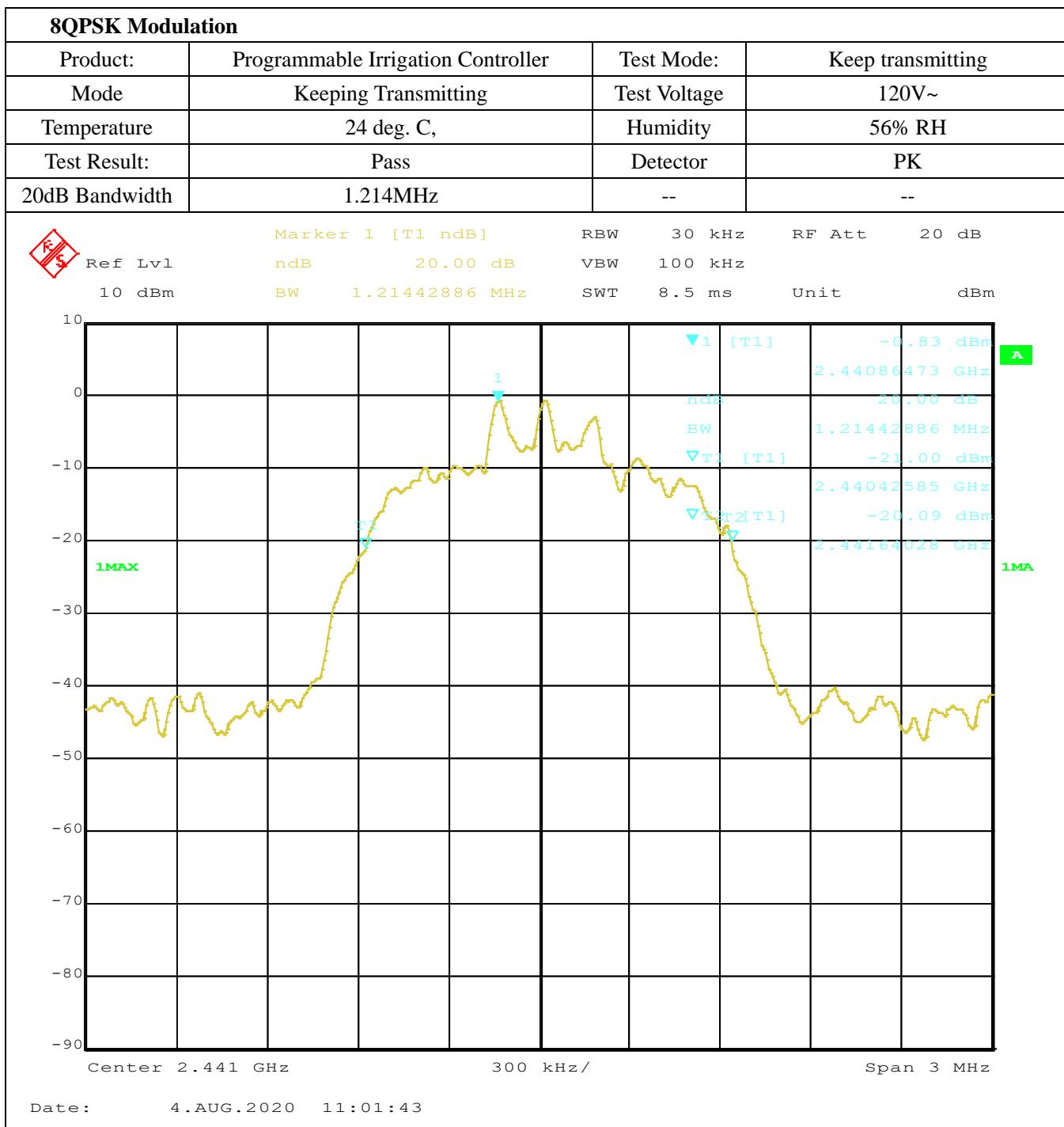
Product:	Programmable Irrigation Controller	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	120V~
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.214MHz	--	--



