Application for Certification
For a Transmitter.

Orbit Irrigation Products Inc.
845 N. Overland Rd.
North Salt Lake, UT 84054

Irrigation Controllers

M/Ns: 57946, 57950, 91946, 91950, 04080, and 04082

FCC ID: ML6WT25
IC ID: 3330A-WT25
HVIN: WT25

REPORT # UT86019A-002

This report was prepared in accordance with the requirements of the FCC Rules and Regulations Part 2, Subpart J, 2.1033, Part 15.247, RSS-247 Issue 2, and other applicable sections of the rules as indicated herein.

Prepared By:

DNB Engineering, Inc.
1100 E Chalk Creek Road
Coalville, UT 84017

4 Sep 2017
(Revised 30 Sep 2017)

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Paragraph numbers in this report follow the application section numbers found in the FEDERAL COMMUNICATIONS COMMISSION Rules and Regulations, Part 2, Subpart J for Certification of electronic equipment.

1.0 ADMINISTRATIVE DATA

1.1 Certifications and Qualifications

I certify that DNB Engineering, Inc conducted the tests performed in order to obtain the technical data presented in this application. Also, based on the results of the enclosed data, I have concluded that the equipment tested meets or exceeds the requirements of the Rules and Regulations governing this application.

1.2 Measurement Repeatability Information

The test data presented in this report has been acquired using the guidelines set forth in FCC Part 2.1031 through 2.1057, Part 15. The test results presented in this document are valid only for the equipment identified herein under the test conditions described. Repeatability of these test results will only be achieved with identical measurement conditions. These conditions include: The same test distance, EUT Height, Measurement Site Characteristics, and the same EUT System Components. The system must have the same Interconnecting Cables arranged in identical placement to that in the test set-up, with the system and/or EUT functioning in the identical mode of operation (i.e. software and so on) as on the date of the test. Any deviation from the test conditions and the environment on the date of the test may result in measurement repeatability difficulties.

All changes made to the EUT during the course of testing as identified in this test report must be incorporated into the EUT or identical models to ensure compliance with the FCC regulations.

C. L. Payne III (Para. 1.1)
Facility Manager
Coalville Facility.
DNB Engineering, Inc.
Tel. (435) 336-4433
FAX (435) 336-4436

1.3 Test Equipment List

TEST EQUIPMENT LIST - CONDUCTED EMISSIONS				
Description	**Manufacturer/MN**	**Asset #**	**Serial #**	**Cal Due**
LISN	Fisher LISN-50/32-4-01	U-286	2020	17-Dec-17
LISN	FisherFCCLISN-50/250/25/8	U-062	5003	16-Nov-17
Spectrum Analyzer	Agilent/E7401A	U-257	MY42000103	29-Dec-17
CDN 16 amp	Fischer/FCC801M316A	U-169	64	09-Jul-17
TILE Software	ETS Lindgren/ 3.4.11.13	U-317	8112006	01-Dec-17
Current Probe	Solar/ 6741-1	U-267	966727	17-Dec-17

TEST EQUIPMENT LIST - RADIATED EMISSIONS				
Description	**Manufacturer/MN**	**Asset #**	**Serial #**	**Cal Due**
Amplifier	HP/8447D	U-065	2727A06180	31-May-17
Bicon Antenna	SCH/BBA9106	U-186	7	18-May-17
Log P Antenna	SCH/UHAL09107	U-010	10	21-Dec-17
DRG Horn Antenna	AH Systems/SAS-200/571	U-156	222	23-Apr-18
Spectrum Analyzer	Agilent/E7401A	U-257	MY42000103	29-Dec-17
Spectrum Analyzer	R&S/FSV30	U-248	101367	18-Jun-18
TILE Software	ETS- Lindgern/ 3.4.11.13	U-317	8112006	01-Dec-17

TEST EQUIPMENT LIST - ANTENNA CONDUCTED				
Description	**Manufacturer/MN**	**Asset #**	**Serial #**	**Cal Due**
Spectrum Analyzer	R&S/FSV30	U-248	101367	18-Jun-18

-

1.4 Test Summary Cross Reference

Test Item	FCC Requirement	IC Requirement	Test Method	Result
Antenna Requirement	FCC Part 15, Subpart C Section 15.203 / 15.247	RSS-Gen Section 8.1.3	---	Pass
AC Power Line Conducted Emissions	FCC Part 15, Subpart C Section 15.207	RSS-Gen Section 8.8	ANSI C63.10 (2013) Section 6.2	Pass
Minimum 6dB Bandwidth	FCC Part 15, Subpart C Section 15.247 (a,2)	RSS-247 Issue 1 May 2015 Section 5.2	ANSI C63.10 (2013) Section 11.8.1	Pass
99% Occupied Bandwidth	---	RSS-Gen Section 6.6	RSS-Gen Section 6.6	Pass
Conducted Peak Output Power	FCC Part 15, Subpart C Section 15.247 (a,2,b,3)	RSS-247 Issue 1 May 2015 Section 5.4	ANSI C63.10 (2013) Section 11.9.1.2	Pass
Power Spectrum Density	FCC Part 15, Subpart C Section 15.247 (a,2,e)	RSS-247 Issue 1 May 2015 Section 5.2	ANSI C63.10 (2013) Section 11.10.2	Pass
Conducted Spurious Emissions and Band Edge	FCC Part 15, Subpart C Section 15.247 (a,2,d)	RSS-247 Issue 1 May 2015 Section 5.5	ANSI C63.10 (2013) Section 11.12.2.4	Pass
Radiated Spurious Emissions and Band Edge	FCC Part 15, Subpart C Section 15.209 / 15.205	RSS-247 Issue 1 May 2015 Section 5.5	ANSI C63.10 (2013) Section 6.4, 6.5, 6.6, 6.10	Pass

Preliminary scans were performed to determine worst case modulation, packet length, and data rates. Only worst case data has been recorded within the body of the test report.

1.5 Measurement Uncertainty

Measurement Type	Uncertainty
AC Conducted Emissions	N/A
OATS - Radiated Emissions - Vertical Biconical (30-300MHz)	± 4.17 dB
OATS - Radiated Emissions - Horizontal Biconical (30-300MHz)	± 4.22 dB
OATS - Radiated Emissions - Vertical Log Periodic (300-100MHz)	± 4.92 dB
OATS - Radiated Emissions - Horizontal Log Periodic (300-1000MHz)	± 4.79 dB
OATS - Radiated Emissions - Vertical DRG Horn (> 1GHz)	± 5.74 dB
OATS - Radiated Emissions - Horizontal DRG Horn (>1GHz)	± 5.80 dB
Antenna Conducted Measurements	± 1.96 dB

