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CERTIFICATION TEST REPORT

Manufacturer: ECO Parking Technologies, LLC
8730 Corporation Drive
Indianapolis, Indiana 46256 USA

Applicant: Same As Above

Product Name: FALCON Vision Based Parking Guidance System

Product Description: Camera based, parking guidance system, with ability to be integrated into ECO's FLEX-Tech parking garage light fixture.

Model: ECO FALCON – Rev B

Operating Voltage/Frequency: 24VDC

FCC ID: 2AVOF-FC-14211

Testing Commenced: Oct. 15, 2019

Testing Ended: June 24, 2020

Summary of Test Results: In Compliance

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications and/or manufacturer's statement. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

Standards:

- **FCC Part 15 Subpart C, Section 15.247**
- **FCC15.207 - Conducted Limits**
- **FCC Part 15.31(e)**
- **ANSI C63.10:2013**



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

Evaluation Conducted by:

Julius Chiller, EMC/Wireless Engineer

Report Reviewed by:

Ken Littell, Director of EMC & Wireless Operations

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1 ADMINISTRATIVE INFORMATION

1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

1.2 Measurement Procedure:

All measurements were performed according to the 2013 version of ANSI C63.10 and recommended FCC procedure of measurement of DTS operating under Section 15.247 and in KDB558074. A list of the measurement equipment can be found in Section 6.

1.3 Uncertainty Budget:

The uncertainty in EMC measurements arises from several factors which affect the results, some associated with environmental conditions in the measurement room, the test equipment being used and the measurement techniques adopted.

The measurement uncertainty budgets detailed below are calculated from the test and calibration data, and are expressed with a 95% confidence factor. Note: Only measurements listed below which relate to tests included in this Test Report are applicable to it.

Measurement Range	Expanded Uncertainty	Combined Uncertainty
Radiated Emissions <1 GHz @ 3m	±5.07dB	±2.54
Radiated Emissions <1 GHz @10m	±5.09dB	±2.55
Radiated Emissions 1 GHz to 2.7 GHz	±3.62dB	±1.81
Radiated Emissions 2.7 GHz to 18 GHz	±3.10dB	±1.55
AC Power Line Conducted Emissions, 150kHz to 30 MHz	±2.76dB	±1.38

This Uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.4 Document History

Document Number	Description	Issue Date	Approved By
F2P21582A-01E	First Issue	June 24, 2020	K. Littell

**2 SUMMARY OF TEST RESULTS**

Test Name	Standard(s)	Results
-6dB Occupied Bandwidth	CFR 47 Part 15.247(a)(2) / KDB558074	Complies
Conducted Output Power	CFR 47 Part 15.247(b)(3) / KDB558074	Complies
Voltage Variations	CFR 47 Part 15.31(e)	Complies
Conducted Spurious Emissions	CFR 47 Part 15.247(d) / Part 15.207 / KDB558074	Complies
Radiated Spurious Emission with 4.4dBi Integral Antenna	CFR 47 Part 15.247(d) / Part 15.209 / KDB558074	Complies
Peak Power Spectral Density	CFR 47 Part 15.247(e) / KDB558074	Complies
Conducted Emissions	CFR 47 Part 15.207(a)	Complies

Modifications Made to the Equipment
None

**3 TABLE OF MEASURED RESULTS**

Test			Low Channel 2.412 GHz	Mid Channel 2.437 GHz	High Channel 2.462 GHz
Peak Power Spectral Density	CCK 11 Mbps		-11.55dBm	-11.30dBm	-11.73dBm
	OFDM 54 Mbps		-16.83dBm	-17.07dBm	-17.66dBm
	MM MCS7 HT20		-16.66dBm	-19.95dBm	-21.02dBm
	GF MCS7 HT20		-21.07dBm	-21.22dBm	-21.10dBm
Peak Power Spectral Density Limit			8dBm	8dBm	8dBm
-6dB Occupied Bandwidth	CCK 11 Mbps		9.641 MHz	9.285 MHz	8.616 MHz
	OFDM 54 Mbps		16.508 MHz	16.496 MHz	16.517 MHz
	MM MCS7 HT20		17.682 MHz	17.680 MHz	17.685 MHz
	GF MCS7 HT20		17.708 MHz	17.71 MHz	17.684 MHz
-6dB Occupied Bandwidth Limit			≥ 500KHz	≥ 500KHz	≥ 500KHz
RF Output Power	CCK 11 Mbps		20.48dBm	20.48dBm	20.30dBm
	OFDM 54 Mbps		15.55dBm	15.38dBm	15.82dBm
	MM MCS7 HT20		14.26dBm	14.33dBm	14.17dBm
	GF MCS7 HT20		14.43dBm	14.35dBm	14.19dBm
RF Output Power Limit			1W / 30dBm	1W / 30dBm	1W / 30dBm
Voltage Variations	CCK 11 Mbps	22VDC	3.37	--	3.90
		24VDC	3.37	--	4.34
		28VDC	3.37	--	4.34
	OFDM 54 Mbps	22VDC	-2.41	--	-2.90
		24VDC	-2.41	--	-2.90
		28VDC	-2.75	--	-2.90
	MM MCS7 HT20	22VDC	-4.10	--	-4.20
		24VDC	-4.10	--	-4.31
		28VDC	-4.10	--	-4.52
	GF MCS7 HT20	22VDC	-5.17	--	-4.35
		24VDC	-5.26	--	-4.35
		28VDC	-5.27	--	-4.47

**To meet the requirements of 15.31, voltage was varied to the lowest stated voltage by the manufacturer and then the highest stated voltage from the manufacturer..*



4 ENGINEERING STATEMENT

This report has been prepared on behalf of ECO Parking Technologies, LLC to provide documentation for the testing described herein. This equipment has been tested and found to comply with Part 15.247 of the FCC Rules using ANSI C63.10:2013 and KDB558074 standards. The test results found in this test report relate only to the items tested.

**5 EUT INFORMATION AND DATA****5.1 Equipment Under Test:**Product: **FALCON Vision Based Parking Guidance System**Model: **ECO FALCON – Rev B**

Serial No.: None Specified

FCC ID: **2AVOF-FC-14211****5.2 Trade Name:**

ECO Parking Technologies, LLC

5.3 Power Supply:**MeanWell LPF-25-24****5.4 Applicable Rules:**

CFR 47, Part 15.247, subpart C

5.5 Equipment Category:

Radio Transmitter-DTS

5.6 Antenna:

4.4dBi Integral

5.7 Accessories:

Device	Manufacturer	Model Number	Serial Number
Laptop	Dell	Latitude E6500	HB68137790
USB to TTL Converter	DTech	PL2303TA	None Specified
Power Supply	MeanWell	LPT-25-24	None Specified

5.8 Test Item Condition:

The equipment to be tested was received in good condition.

5.9 Testing Algorithm:

The radio was set to continuously transmit on the low, mid and high channel (1, 6 and 11) in the 2.4 GHz band. The highest emissions were recorded in the data tables.

**6 LIST OF MEASUREMENT INSTRUMENTATION**

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166-E	AlbatrossProjects	B83117-DF435-T261	US140023	Oct. 31, 2019
Temp/Hum. Recorder	CL234	Extech	445814	03	Apr. 19, 2020
Temp/Hum. Recorder	CL261	Extech	445814	04	Mar. 6, 2020
Temp/Hum. Recorder	CL263	Extech	445814	06	Mar. 6, 2020
Receiver	CL151	Rohde & Schwarz	ESU40	100319	Oct. 21, 2020
Receiver	CL204	Rohde & Schwarz	ESR7	101714	Oct. 29, 2019
Antenna, Bilog	CL211	Sunol Sciences, Inc.	JB1	A021017	Oct. 3, 2021
Low Loss Cable Set	--	Pasternack	PE3C0666-252 / PE3C066-50CM	None Spec.	July 16, 2020
Horn Antenna	CL098	Emco	3115	9809-5580	Jan. 31, 2021
Antenna, 18" Active Loop	CL194	AH Systems	SAS-562B	281	2022-02-21
Pre-Amplifier	CL153	Agilent	83006-69007	MY39500791	Aug. 5, 2020
Pre-Amplifier	CL250	Com-Power	PAM-118A	18040011	Oct. 26, 2019
Software:	Tile Version 1.0		Software Verified: Oct. 15-25, 2019		
Software:	EMC 32, Version 8.53.0		Software Verified: Oct. 15-25, 2019		
Antenna, Horn	CL114	A. H. Systems, Inc.	SAS-572	237	Feb. 4, 2021
Transient Limiter	CL102	Hewlett Packard	11947A	3107A03325	Feb. 7, 2020
Spectrum Analyzer	CL147	Agilent	E7402A	MY45101241	Jan. 25, 2020
LISN	CL181	Com-Power	LI-125A	191226	Sept. 6, 2020
LISN	CL182	Com-Power	LI-125A	191225	Sept. 6, 2020
Pre-Amplifier	CL189	Com-Power	PAM-840A	461303	July 31, 2021



7 OCCUPIED BANDWIDTH

7.1 Requirements:

The 6dB bandwidth shall be greater than 500 kHz.

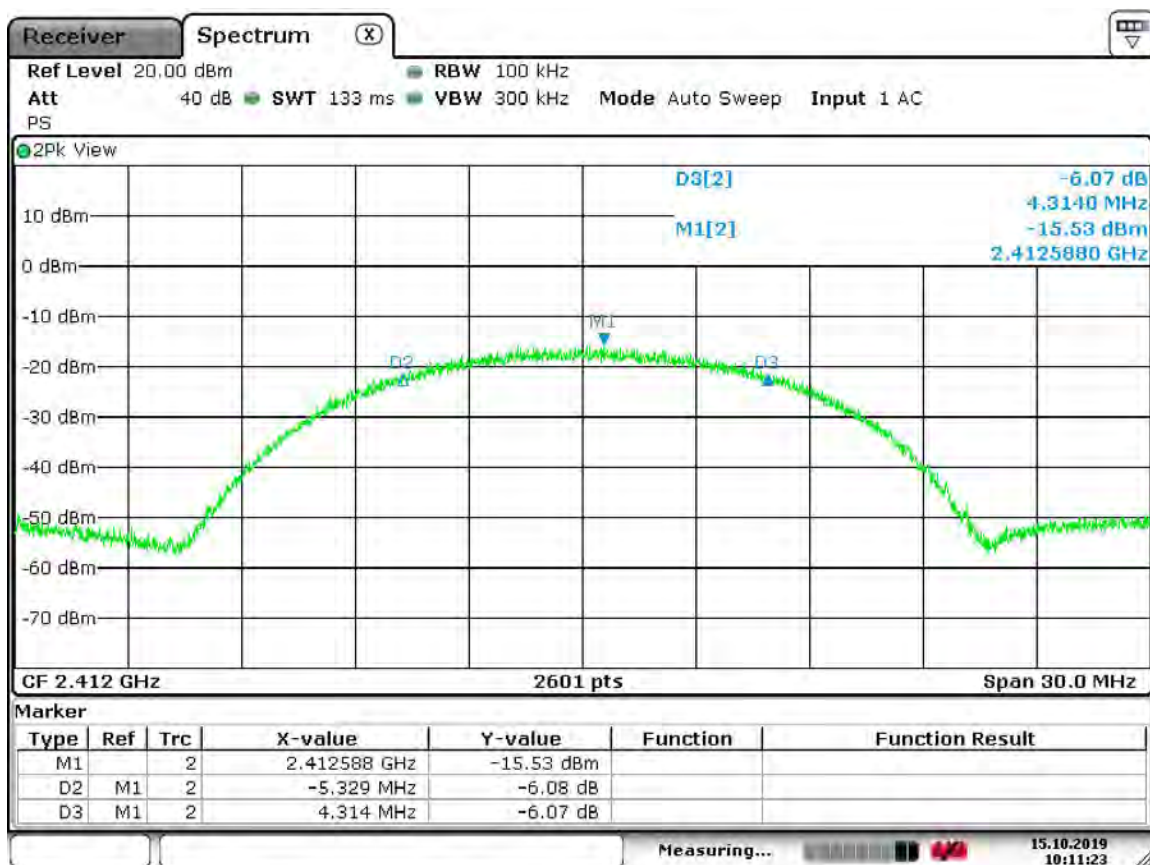
Bandwidth measurements were made at the low, mid and high frequencies with the resolution bandwidth set at 100 kHz (video bandwidth set at 300 kHz) while the span was set at 30 MHz. The bandwidth was measured using the marker delta method.



7.2 Occupied Bandwidth Test Data

Test Date:	Oct. 15, 2019	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(a)(2); KDB558074	Air Temperature:	21.2°C
		Relative Humidity:	45%

CCK 11 Mbps, Low Channel



Date: 15.OCT.2019 10:11:23

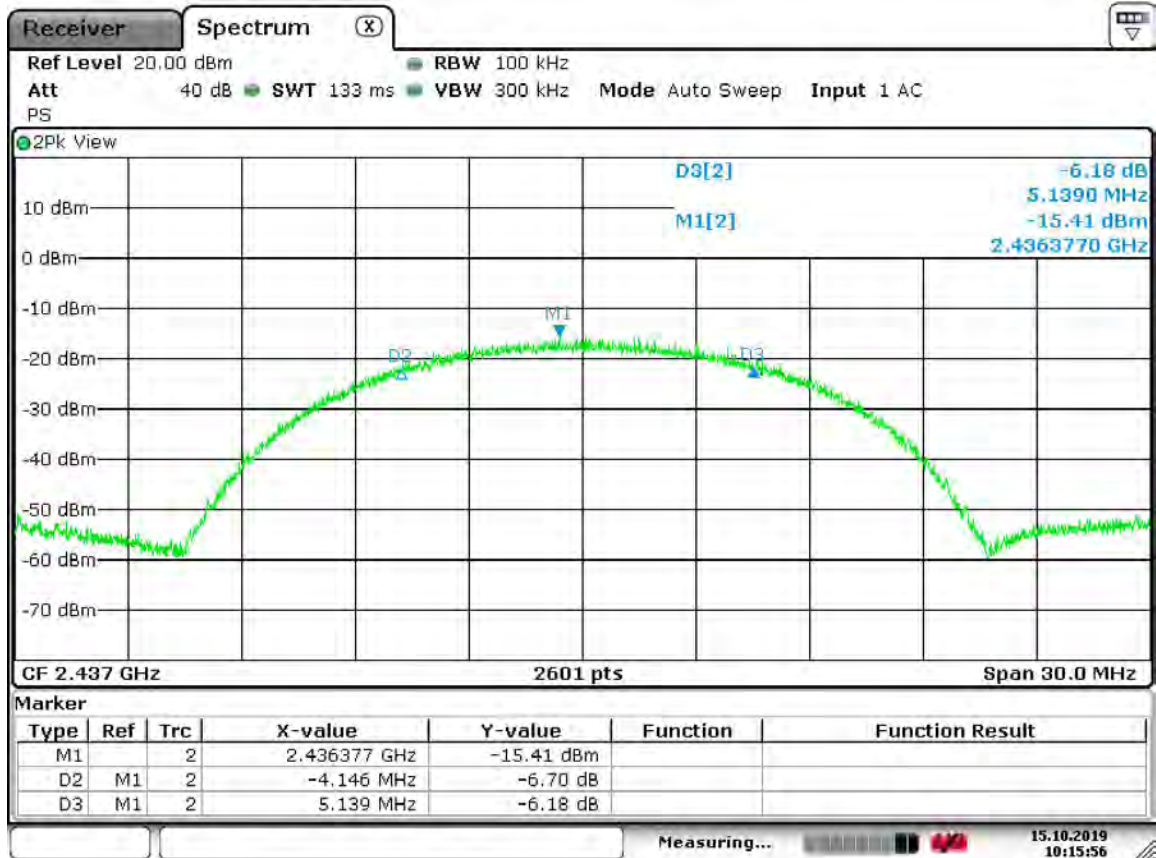


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

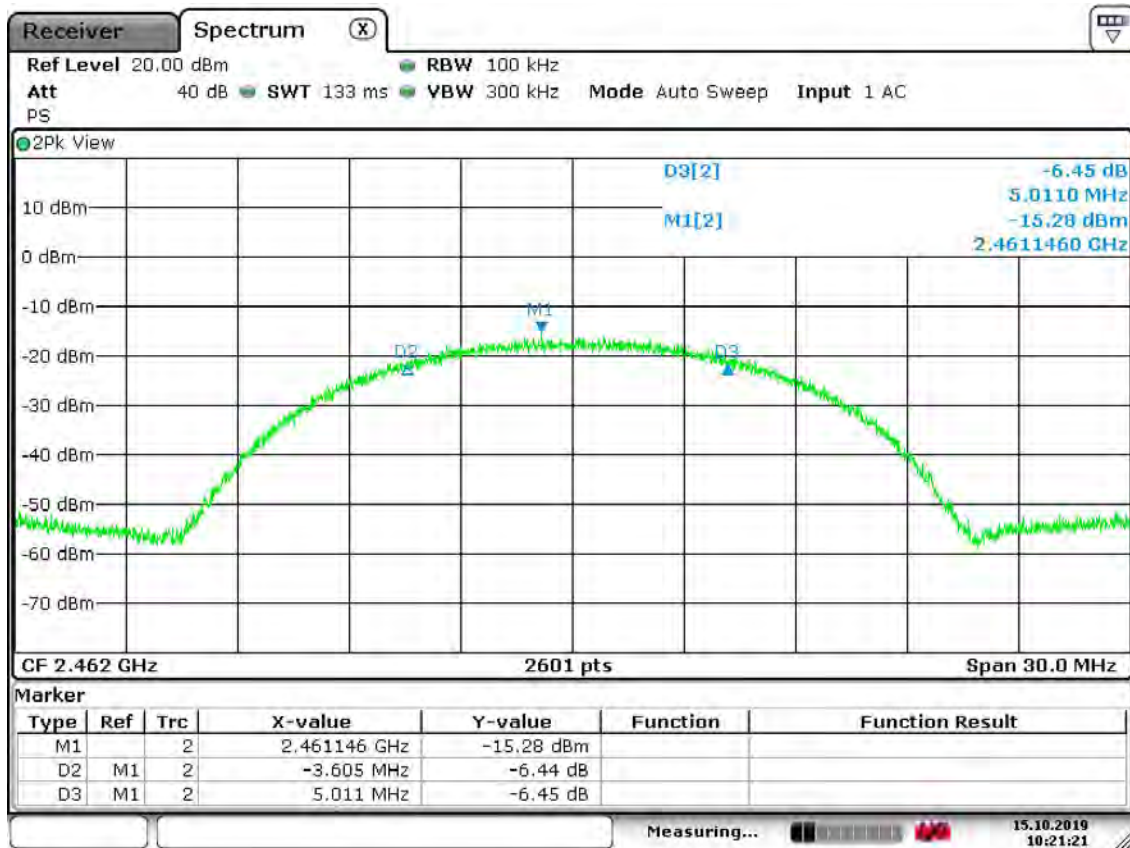
CCK 11 Mbps, Mid Channel



Date: 15.OCT.2019 10:15:56



CCK 11 Mbps, High Channel



Date: 15.OCT.2019 10:21:21

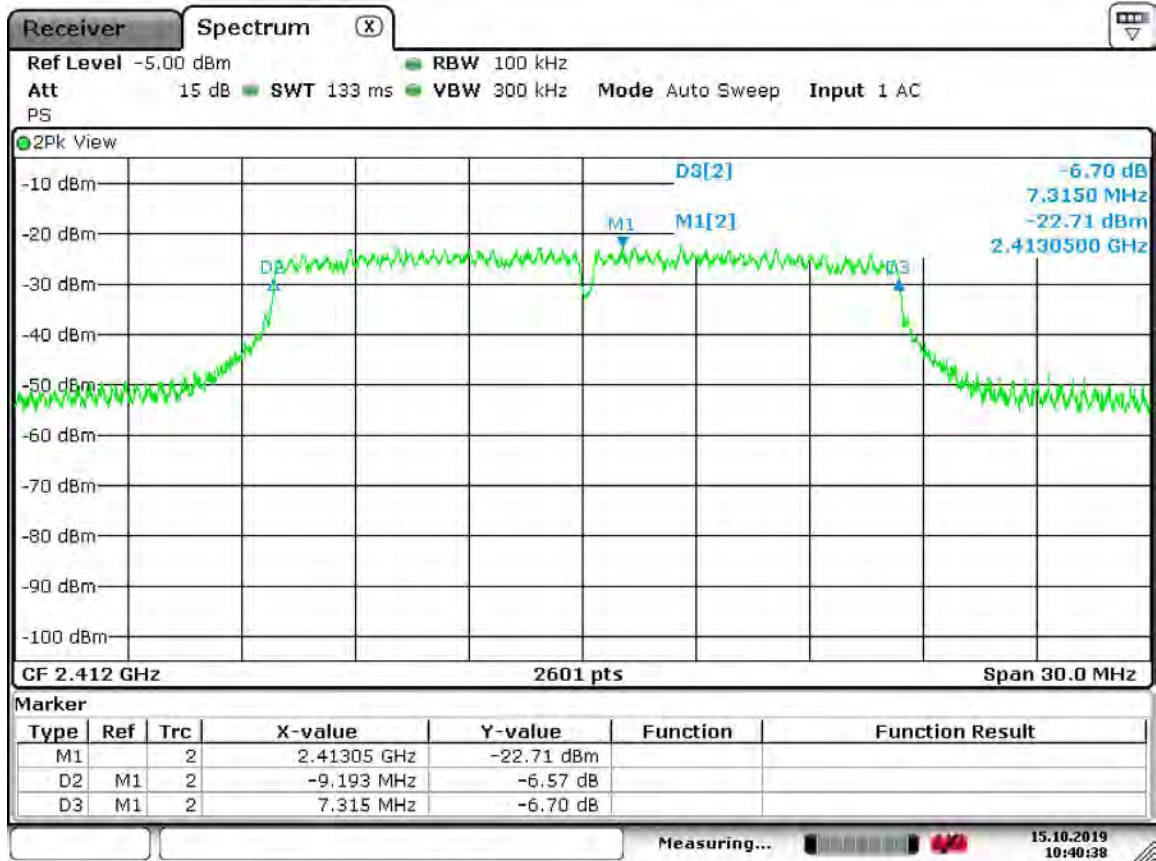


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

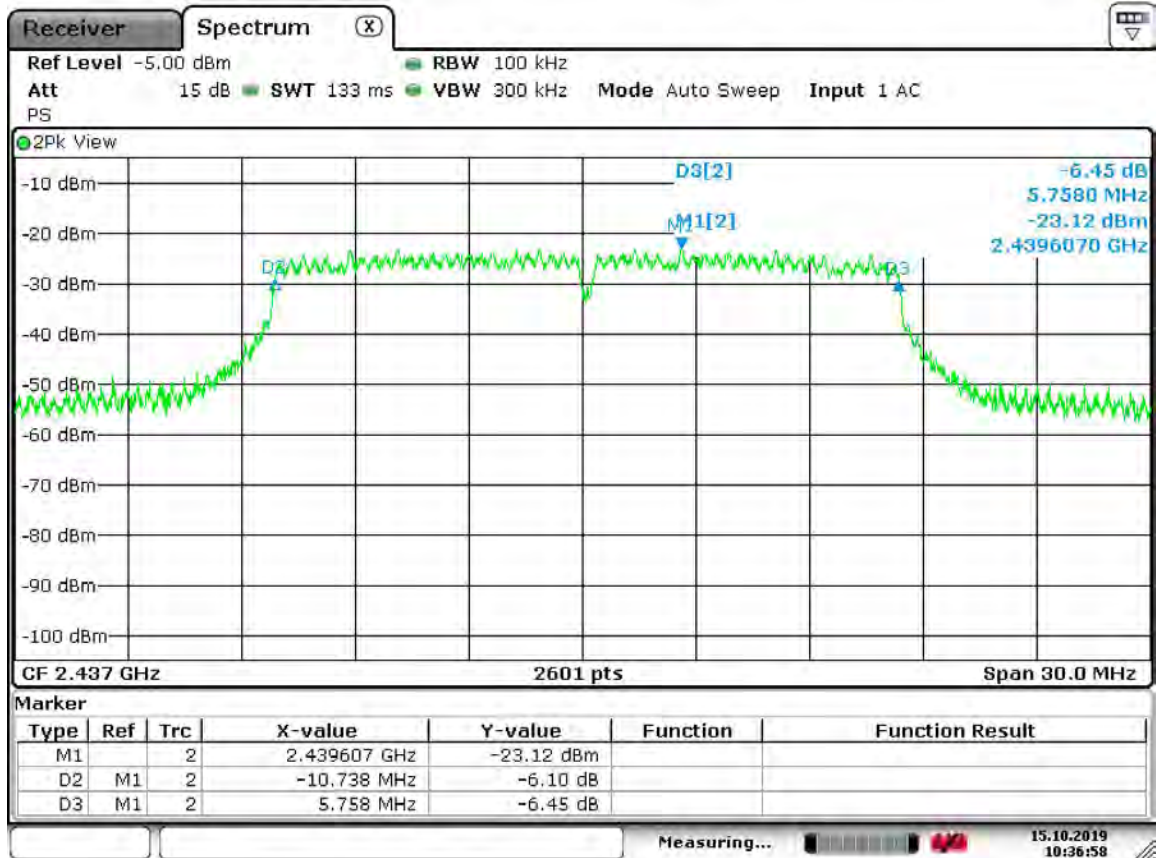
OFDM 54 Mbps, Low Channel



Date: 15.OCT.2019 10:40:38



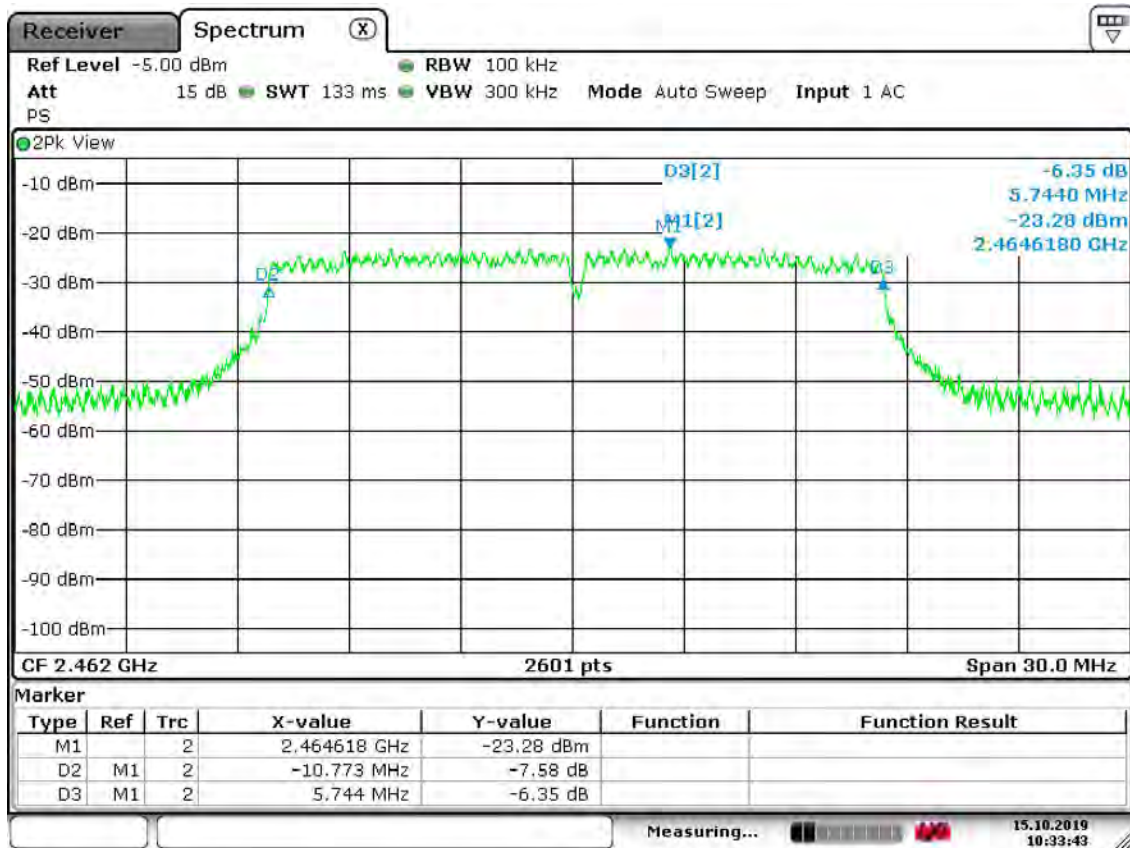
OFDM 54 Mbps, Mid Channel



Date: 15.OCT.2019 10:36:59



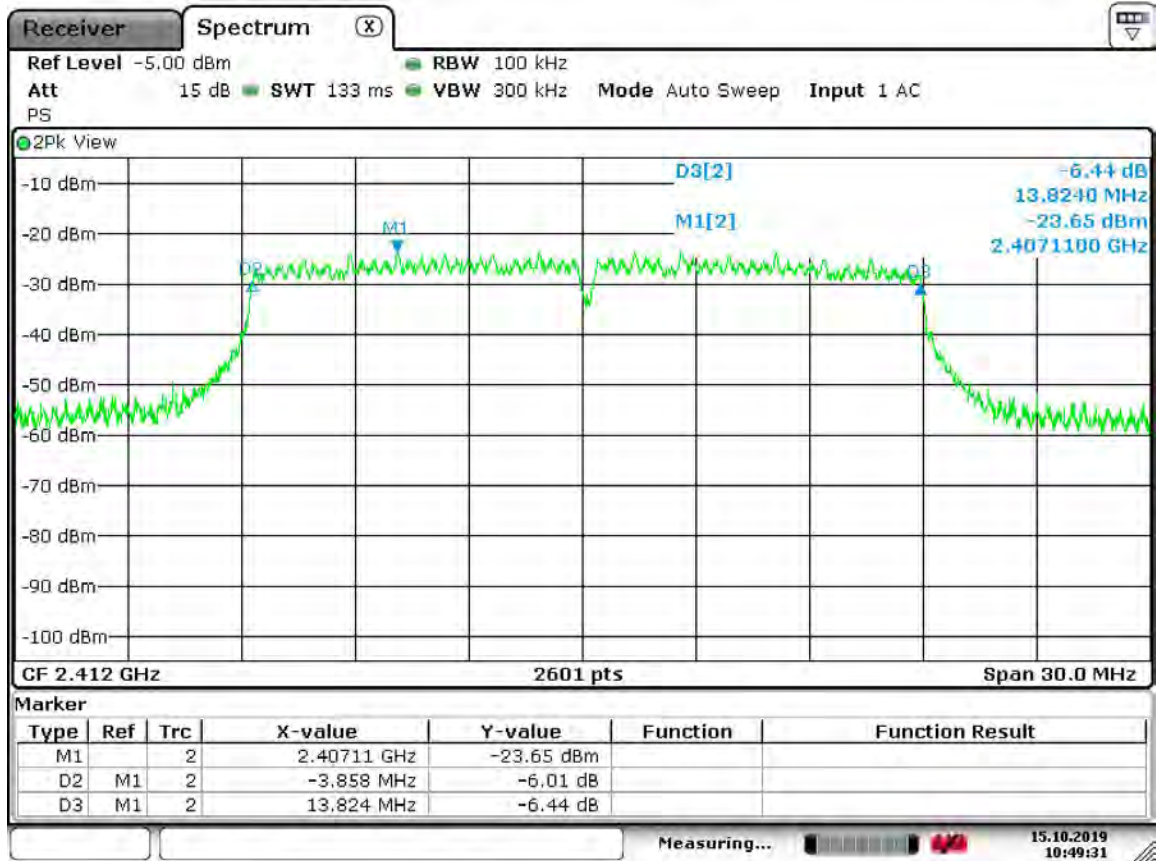
OFDM 54 Mbps, High Channel



Date: 15.OCT.2019 10:33:42



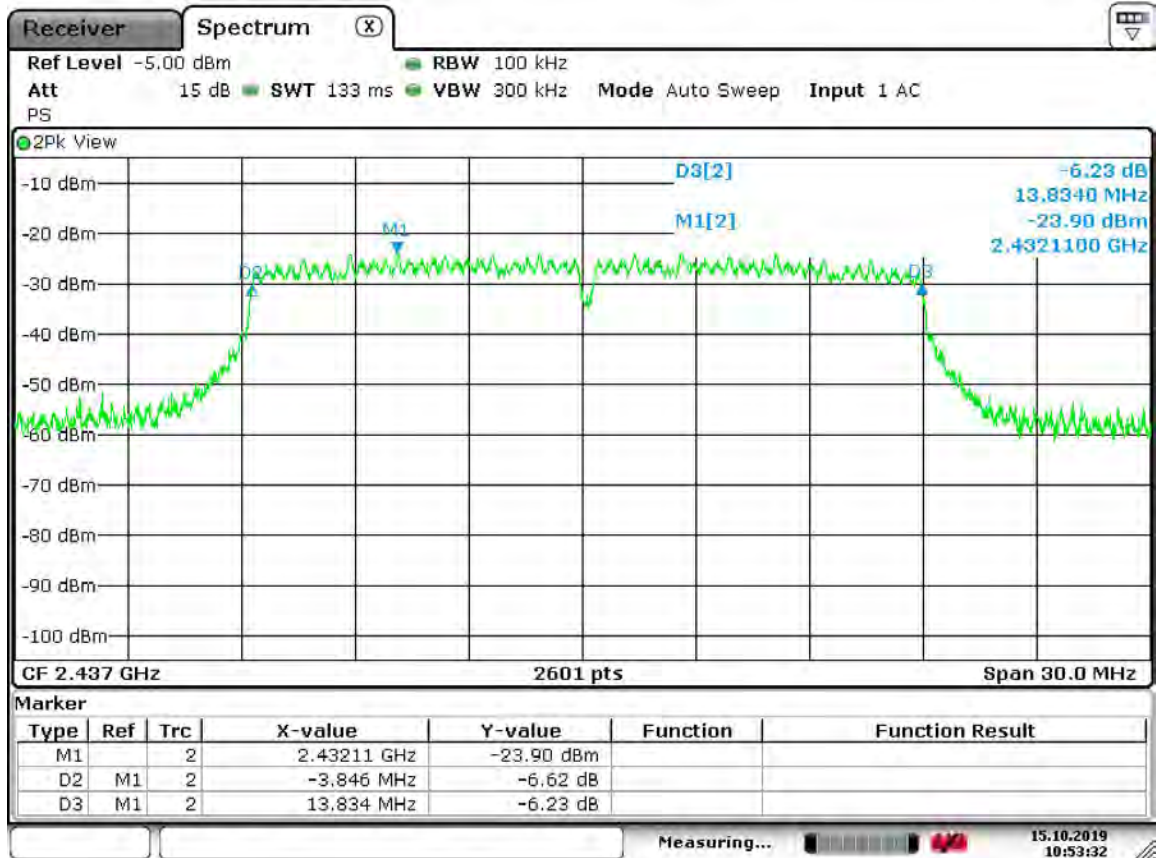
MM MCS7 HT20, Low Channel



Date: 15.OCT.2019 10:49:31



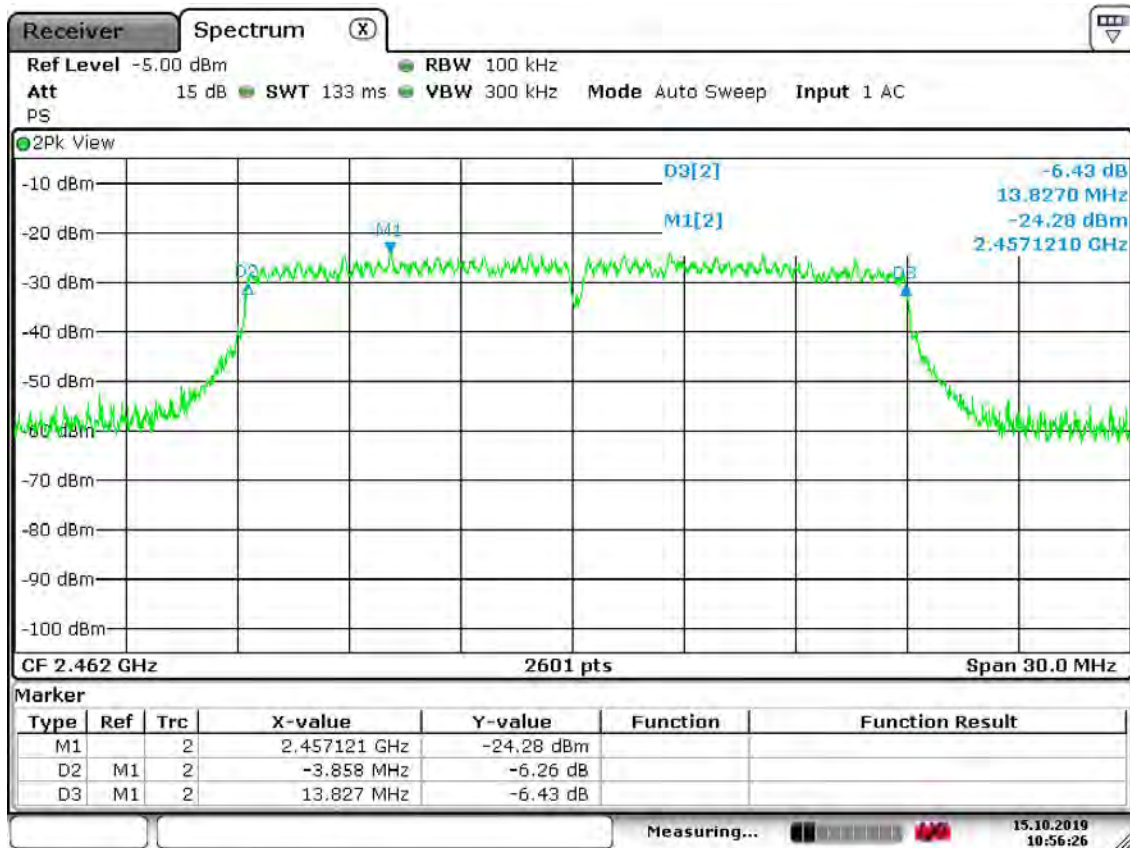
MM MCS7 HT20, Mid Channel



Date: 15.OCT.2019 10:53:32



MM MCS7 HT20, High Channel



Date: 15.OCT.2019 10:56:27

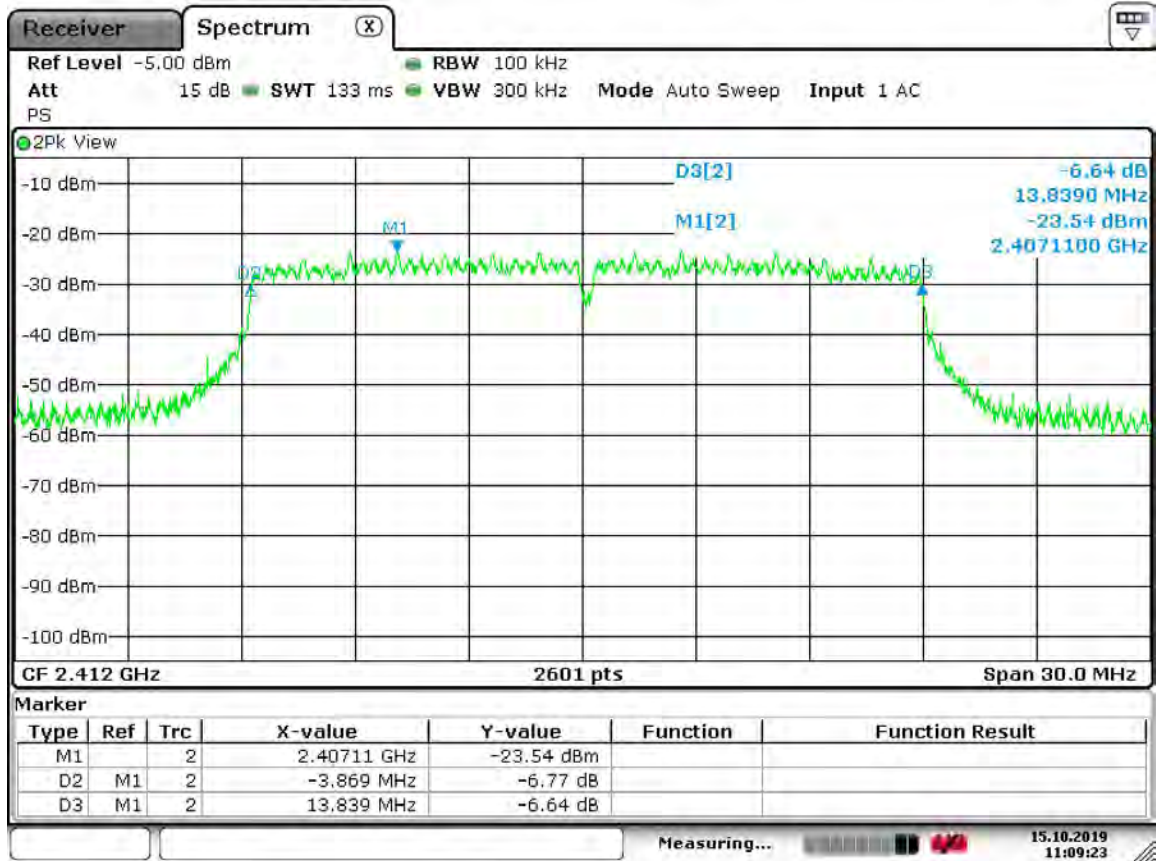


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

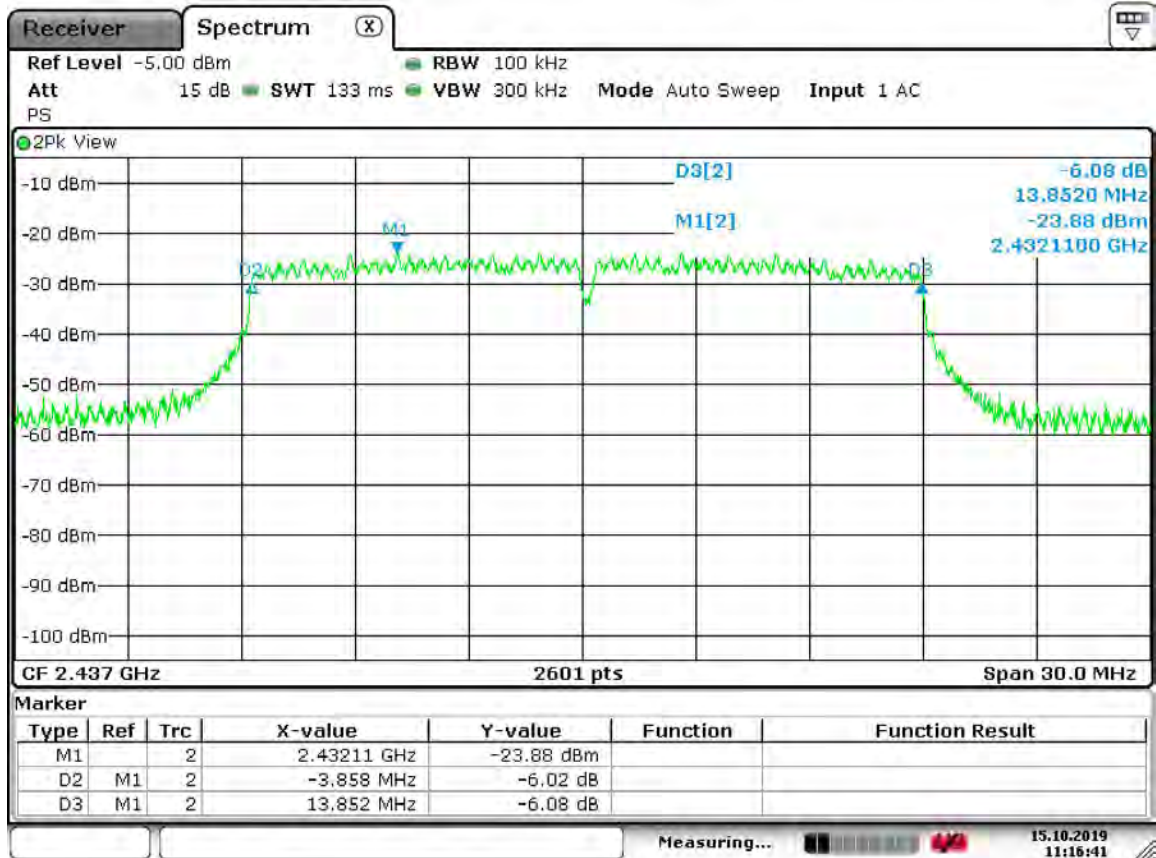
GF MCS7 HT20, Low Channel



Date: 15.OCT.2019 11:09:24



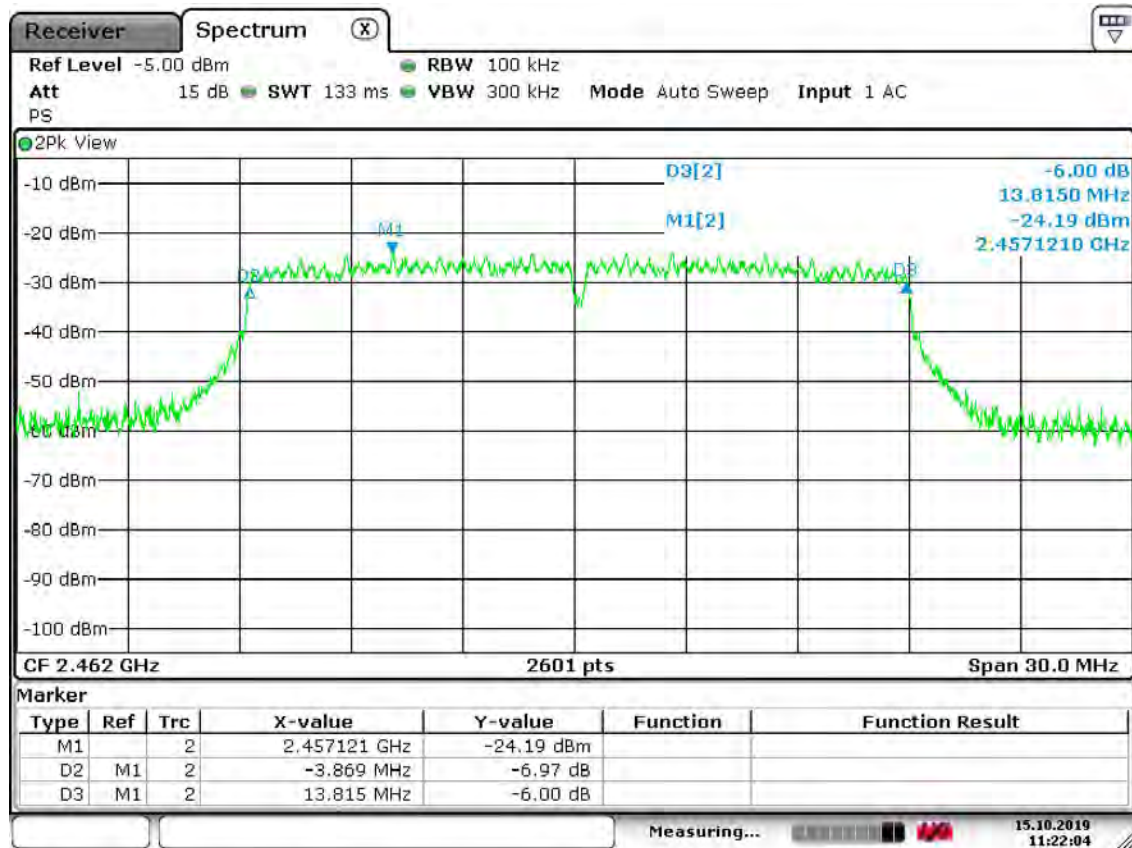
GF MCS7 HT20, Mid Channel



Date: 15.OCT.2019 11:16:41



GF MCS7 HT20, High Channel



Date: 15.OCT.2019 11:22:03



8 CONDUCTED OUTPUT POWER

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the receiver. The peak power output was measured.