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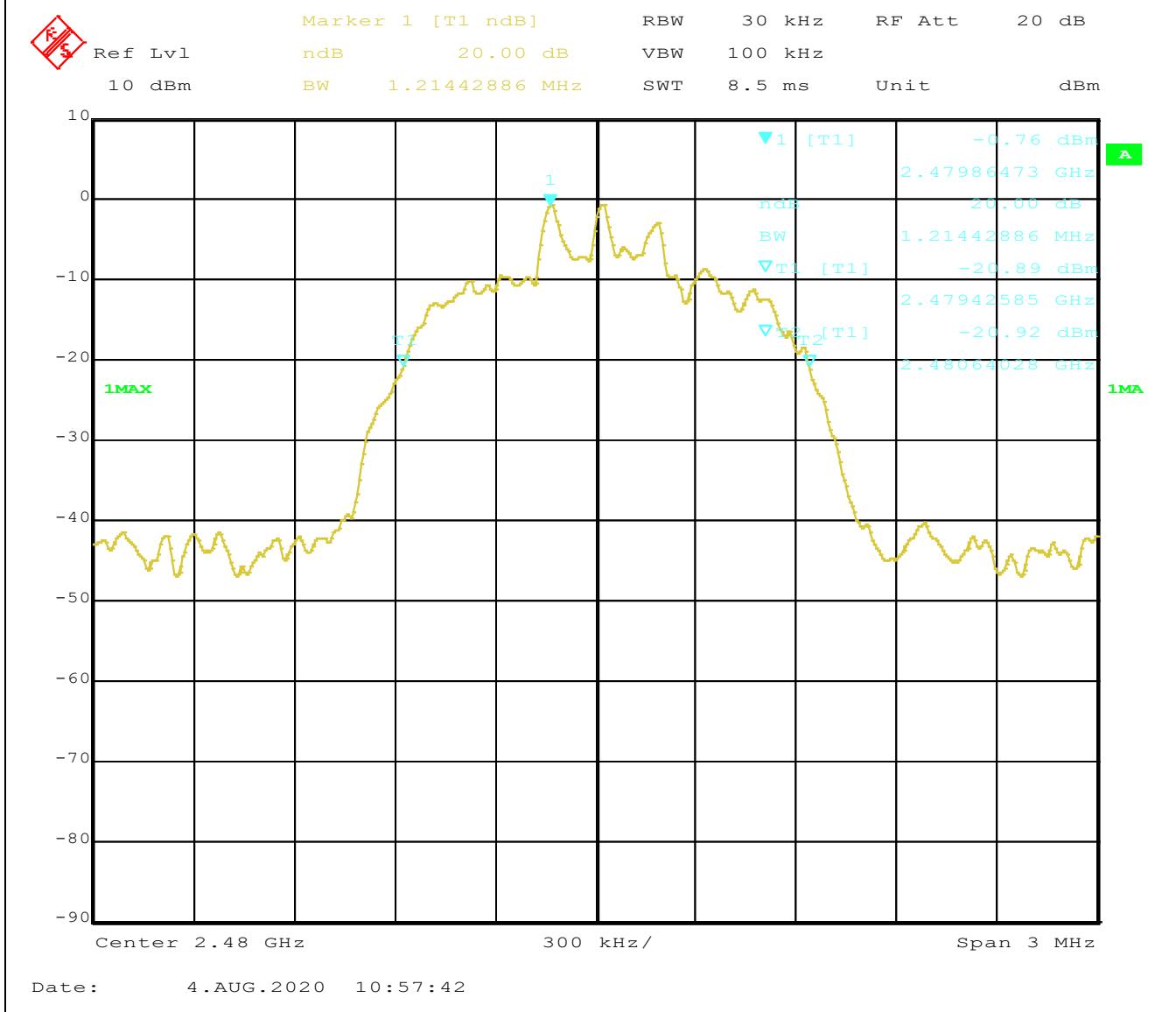
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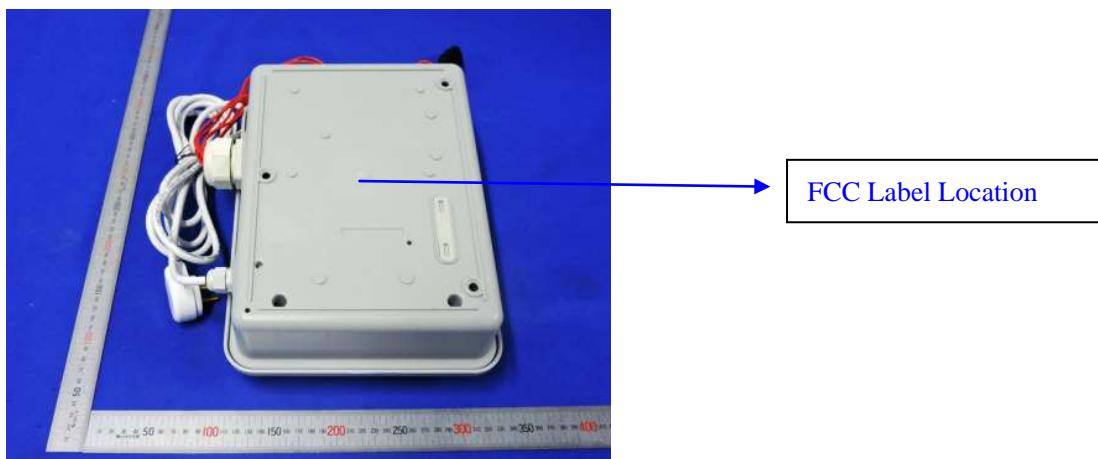
10.0 FCC ID Label