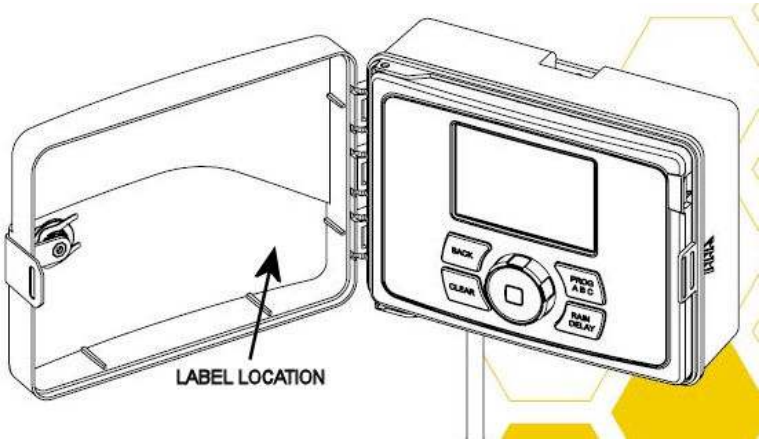
2.1033 (b) (1) Application for Certification

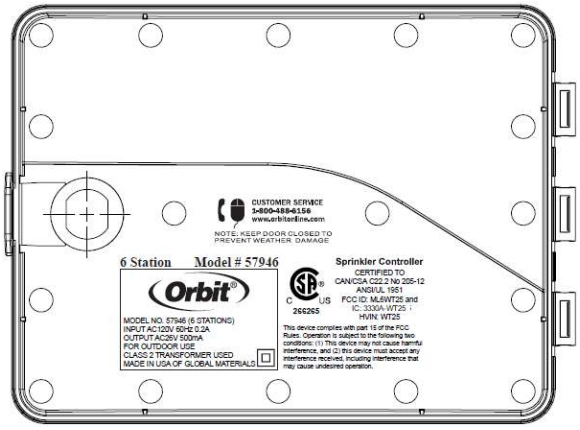
Name of Applicant:	Orbit Irrigation Products Inc. 845 N. Overland Rd. West North Salt Lake, UT 84054
FRN Number:	0023422009
IC Number:	3330A
Name of Manufacturer :	Orbit Irrigation Products Inc. 845 N. Overland Rd. North Salt Lake, UT 84054
Description:	Irrigation Controllers with BLE Transmitter
Model Number(s):	57946, 57950, 91946, 91950, 04080, and 04082
Transmitter HVIN:	WT25
Anticipated Production Quantity:	Multiple Units
Frequency Band:	2402 - 2480 MHz
Rated Power:	9.25 dBm (8.414 mW)
Type of Signal:	Digital Transmission System (DTS)
Channels:	40 (BLE)
Max Data Rate:	1Mpbs (mega-bit) - Data transmission is not continuous, it happens for short intervals for short periods of time.
Antenna Type:	Monopole (PWB Trace)
Antenna Gain:	2dBi
Firmware/Software Version:	CSR uEnergy SDK 2.6.2.9

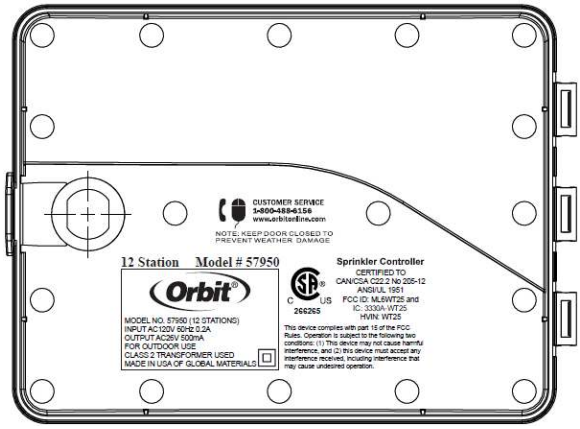
2.1033 (b) (2) FCC Identifier

Model Number:	57946 and 57950
FCC ID:	ML6WT25
IC ID:	3330A-WT25
HVIN:	WT25

Figure 1 - Label and location



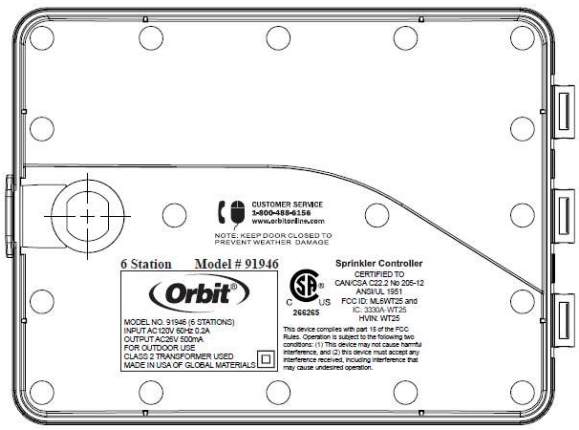


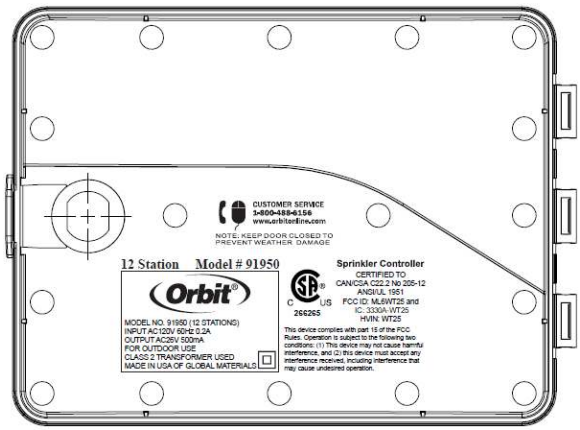


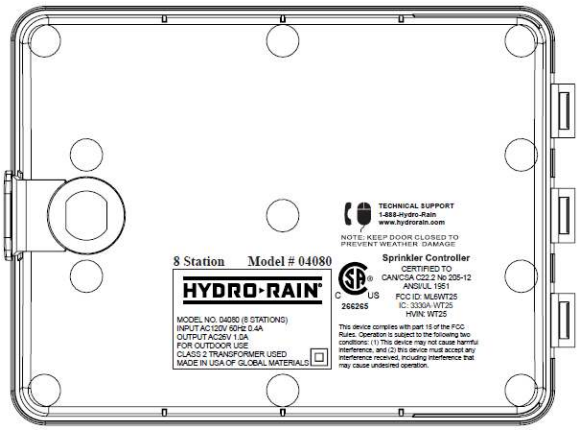
2.1033 (b) (2) FCC Identifier - *continued*

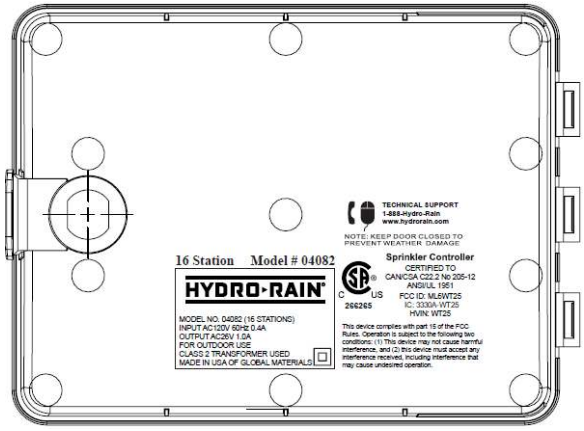
Model Number:	91946, 91950, 04080 and 04082
FCC ID:	ML6WT25
IC ID:	3330A-WT25
HVIN:	WT25

Figure 2 - Label and location









2.1033 (b) (3) Installation and Operating Instructions

Supplied separately.