8.1 Requirements:

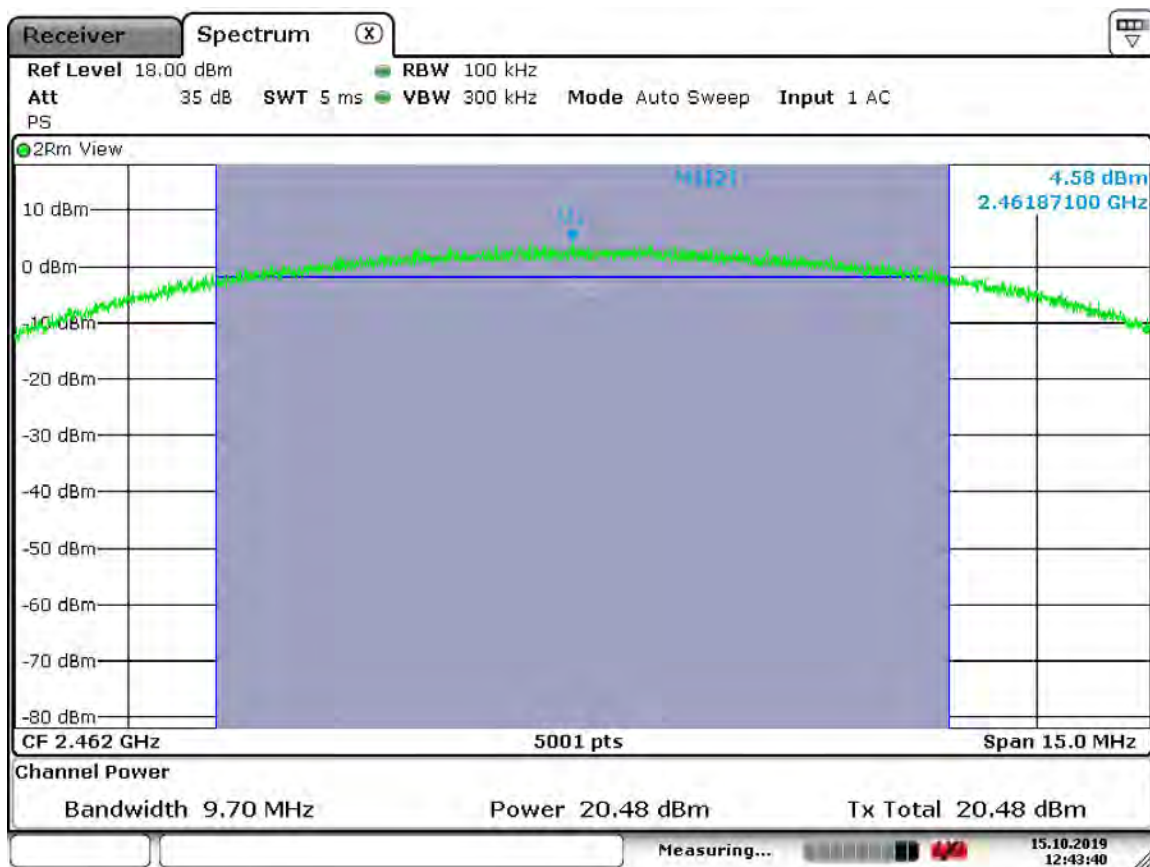
The peak power output shall be 1 watt (30 dBm) or less when using an antenna with a gain of less than 6dBi. For antennas having a gain of more than 6dBi, the limit is reduced by 1dB for every dB the antenna gain is over 6dBi.



8.2 Conducted Output Power Test Data

Test Date:	Oct. 15, 2019	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(b)(3); KDB558074	Air Temperature:	20.9°C
		Relative Humidity:	47%

CCK 11 Mbps, Low Channel



Date: 15.OCT.2019 12:43:40

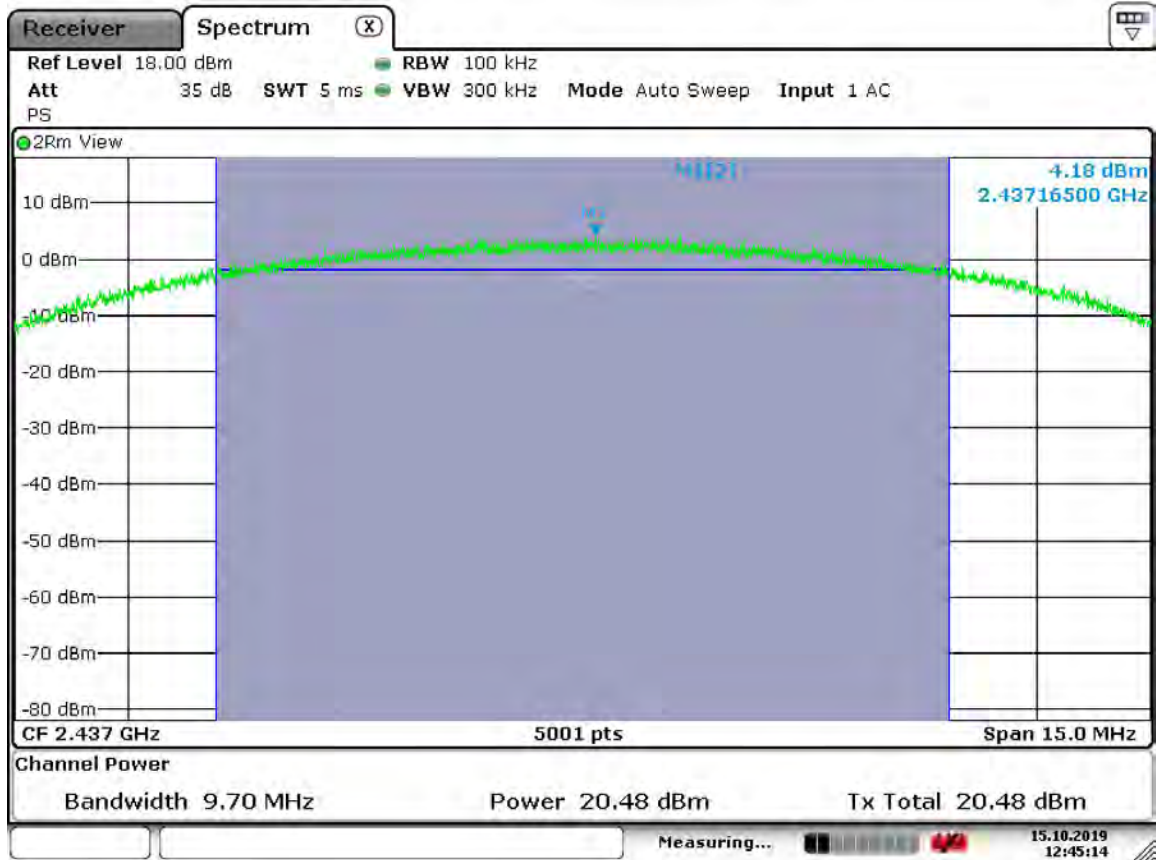


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps, Mid Channel



Date: 15.OCT.2019 12:45:14

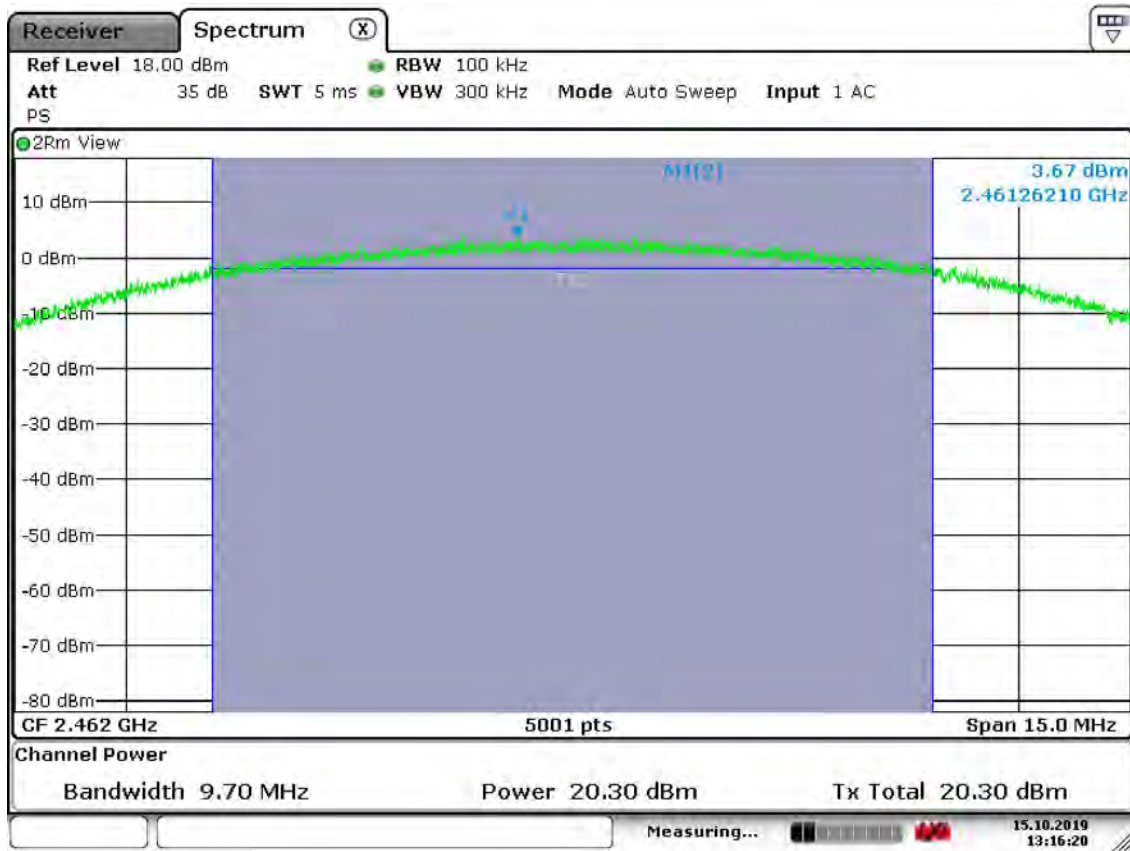


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps, High Channel



Date: 15.OCT.2019 13:16:21

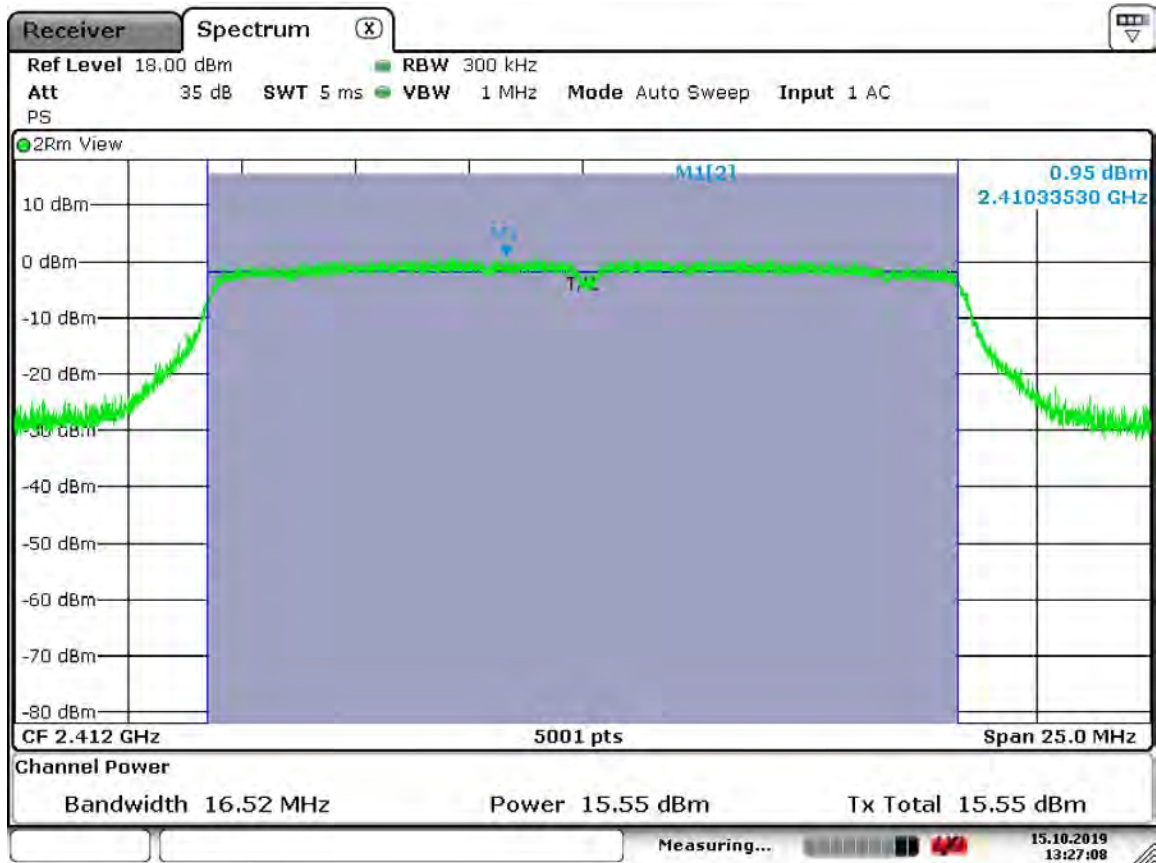


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

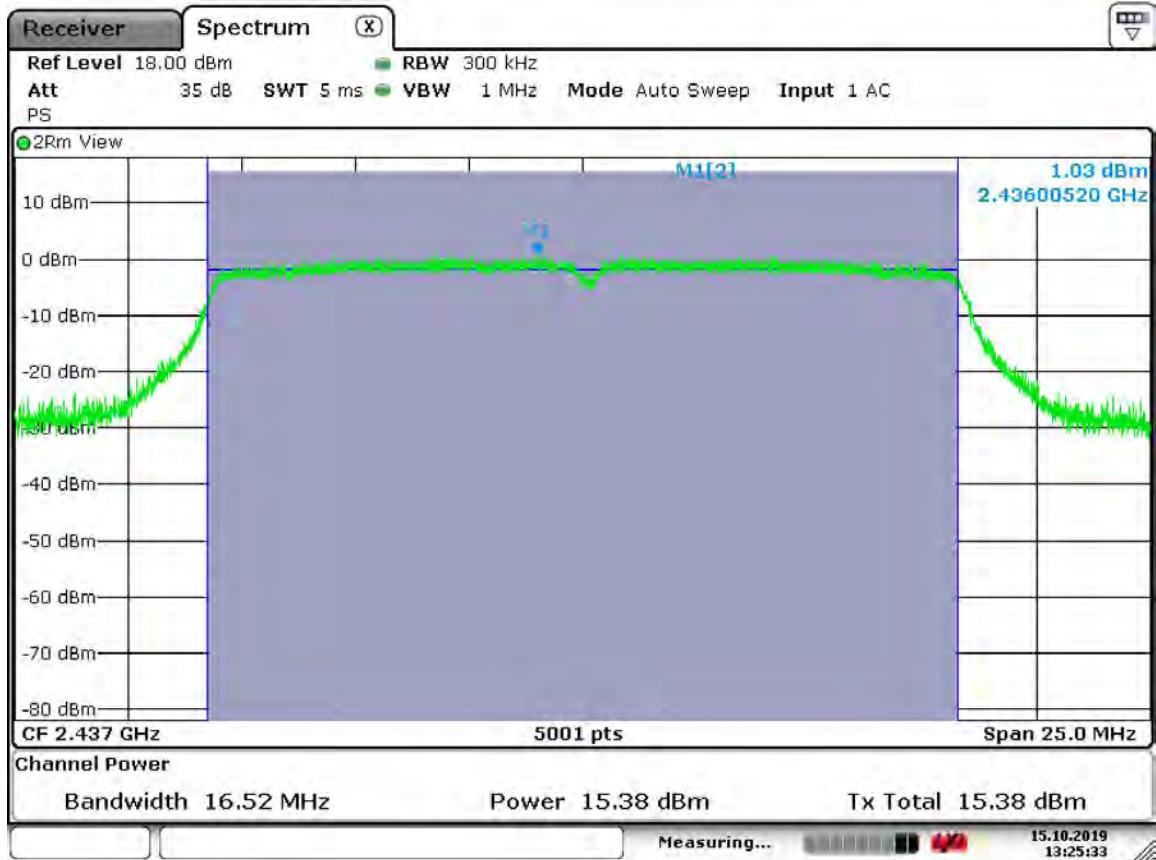
OFDM 54 Mbps, Low Channel



Date: 15.OCT.2019 13:27:09



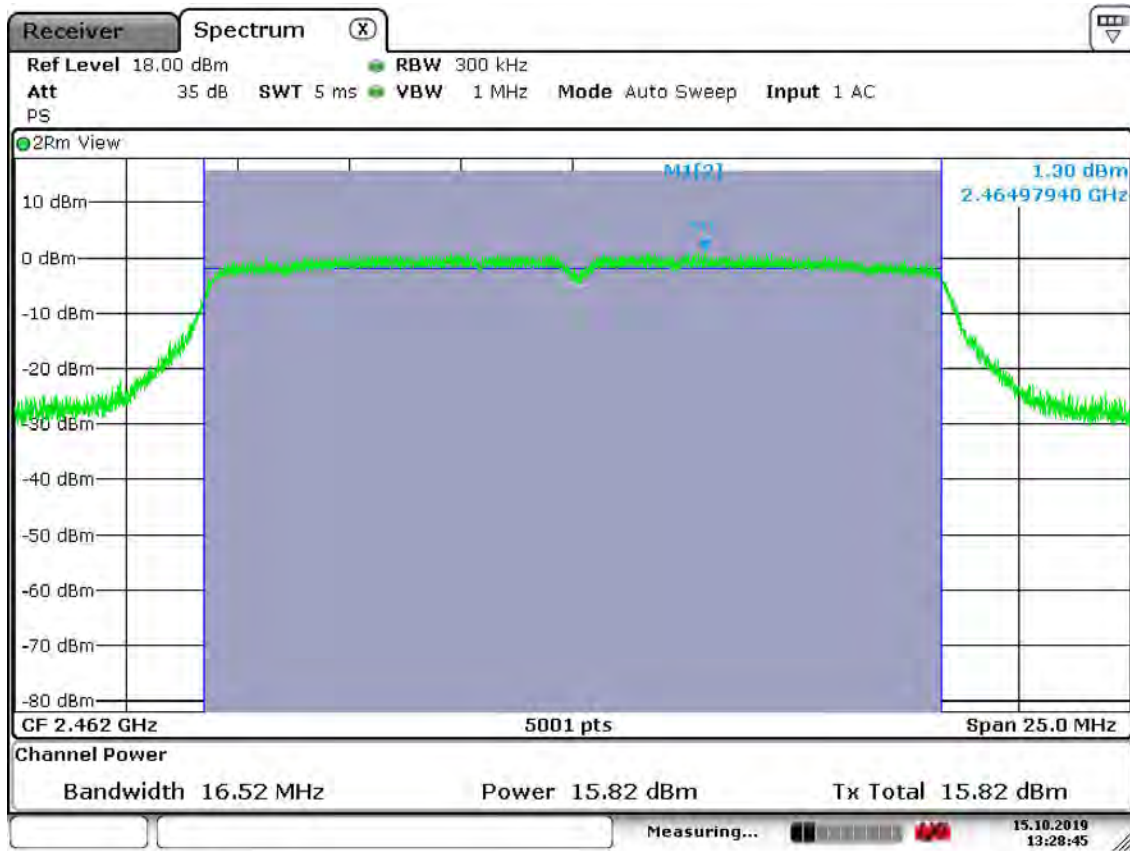
OFDM 54 Mbps, Mid Channel



Date: 15.OCT.2019 13:25:33



OFDM 54 Mbps, High Channel



Date: 15.OCT.2019 13:28:45

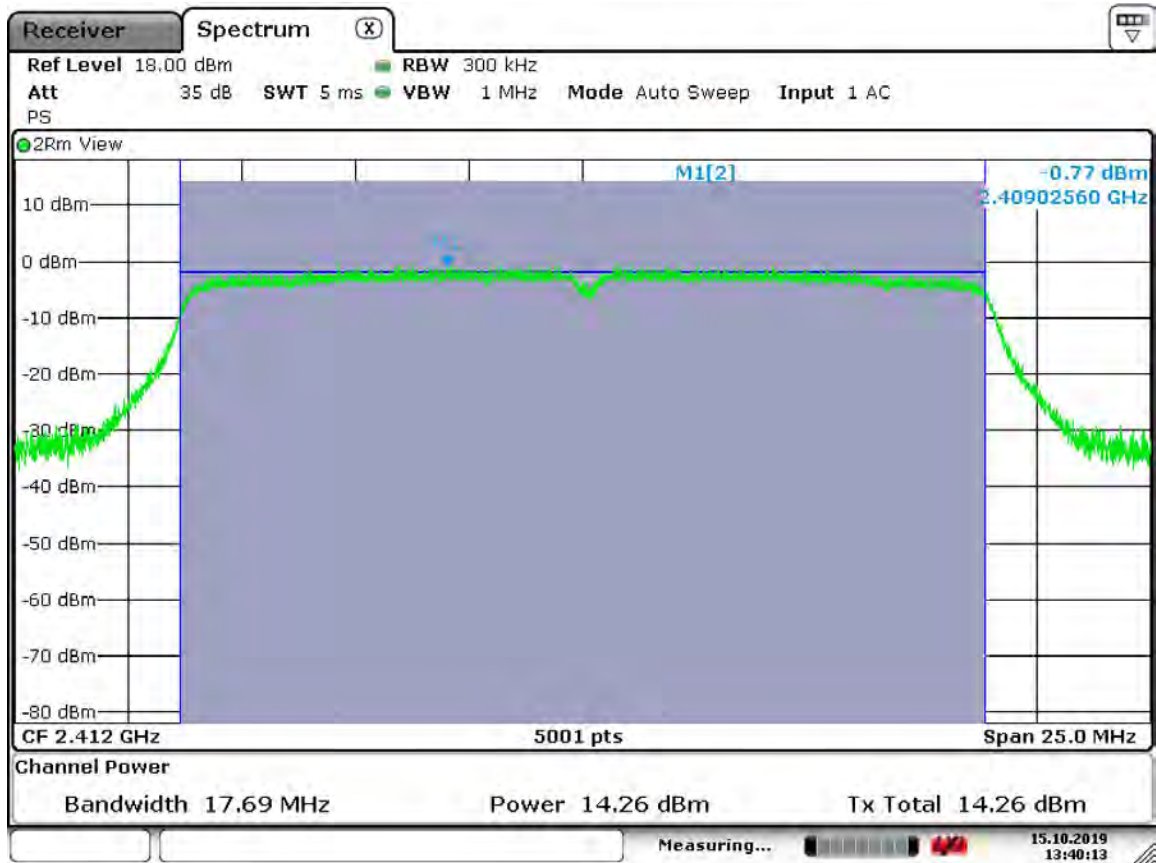


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20, Low Channel



Date: 15.OCT.2019 13:40:13

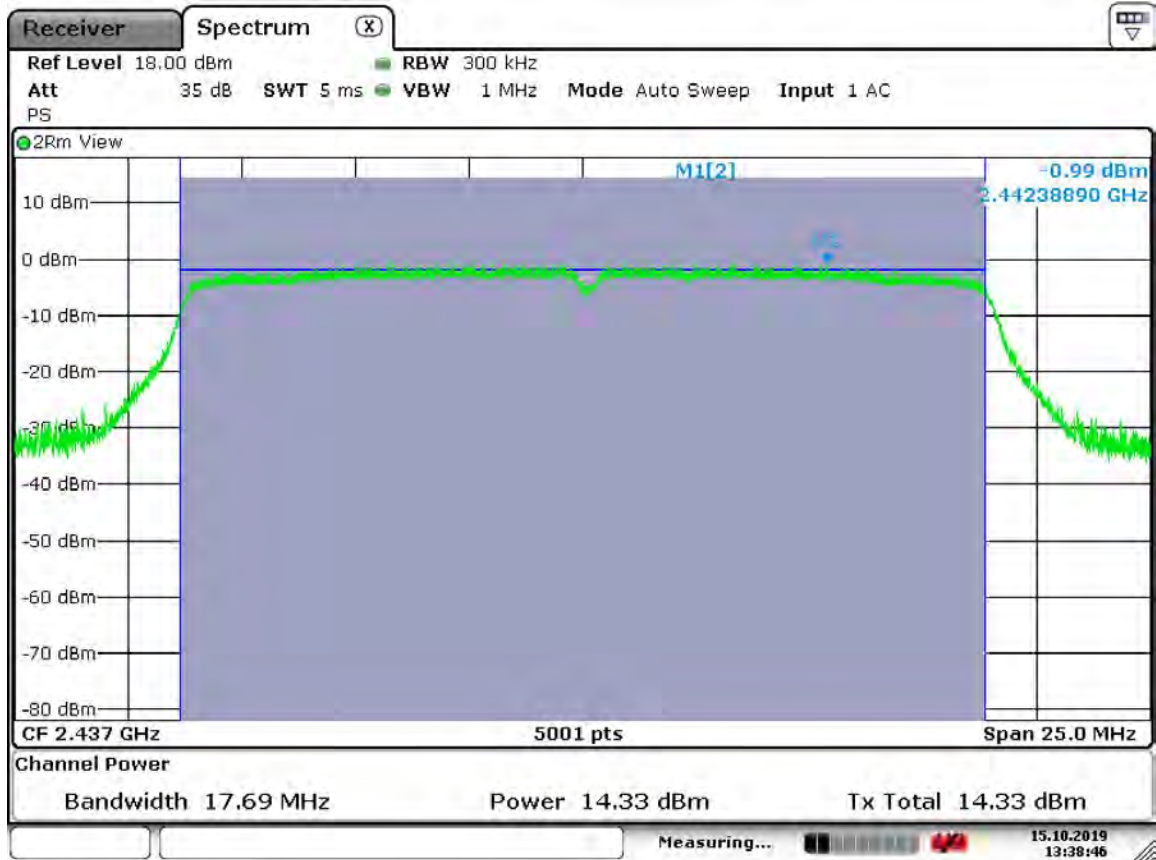


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20, Mid Channel



Date: 15.OCT.2019 13:38:46

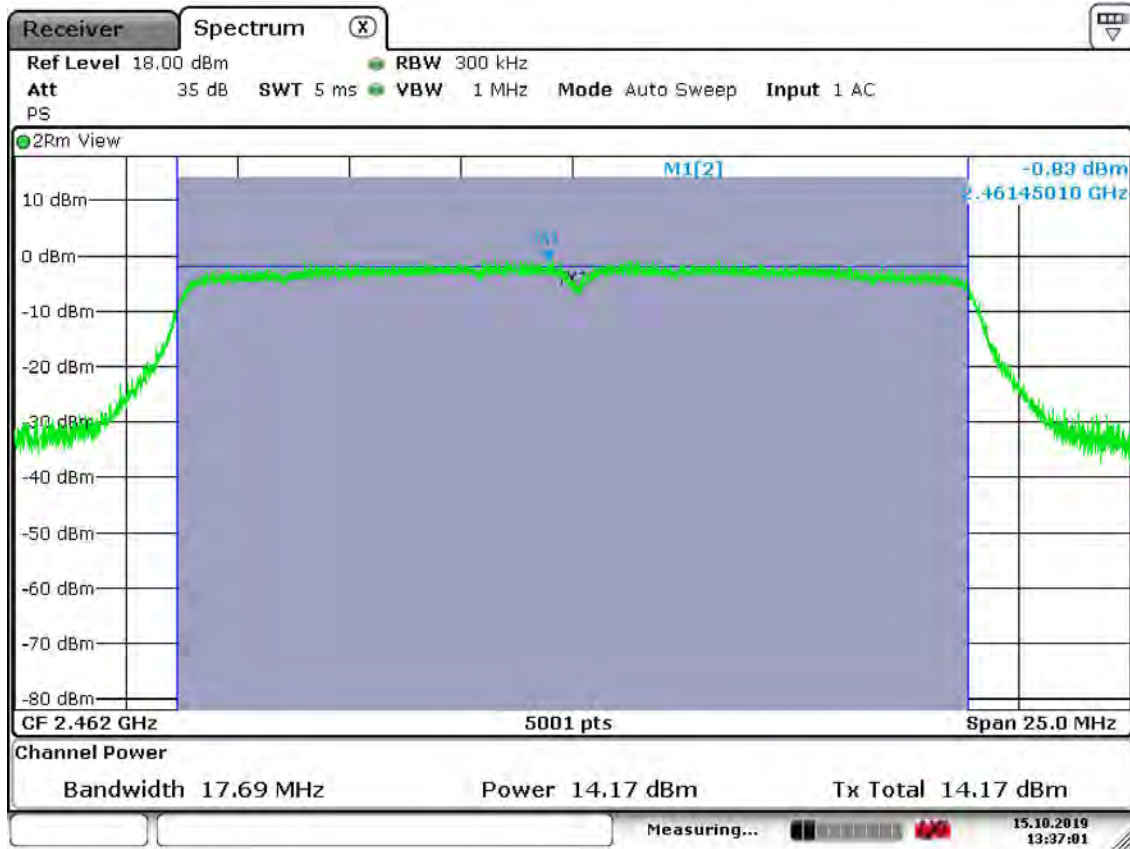


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20, High Channel



Date: 15.OCT.2019 13:37:01

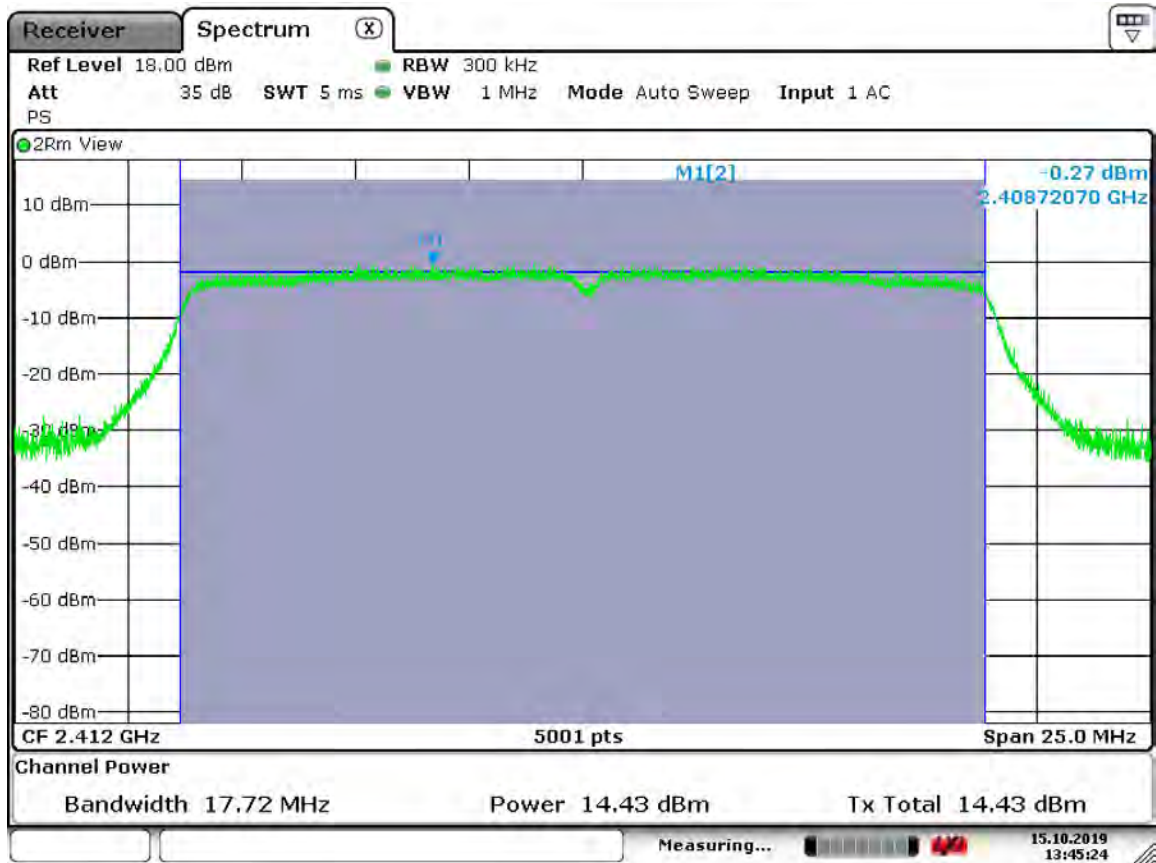


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

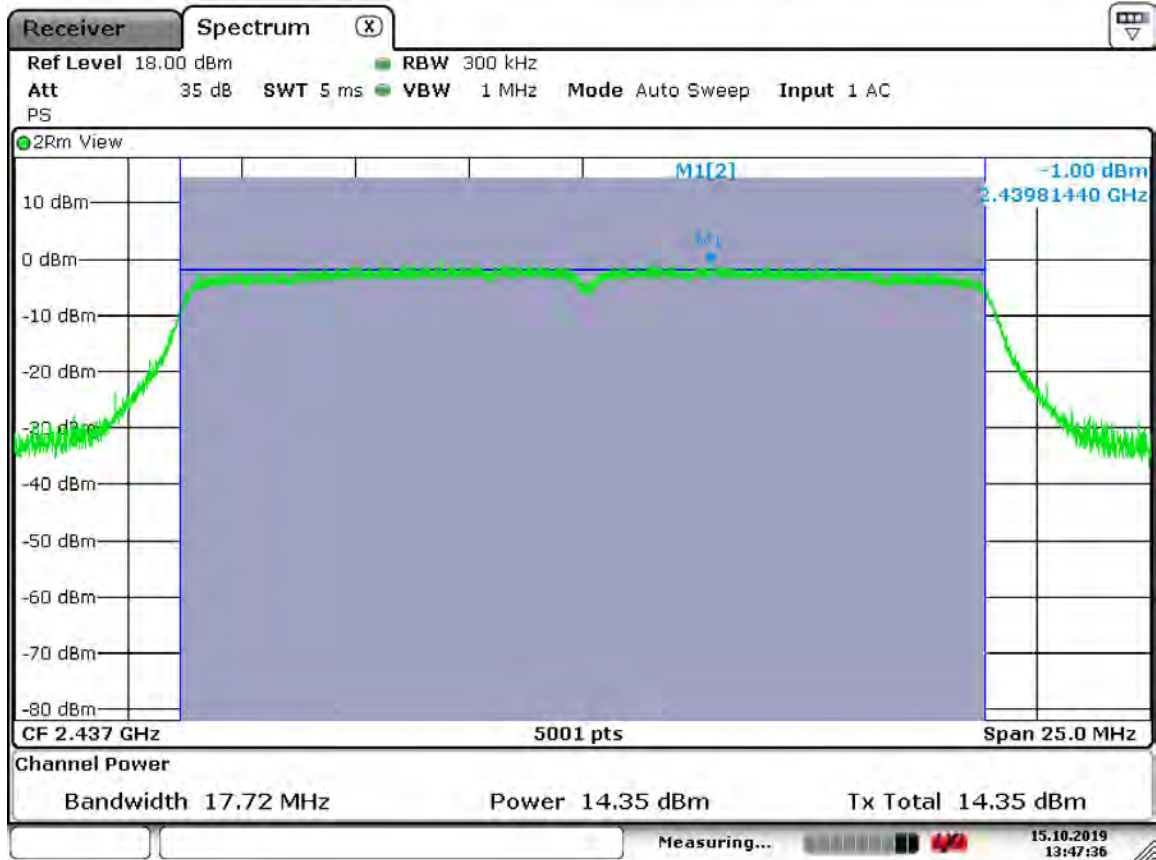
GF MCS7 HT20, Low Channel



Date: 15.OCT.2019 13:45:24



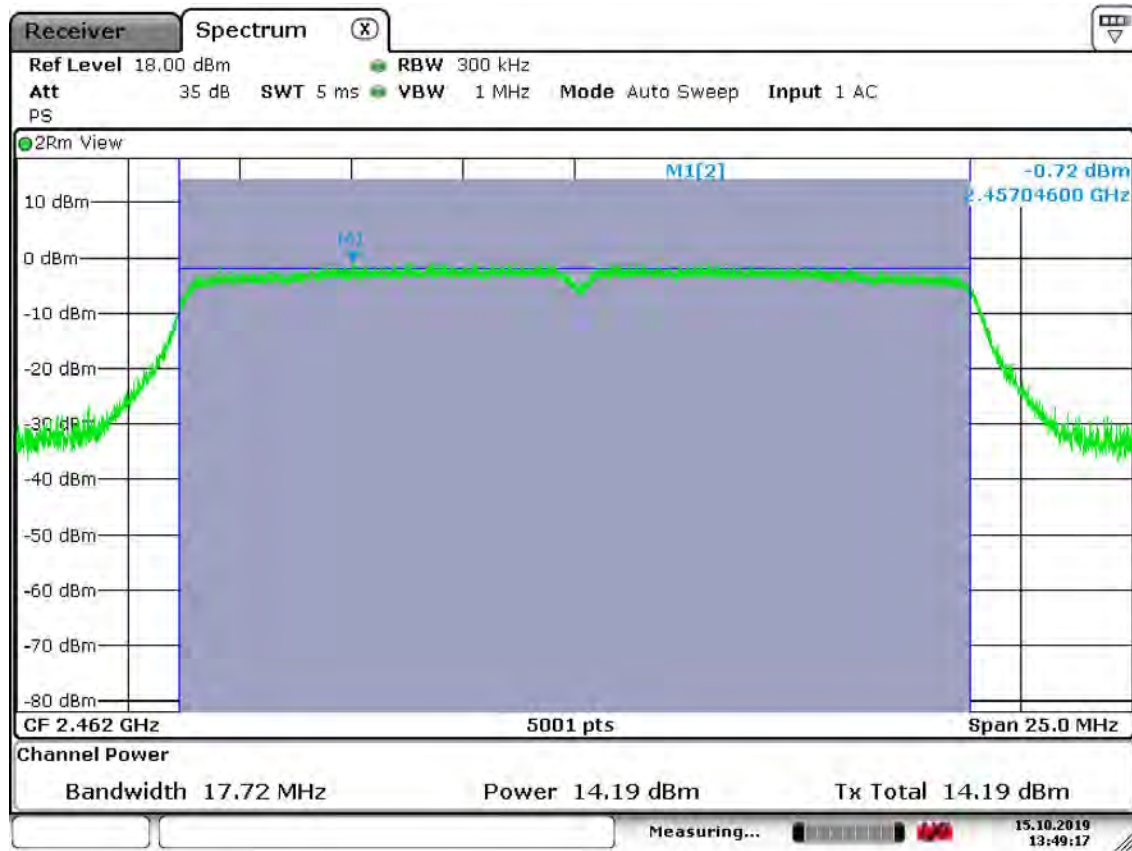
GF MCS7 HT20, Mid Channel



Date: 15.OCT.2019 13:47:36



GF MCS7 HT20, High Channel





9 VOLTAGE VARIATIONS

9.1 Requirements

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery-operated equipment, the equipment tests shall be performed using a new battery.