FCC ID: SZ890BTA

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



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11.0 Photo of testing

11.1 Conducted test View--



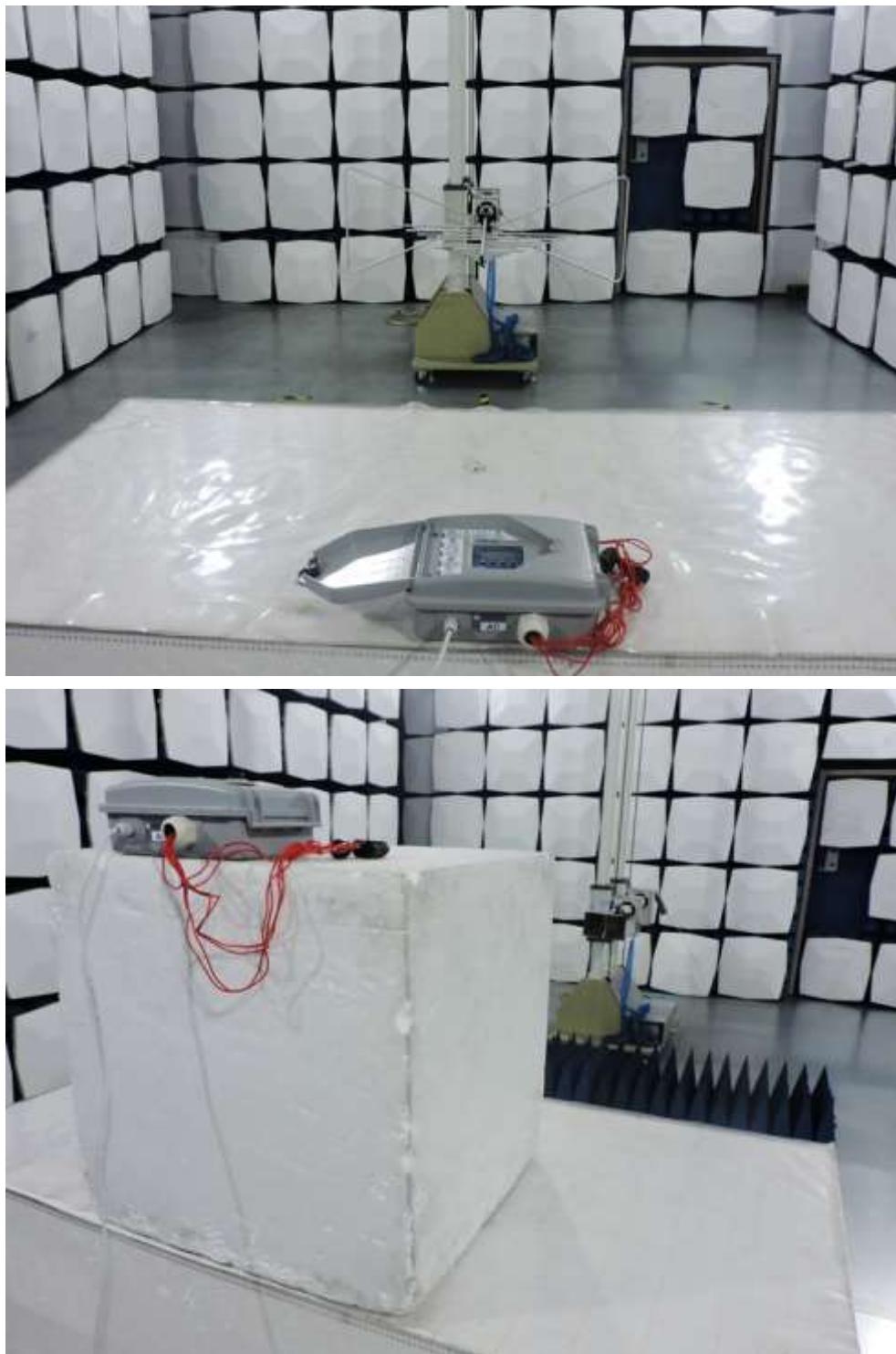
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Radiated emission test view