2.1033 (b) (4) Brief Description of Circuit Function

The WT 25 is an Irrigation timer with internal WiFi and Bluetooth Low Energy (BLE) radios to connect the timer for controlling, programing, and updating of settings wirelessly. The WT 25 is an indoor/outdoor irrigation timer which connects directly to AC irrigation valve solenoids for the actuation of underground installed irrigation systems. The communication to and from the WT 25 includes SMART watering communication which utilizes enhanced EPA water smart logic, basic programming, and flow data. The WT 25 is powered by a standard residential outlet with standard plug configuration.

The WT-25 has multiple configurations which vary the number of zone, or separate watering valves that are controlled by the timer. There are versions with 6, 8, 12, and 16 zones. The software helps to schedule the zones to water sequentially. On the professional version, which contains a larger transformer the programming will allow a user to operate up to 2 zones simultaneously in cases of low flow zones with long run duration, otherwise the timer operates only 1 zone at any given time.

2.1033 (b) (5) Block Diagram

Supplied separately for confidentiality.

2.1033 (b) (6) Report of Measurements

15.203 Antenna Requirement

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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Pass - Antenna gain is less than 2dBi

Pass - The antenna is part of the pwb and is permanently attached within the device and can not be replaced by the user.

15.207 Conducted Emissions (General Provisions)

Test Procedure: As specified in ANSI C63.10-2013

To measure conducted emissions, the EUT was set upon a wooden table in the shielded enclosure. AC power was fed into the EUT from the Artificial Mains Network. With the Artificial Mains Network connected to an Rhode & Schwarz FSV Signal and Spectrum Analyzer, and using Personal Computer with TILES Measurement Software, the spectrum was searched from 0.15 - 30 MHz for emissions emanating from the EUT.

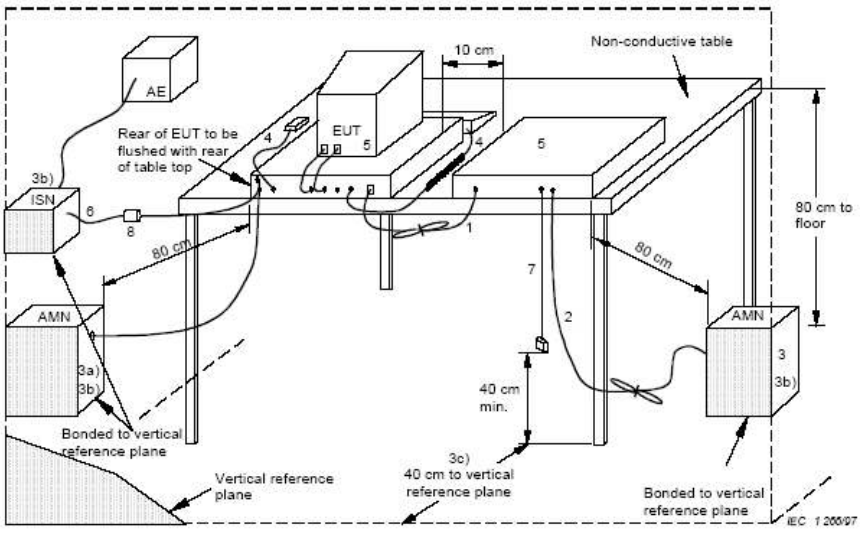
Frequency of emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

EUT operating conditions:

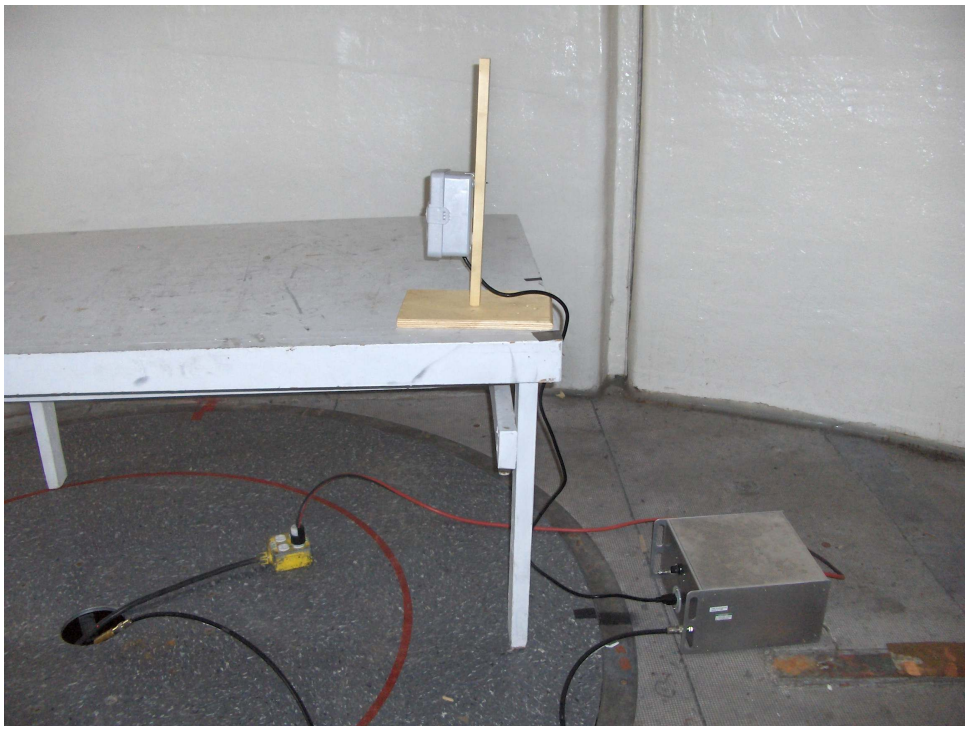
The software provided by the client to enable the EUT to transmit continuously.

Test Set Up:



	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Conducted Emissions	
DNB Job Number:	86019	Date: 21 Aug 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.207 [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		

TEST SET UP - CONDUCTED EMISSIONS



1100 E Chalk Creek Road
Coalville, UT 84017
(435) 336-4433
FAX (435) 336-4436

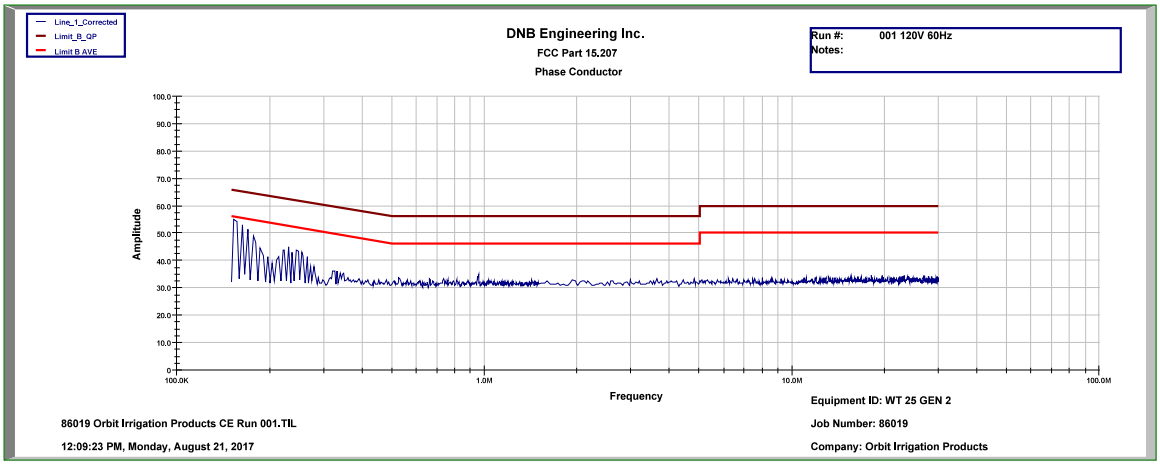
Conducted Emissions

DNB Job Number:	86019	Date: 21 Aug 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.207
Model Number:	WT25		[X] ANSI C63.10-2013
Description:	BLE Transmitter		