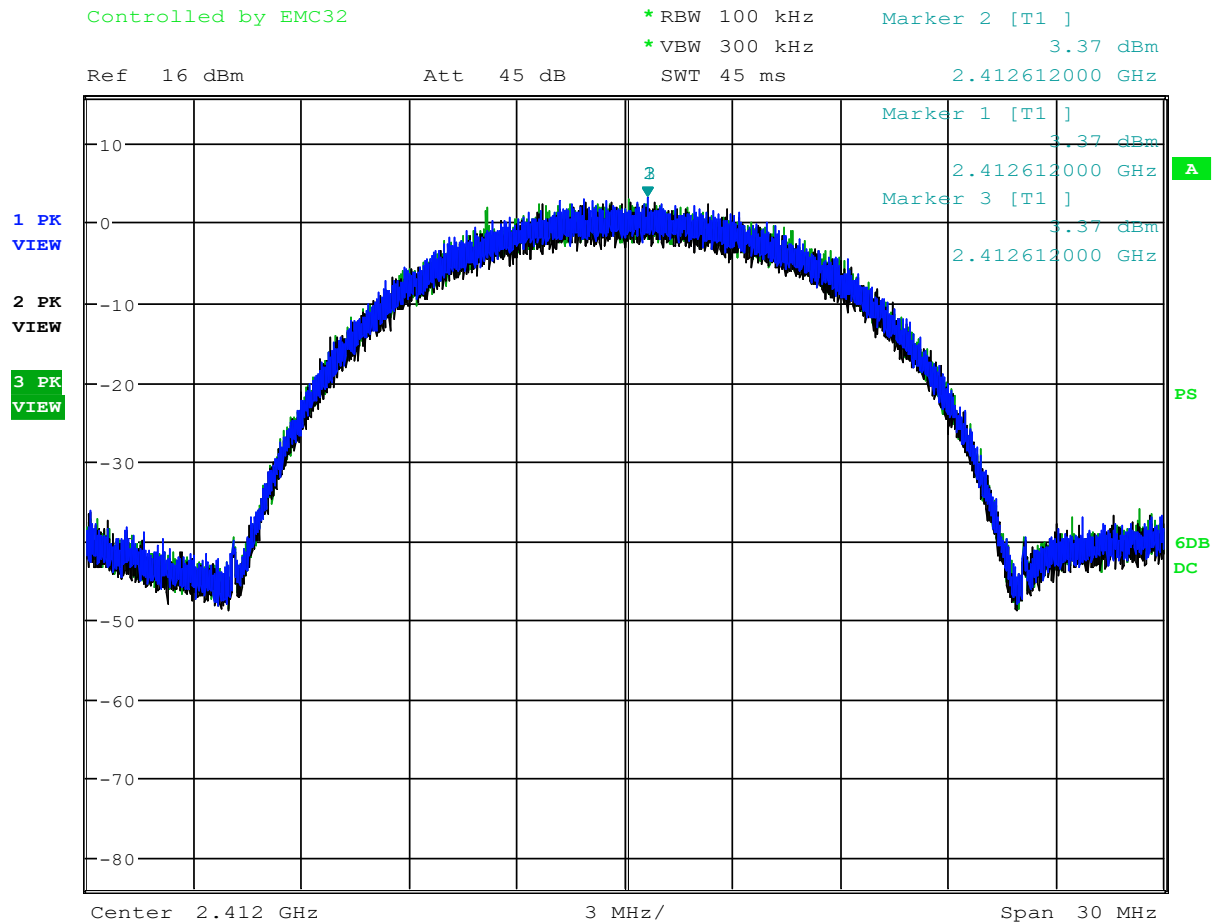
In the following plots, Trace 1 is 22VDC, Trace 2 is 24VDC and Trace 3 is 28VDC operation. These plots confirm frequency and power do not change when the voltage varies within the EUT's DC operating range.



9.2 Voltage Variations Test Data

Test Date(s):	Oct. 25, 2019	Test Engineer:	J. Chiller
Rule:	15.31(e)	Air Temperature:	21.3° C
Test Results:	Complies	Relative Humidity:	40%

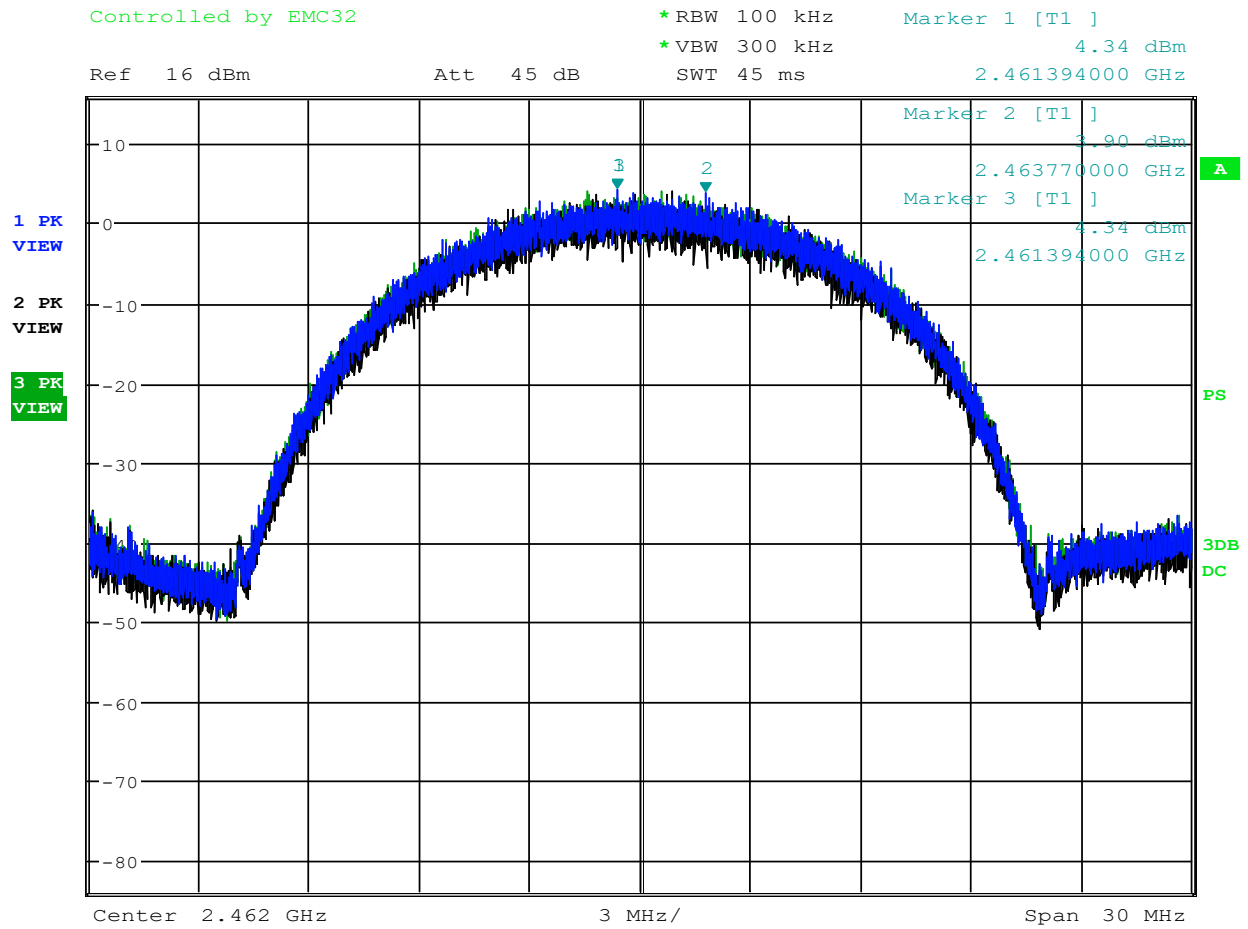
CCK 11 Mbps Low Channel



Date: 25.OCT.2019 14:49:53



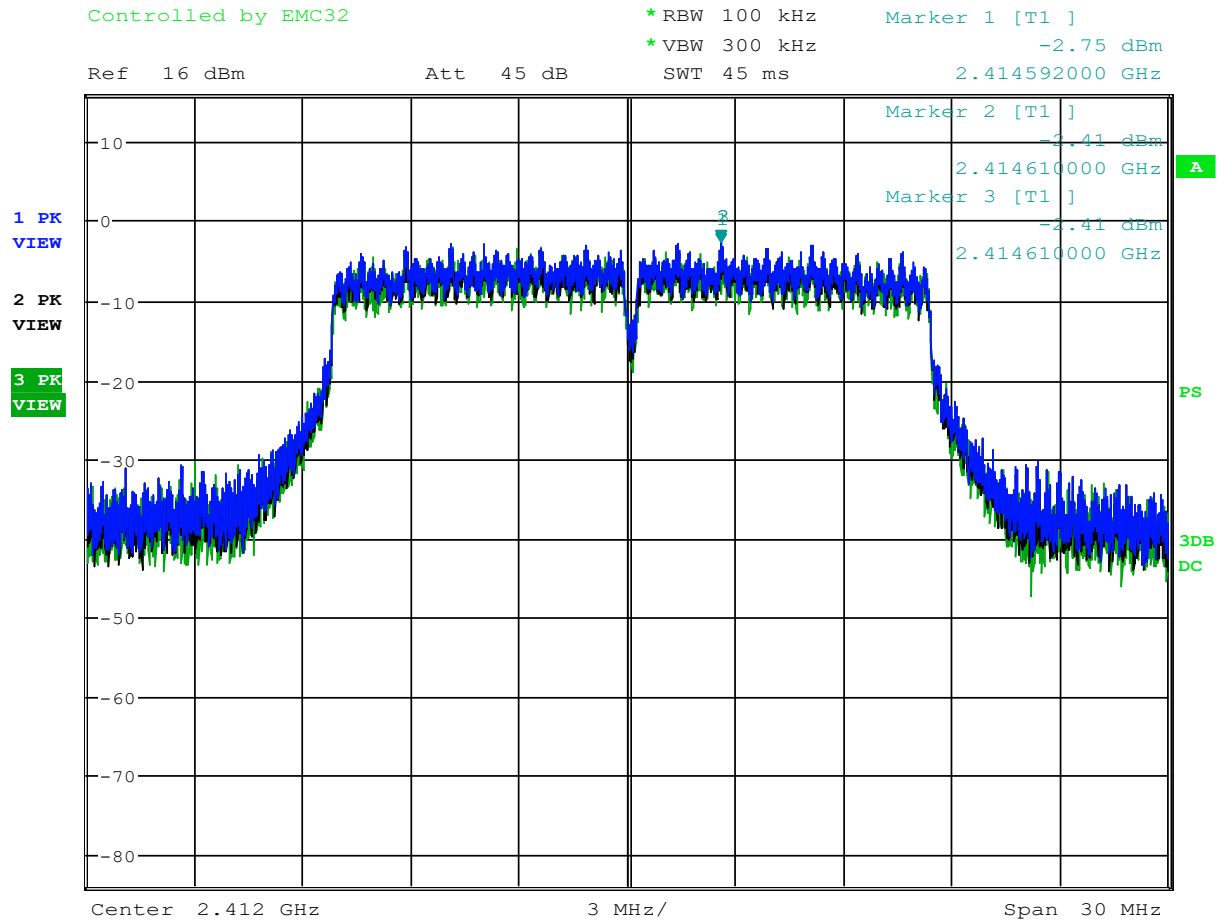
CCK 11 Mbps High Channel



Date: 25.OCT.2019 14:54:58



OFDM 54 Mbps Low Channel



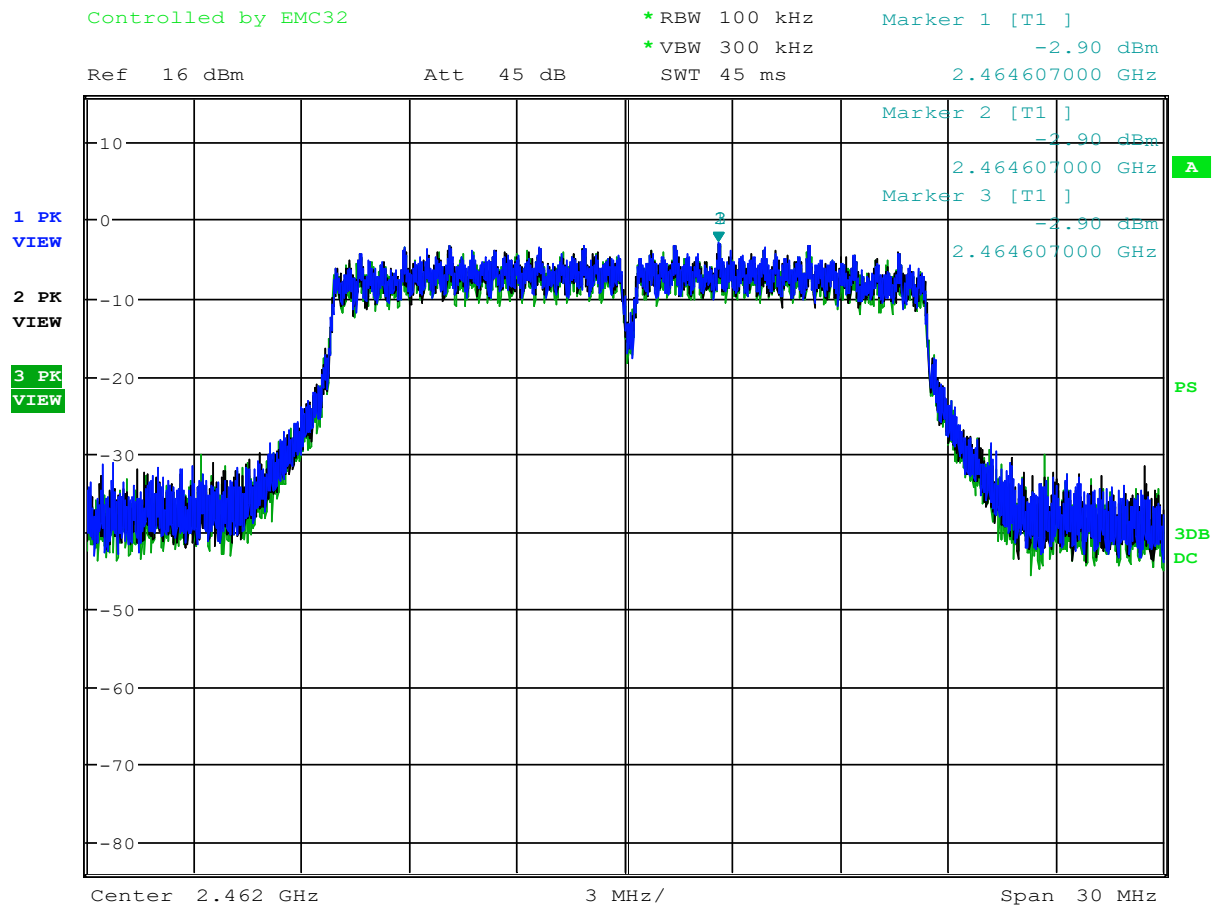
Date: 25.OCT.2019 15:12:12



Order Number: F2P21582A

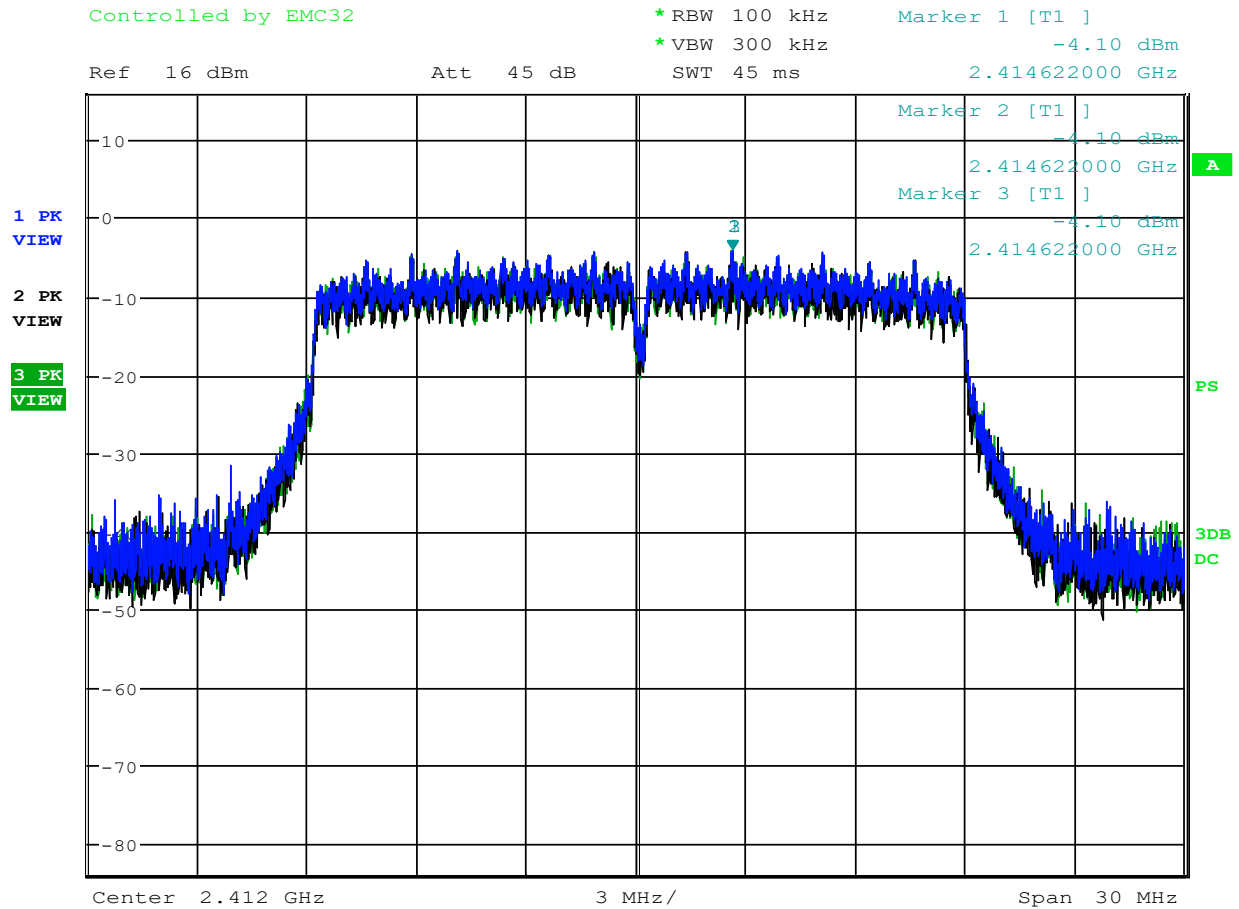
Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps High Channel



Date: 25.OCT.2019 15:08:38

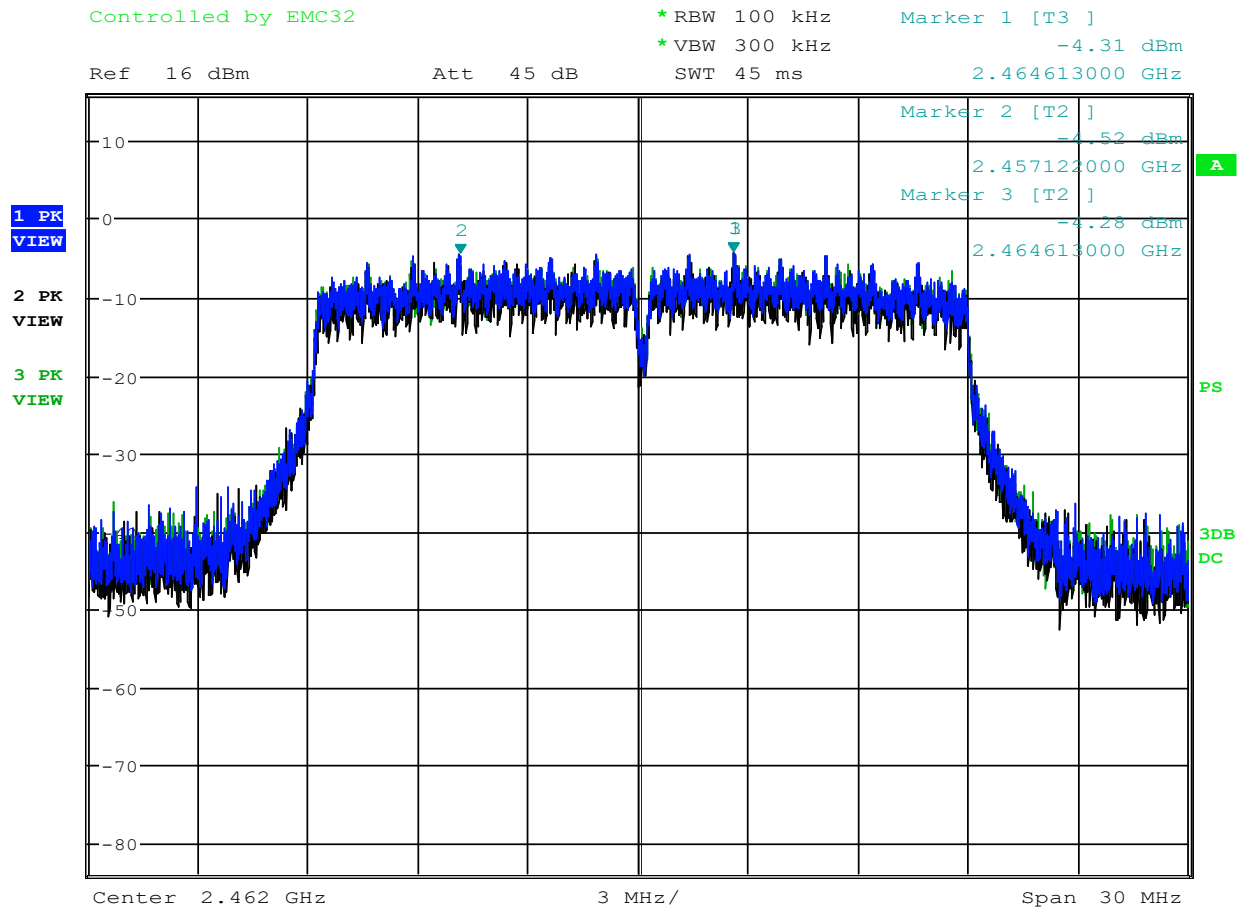
MCS7 HT20 Low Channel



Date: 25.OCT.2019 15:14:39



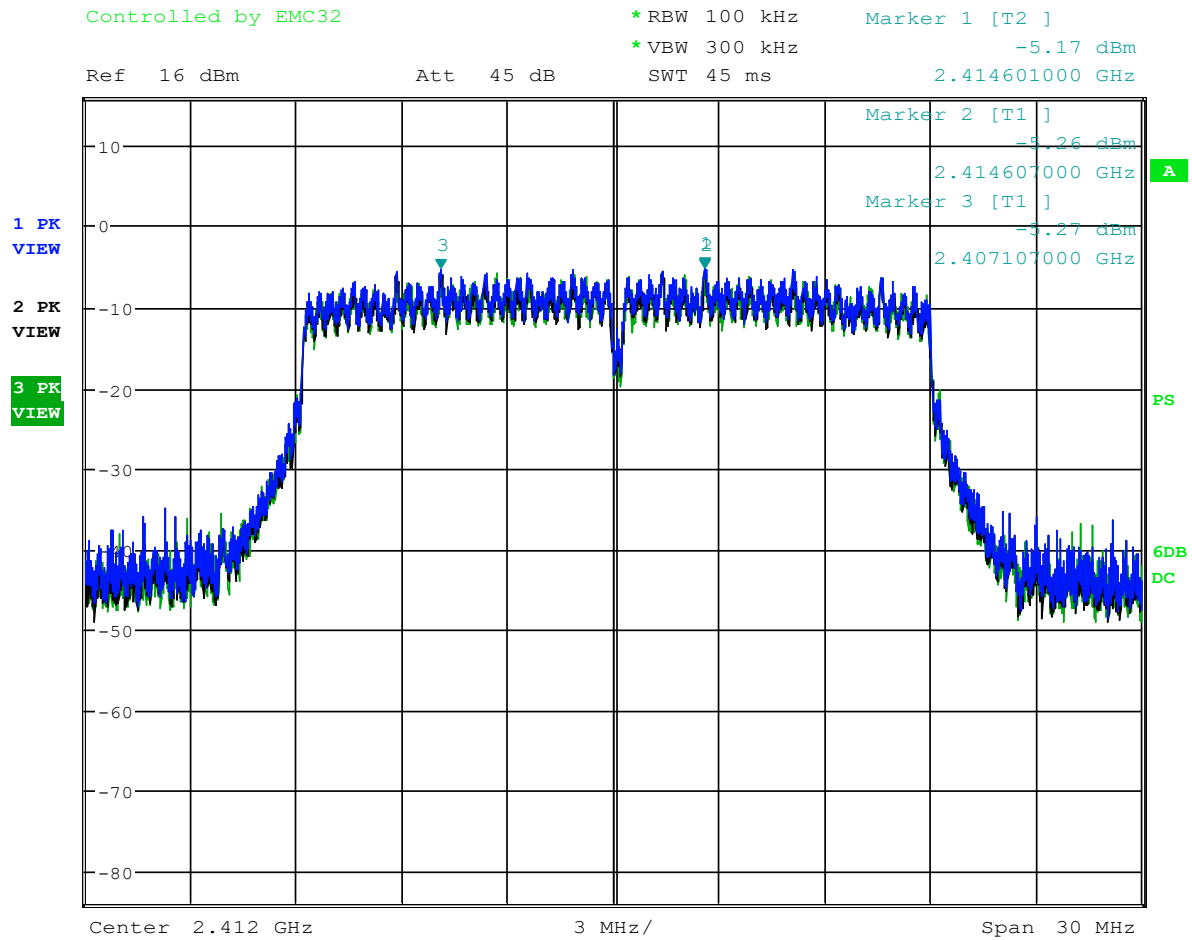
MCS7 HT20 High Channel



Date: 25.OCT.2019 15:19:28



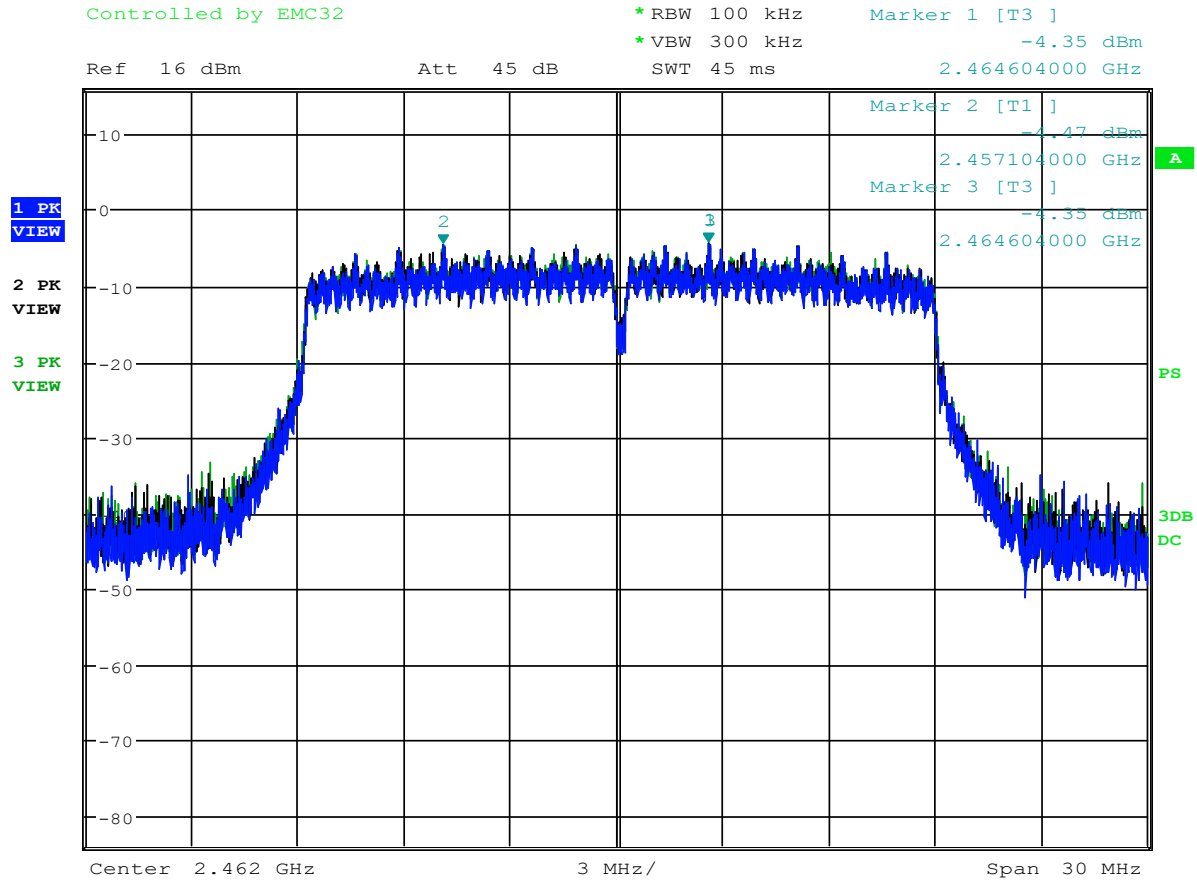
GF MCS7 HT20 Low Channel



Date: 19.JUN.2020 13:45:39



GF MCS7 HT20 High Channel



Date: 25.OCT.2019 15:25:36



10 CONDUCTED SPURIOUS EMISSIONS

The following tests were performed to demonstrate compliance.

RF Antenna Conducted Test

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the spectrum analyzer.

10.1 Requirements:

All Spurious Emissions must be at least 30dB down from the highest emission level measured within the authorized band up through the tenth harmonic.

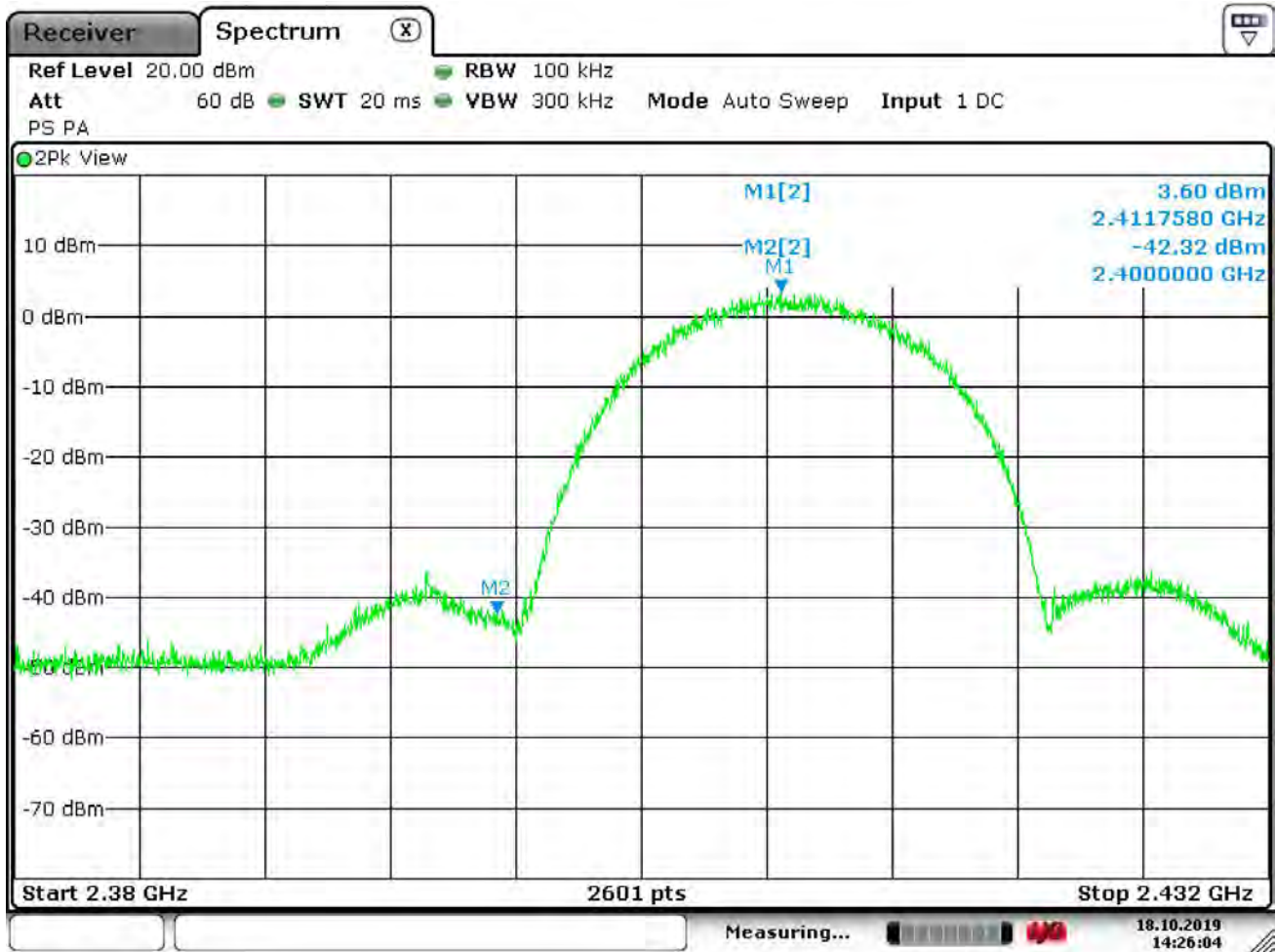
Spurious emissions measurements were made at the low, mid, and upper channels with the appropriate spectrum analyzer impulse bandwidth. Additionally, 30dB down points were measured for the low and high channels to verify band edge compliance.



10.2 Conducted Spurious Emissions Test Data

Test Date:	Oct. 17, 2019	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(d) / Part 15.207 KDB558074	Air Temperature:	20.0°C
		Relative Humidity:	47%