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11.2 Photographs – EUT

Outside View



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Photographs – EUT

Outside View



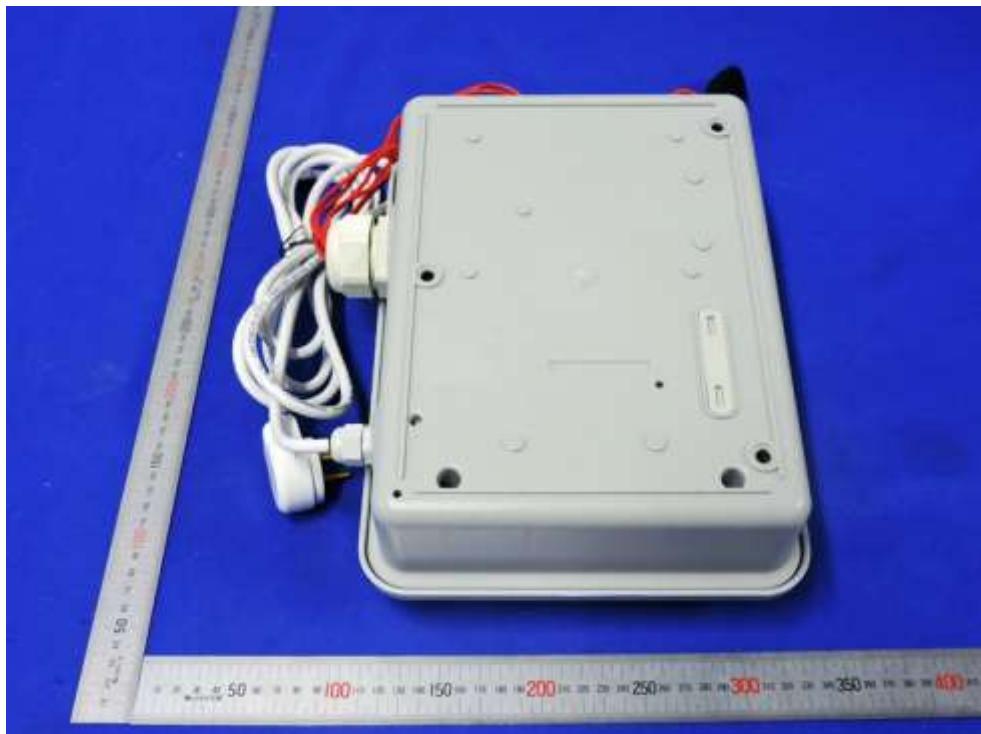
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Inside view