EUT is in conformance with FCC 15.207	X	YES		NO	Signed	*CL Payne III*

CONDUCTED EMISSIONS

Freq in MHz	Meter Reading	Factors in dB		Corr'd Reading	Limit		Lead	Measure Type	Delta
		LISN	Cable		dBuV	Type			
0.150	21.65	0.10	0.00	21.75	56.00	AVE	Phase	AVE	-34.25
0.150	44.98	0.10	0.00	45.08	66.00	QP	Phase	QP	-20.92
0.163	21.41	0.10	0.00	21.51	56.00	AVE	Phase	AVE	-34.49
0.163	44.33	0.10	0.00	44.43	66.00	QP	Phase	QP	-21.57
0.170	20.58	0.10	0.00	20.68	55.00	AVE	Phase	AVE	-34.32
0.170	43.73	0.10	0.00	43.83	65.00	QP	Phase	QP	-21.17
0.177	19.85	0.10	0.00	19.95	55.00	AVE	Phase	AVE	-35.05
0.177	42.54	0.10	0.00	42.64	65.00	QP	Phase	QP	-22.36
0.236	17.27	0.06	0.00	17.34	54.00	AVE	Phase	AVE	-36.66
0.236	34.99	0.06	0.00	35.05	64.00	QP	Phase	QP	-28.95
0.245	37.06	0.06	0.00	37.12	53.00	AVE	Phase	AVE	-15.89
0.245	37.06	0.06	0.00	37.12	63.00	QP	Phase	QP	-25.89

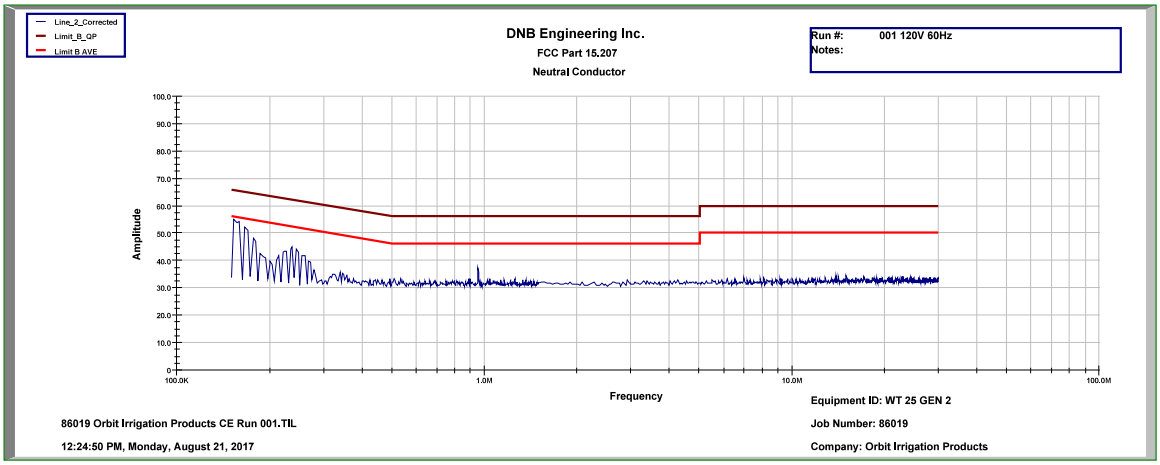


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	Conducted Emissions	
DNB Job Number:	86019	Date: 21 Aug 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.207 [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		

EUT is in conformance with FCC 15.207	X	YES		NO	Signed	*CL Payne III*

CONDUCTED EMISSIONS

Freq in MHz	Meter Reading	Factors in dB		Corr'd Reading	Limit		Lead	Measure Type	Delta
		LISN	Cable		dBuV	Type			
0.150	22.07	0.10	0.00	22.17	56.00	AVE	Neutral	AVE	-33.83
0.150	44.94	0.10	0.00	45.04	66.00	QP	Neutral	QP	-20.96
0.163	22.26	0.10	0.00	22.36	56.00	AVE	Neutral	AVE	-33.64
0.163	44.26	0.10	0.00	44.36	66.00	QP	Neutral	QP	-21.64
0.170	20.95	0.10	0.00	21.05	55.00	AVE	Neutral	AVE	-33.95
0.170	43.70	0.10	0.00	43.80	65.00	QP	Neutral	QP	-21.20
0.180	20.16	0.10	0.00	20.26	55.00	AVE	Neutral	AVE	-34.74
0.180	41.92	0.10	0.00	42.02	65.00	QP	Neutral	QP	-22.98
0.237	17.75	0.06	0.00	17.81	54.00	AVE	Neutral	AVE	-36.19
0.237	35.14	0.06	0.00	35.20	64.00	QP	Neutral	QP	-28.80
0.244	17.89	0.06	0.00	17.95	53.00	AVE	Neutral	AVE	-35.05
0.244	35.32	0.06	0.00	35.38	63.00	QP	Neutral	QP	-27.62



15.209 Radiated Emissions (General Provisions)

Test Procedure: ANSI C63.10-2013

The EUT was measured on an open area test site (OATS).

A measuring distance of at least 3 m shall be used for measurements at frequencies up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used. The equipment size (excluding the antenna) shall be less than 20 % of the measuring distance.