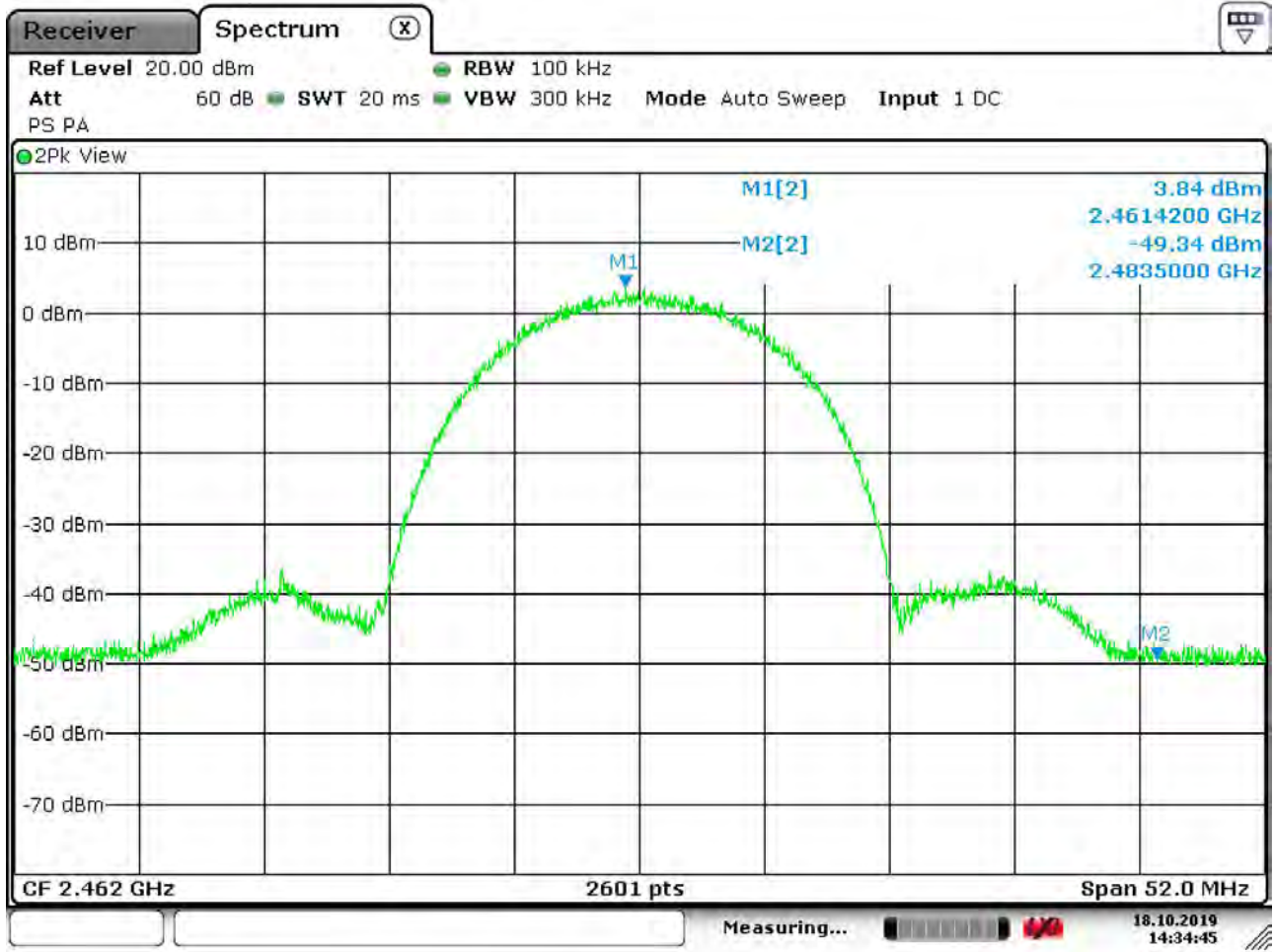
CCK 11 Mbps: Band Edge, Lower Band Edge



Date: 18.OCT.2019 14:26:05



CCK 11 Mbps: Band Edge, Upper Band Edge



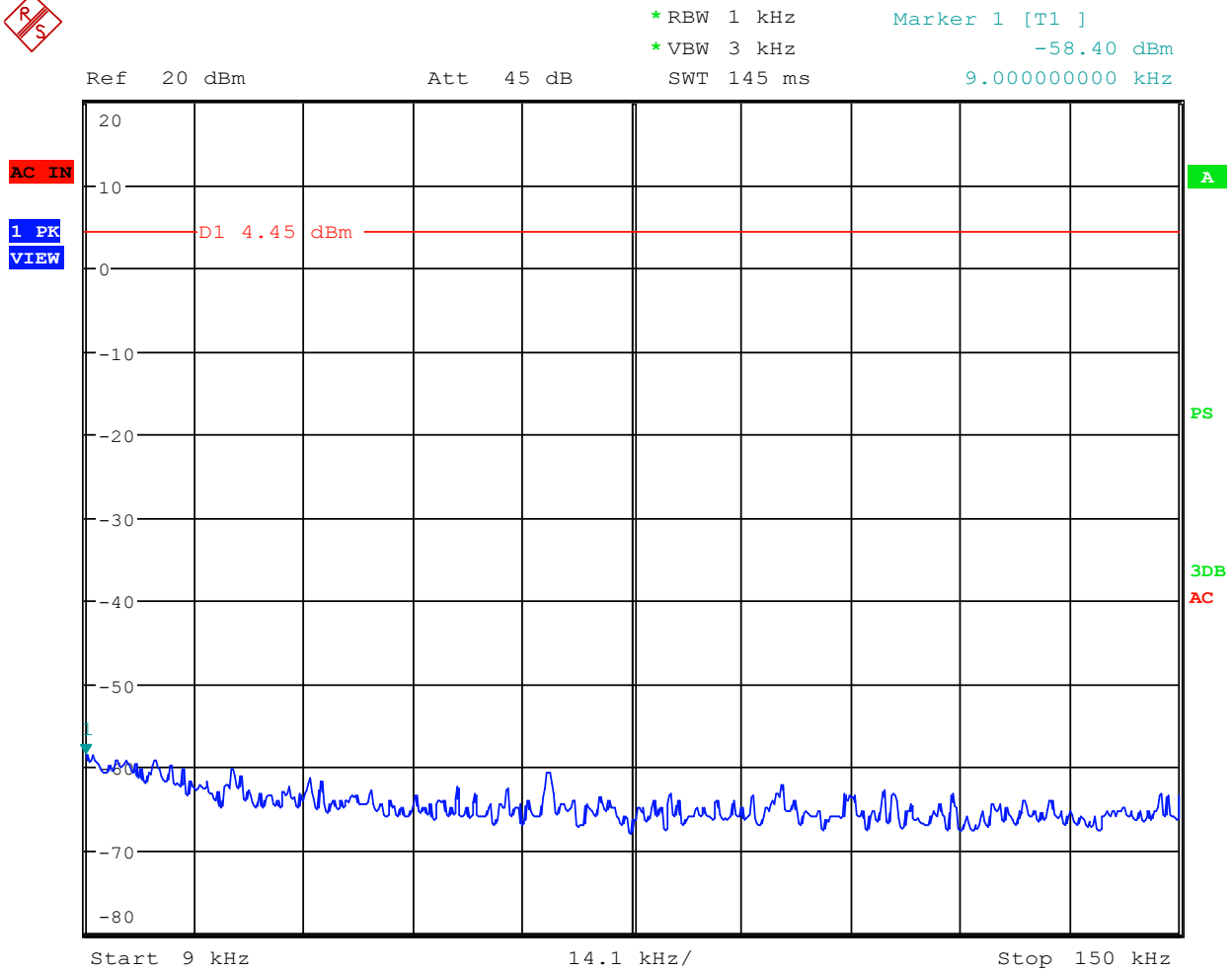
Date: 18.OCT.2019 14:34:45



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

CCK 11 Mbps: Low Channel, 0.009 MHz to 0.15 MHz



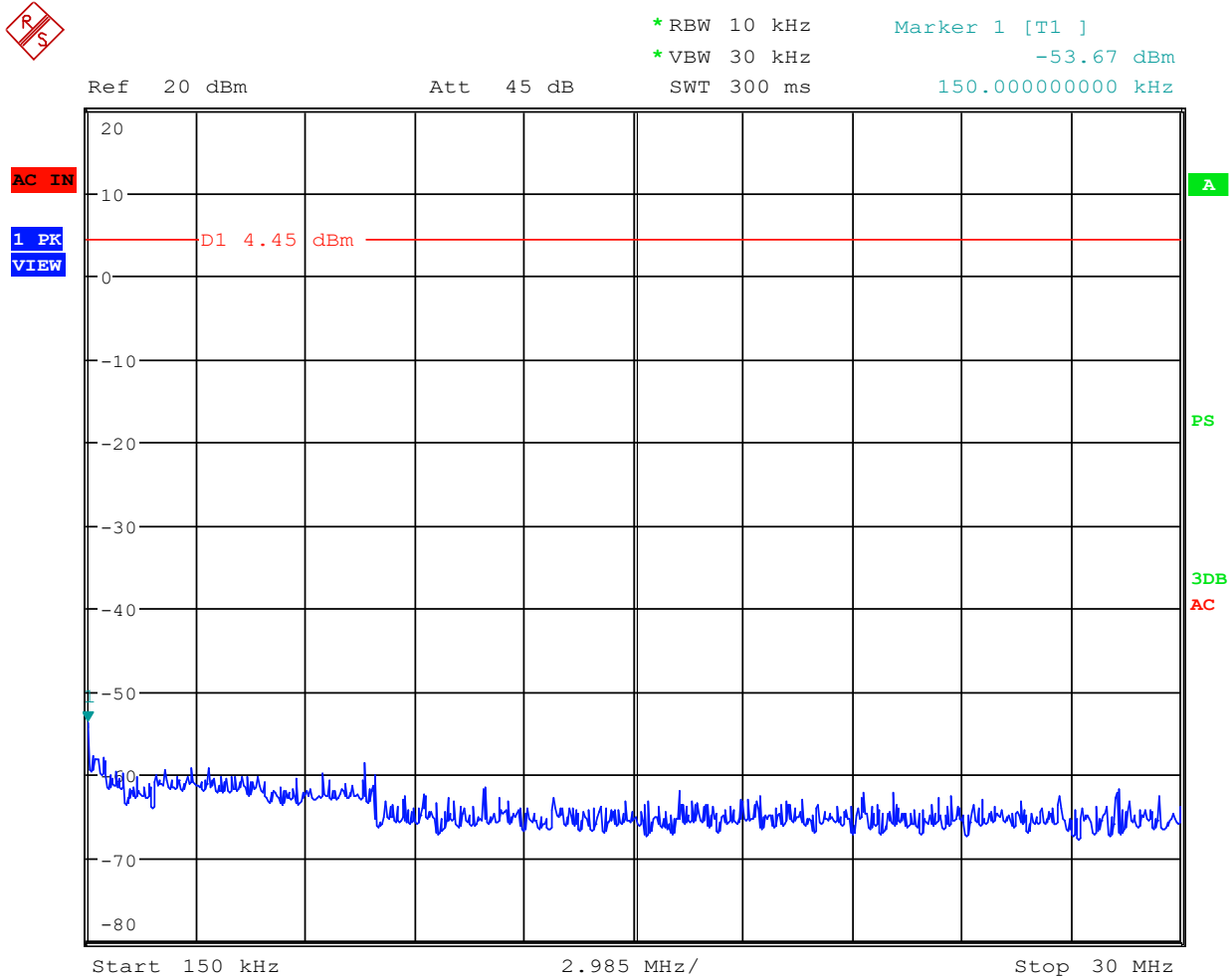
Date: 17.OCT.2019 12:05:15



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

CCK 11 Mbps: Low Channel, 0.15 MHz to 30 MHz



Date: 17.OCT.2019 12:04:08

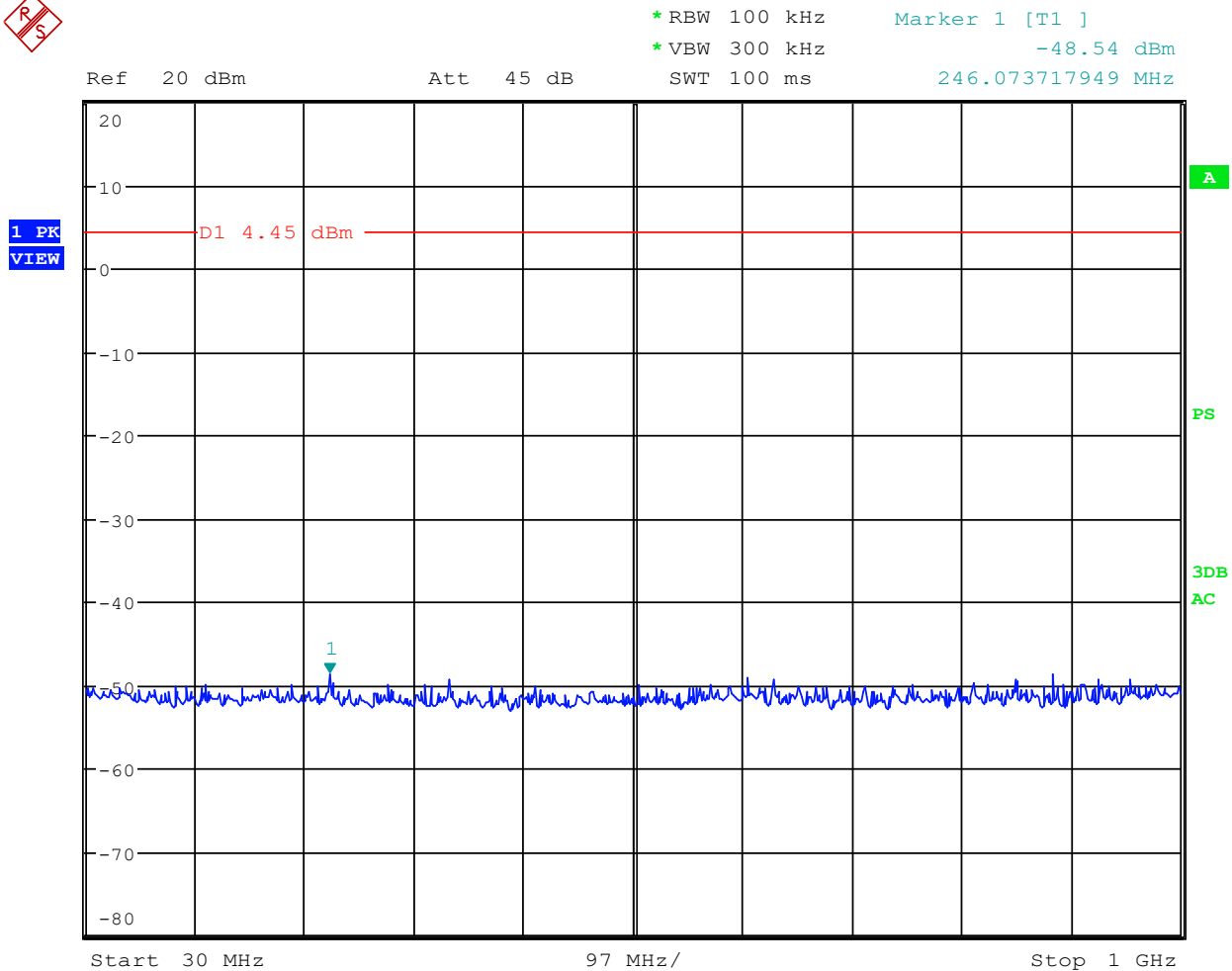


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: Low Channel, 30 MHz to 1000 MHz



Date: 17.OCT.2019 12:00:49

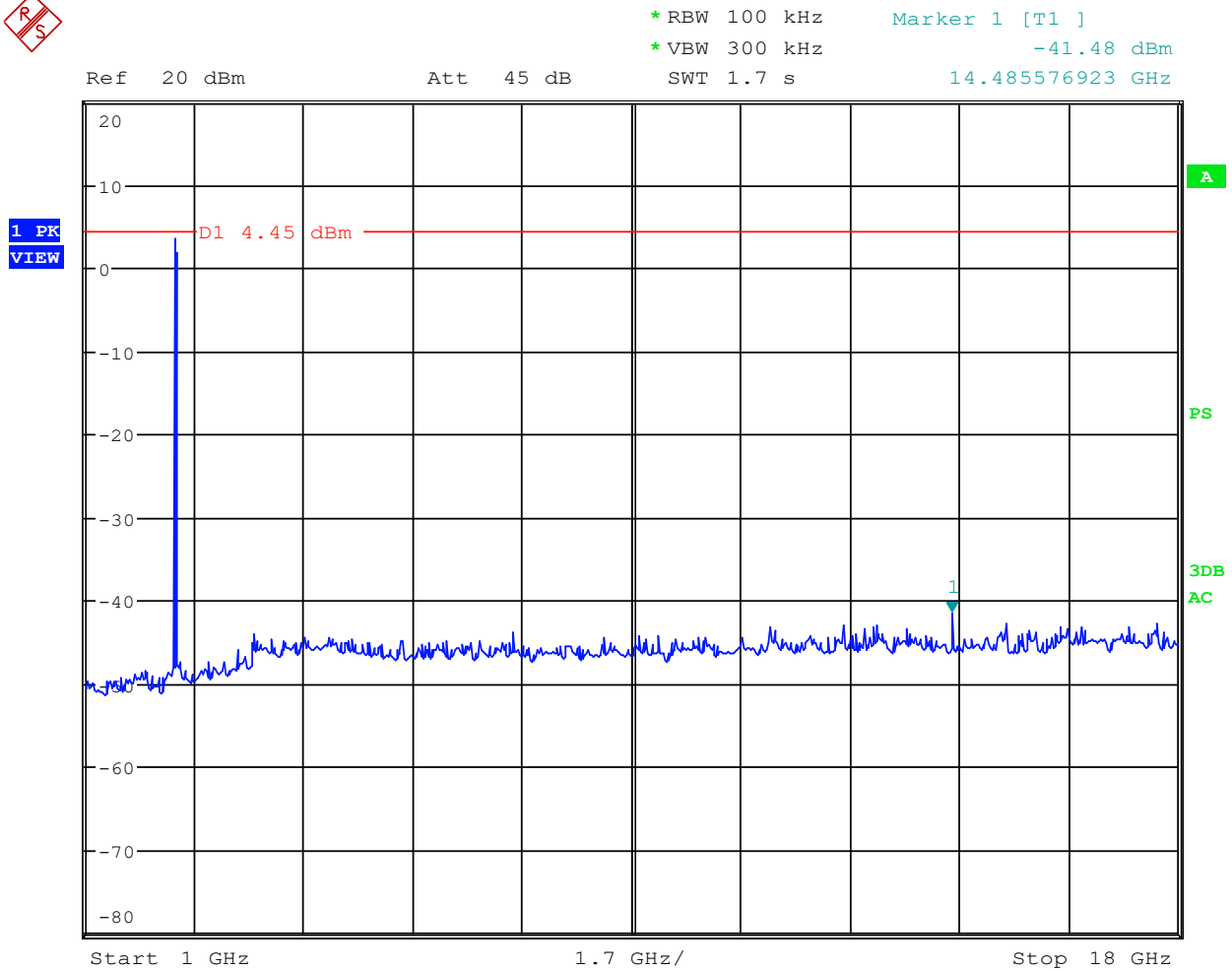


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: Low Channel, 1 GHz to 18 GHz



Date: 17.OCT.2019 11:59:35



Order Number: F2P21582A

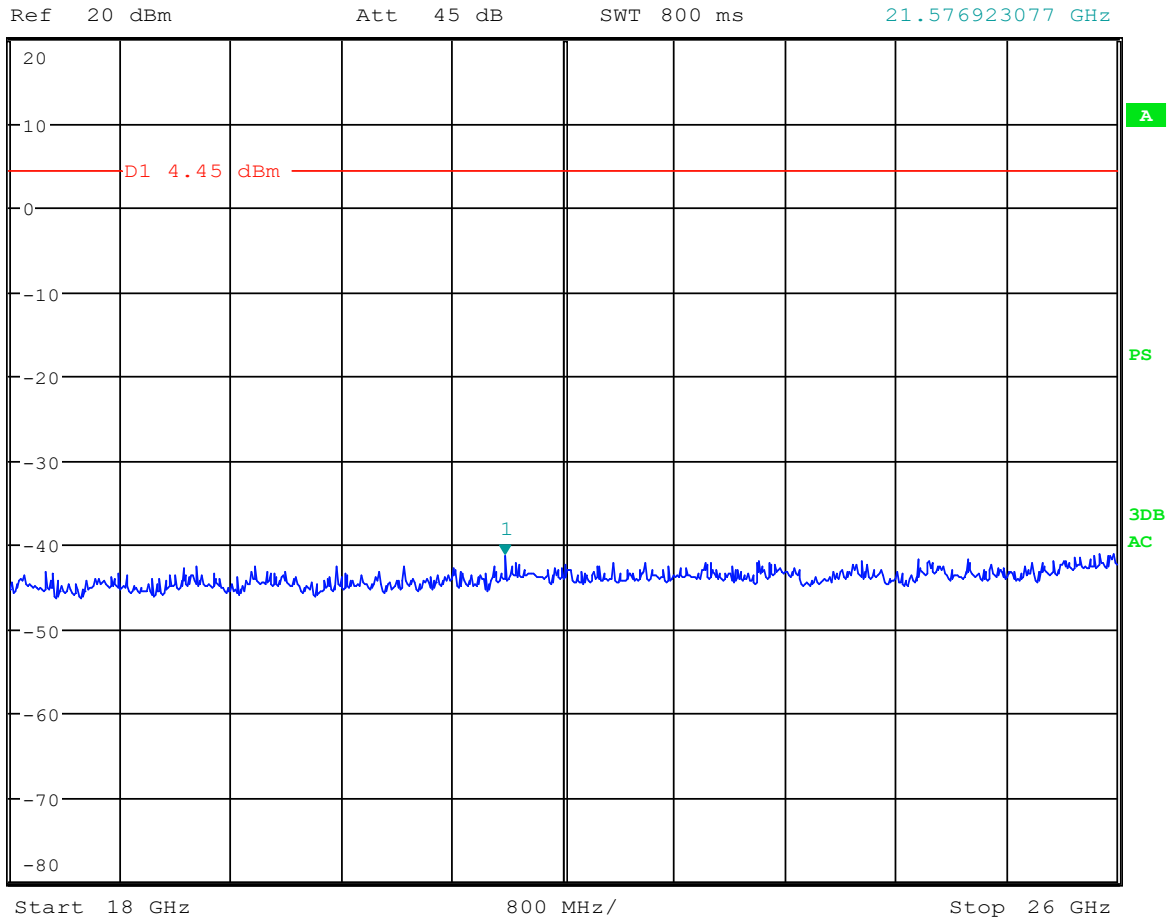
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: Low Channel, 18 GHz to 26 GHz

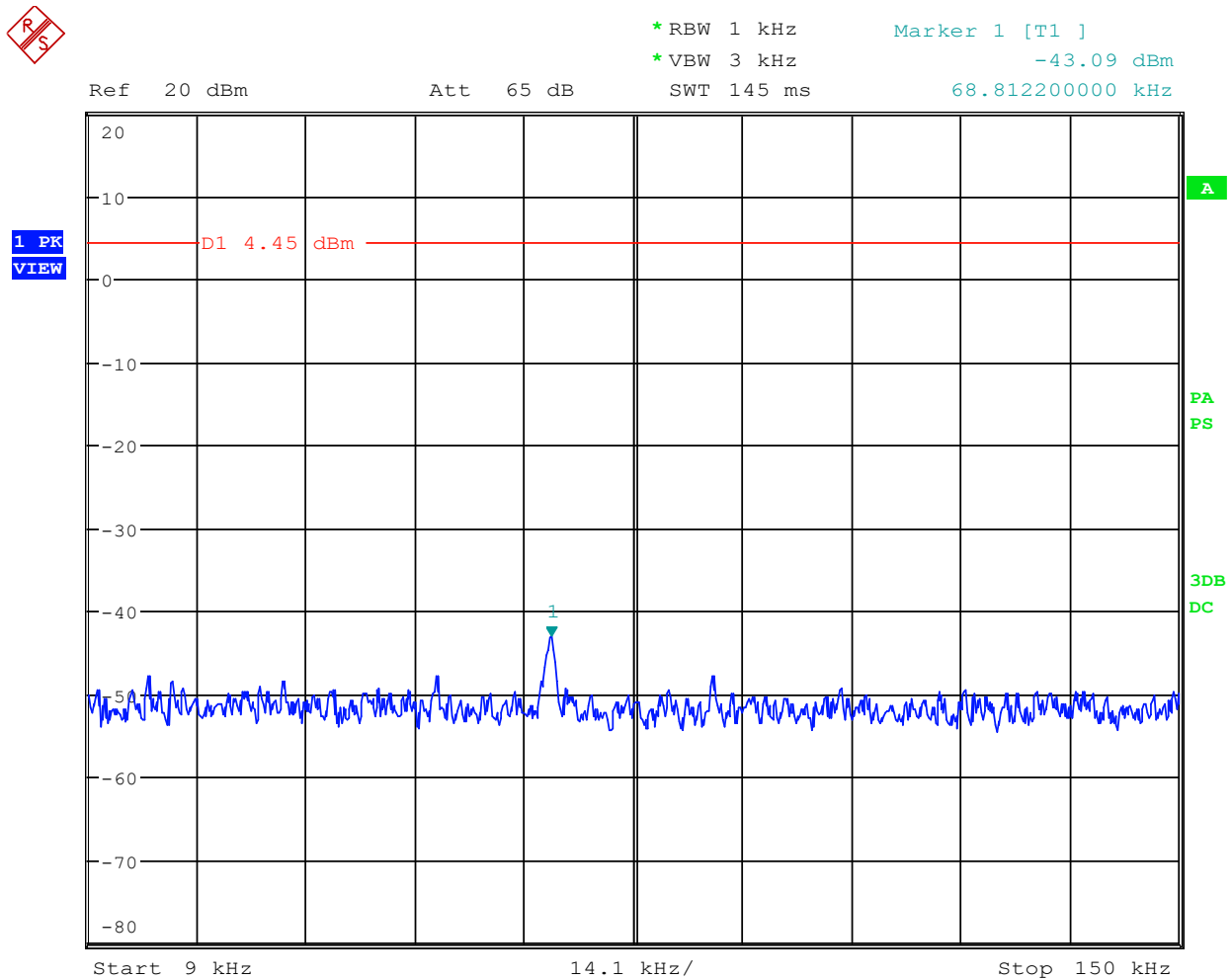


* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -41.24 dBm
SWT 800 ms 21.576923077 GHz



Date: 17.OCT.2019 11:45:09

CCK 11 Mbps: Mid Channel, 0.009 MHz to 0.15 MHz



Date: 17.OCT.2019 11:34:25



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

CCK 11 Mbps: Mid Channel, 0.15 MHz to 30 MHz



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -40.79 dBm
SWT 300 ms 185.82000000 kHz

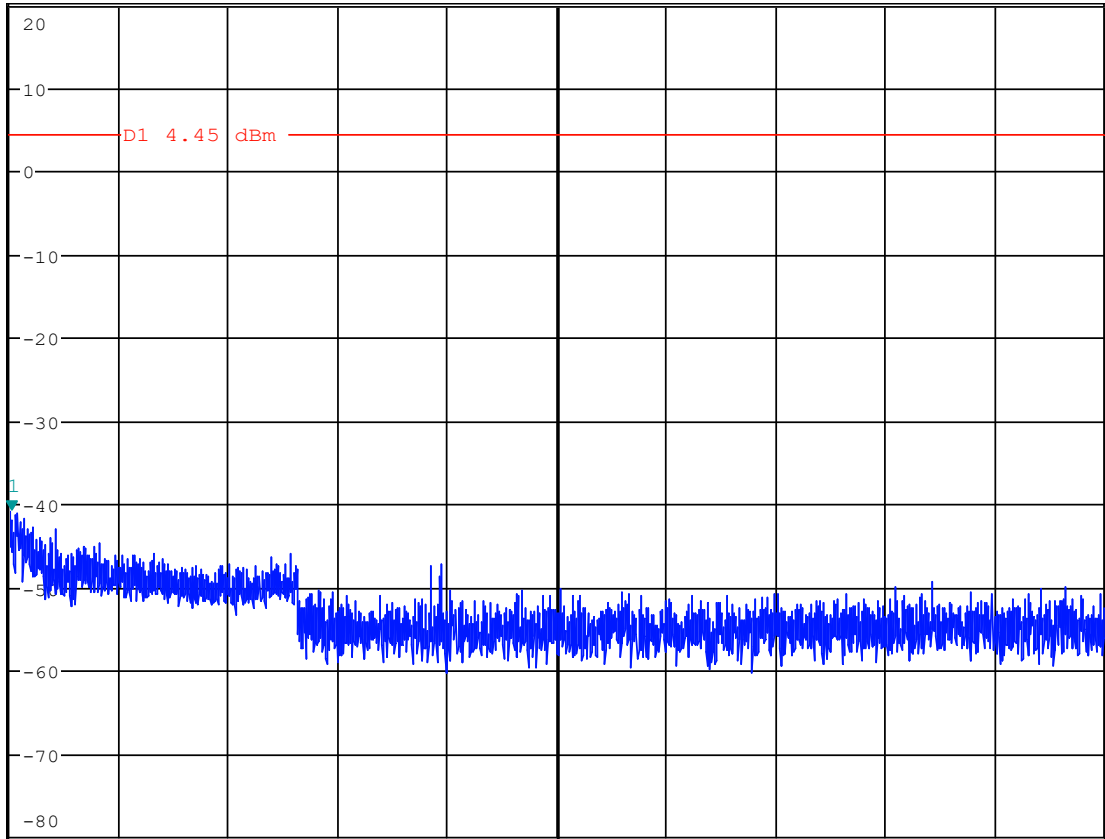
Ref 20 dBm

Att 65 dB

SWT 300 ms

185.82000000 kHz

1 PK
VIEW



Start 150 kHz

2.985 MHz/

Stop 30 MHz

Date: 17.OCT.2019 11:35:18



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

CCK 11 Mbps: Mid Channel, 30 MHz to 1000 MHz

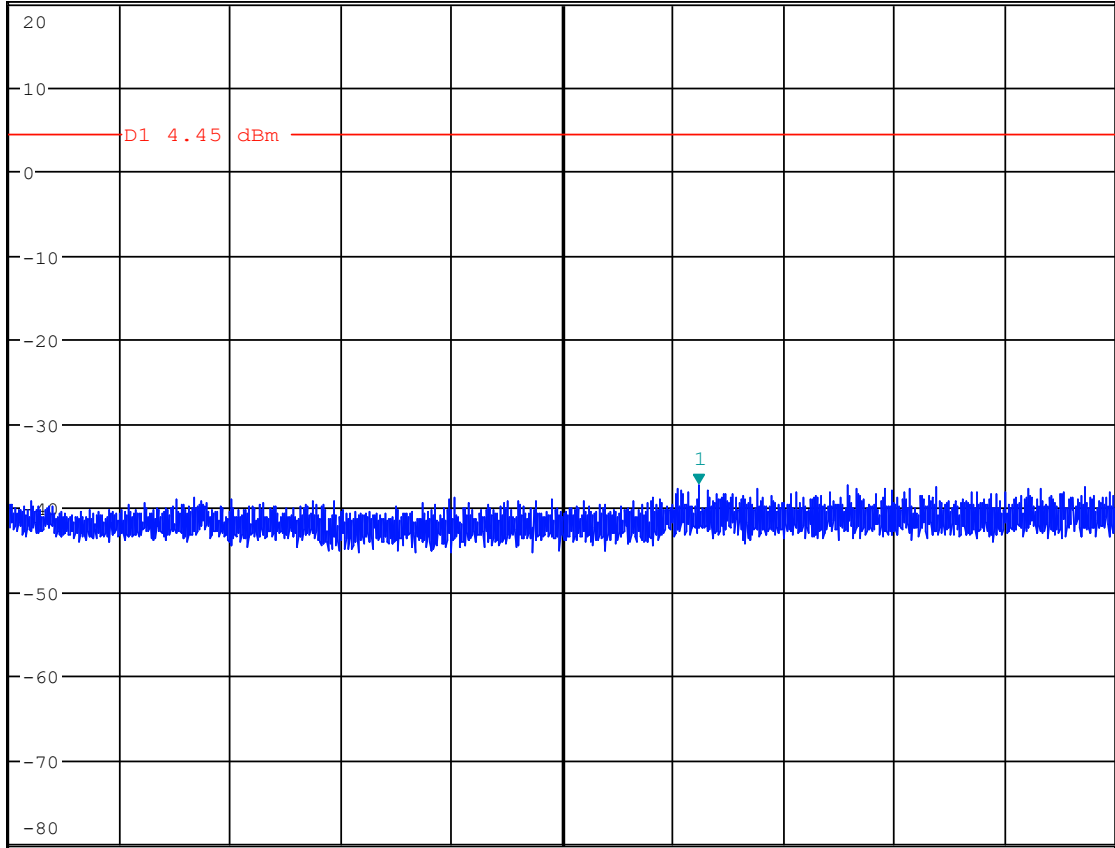


* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -37.18 dBm
SWT 100 ms 634.892000000 MHz

Ref 20 dBm

Att 65 dB

1 PK
VIEW



Start 30 MHz

97 MHz/

Stop 1 GHz

A

PA
PS

3DB
DC

Date: 17.OCT.2019 11:36:19

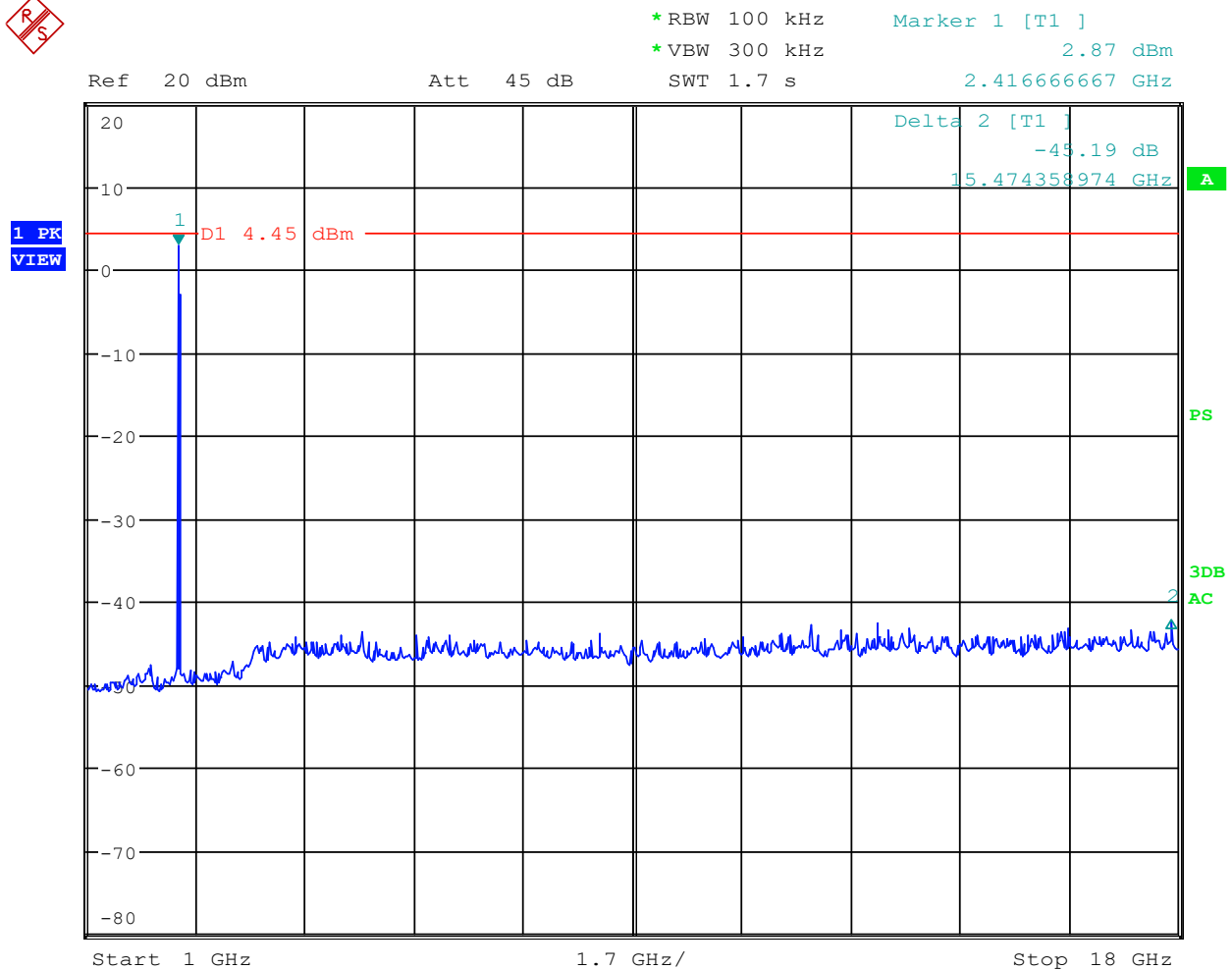


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: Mid Channel, 1 GHz to 18 GHz



Date: 17.OCT.2019 11:42:21



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: Mid Channel, 18 GHz to 26 GHz

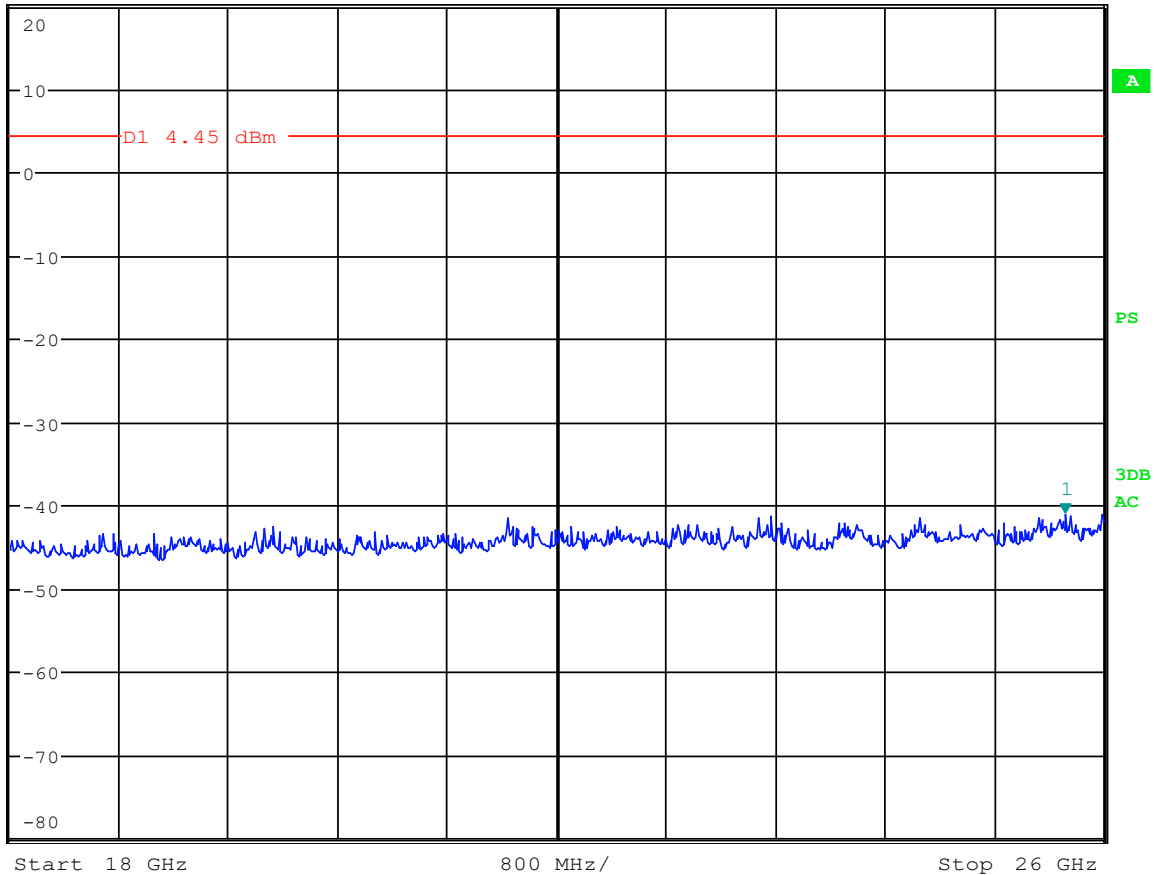


*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz -41.01 dBm
SWT 800 ms 25.717948718 GHz

Ref 20 dBm

Att 45 dB

1 PK
VIEW



Date: 17.OCT.2019 11:43:15

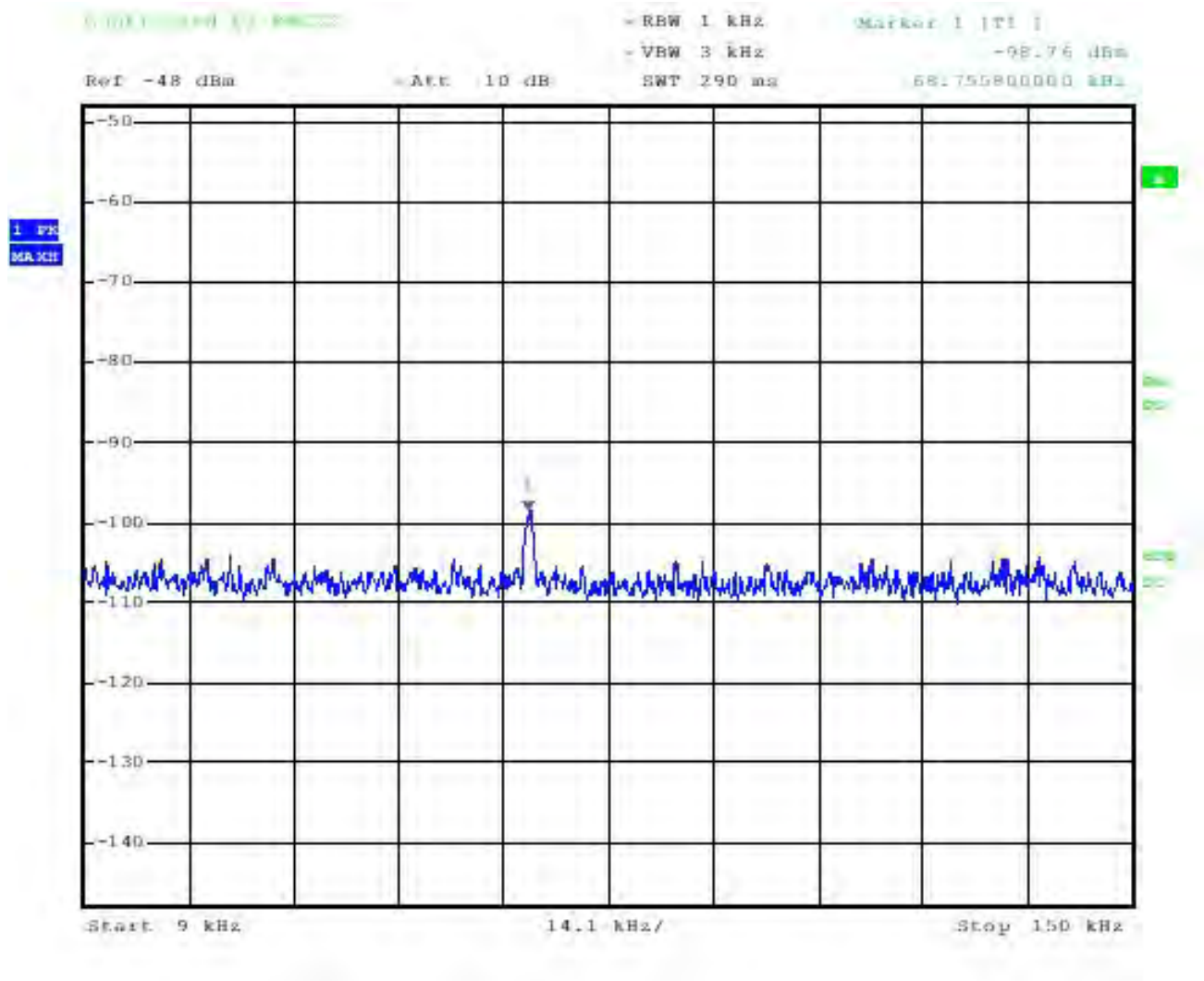


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: High Channel, 0.009 MHz to 0.15 MHz



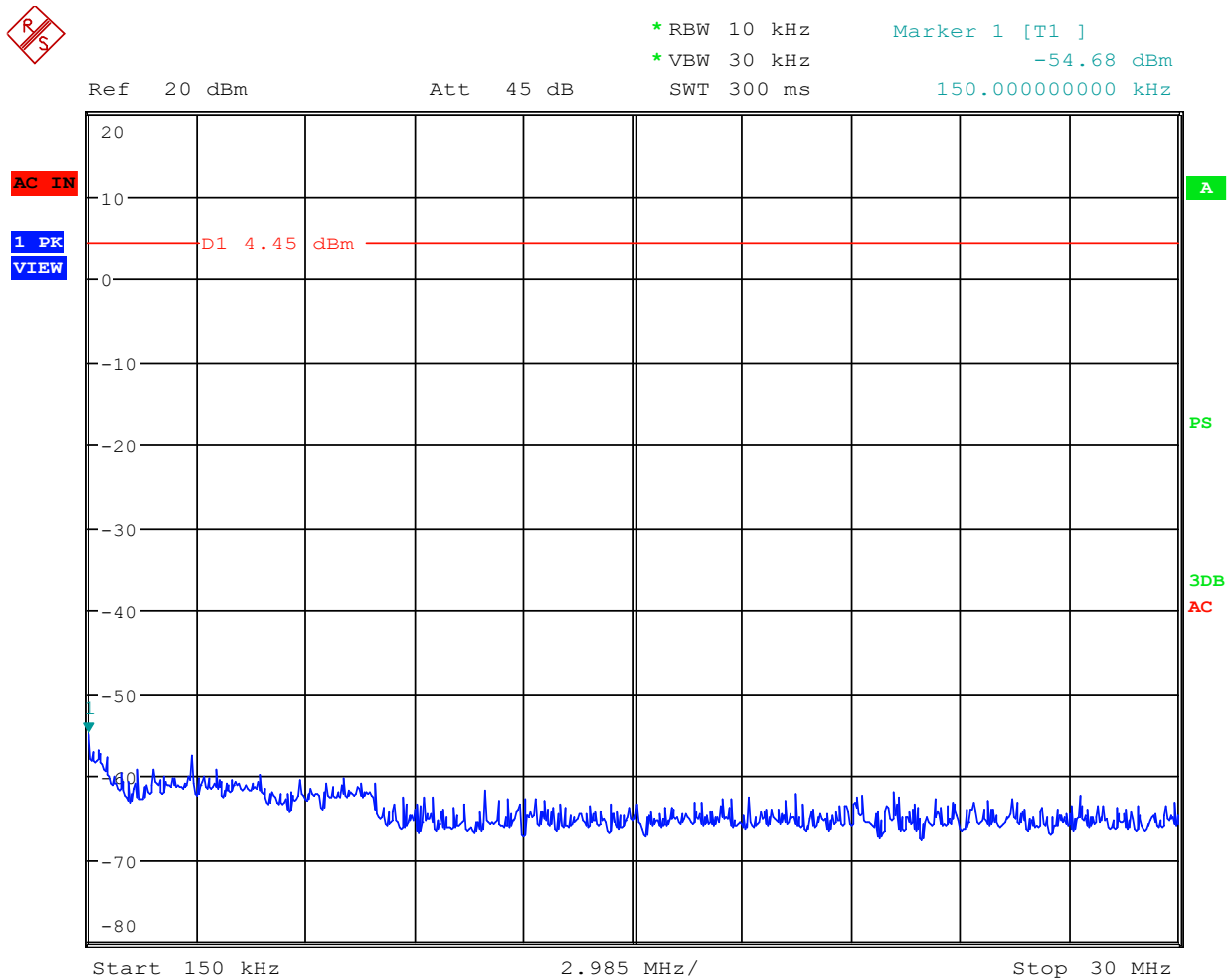


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: High Channel, 0.15 MHz to 30 MHz



Date: 17.OCT.2019 12:03:09



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: High Channel, 30 MHz to 1000 MHz