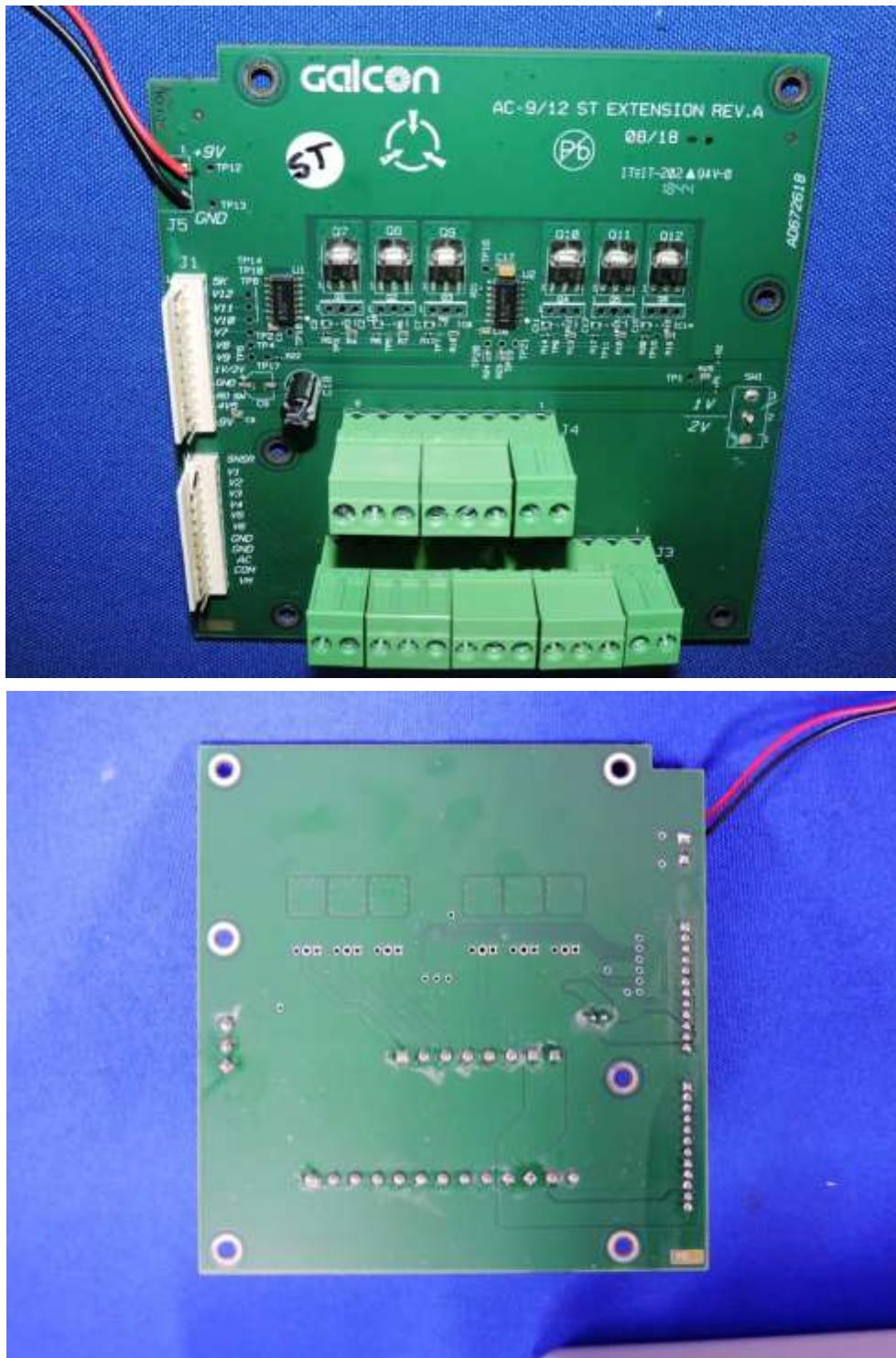
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Inside view



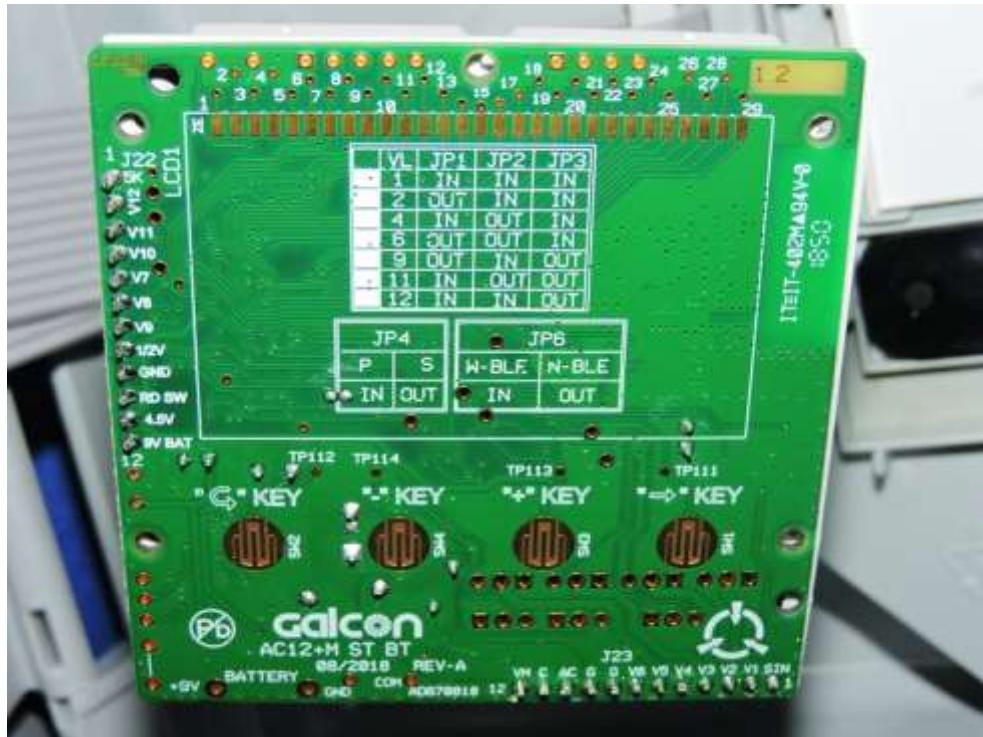
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Inside view