Sufficient precautions shall be taken to ensure that reflections from extraneous objects adjacent to the site do not degrade the measurement results, in particular:

- no extraneous conducting objects having any dimension in excess of a quarter wavelength of the highest frequency tested shall be in the immediate vicinity of the site;

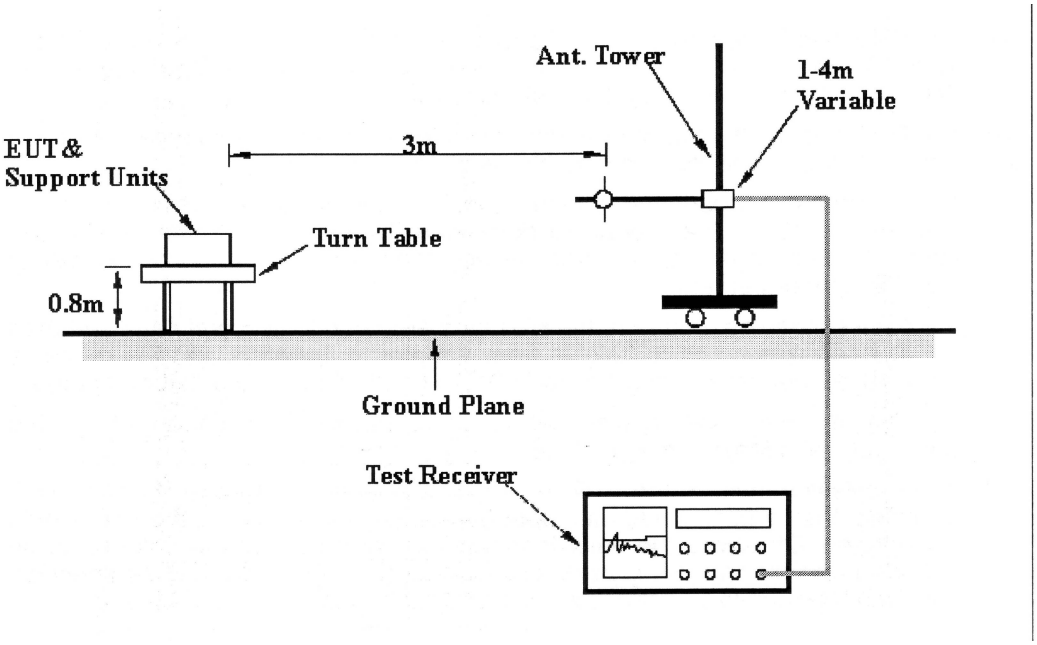
- all cables shall be as short as possible; as much of the cables as possible shall be on the ground plane or preferably below; and the low impedance cables shall be screened.

- EUT was positioned in three orthogonal axis - only the worst case data (X-Axis) has been recorded

The EUT shall be placed upon a non-conductive table (wooden for below 1GHz and styrene above 1GHz) 0.80 meters above the ground plane for frequencies from 30 to 1000MHz and 1.5 meters above the ground plane above 1 Ghz and shall be placed in the “worst case” transmitting mode. The EUT shall be rotated 360 degrees to find the azimuth maxima. The receive antenna shall then be raised and lowered between 1 to 4 meters to find the maximum signal emanating from the EUT. This signal strength is then recorded on the data sheets.

Frequency (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measurement Distance (meters)
.0009 - 0.490	2400/F(kHz)	$20*(Log_{10}(2400/F(kHz))$	300
0.490 - 1.705	24000/F(kHz)	$20*(Log_{10}(24000/F(kHz))$	30
1.705 - 30.0	30	29.5	30
30 - 88	100	40.0	3
88 - 216	150	43.5	3
216 - 960	200	46.0	3
Above 960	500	54.0	3

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Radiated Emissions** (General)	
DNB Job Number:	86019	Date: 29 Sep 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.209 [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		
	Test Set Up		



	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Radiated Emissions** (General)	
DNB Job Number:	86019	Date: 29 Sep 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.209 [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		
Test Set Up - Vertical - 30-1000MHz			

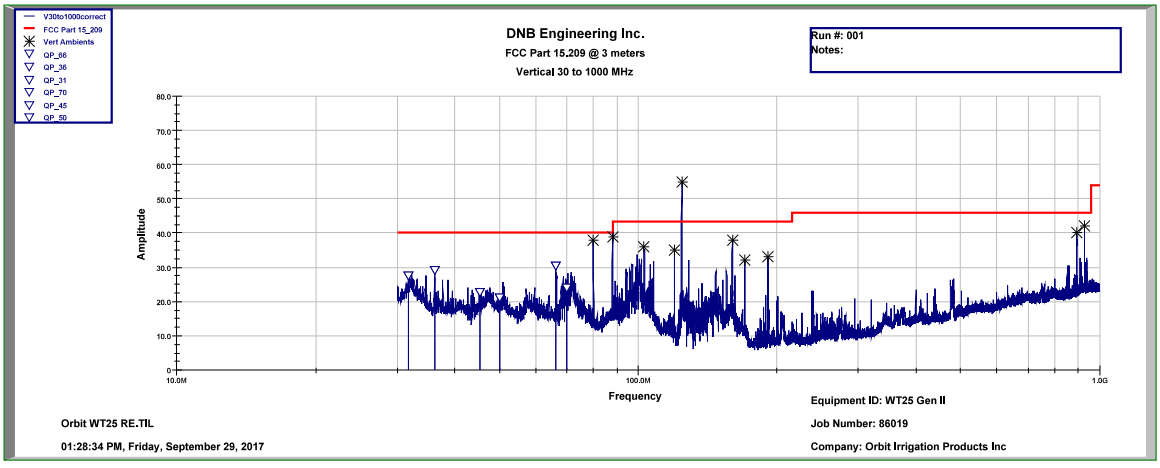
1100 E Chalk Creek Road
Coalville, UT 84017
(435) 336-4433
FAX (435) 336-4436

Radiated Emissions (General)

DNB Job Number:	86019	Date: 29 Sep 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.209
Model Number:	WT25		[X] ANSI C63.10-2013
Description:	BLE Transmitter		

EUT is in conformance with FCC 15.209	X	YES		NO	Signed	*J Payne*

FREQ (Mhz)	S/A Reading	Correction Factors (dB)			dBuV/m			Positions			
		Ant	Cbl	Amp	Corr	Lim	Delta	Typ	Tbl	Pl	Hgt
66.427	48.68	7.12	1.26	26.54	30.53	40.00	-9.48	QP	360	Vert	1.00
36.258	42.18	12.60	0.90	26.60	29.08	40.00	-10.93	QP	331	Vert	1.00
31.726	37.98	15.33	0.83	26.60	27.54	40.00	-12.46	QP	1	Vert	1.00
70.201	41.88	7.29	1.30	26.50	23.97	40.00	-16.04	QP	1	Vert	1.00
45.321	40.15	8.22	1.00	26.60	22.77	40.00	-17.24	QP	1	Vert	1.00
50.035	39.94	7.00	1.00	26.60	21.34	40.00	-18.67	QP	340	Vert	1.00

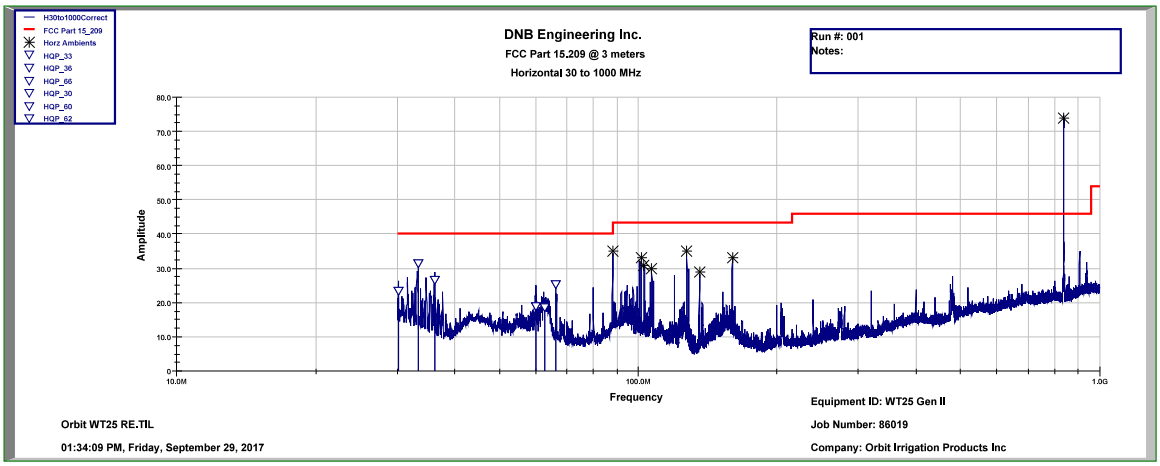


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Radiated Emissions** (General)