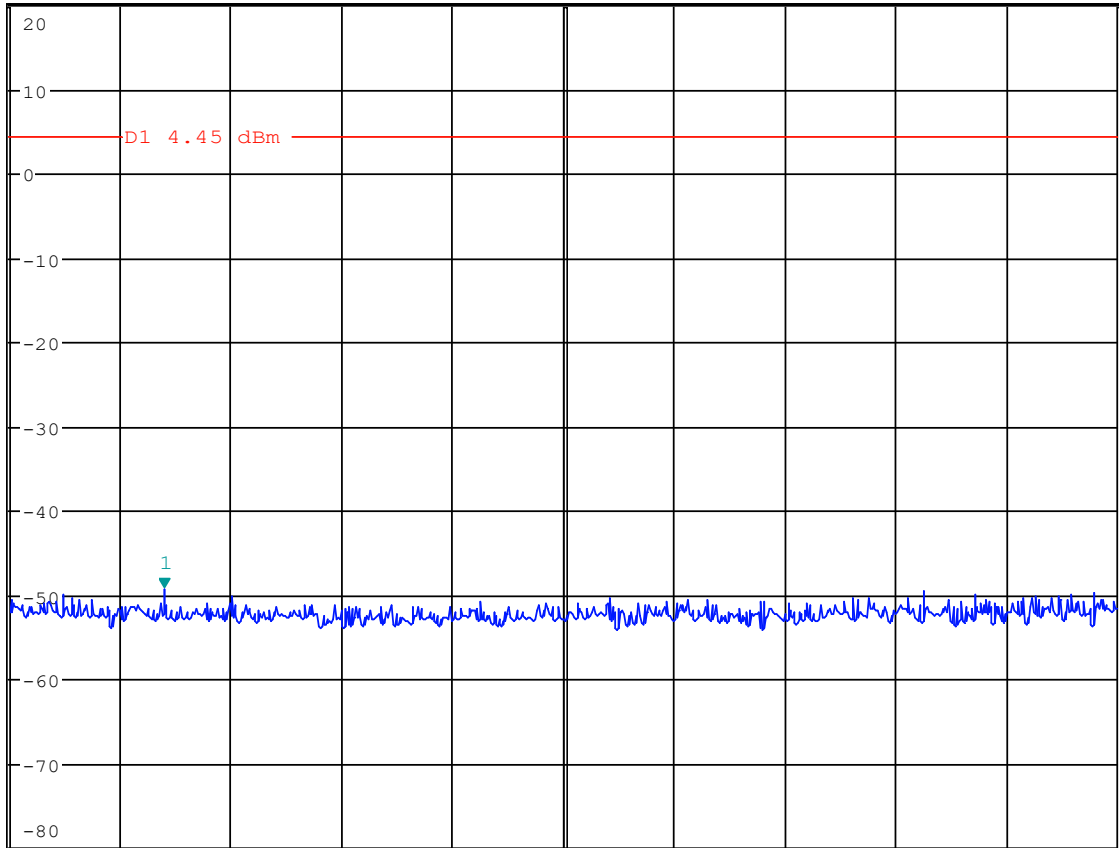


*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz -49.32 dBm
SWT 100 ms 165.240384615 MHz

Ref 20 dBm

Att 45 dB

1 PK
VIEW



Start 30 MHz

97 MHz/

Stop 1 GHz

Date: 17.OCT.2019 12:01:40

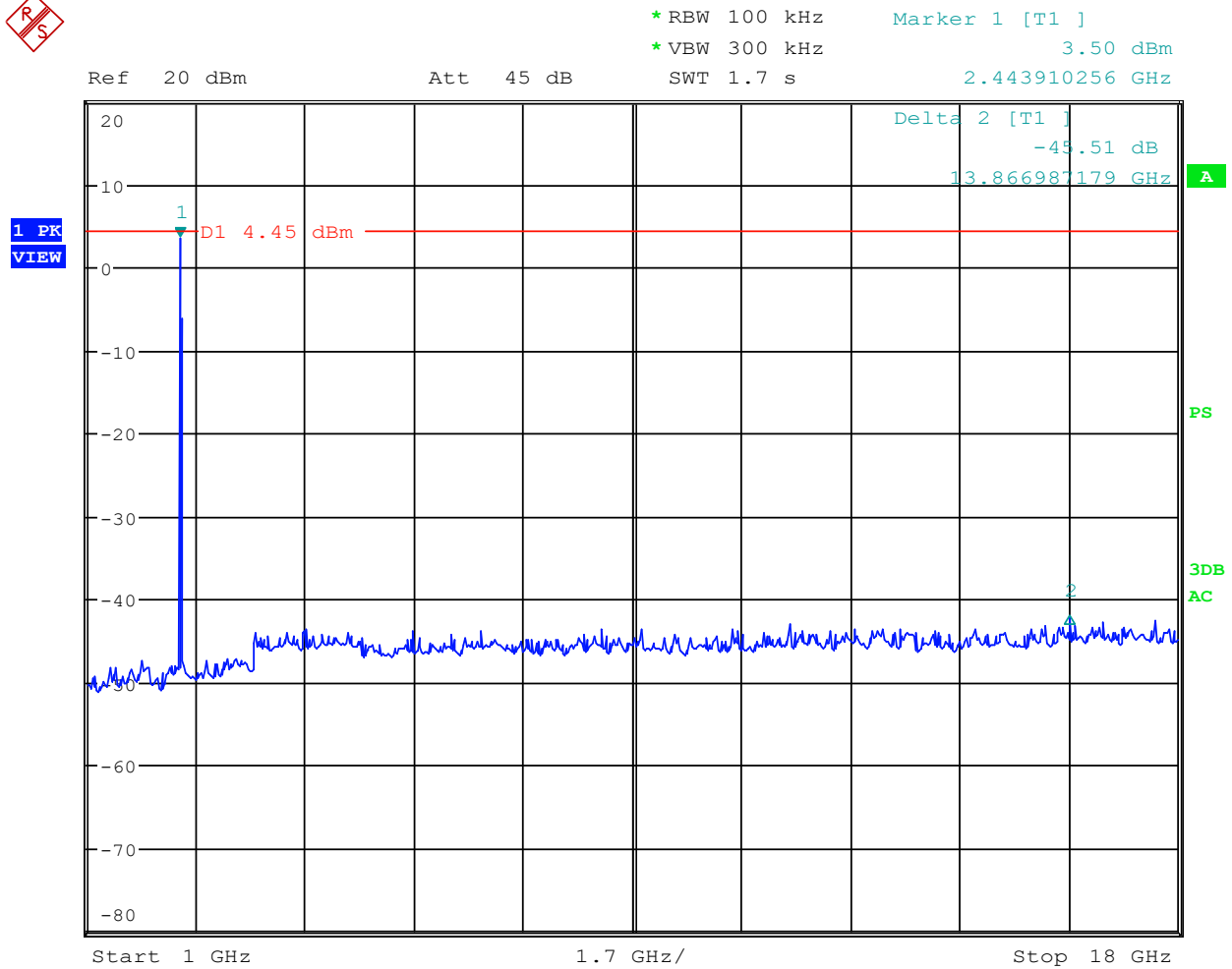


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: High Channel, 1 GHz to 18 GHz



Date: 17.OCT.2019 11:57:13



Order Number: F2P21582A

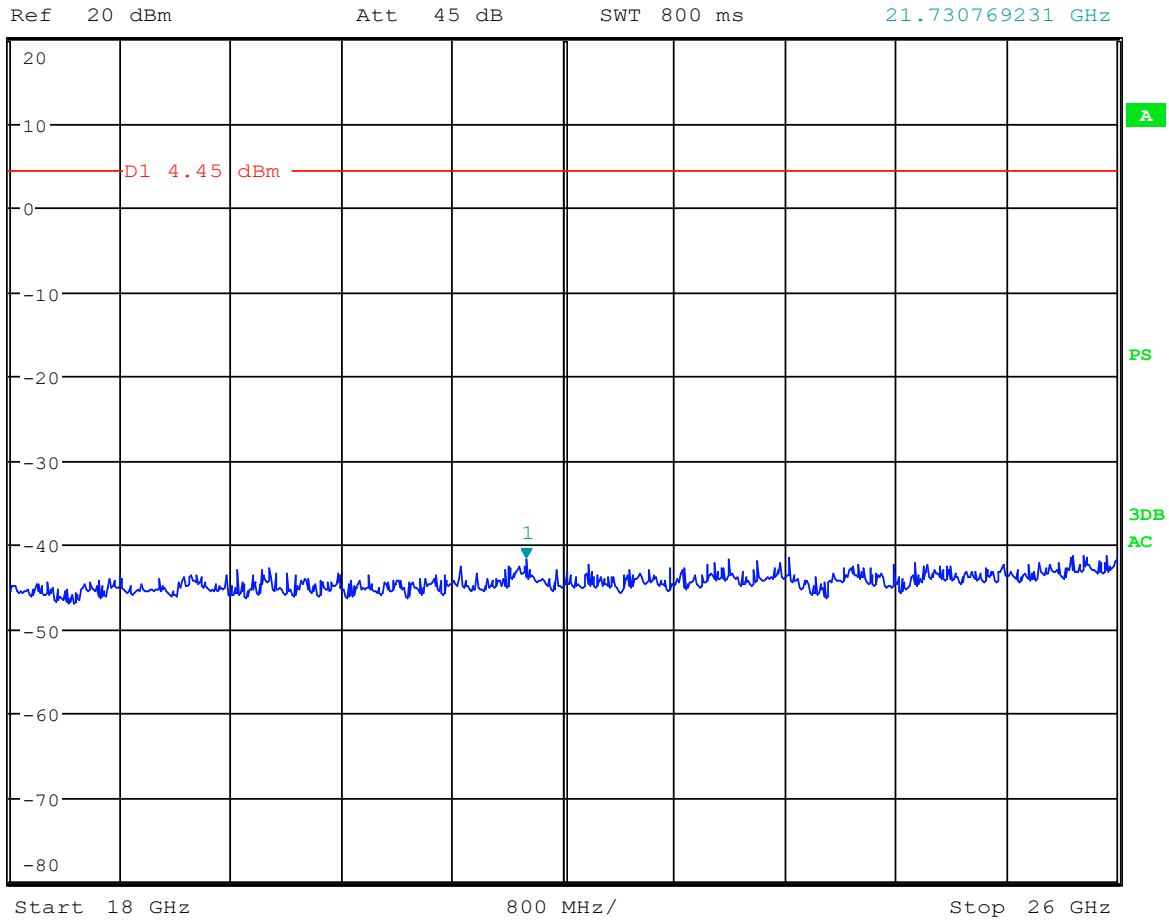
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps: High Channel, 18 GHz to 26 GHz



* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -41.75 dBm
SWT 800 ms 21.730769231 GHz



Date: 17.OCT.2019 11:46:40



Order Number: F2P21582A

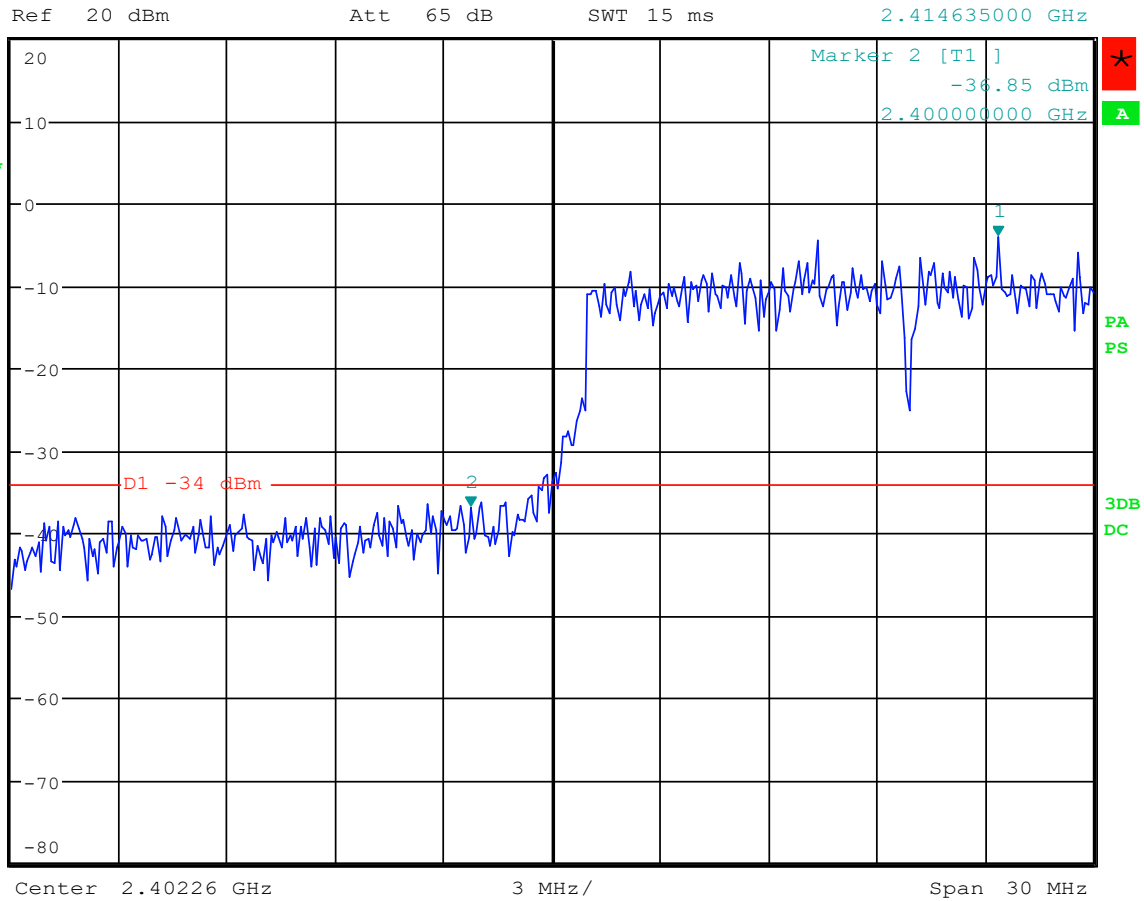
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps: Band Edge, Lower Band Edge



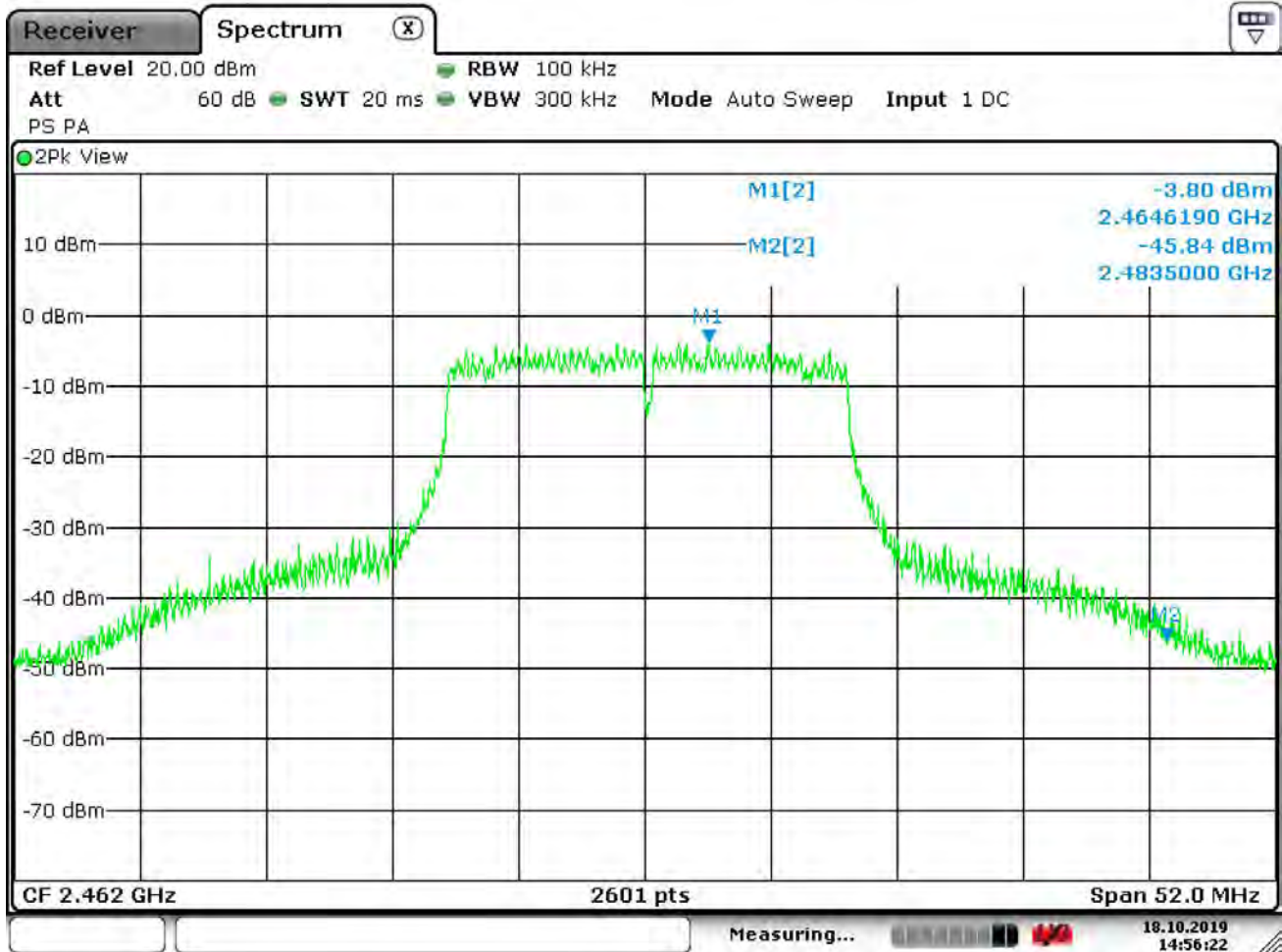
*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz -4.00 dBm
SWT 15 ms 2.414635000 GHz



Date: 24.JUN.2020 10:34:50



OFDM 54 Mbps: Band Edge, Upper Band Edge



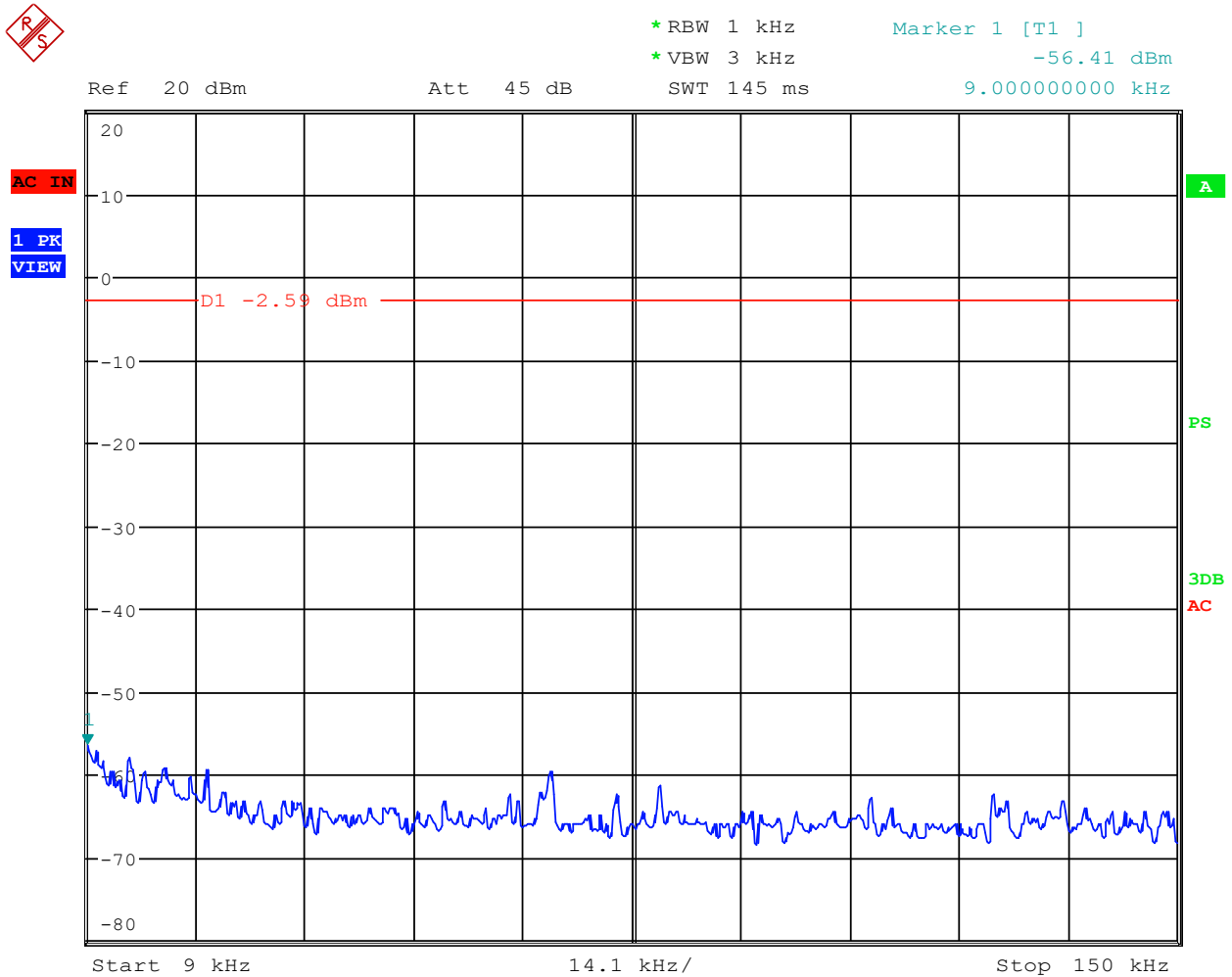
Date: 18.OCT.2019 14:56:22



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps: Low Channel, 0.009 MHz to 0.15 MHz



Date: 17.OCT.2019 13:01:43



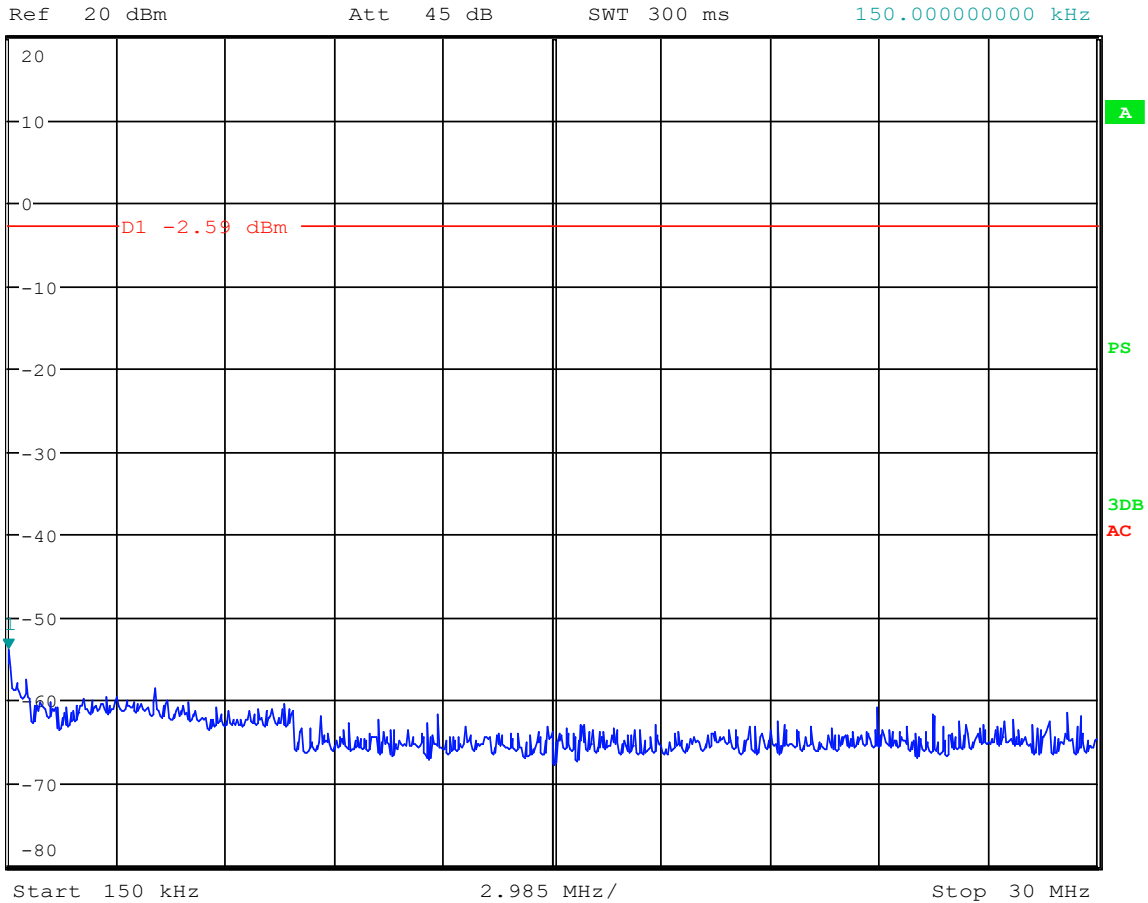
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps: Low Channel, 0.15 MHz to 30 MHz



*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -53.77 dBm
SWT 300 ms 150.000000000 kHz



Date: 17.OCT.2019 13:00:45



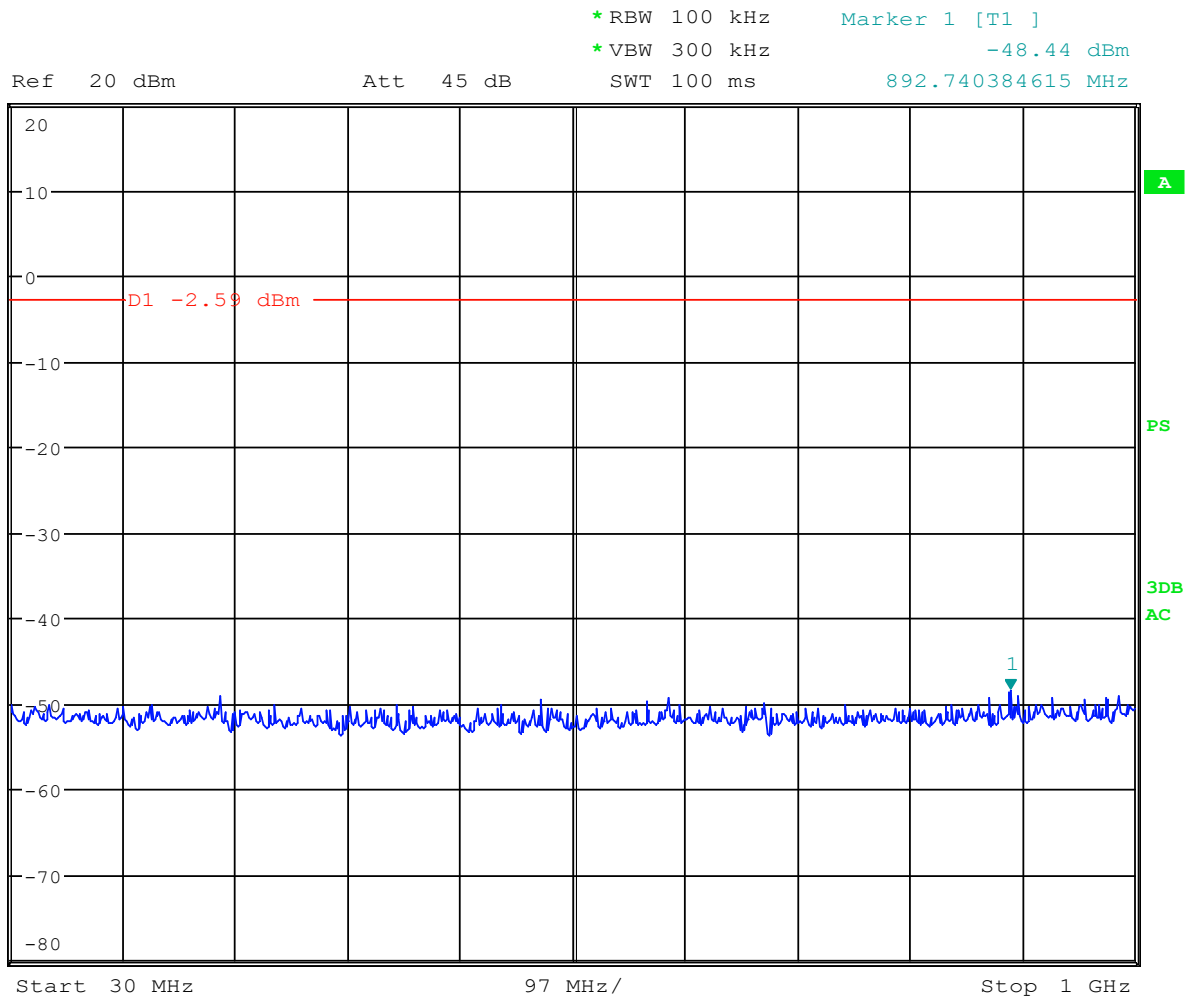
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps: Low Channel, 30 MHz to 1000 MHz



1 PK
VIEW



Date: 17.OCT.2019 12:55:27



Order Number: F2P21582A

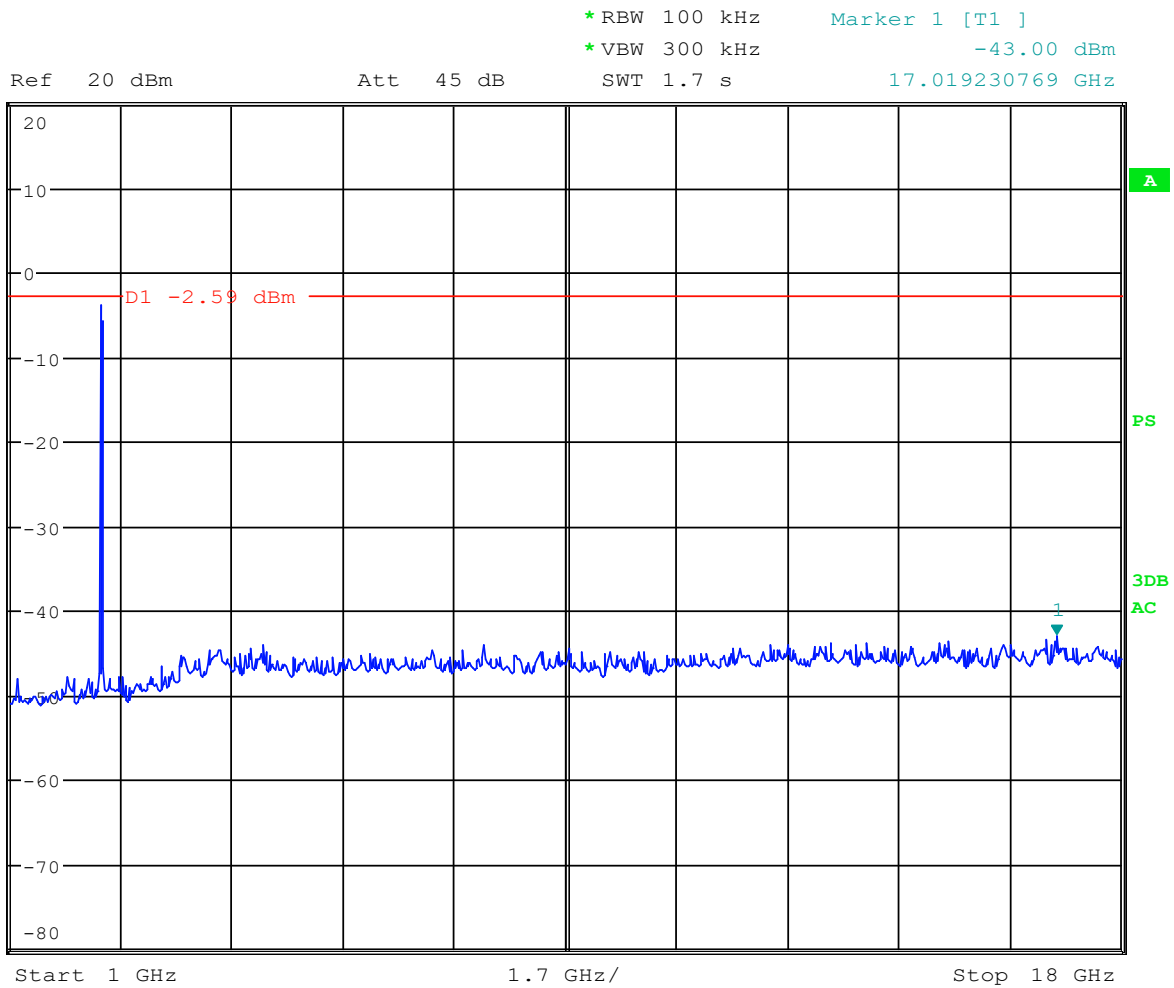
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps: Low Channel, 1 GHz to 18 GHz



1 PK
VIEW



Date: 17.OCT.2019 12:54:36



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps: Low Channel, 18 GHz to 26 GHz

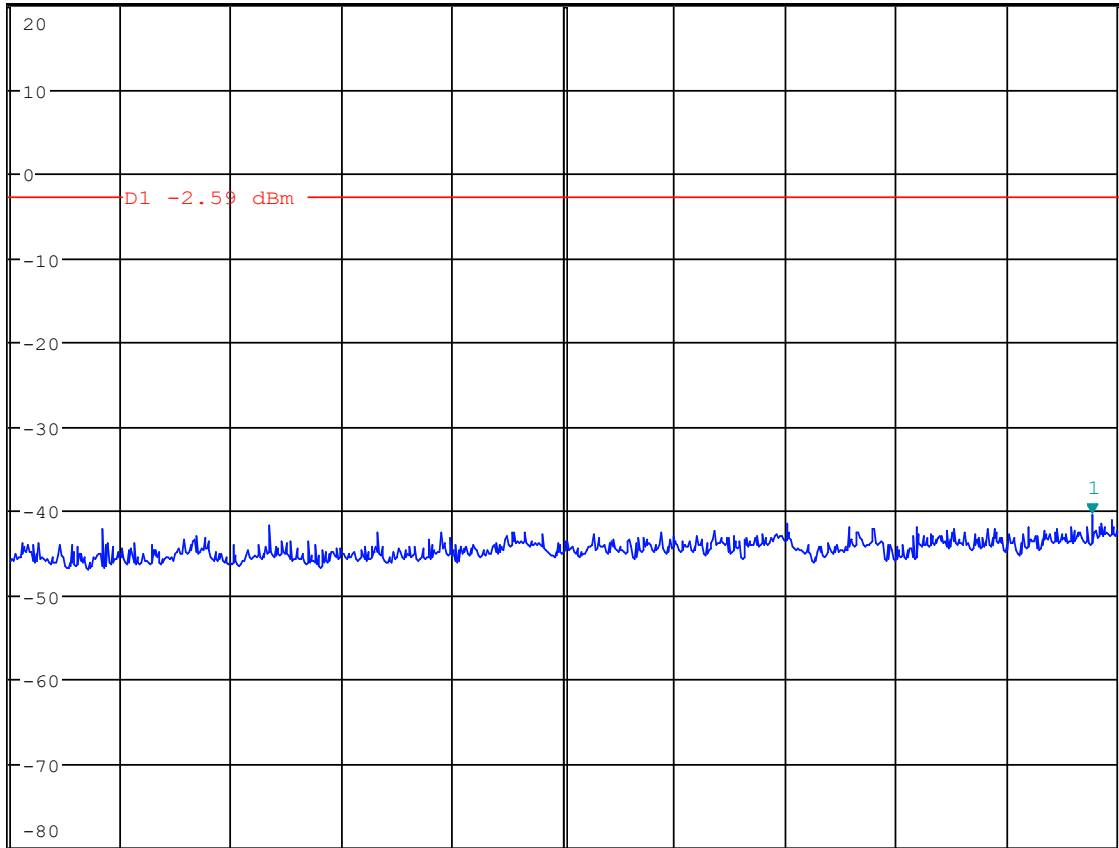


* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -40.37 dBm
SWT 800 ms 25.820512821 GHz

Ref 20 dBm

Att 45 dB

1 PK
VIEW



Start 18 GHz

800 MHz/

Stop 26 GHz

Date: 17.OCT.2019 12:48:49

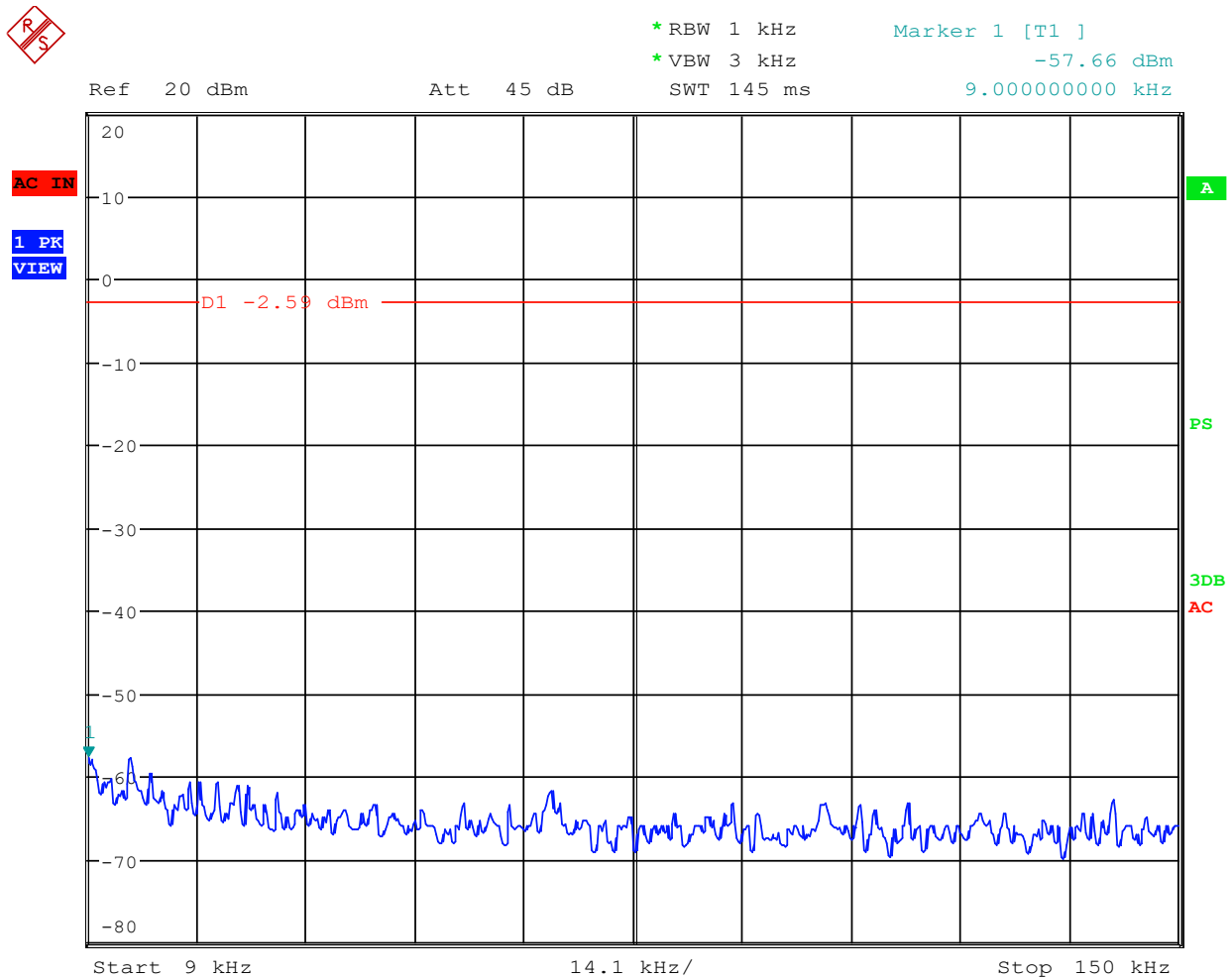


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps: Mid Channel, 0.009 MHz to 0.15 MHz



Date: 17.OCT.2019 13:02:34



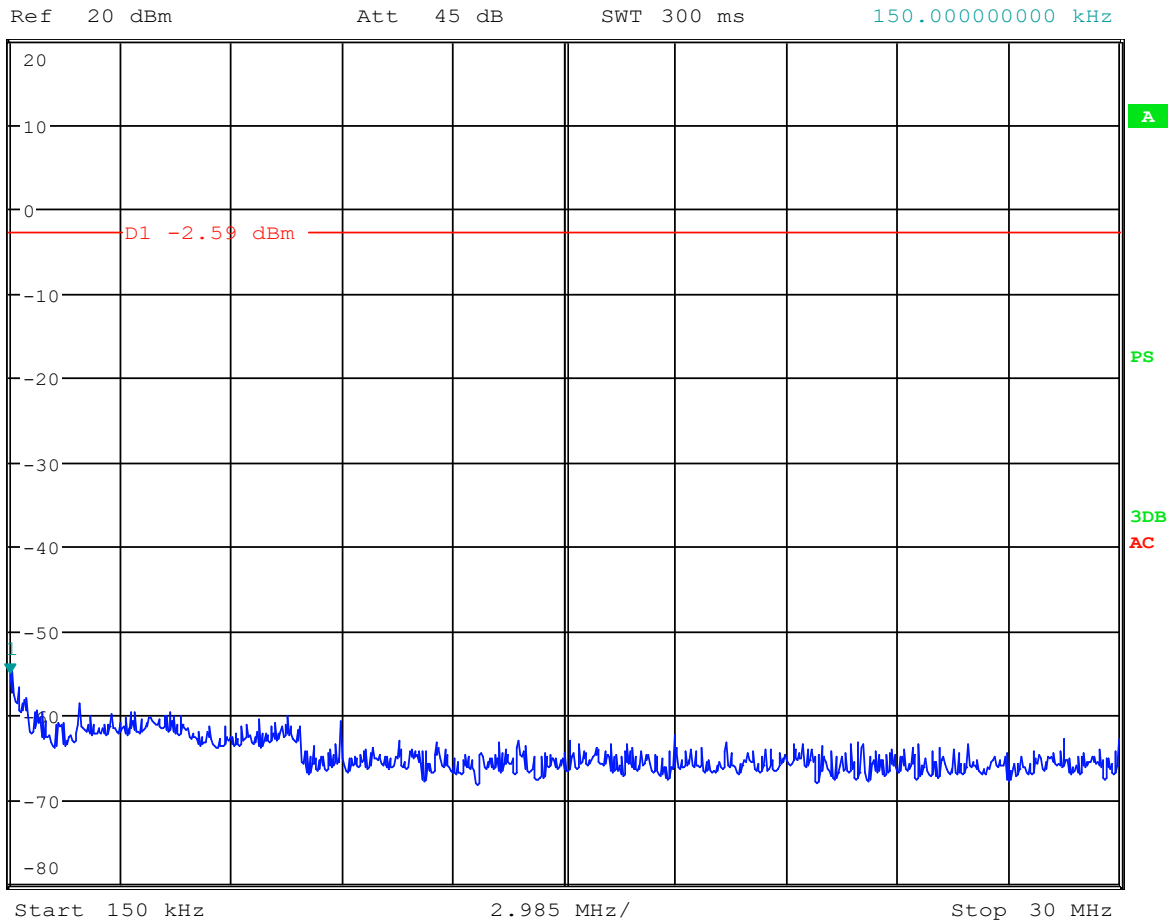
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps: Mid Channel, 0.15 MHz to 30 MHz