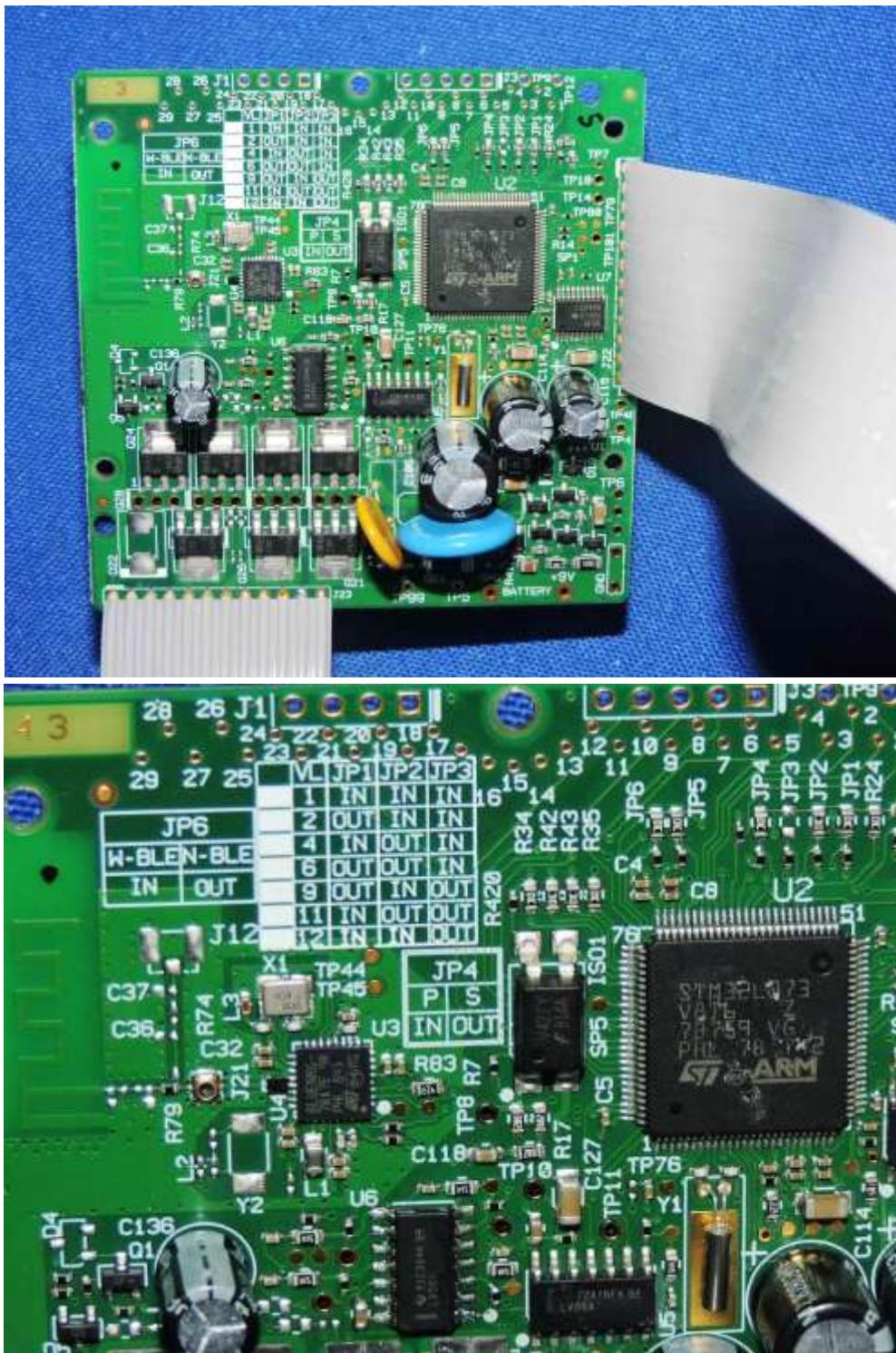
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Inside view



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