DNB Job Number:	86019	Date: 29 Sep 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.209 [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		

EUT is in conformance with FCC 15.209	X	YES		NO	Signed	*J Payne*

FREQ (Mhz)	S/A Reading	Correction Factors (dB)			dBuV/m			Positions			
		Ant	Cbl	Amp	Corr	Lim	Delta	Typ	Tbl	Pl	**Hgt**
33.353	42.95	14.32	0.87	26.60	31.54	40.00	-8.47	QP	360	Horz	4.00
36.262	39.66	12.59	0.90	26.60	26.55	40.00	-13.45	QP	320	Horz	4.00
66.427	43.64	7.12	1.26	26.54	25.49	40.00	-14.52	QP	178	Horz	4.00
30.226	33.13	16.26	0.80	26.60	23.59	40.00	-16.41	QP	1	Horz	4.00
60.001	37.50	6.80	1.20	26.60	18.90	40.00	-21.11	QP	97	Horz	4.00
62.803	37.02	6.94	1.23	26.57	18.62	40.00	-21.39	QP	102	Horz	4.00



15.247 Spurious Radiated Emissions

This test is required for any spurious emission or modulation product that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW = ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Follow the guidelines in ANSI C63.10-2013with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b). Submit this data.

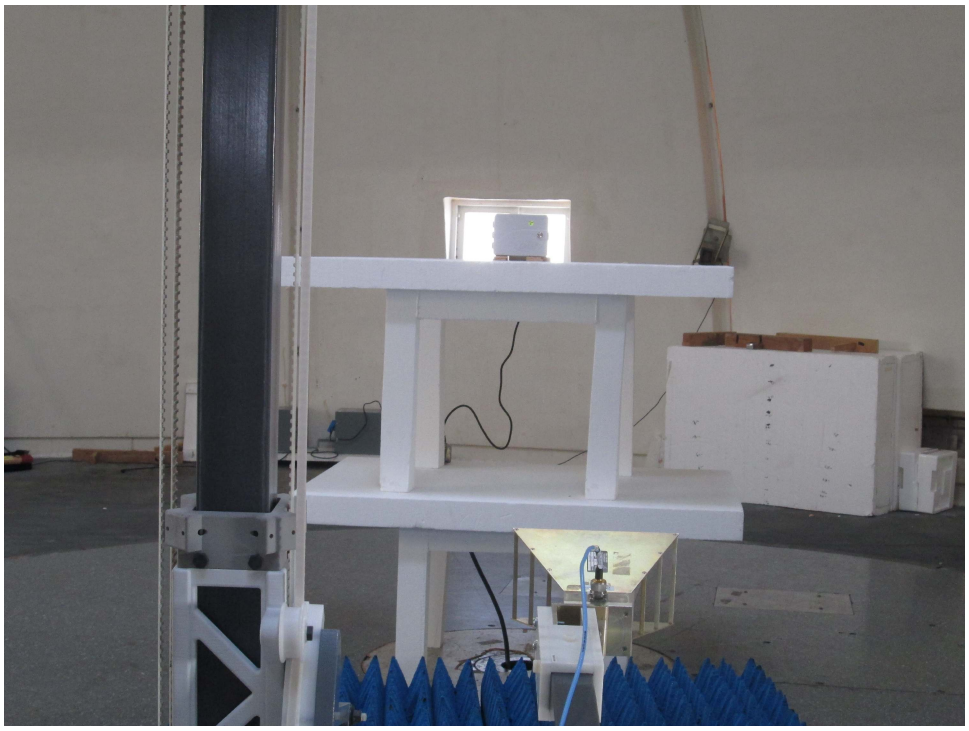
Now repeat the measurement using the average detector of the spectrum analyzer. Submit this data.

If the emission on which a radiated measurement must be made is located at the edge of the authorized band of operation, then the alternative "marker-delta" method, listed at the end of this document, may be employed.

Note 1: Limit listed is the general limit as specified in 15.209 in order to show compliance with the restricted bands of operation as well as the out of band limit in 15.247. No other identifiable signals were observed in the restricted bands as specified in 15.205.

Note 2: Highest frequency investigated was the tenth harmonic of the fundamental, no radiated emissions were detected above the 3rd harmonic.

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Radiated Emissions** (Spurious)	
DNB Job Number:	86019	Date: 18 Aug 2017	Specification [X] 15.247 (c) [X] ANSI C63.10-2013
Customer:	Orbit Irrigation Products Inc.		
Model Number:	WT25		
Description:	BLE Transmitter		
Test Set Up - (Vertical - DRG)			



1100 E Chalk Creek Road
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Radiated Emissions (Spurious)

DNB Job Number:	86019	Date: 18 Aug 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.247 (c) [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		

Low Channel

FREQ (Mhz)	Meter	Correction Factors (dB)			dBuV/m			Type		Polarity
		Ant	Cbl	Amp	Corr	Lim	Delta	Lim	Rdng	
4804	34.40	33.09	7.04	25.82	48.72	74.00	-25.28	Peak	Peak	Hor
4804	24.30	33.09	7.04	25.82	38.62	54.00	-15.38	Ave	Ave	Hor
7206	33.05	36.96	8.78	25.53	53.26	74.00	-20.74	Peak	Peak	Hor
7206	19.62	36.96	8.78	25.53	39.83	54.00	-14.17	Ave	Ave	Hor
9608	33.56	37.94	10.46	24.91	57.06	74.00	-16.94	Peak	Peak	Hor
9608	20.61	37.94	10.46	24.91	44.11	54.00	-9.89	Ave	Ave	Hor
12010	33.10	40.02	10.83	24.52	59.43	74.00	-14.57	Peak	Peak	Hor
12010	20.17	40.02	10.83	24.52	46.50	54.00	-7.50	Ave	Ave	Hor
4804	35.22	33.09	7.04	25.82	49.54	74.00	-24.46	Peak	Peak	Ver
4804	22.66	33.09	7.04	25.82	36.98	54.00	-17.02	Ave	Ave	Ver
7206	33.06	36.96	8.78	25.53	53.27	74.00	-20.73	Peak	Peak	Ver
7206	19.95	36.96	8.78	25.53	40.16	54.00	-13.84	Ave	Ave	Ver
9608	33.99	37.94	10.46	24.91	57.49	74.00	-16.51	Peak	Peak	Ver
9608	20.53	37.94	10.46	24.91	44.03	54.00	-9.97	Ave	Ave	Ver
12010	33.89	40.02	10.83	24.52	60.22	74.00	-13.78	Peak	Peak	Ver
12010	20.43	40.02	10.83	24.52	46.76	54.00	-7.24	Ave	Ave	Ver