* RBW 10 kHz
* VBW 30 kHz
SWT 300 ms
Marker 1 [T1]
-55.14 dBm
150.00000000 kHz



Date: 17.OCT.2019 12:59:50



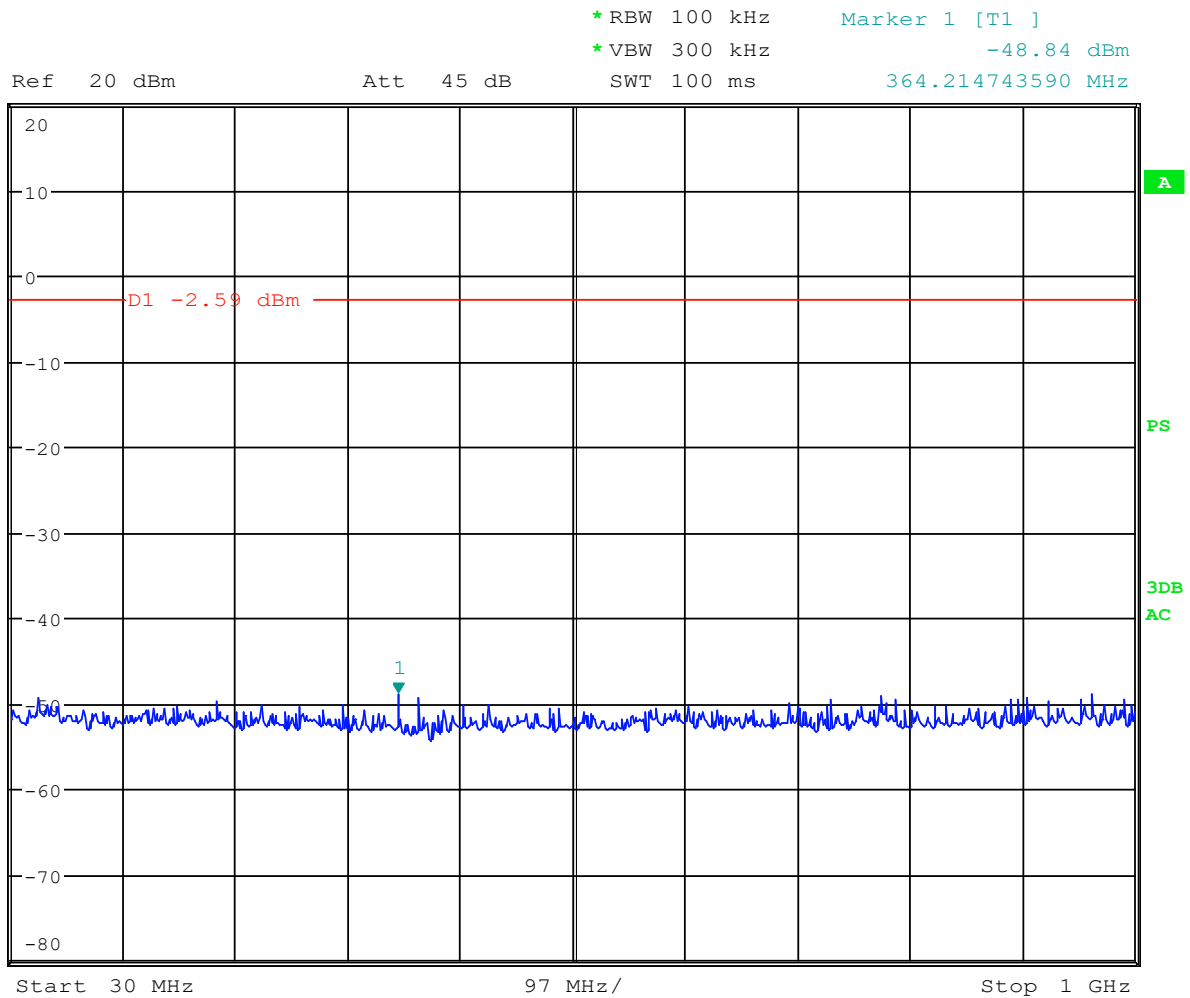
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps: Mid Channel, 30 MHz to 1000 MHz



1 PK
VIEW



Date: 17.OCT.2019 12:56:24

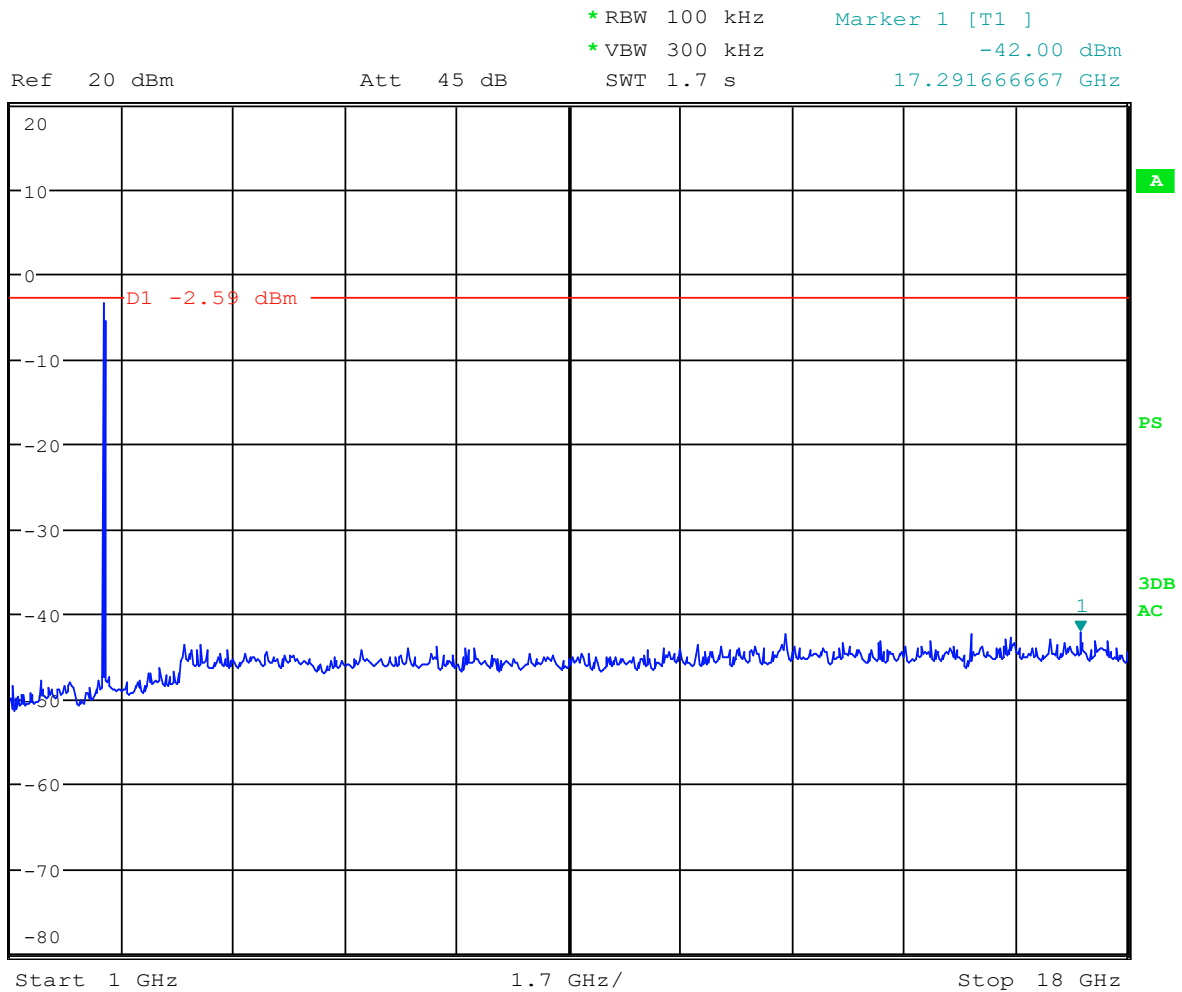


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps: Mid Channel, 1 GHz to 18 GHz



Date: 17.OCT.2019 12:53:36



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps: Mid Channel, 18 GHz to 26 GHz

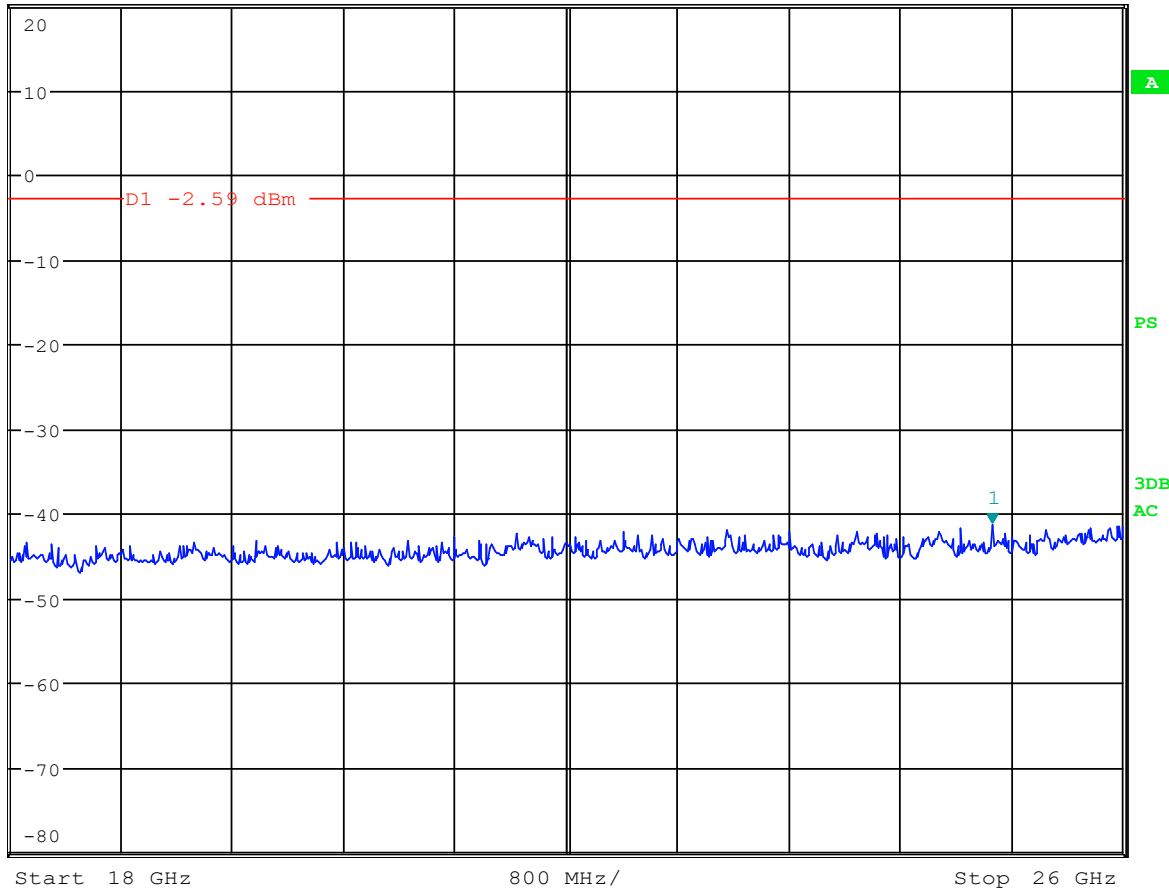


Ref 20 dBm Att 45 dB SWT 800 ms

* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -41.22 dBm

25.064102564 GHz

1 PK
VIEW



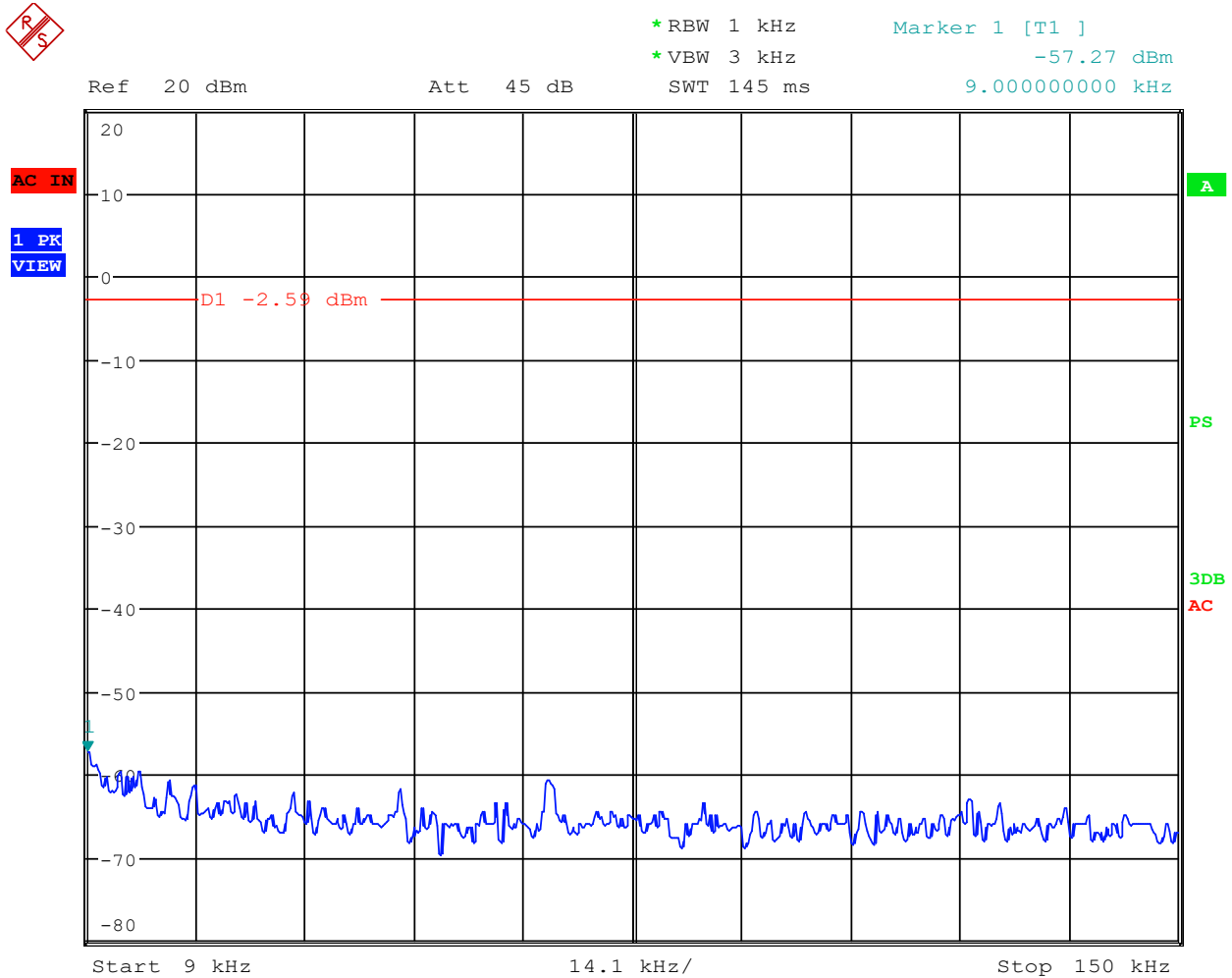
Date: 17.OCT.2019 12:49:51



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps: High Channel, 0.009 MHz to 0.15 MHz



Date: 17.OCT.2019 13:03:29

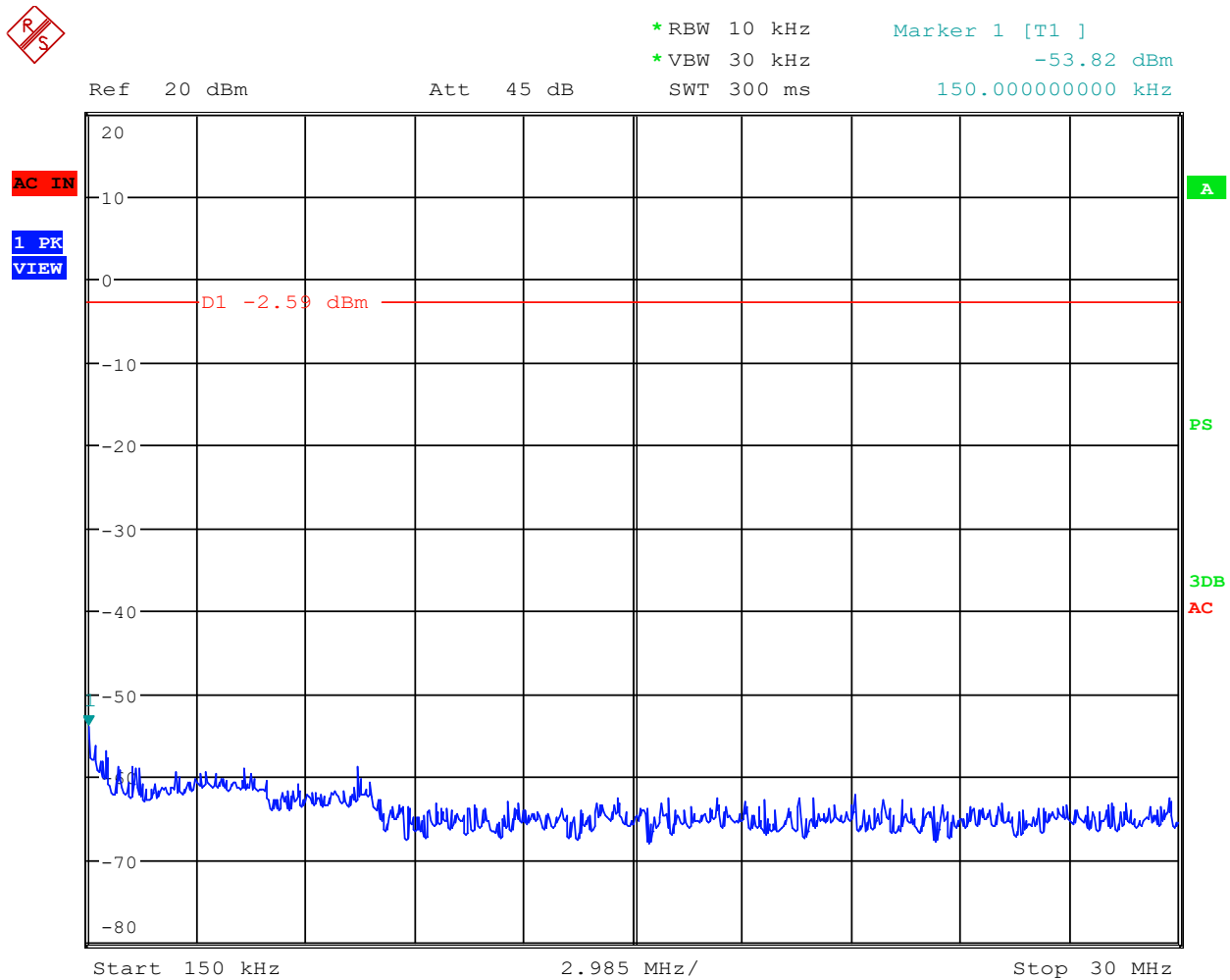


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps: High Channel, 0.15 MHz to 30 MHz



Date: 17.OCT.2019 12:58:59



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps: High Channel, 30 MHz to 1000 MHz



*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz -48.80 dBm
SWT 100 ms 968.910256410 MHz

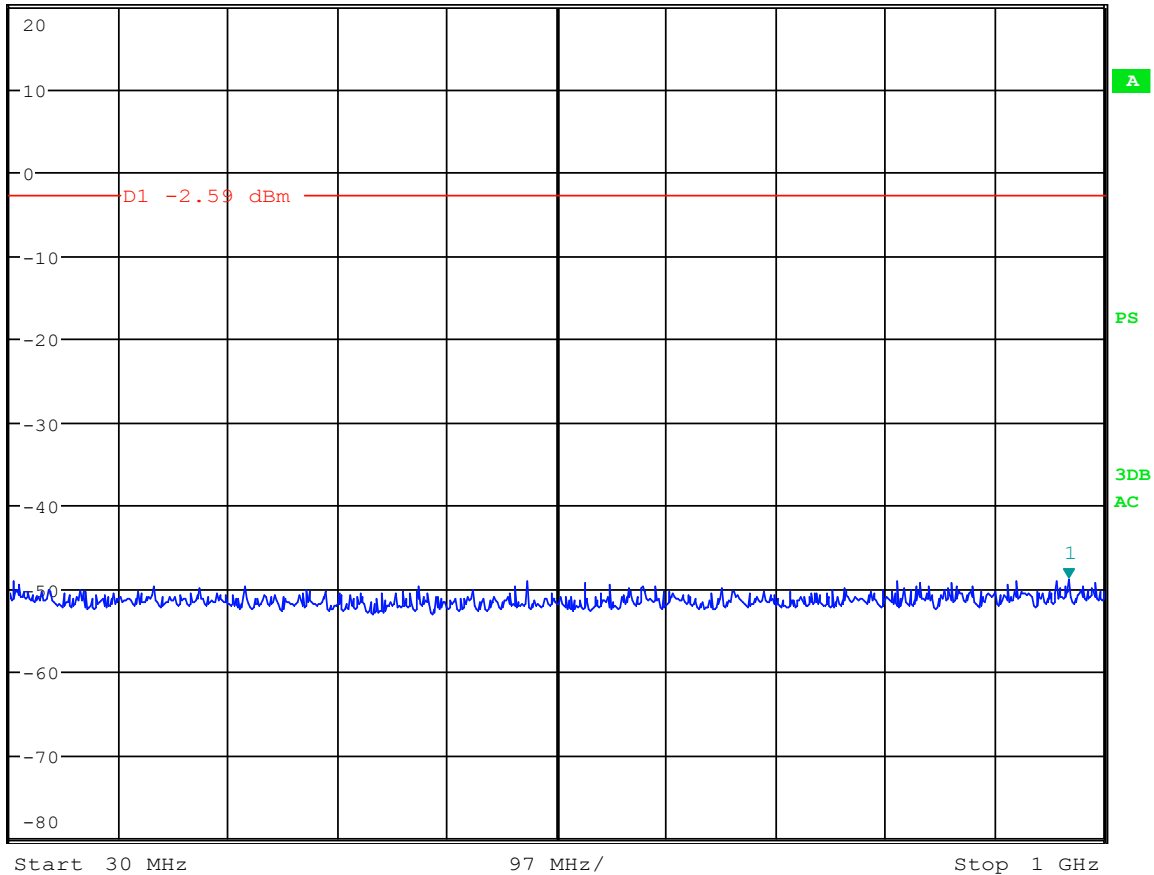
Ref 20 dBm

Att 45 dB

SWT 100 ms

968.910256410 MHz

1 PK
VIEW



Date: 17.OCT.2019 12:57:55



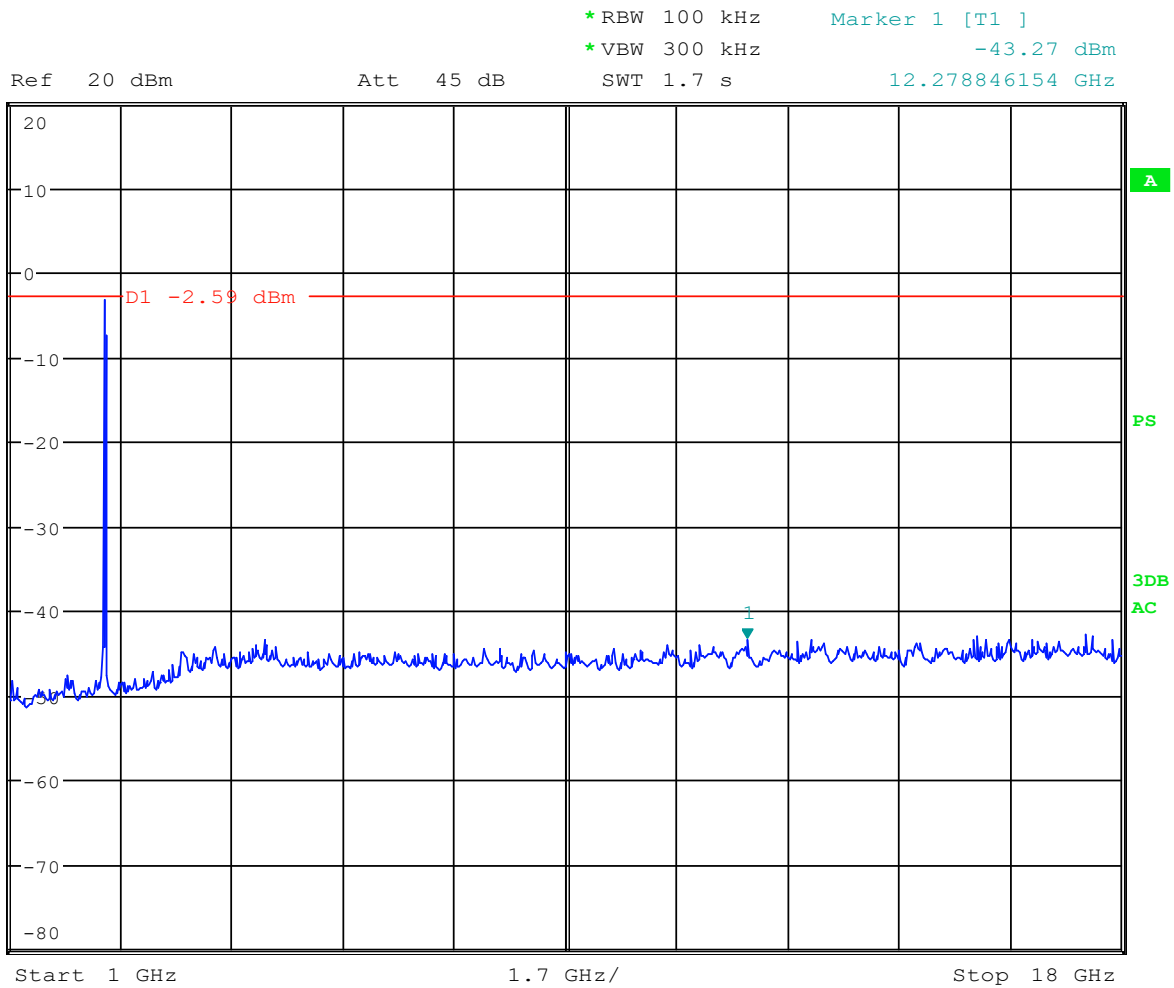
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps: High Channel, 1 GHz to 18 GHz



1 PK
VIEW



Date: 17.OCT.2019 12:52:07



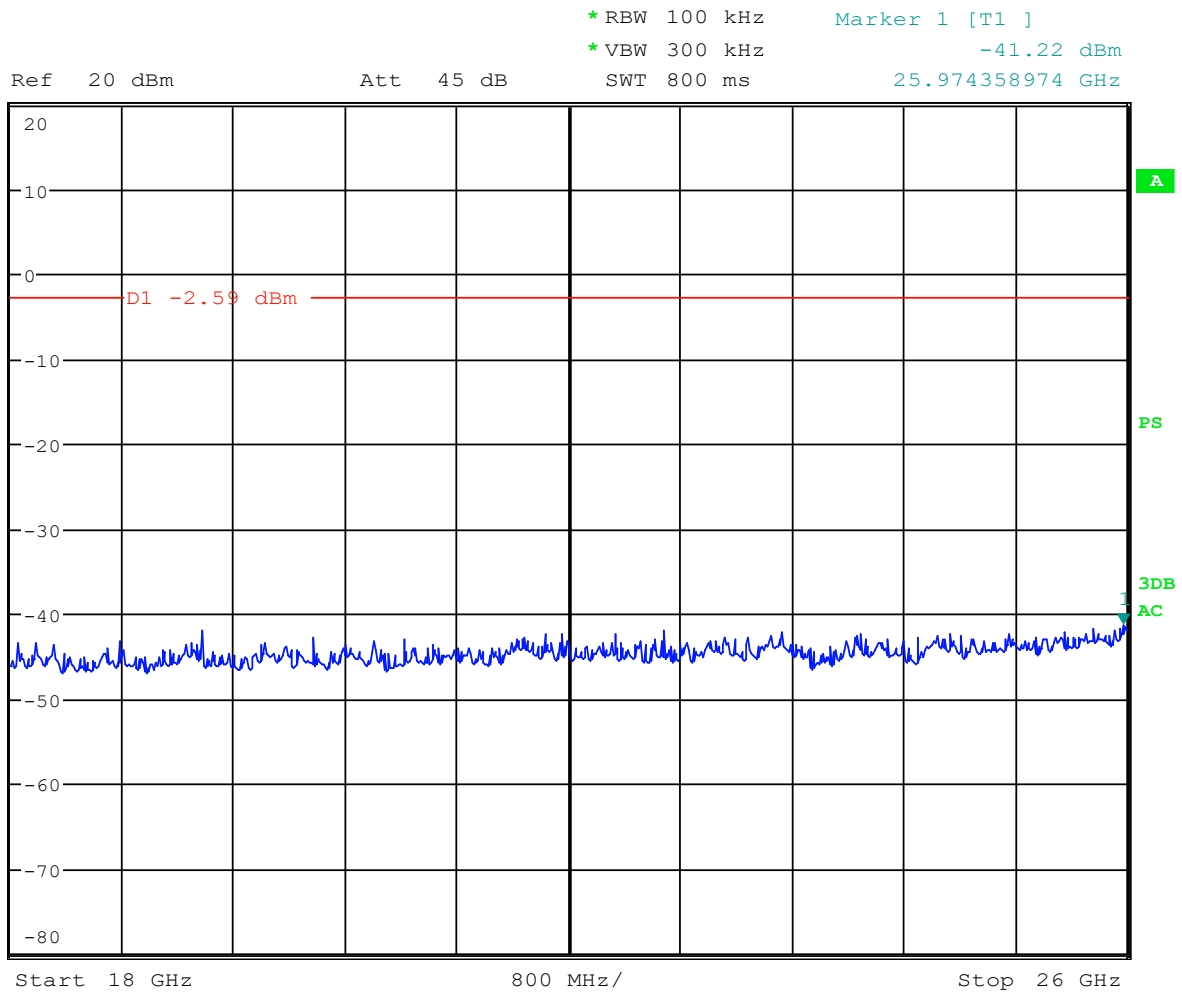
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

OFDM 54 Mbps: High Channel, 18 GHz to 26 GHz



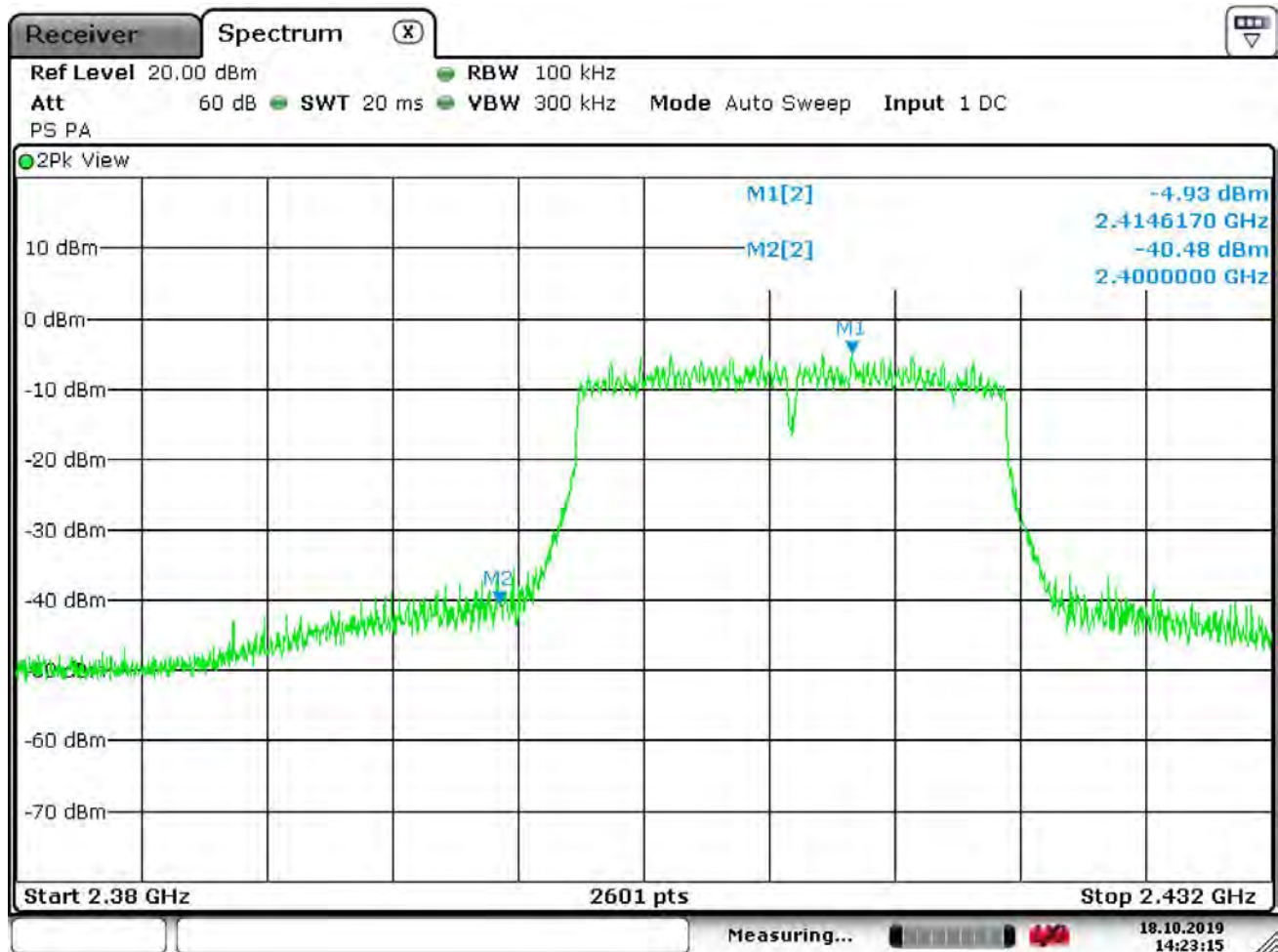
1 PK
VIEW



Date: 17.OCT.2019 12:50:42



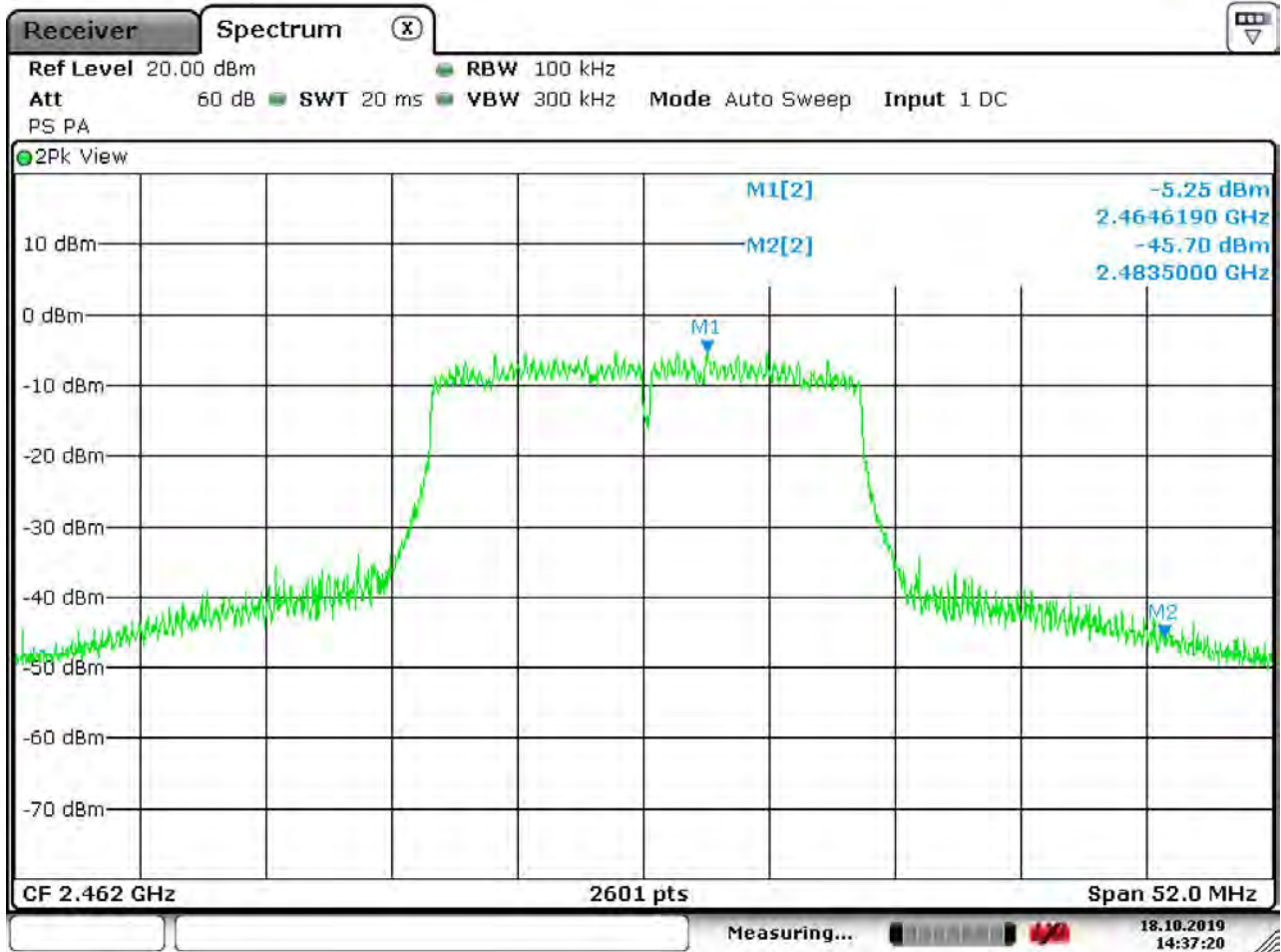
MM MCS7 HT20: Band Edge, Lower Band Edge



Date: 18.OCT.2019 14:23:15



MM MCS7 HT20: Band Edge, Upper Band Edge



Date: 18.OCT.2019 14:37:20



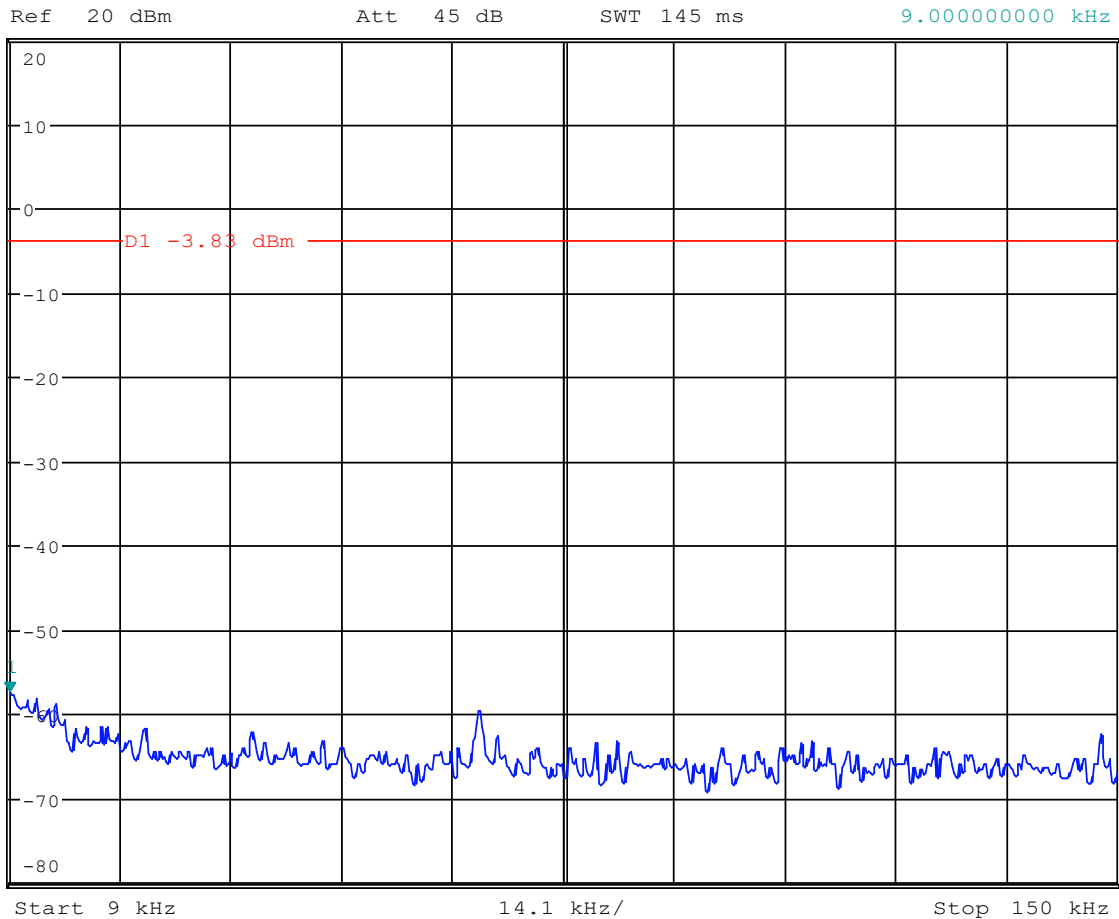
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

MM MCS7 HT20: Low Channel, 0.009 MHz to 0.15 MHz



* RBW 1 kHz
* VBW 3 kHz
Marker 1 [T1]
-57.42 dBm
9.000000000 kHz



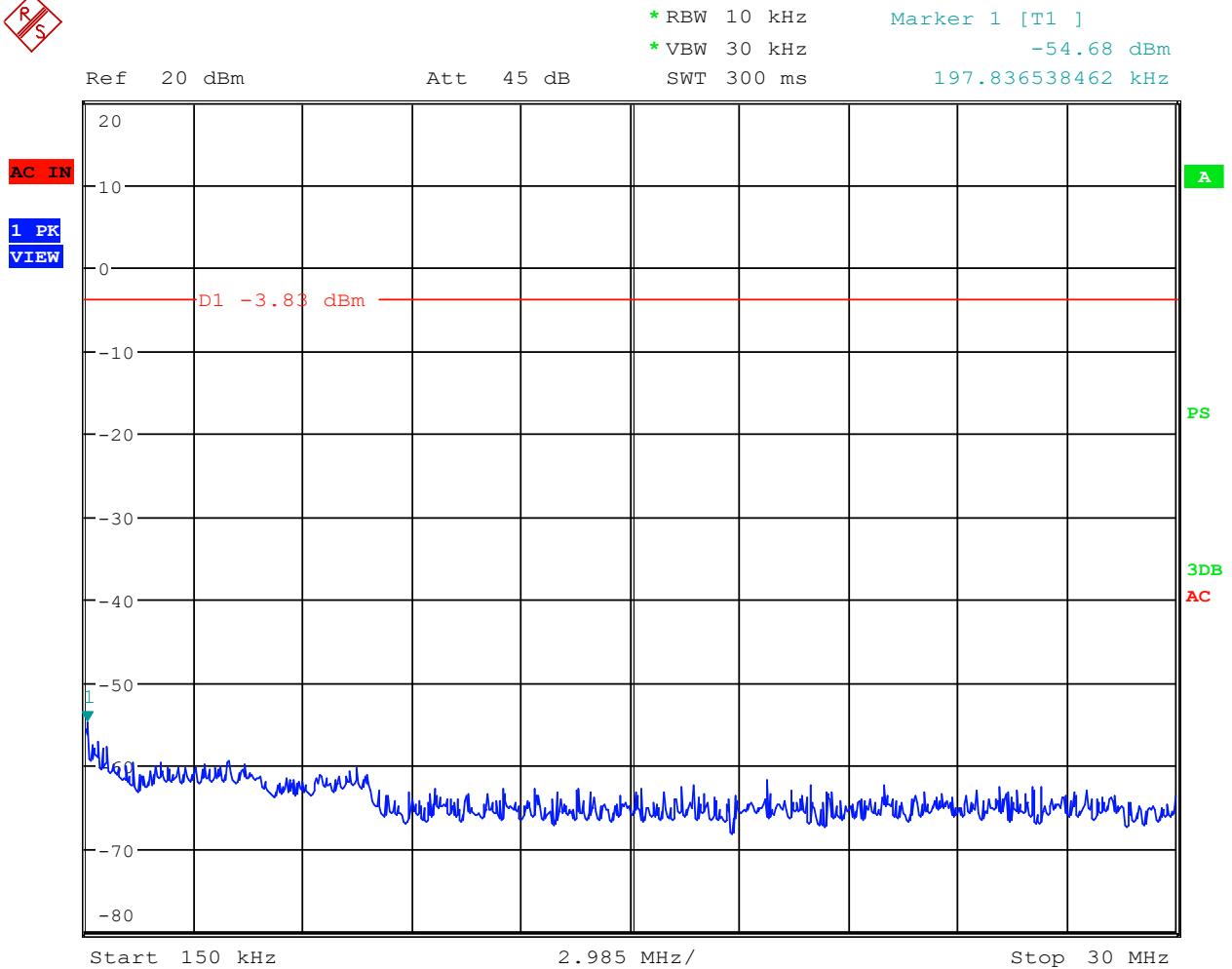
Date: 17.OCT.2019 13:39:16



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

MM MCS7 HT20: Low Channel, 0.15 MHz to 30 MHz



Date: 17.OCT.2019 13:38:27



Order Number: F2P21582A

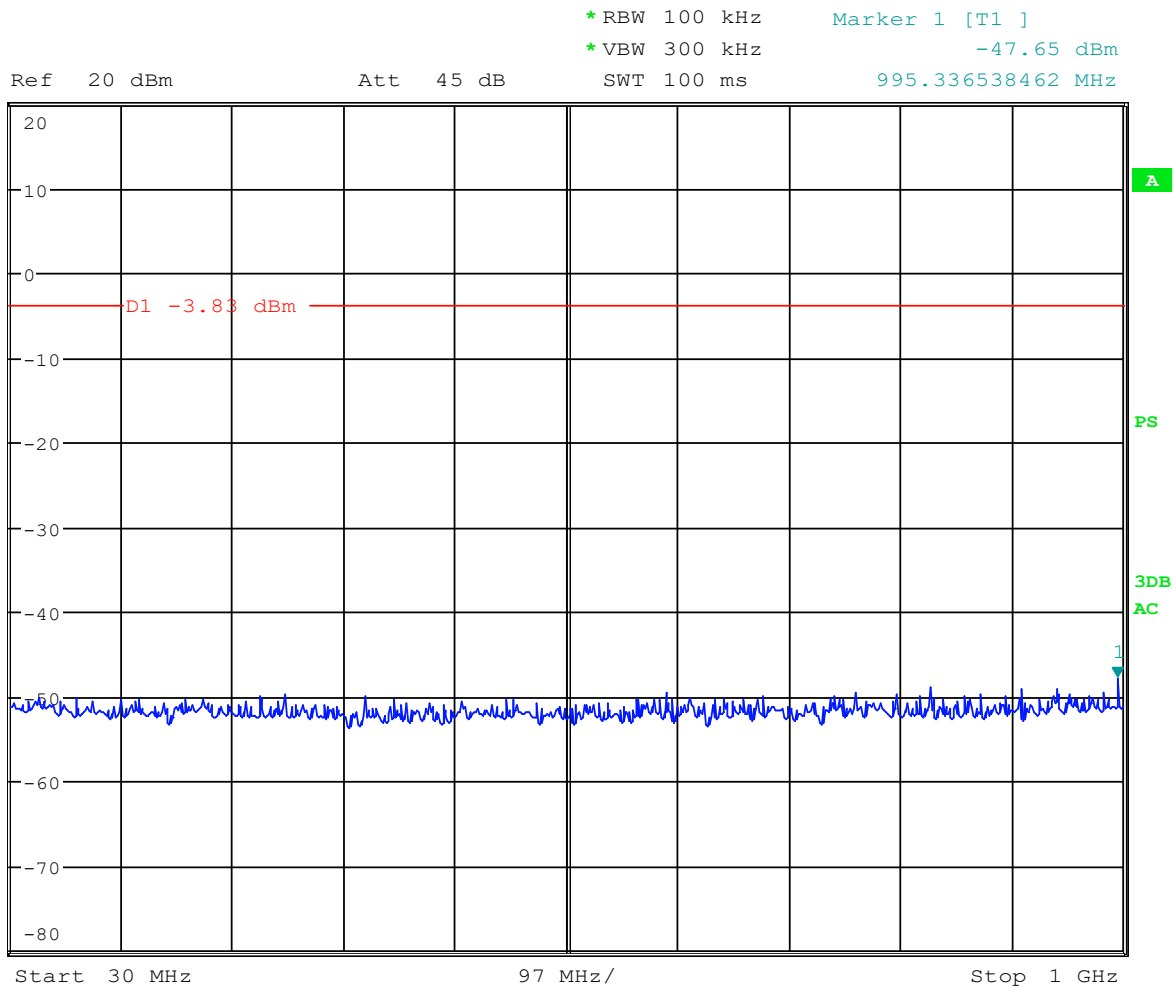
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20: Low Channel, 30 MHz to 1000 MHz



1 PK
VIEW



Date: 17.OCT.2019 13:33:54



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

MM MCS7 HT20: Low Channel, 1 GHz to 18 GHz

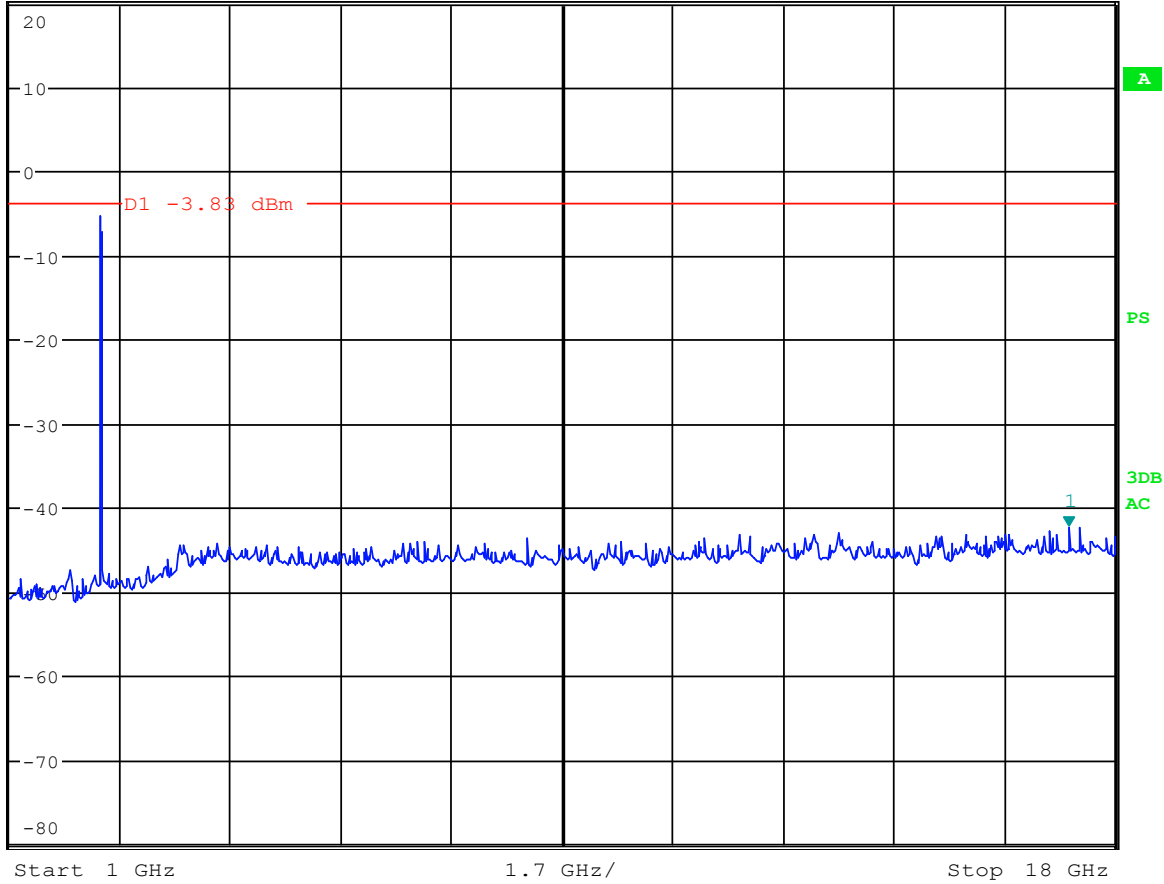


*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz -42.30 dBm
SWT 1.7 s 17.29166667 GHz

Ref 20 dBm

Att 45 dB

1 PK
VIEW



Date: 17.OCT.2019 13:33:02



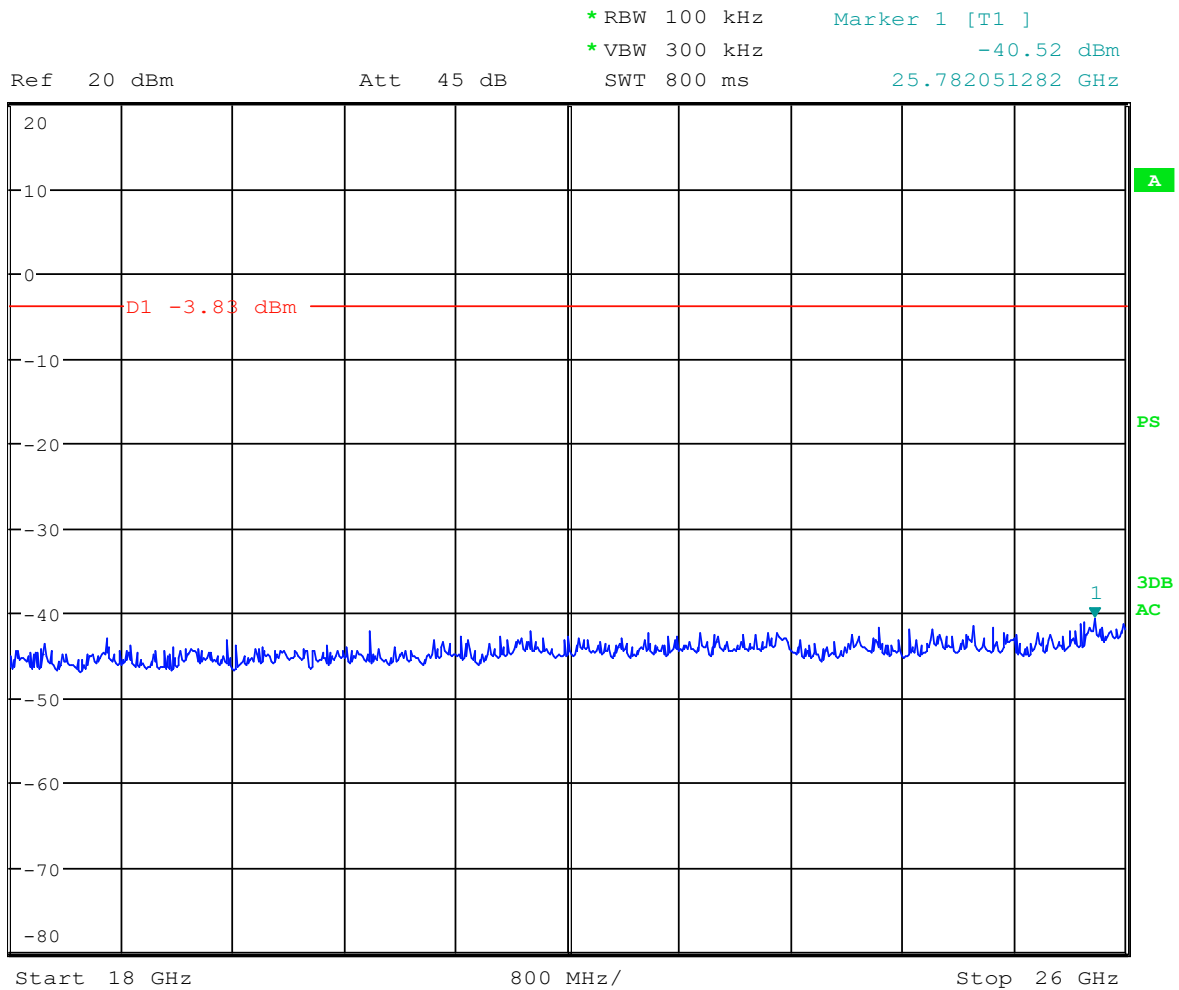
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

MM MCS7 HT20: Low Channel, 18 GHz to 26 GHz



1 PK
VIEW



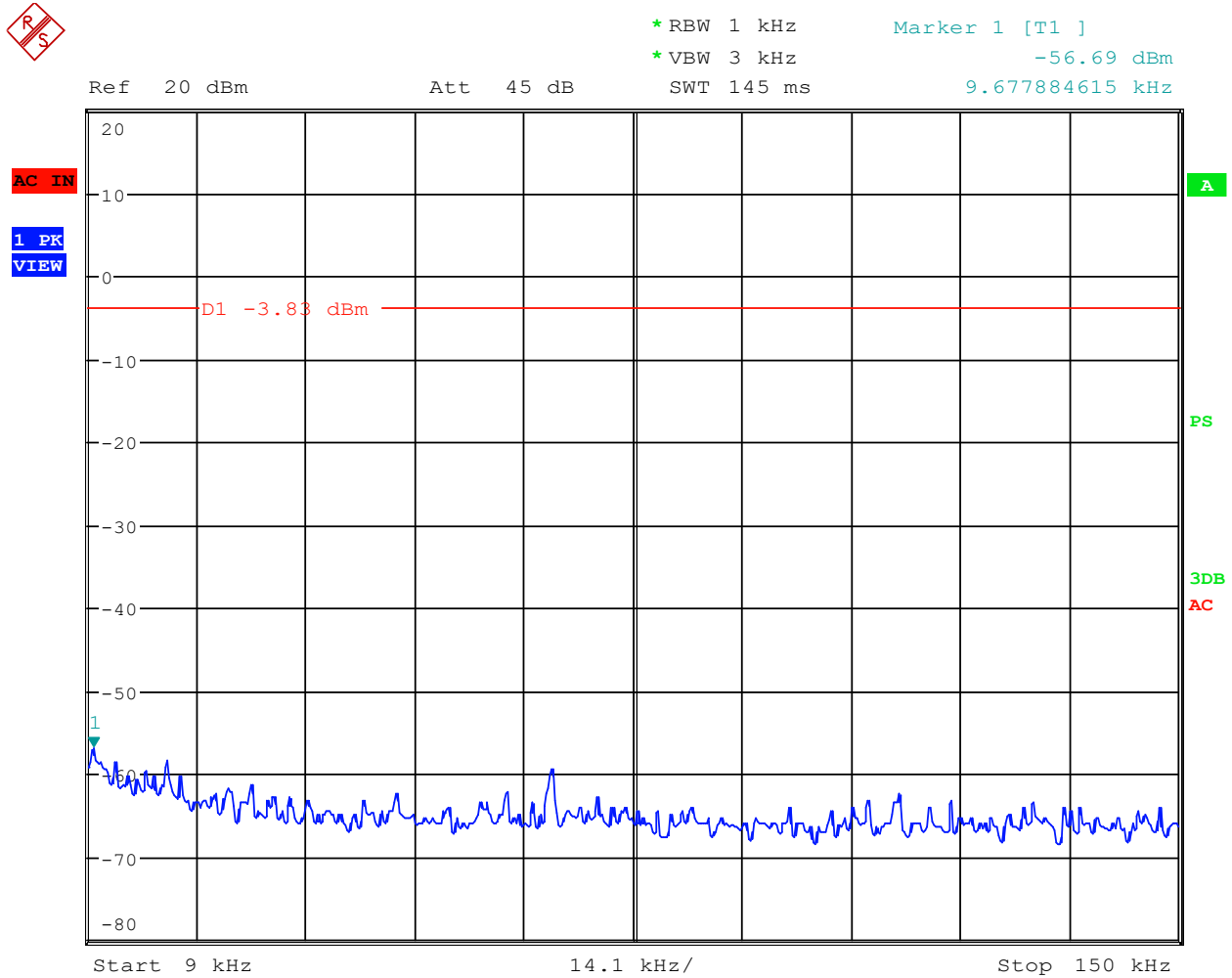
Date: 17.OCT.2019 13:27:54



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

MM MCS7 HT20: Mid Channel, 0.009 MHz to 0.15 MHz



Date: 17.OCT.2019 13:40:24

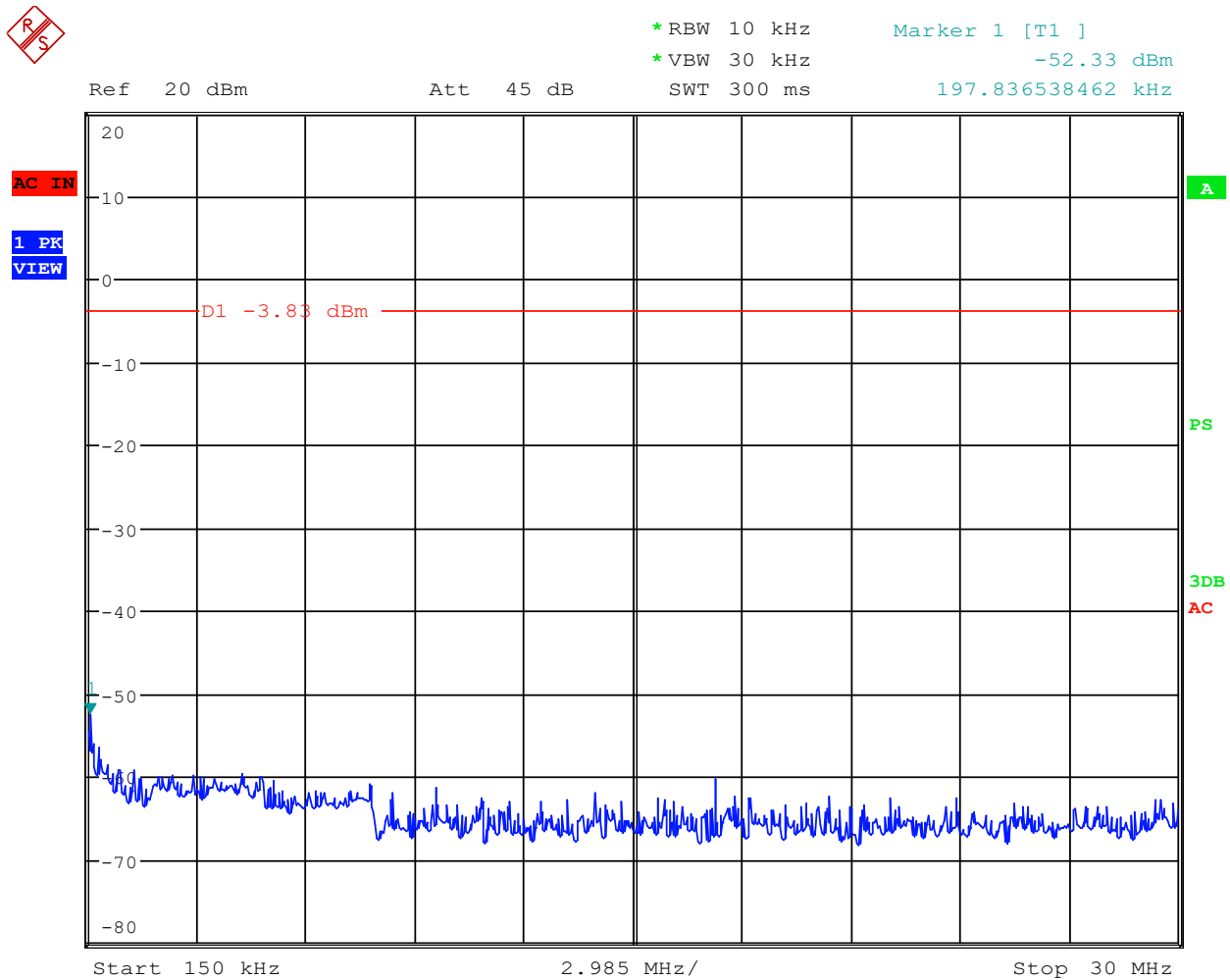


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20: Mid Channel, 0.15 MHz to 30 MHz



Date: 17.OCT.2019 13:37:34



Order Number: F2P21582A

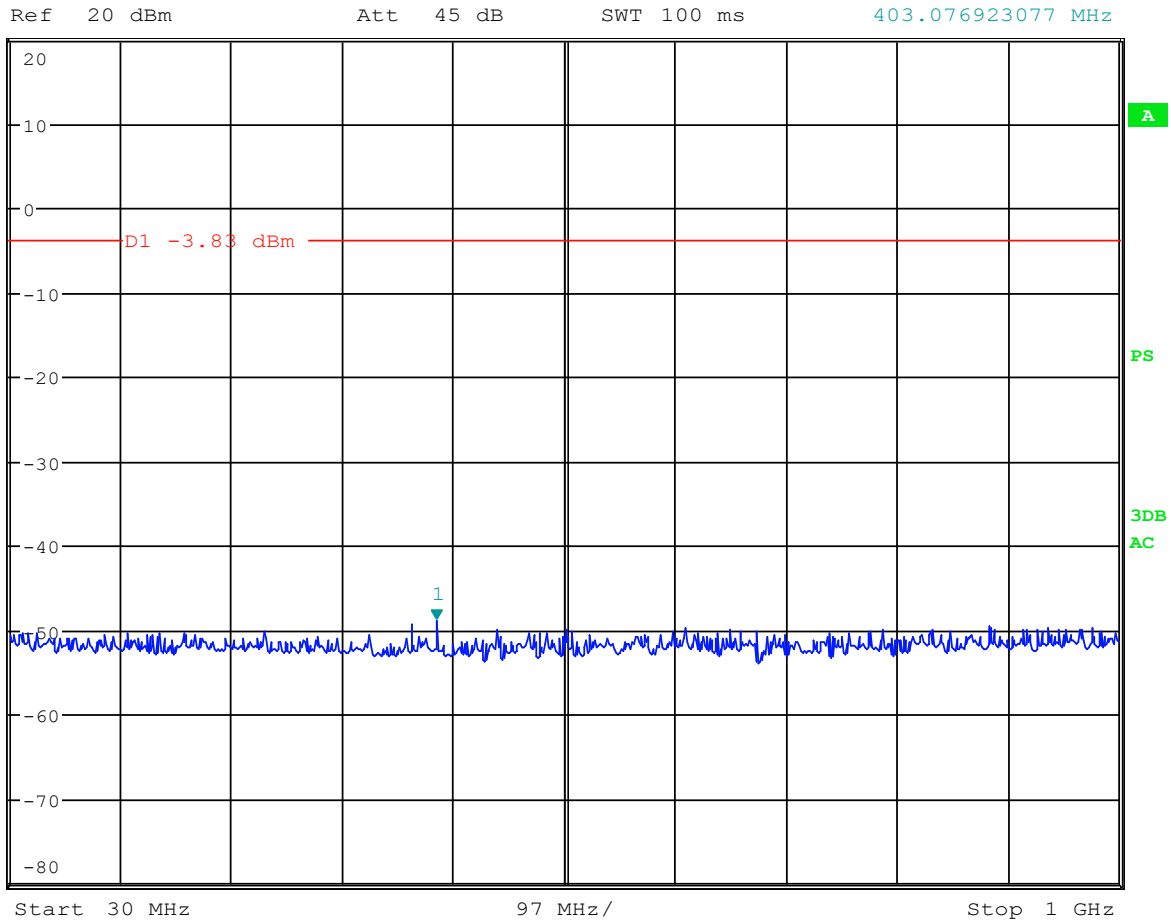
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20: Mid Channel, 30 MHz to 1000 MHz



* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -48.89 dBm
SWT 100 ms 403.076923077 MHz



Date: 17.OCT.2019 13:34:41



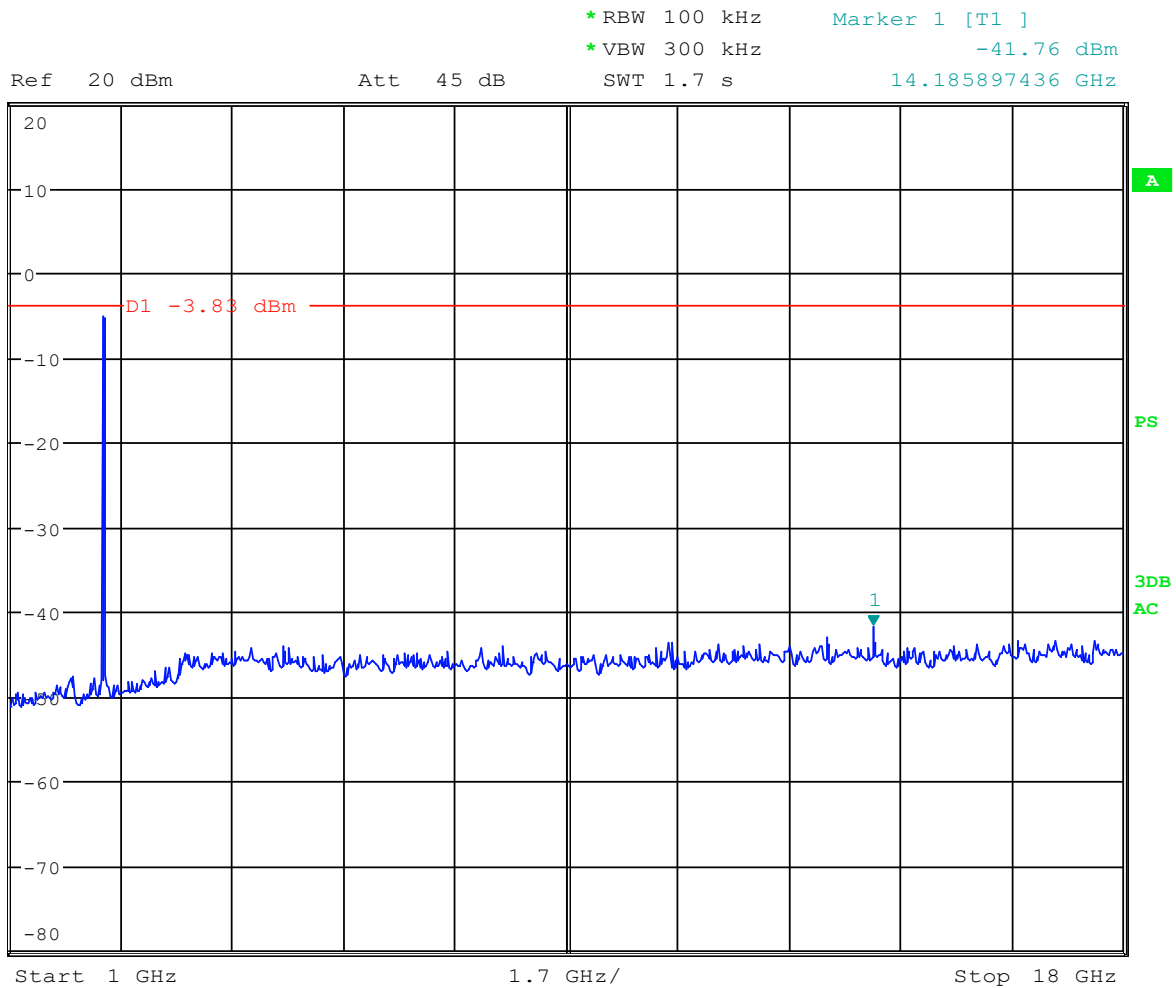
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

MM MCS7 HT20: Mid Channel, 1 GHz to 18 GHz



1 PK
VIEW



Date: 17.OCT.2019 13:31:52



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20: Mid Channel, 18 GHz to 26 GHz

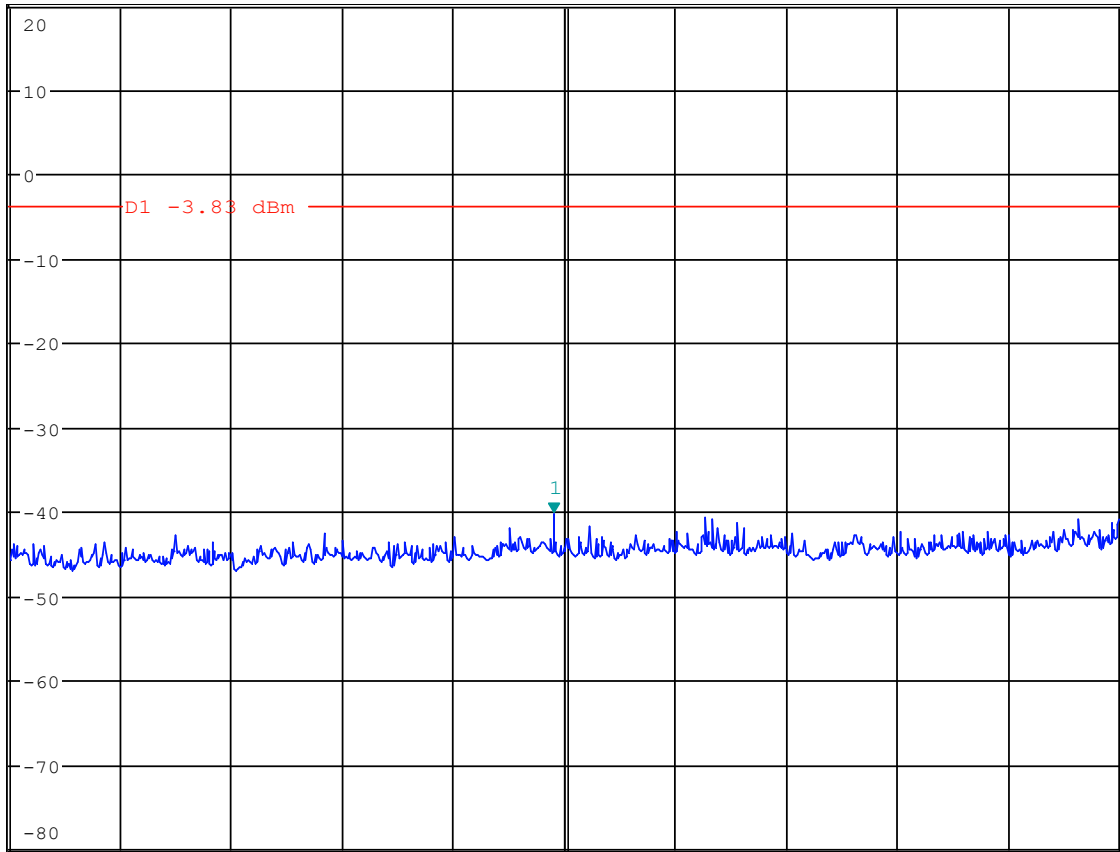


* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -40.23 dBm
SWT 800 ms 21.923076923 GHz

Ref 20 dBm

Att 45 dB

1 PK
VIEW



Start 18 GHz

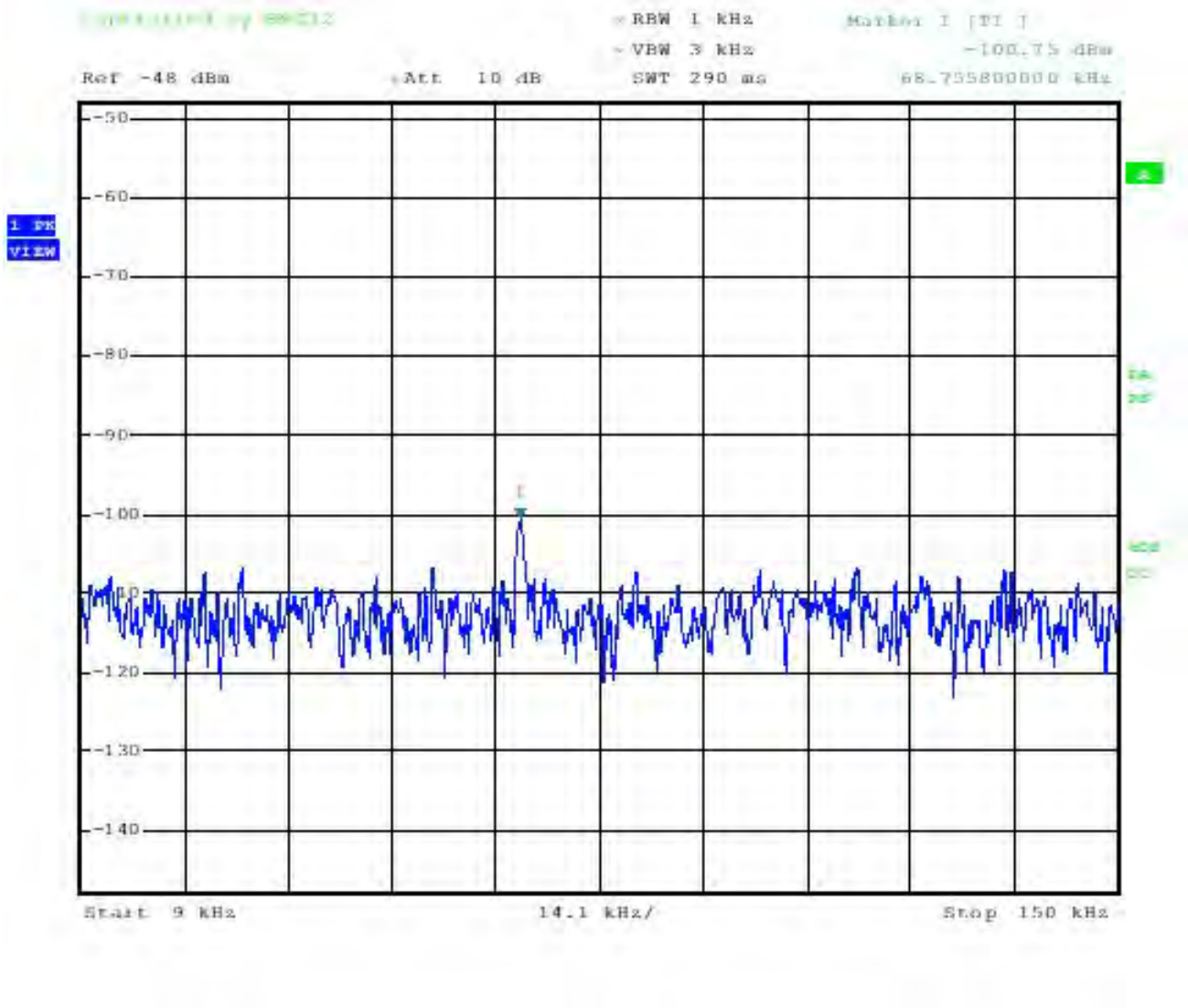
800 MHz/

Stop 26 GHz

Date: 17.OCT.2019 13:28:47



MM MCS7 HT20: High Channel, 0.009 MHz to 0.15 MHz



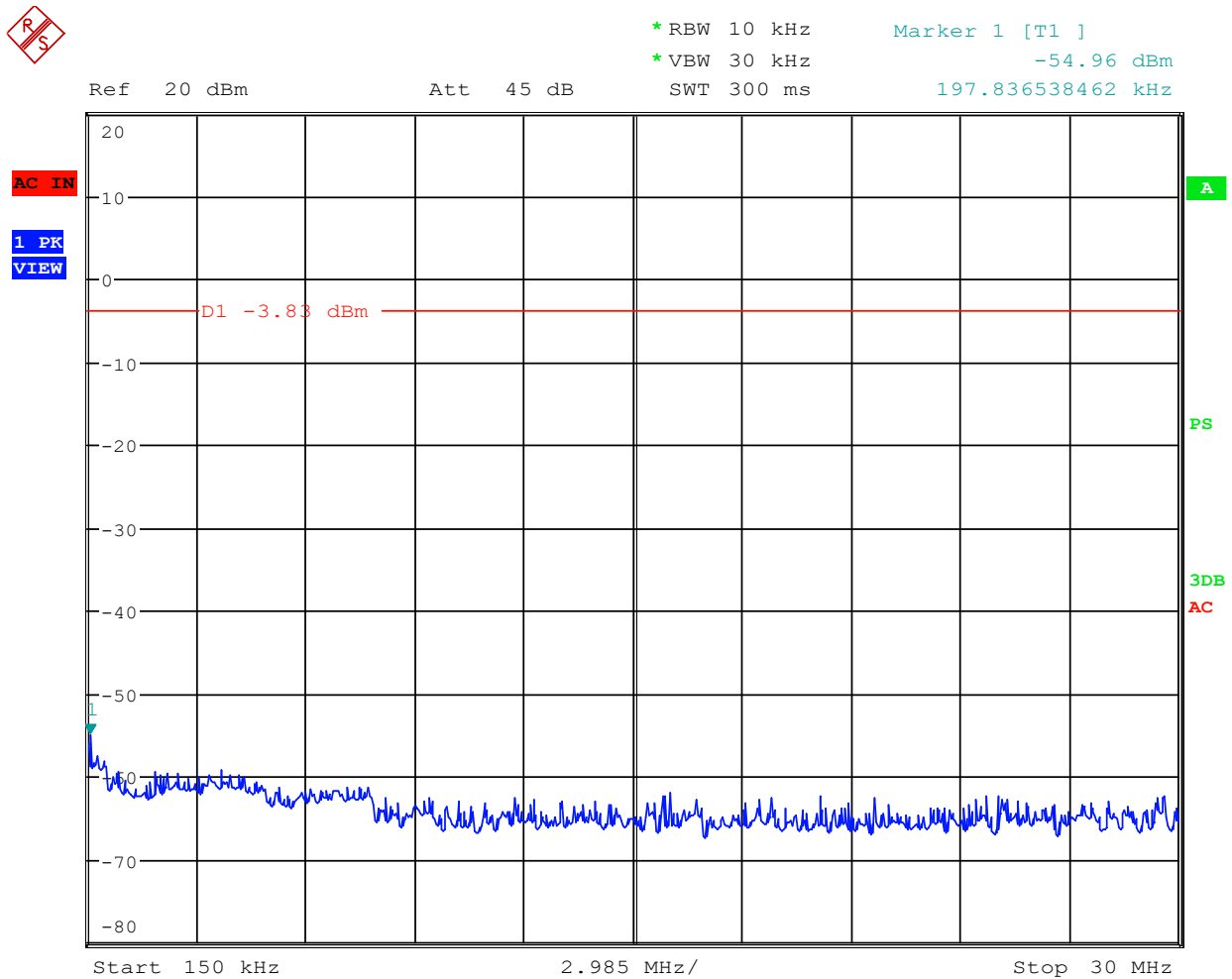


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20: High Channel, 0.15 MHz to 30 MHz



Date: 17.OCT.2019 13:36:49

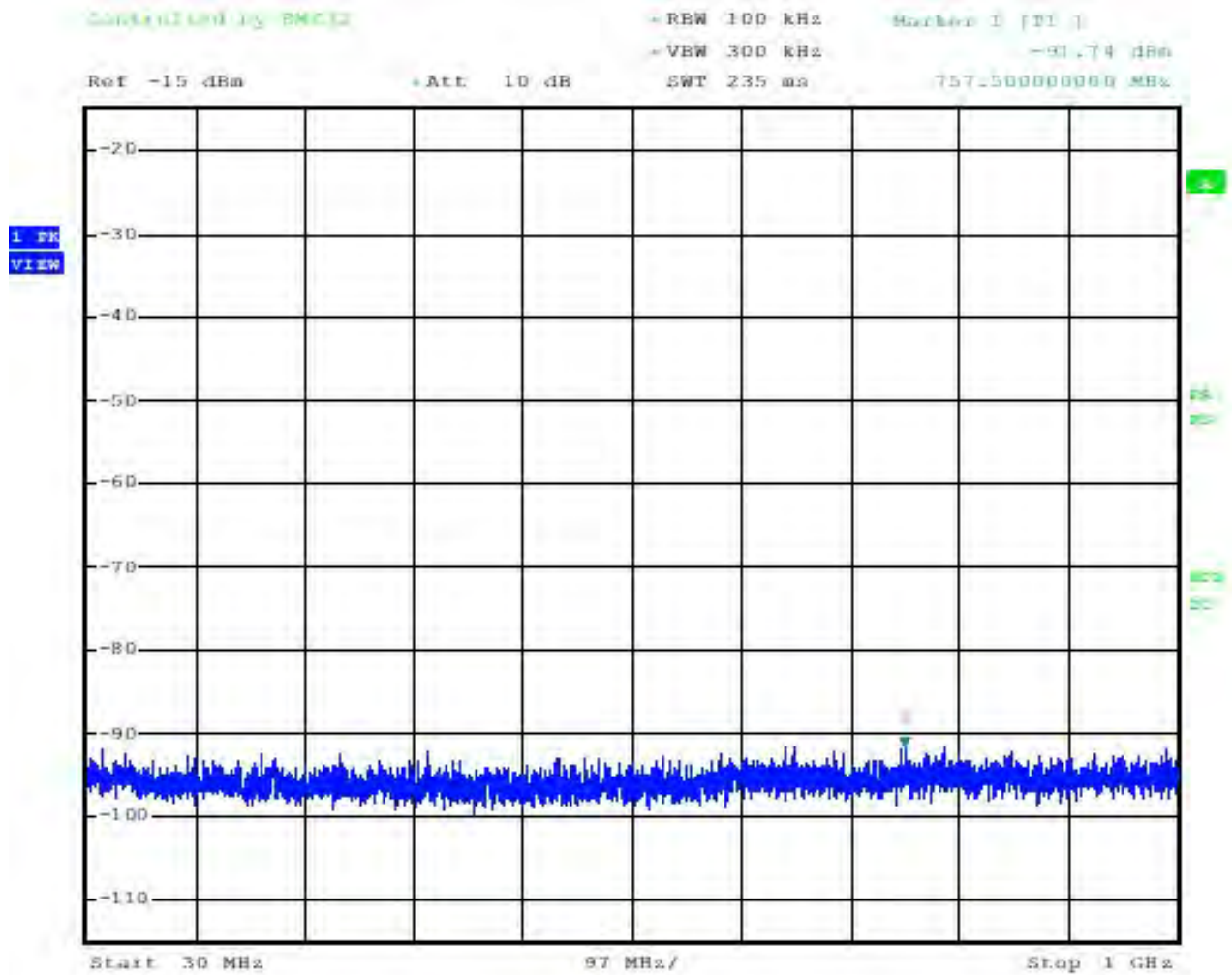


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20: High Channel, 30 MHz to 1000 MHz