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Radiated Emissions (Spurious)

DNB Job Number:	86019	Date: 18 Aug 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.247 (c) [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		

Middle Channel

FREQ (Mhz)	Meter	Correction Factors (dB)			dBuV/m			Type		Polarity
		Ant	Cbl	Amp	Corr	Lim	Delta	Lim	Rdng	
4880	34.67	33.37	7.11	25.80	49.35	74.00	-24.65	Peak	Peak	Hor
4880	22.57	33.37	7.11	25.80	37.25	54.00	-16.75	Ave	Ave	Hor
7320	32.79	37.06	8.83	25.51	53.17	74.00	-20.83	Peak	Peak	Hor
7320	19.72	37.06	8.83	25.51	40.10	54.00	-13.90	Ave	Ave	Hor
9760	32.87	38.00	10.59	24.90	56.56	74.00	-17.44	Peak	Peak	Hor
9760	19.53	38.00	10.59	24.90	43.22	54.00	-10.78	Ave	Ave	Hor
12200	34.14	40.32	11.17	24.44	61.18	74.00	-12.82	Peak	Peak	Hor
12200	20.37	40.32	11.17	24.44	47.41	54.00	-6.59	Ave	Ave	Hor
4880	34.35	33.37	7.11	25.80	49.03	74.00	-24.97	Peak	Peak	Ver
4880	21.32	33.37	7.11	25.80	36.00	54.00	-18.00	Ave	Ave	Ver
7320	33.65	37.06	8.83	25.51	54.03	74.00	-19.97	Peak	Peak	Ver
7320	19.88	37.06	8.83	25.51	40.26	54.00	-13.74	Ave	Ave	Ver
9760	31.96	38.00	10.59	24.90	55.65	74.00	-18.35	Peak	Peak	Ver
9760	19.61	38.00	10.59	24.90	43.30	54.00	-10.70	Ave	Ave	Ver
12200	33.63	40.32	11.17	24.44	60.67	74.00	-13.33	Peak	Peak	Ver
12200	20.49	40.32	11.17	24.44	47.53	54.00	-6.47	Ave	Ave	Ver

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Radiated Emissions (Spurious)

DNB Job Number:	86019	Date: 18 Aug 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.247 (c) [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		

High Channel

FREQ (Mhz)	Meter	Correction Factors (dB)			dBuV/m			Type		Polarity
		Ant	Cbl	Amp	Corr	Lim	Delta	Lim	Rdng	
4960	34.26	33.66	7.19	25.79	49.31	74.00	-24.69	Peak	Peak	Hor
4960	22.97	33.66	7.19	25.79	38.02	54.00	-15.98	Ave	Ave	Hor
7440	33.58	37.15	8.90	25.48	54.14	74.00	-19.86	Peak	Peak	Hor
7440	20.11	37.15	8.90	25.48	40.67	54.00	-13.33	Ave	Ave	Hor
9920	33.46	38.07	10.72	24.89	57.36	74.00	-16.64	Peak	Peak	Hor
9920	20.09	38.07	10.72	24.89	43.99	54.00	-10.01	Ave	Ave	Hor
12400	33.97	40.64	11.52	24.37	61.76	74.00	-12.24	Peak	Peak	Hor
12400	21.03	40.64	11.52	24.37	48.82	54.00	-5.18	Ave	Ave	Hor
4960	34.45	33.66	7.19	25.79	49.50	74.00	-24.50	Peak	Peak	Ver
4960	21.86	33.66	7.19	25.79	36.91	54.00	-17.09	Ave	Ave	Ver
7440	33.04	37.15	8.90	25.48	53.60	74.00	-20.40	Peak	Peak	Ver
7440	21.62	37.15	8.90	25.48	42.18	54.00	-11.82	Ave	Ave	Ver
9920	33.81	38.07	10.72	24.89	57.71	74.00	-16.29	Peak	Peak	Ver
9920	20.13	38.07	10.72	24.89	44.03	54.00	-9.97	Ave	Ave	Ver
12400	33.73	40.64	11.52	24.37	61.52	74.00	-12.48	Peak	Peak	Ver
12400	21.10	40.64	11.52	24.37	48.89	54.00	-5.11	Ave	Ave	Ver

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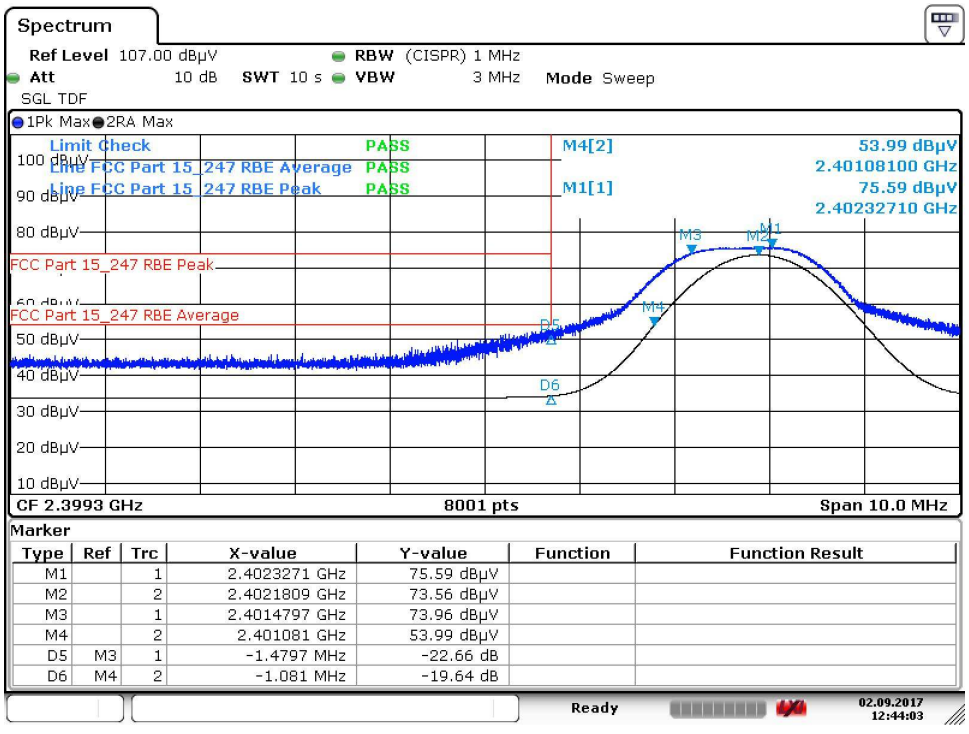
Radiated Emissions (Bandedge)

DNB Job Number:	86019	Date: 2 Sep 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.247 (c) [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		
	1 Mbps (Basic data rate)		

Radiated Corrected Band Edge - BLE - Lower Edge

FREQ (Mhz)	Meter	Correction Factors (dB)			dBuV/m			Type		Polarity
		Ant	Cbl	Amp	Corr	Lim	Delta	Lim	Rdng	
2400.0	25.86	29.8	5.0	26.3	34.36	54.0	-19.64	Ave	Ave	Hor
2400.0	42.84	29.8	5.0	26.3	51.34	74.0	-22.66	Peak	Peak	Hor

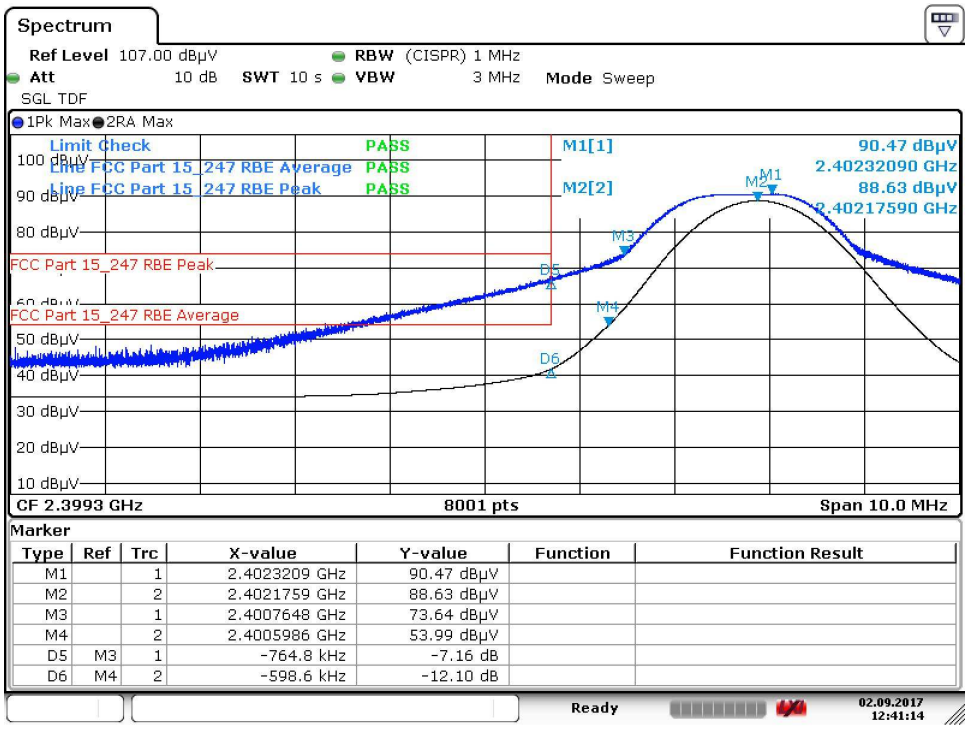


Date: 2.SEP.2017 12:44:04

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Radiated Emissions** (Bandedge)	
DNB Job Number:	86019	Date: 2 Sep 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.247 (c) [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		
	1 Mbps (Basic data rate)		

Radiated Corrected Band Edge - BLE - Lower Edge

FREQ (Mhz)	Meter	Correction Factors (dB)			dBuV/m			Type		Polarity
		Ant	Cbl	Amp	Corr	Lim	Delta	Lim	Rdng	
2400.0	38.34	29.8	5.0	26.3	46.84	54.0	-7.16	Ave	Ave	Ver
2400.0	53.40	29.8	5.0	26.3	61.9	74.0	-12.1	Peak	Peak	Ver

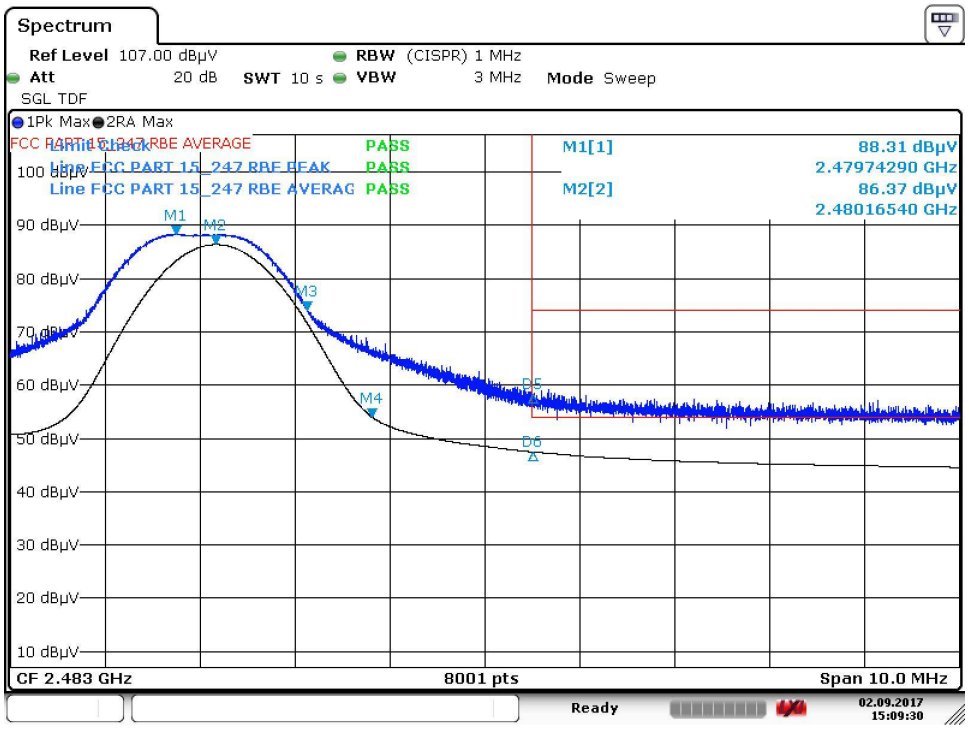


Date: 2.SEP.2017 12:41:14

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Radiated Emissions (Bandedge)

DNB Job Number:	86019	Date: 2 Sep 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.247 (c) [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		
	1 Mbps (Basic data rate)		

Radiated Corrected Band Edge - BLE - Upper Edge										
FREQ (Mhz)	Meter	Correction Factors (dB)			dBuV/m			Type		Polarity
		Ant	Cbl	Amp	Corr	Lim	Delta	Lim	Rdng	
2483.5	39.1	30.1	5.1	26.3	48	54.0	-6	Ave	Ave	Hor
2483.5	50.1	30.1	5.1	26.3	59	74.0	-15	Peak	Peak	Hor



Date: 2.SEP.2017 15:09:30

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436		Radiated Emissions (Bandedge)

DNB Job Number:	86019	Date: 2 Sep 2017	Specification
Customer:	Orbit Irrigation Products Inc.		[X] 15.247 (c) [X] ANSI C63.10-2013
Model Number:	WT25		
Description:	BLE Transmitter		
	1 Mbps (Basic data rate)		

Radiated Corrected Band Edge - BLE - Upper Edge										
FREQ (Mhz)	Meter	Correction Factors (dB)			dBuV/m			Type		Polarity
		Ant	Cbl	Amp	Corr	Lim	Delta	Lim	Rdng	
2483.5	37.1	30.1	5.1	26.3	46	54.0	-8	Ave	Ave	Ver
2483.5	54.1	30.1	5.1	26.3	63	74.0	-11	Peak	Peak	Ver