Order Number: F2P21582A

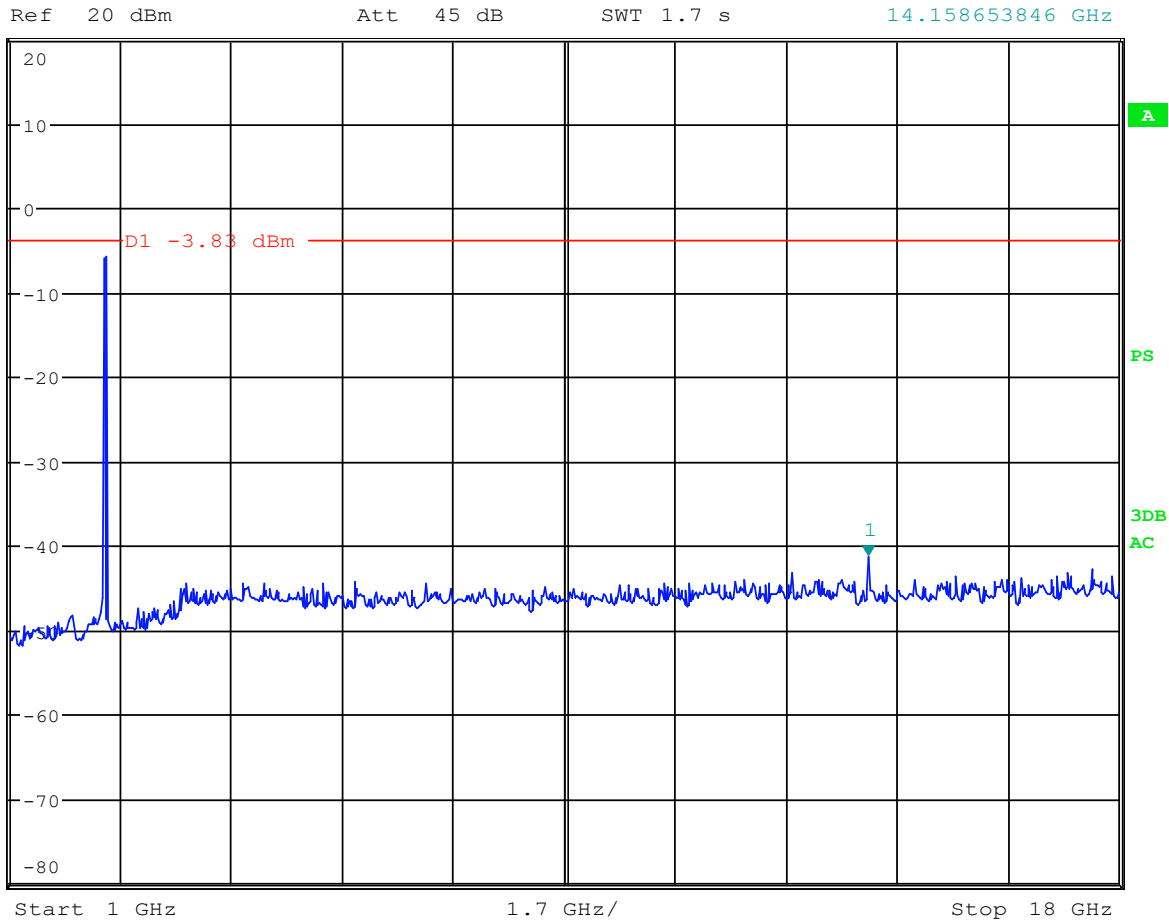
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20: High Channel, 1 GHz to 18 GHz



* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -41.26 dBm
SWT 1.7 s 14.158653846 GHz



Date: 17.OCT.2019 13:30:38



Order Number: F2P21582A

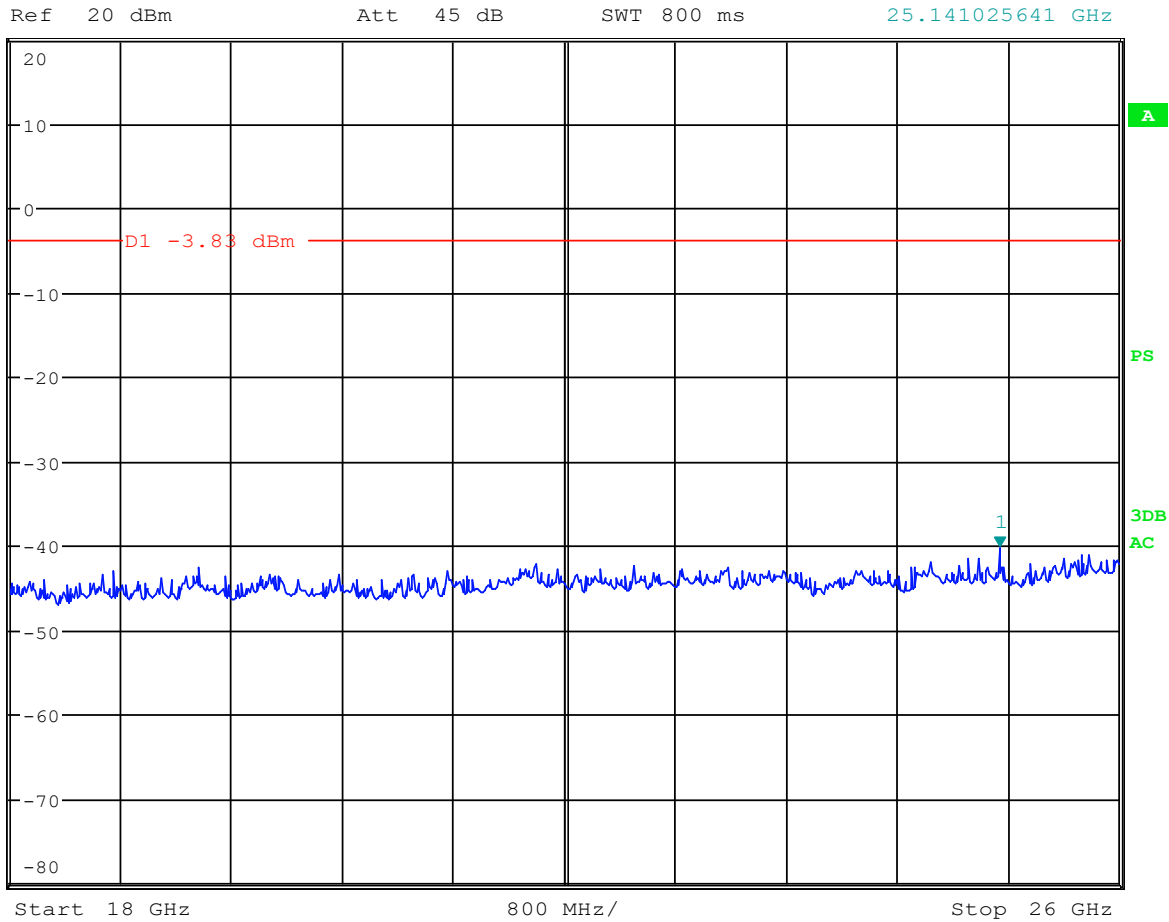
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20: High Channel, 18 GHz to 26 GHz



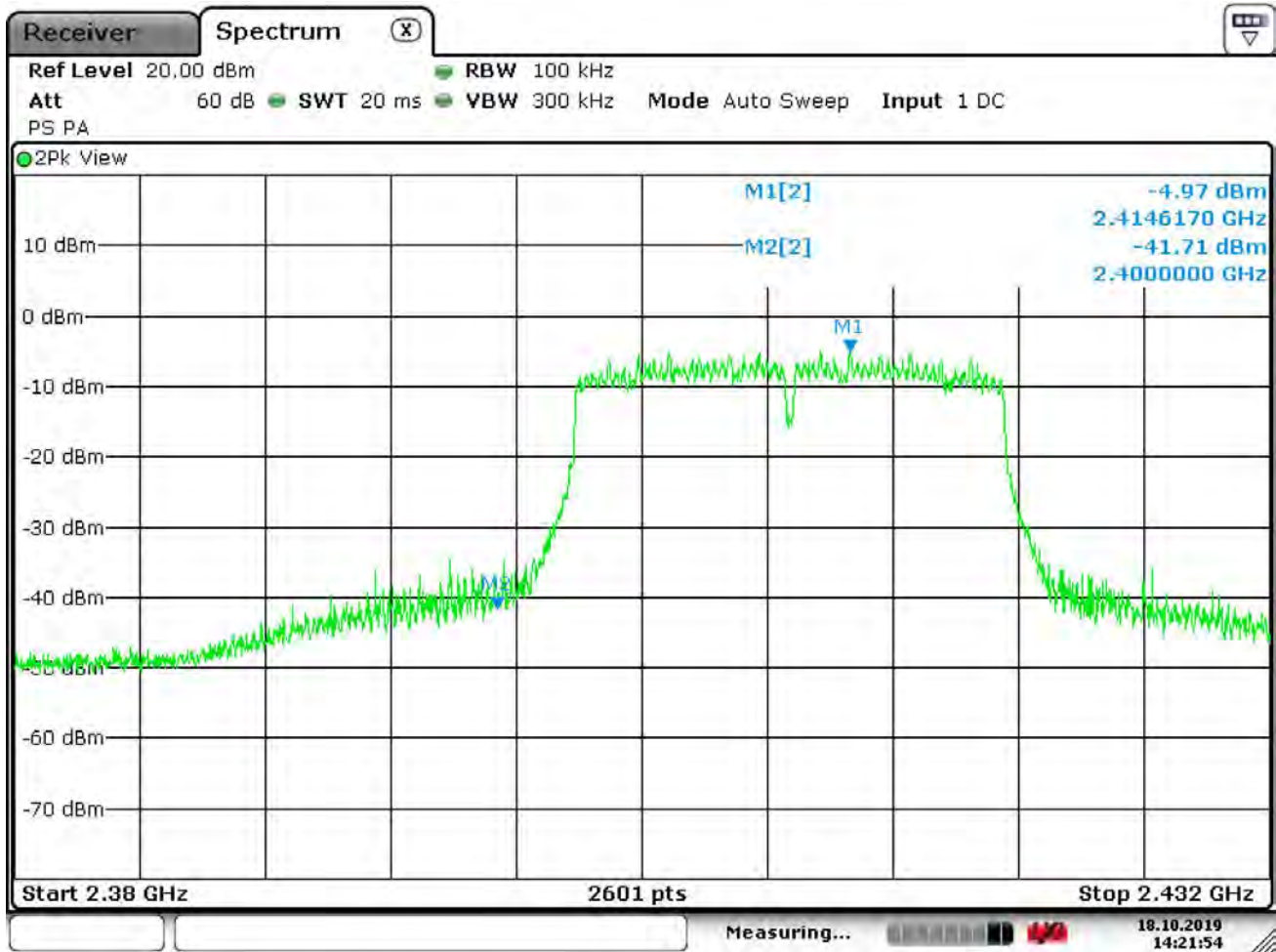
* RBW 100 kHz Marker 1 [T1]
* VBW 300 kHz -40.26 dBm
SWT 800 ms 25.141025641 GHz



Date: 17.OCT.2019 13:29:43



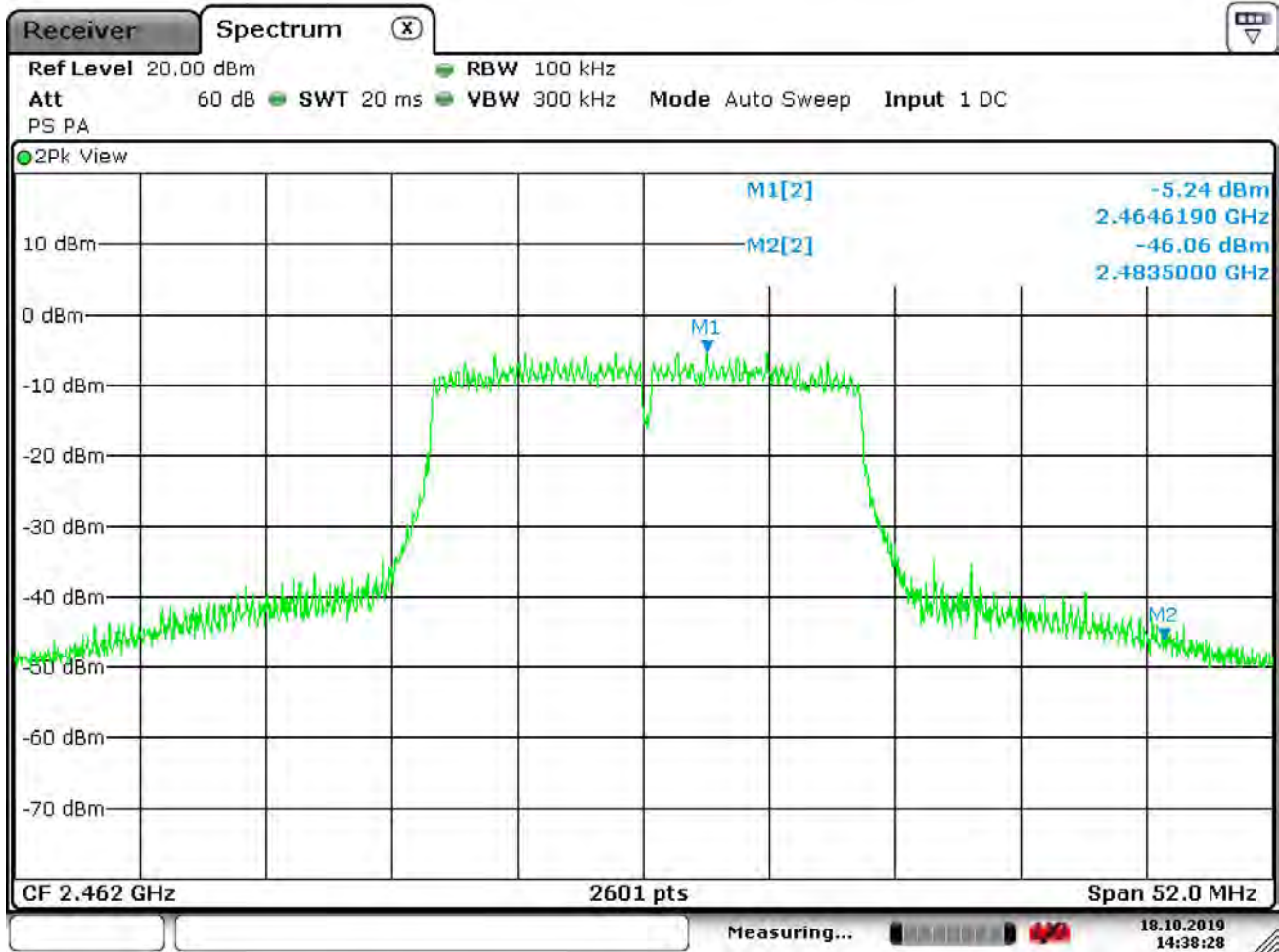
GF MCS7 HT20: Band Edge, Lower Band Edge



Date: 18.OCT.2019 14:21:54



GF MCS7 HT20: Band Edge, Upper Band Edge



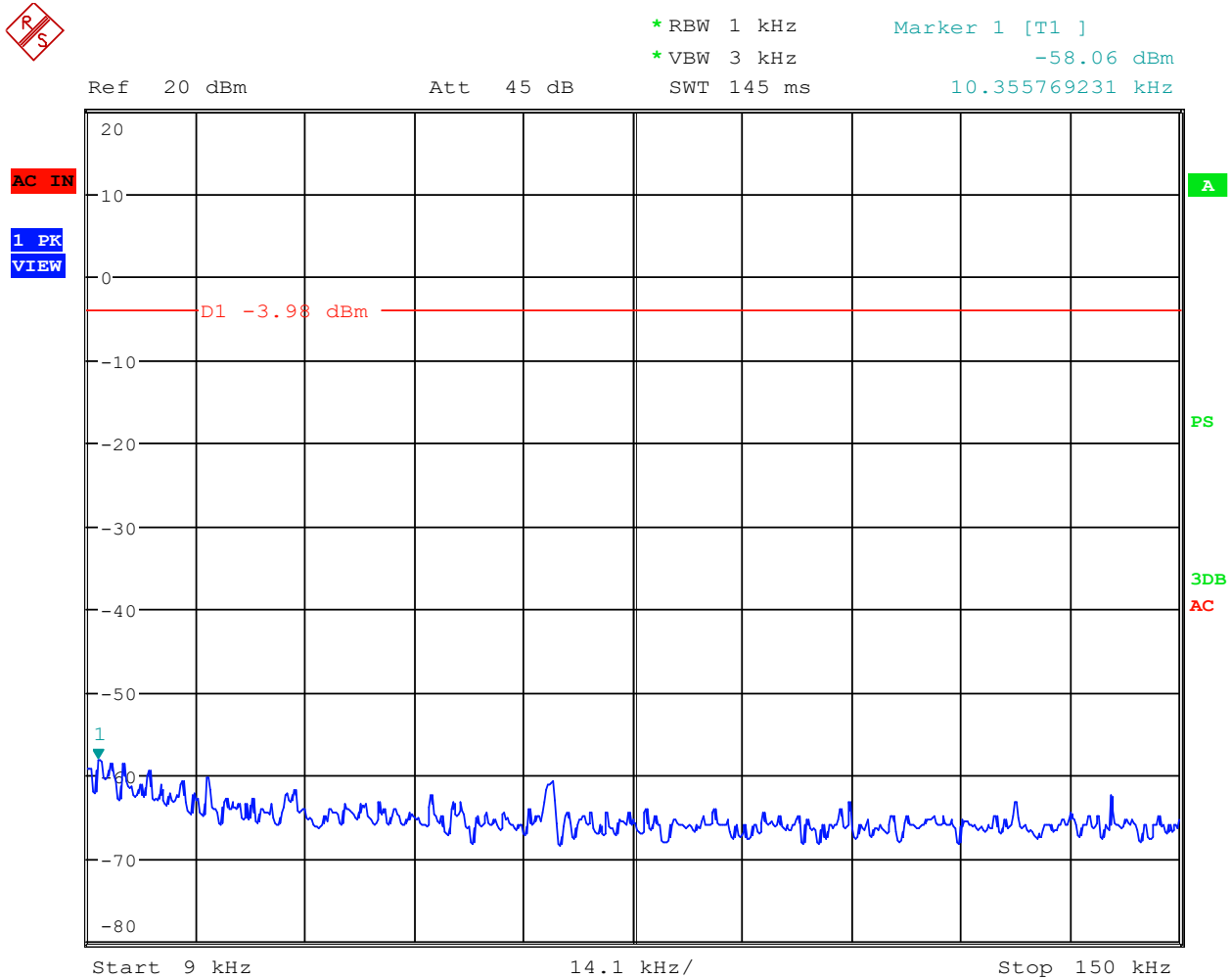
Date: 18.OCT.2019 14:38:28



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

GF MCS7 HT20: Low Channel, 0.009 MHz to 0.15 MHz



Date: 17.OCT.2019 14:14:28



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: Low Channel, 0.15 MHz to 30 MHz

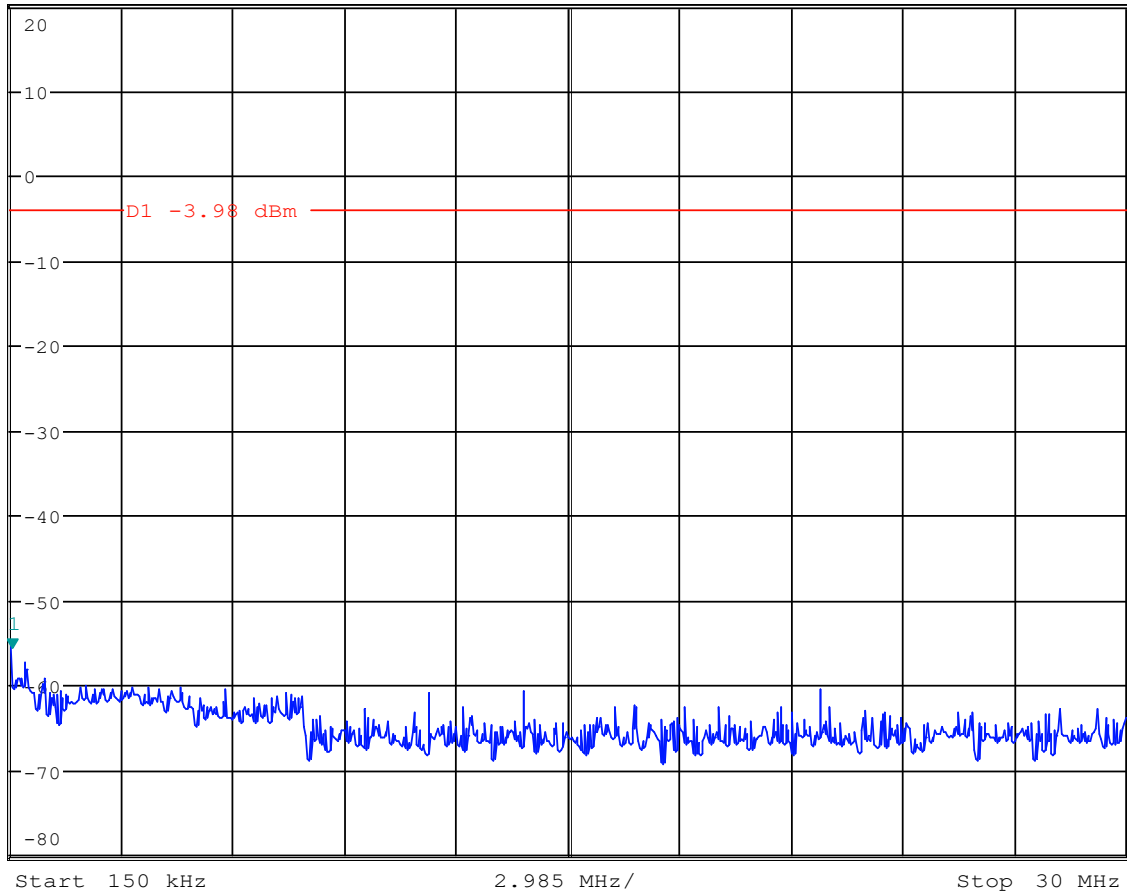


Ref 20 dBm Att 45 dB SWT 300 ms

*RBW 10 kHz Marker 1 [T1]
*VBW 30 kHz -55.75 dBm
197.836538462 kHz

AC IN

1 PK
VIEW



Date: 17.OCT.2019 14:13:07



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

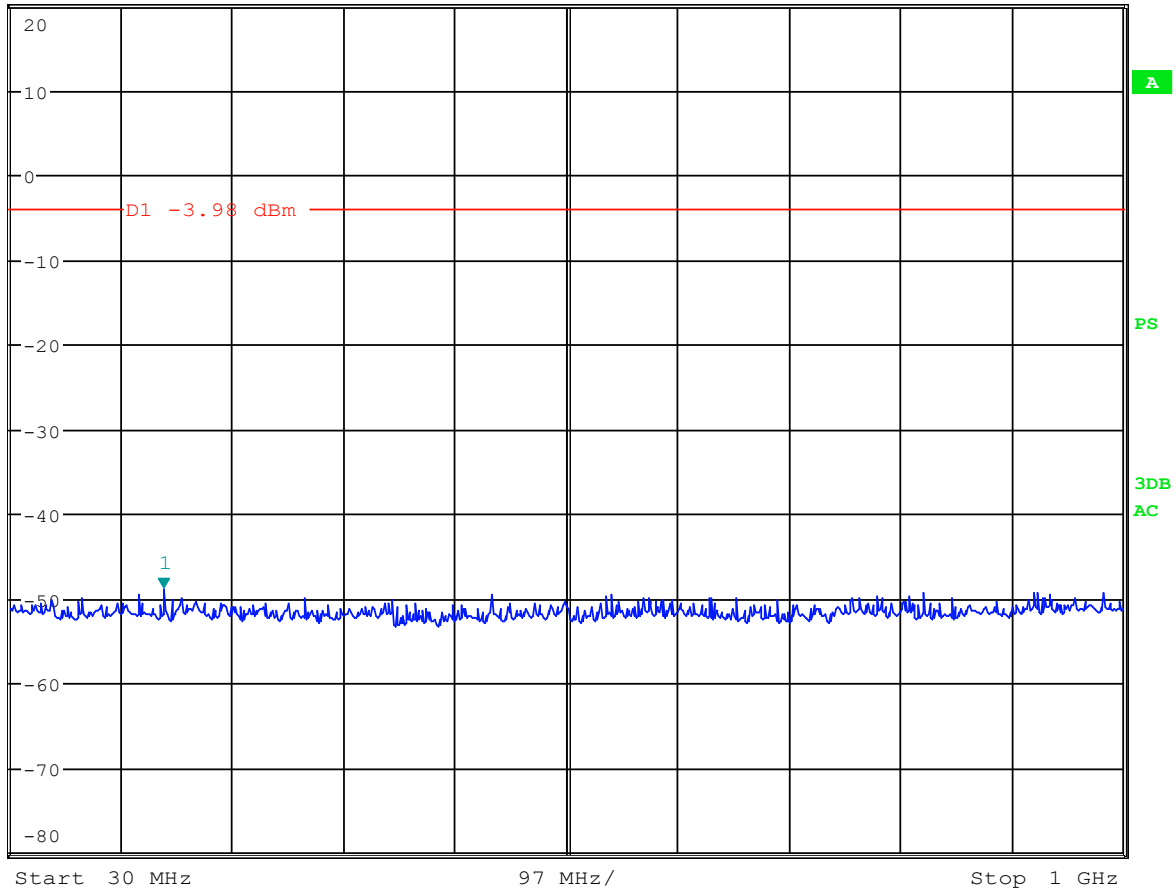
GF MCS7 HT20: Low Channel, 30 MHz to 1000 MHz



Ref 20 dBm Att 45 dB SWT 100 ms

*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz -48.72 dBm
163.685897436 MHz

1 PK
VIEW



Date: 17.OCT.2019 14:07:37



Order Number: F2P21582A

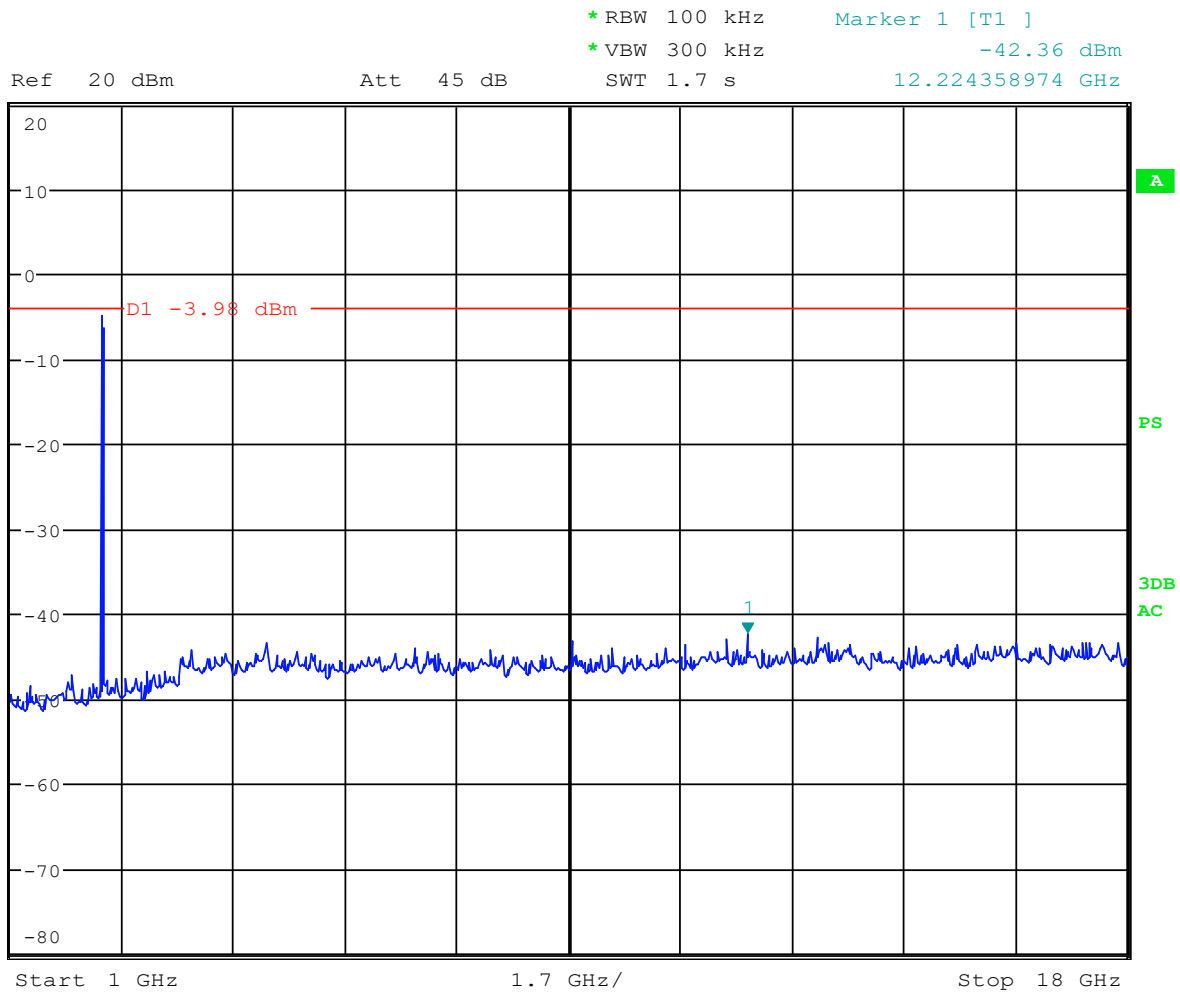
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: Low Channel, 1 GHz to 18 GHz



1 PK
VIEW



Date: 17.OCT.2019 14:06:51



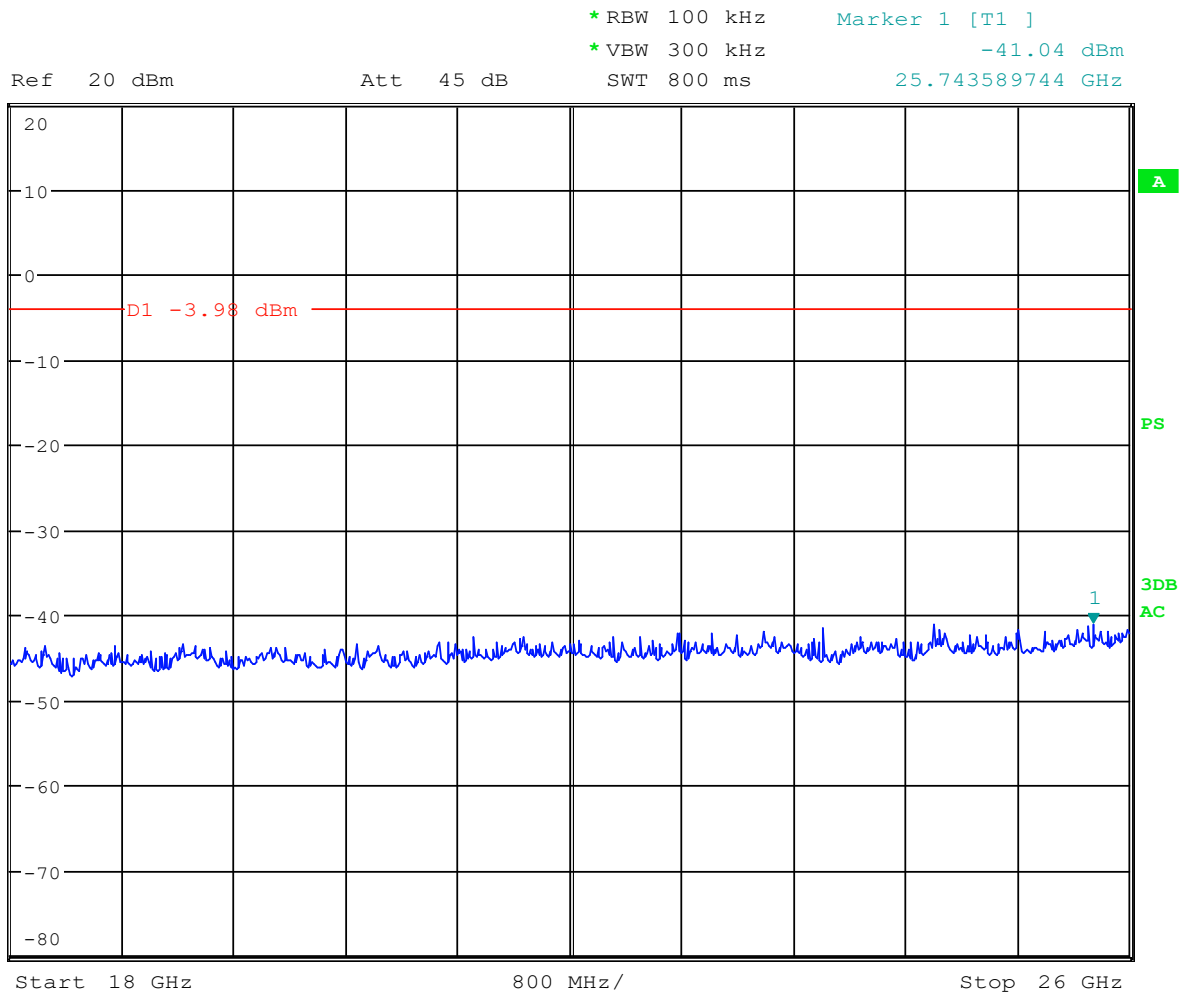
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

GF MCS7 HT20: Low Channel, 18 GHz to 26 GHz

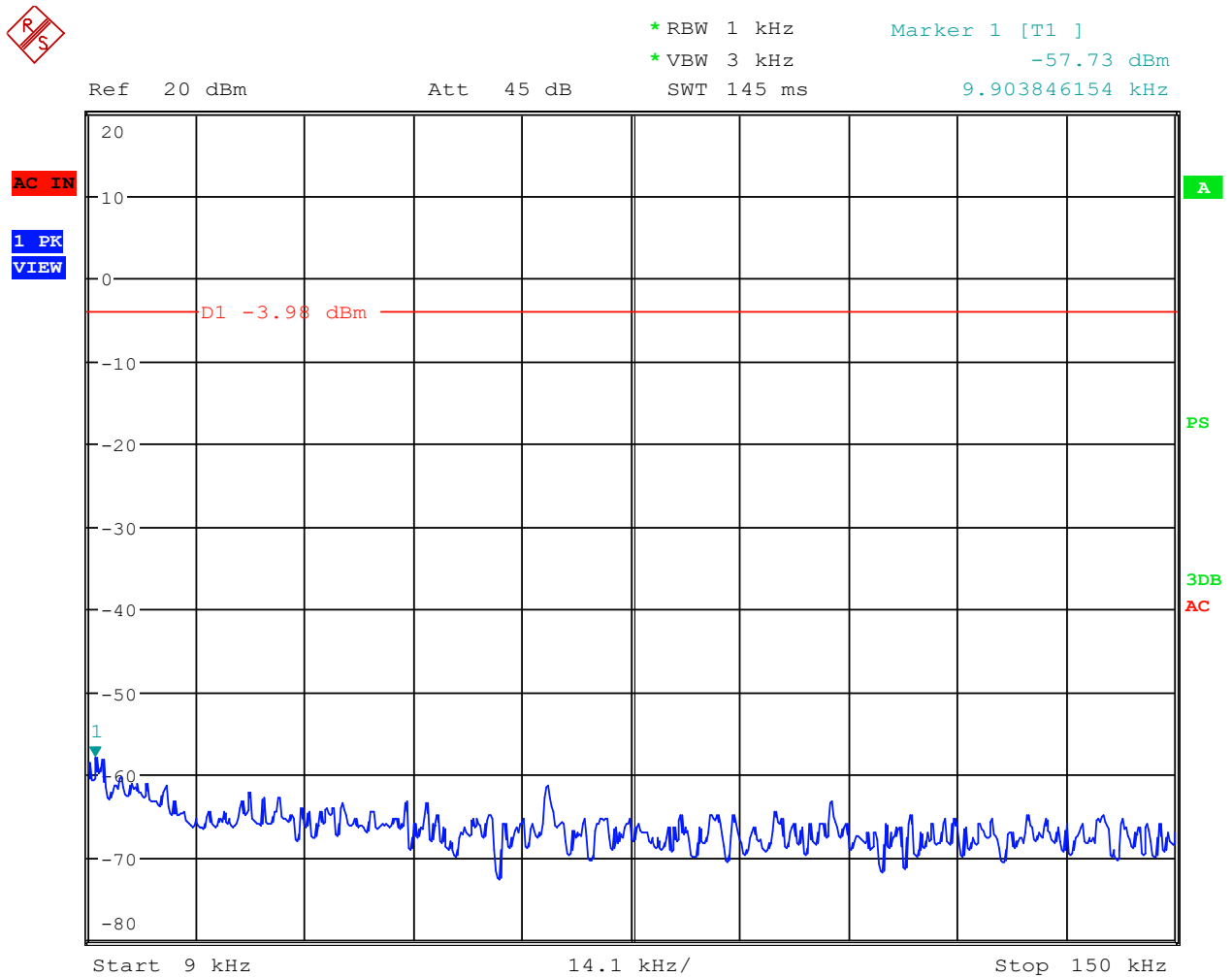


1 PK
VIEW



Date: 17.OCT.2019 14:00:59

GF MCS7 HT20: Mid Channel, 0.009 MHz to 0.15 MHz



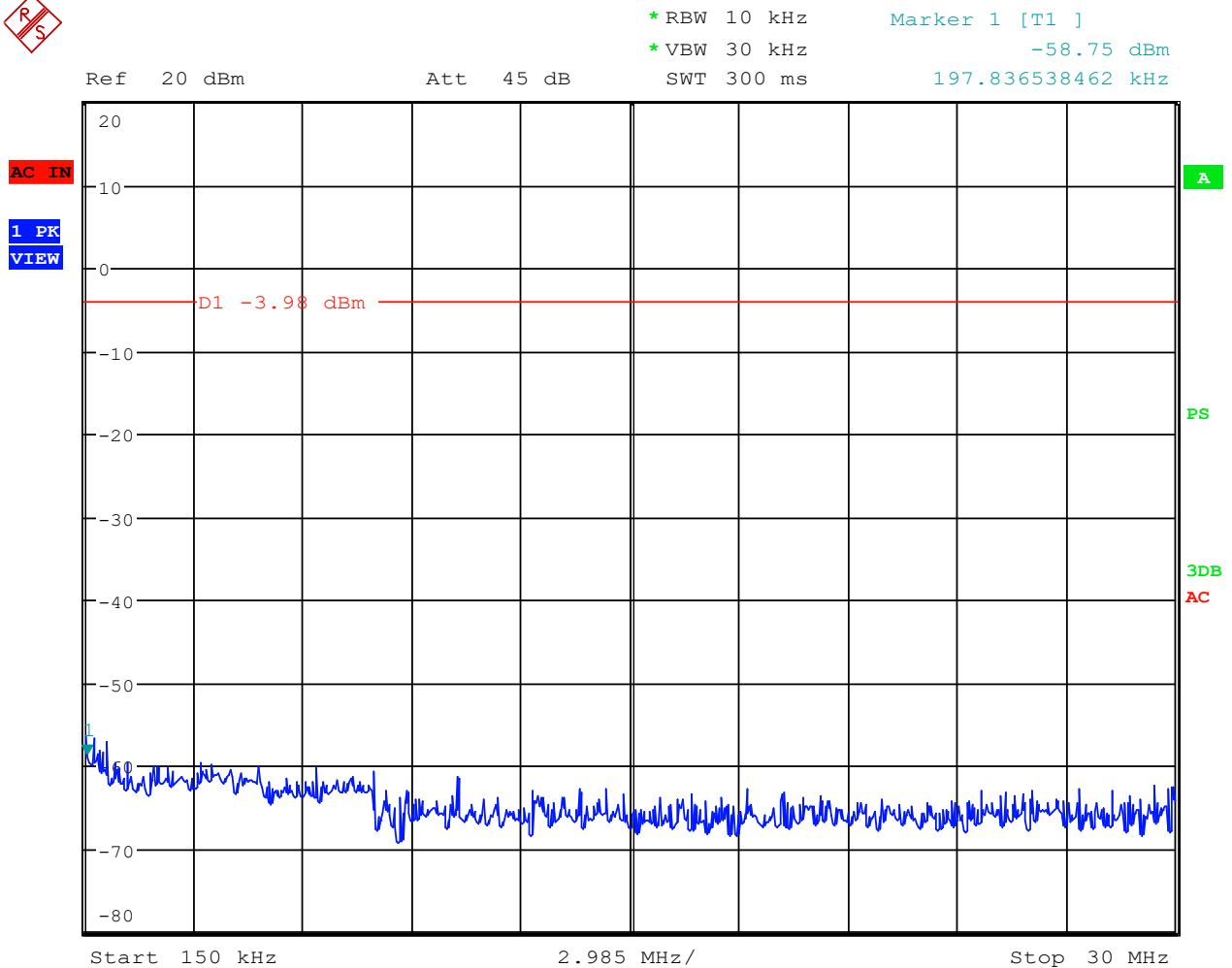
Date: 17.OCT.2019 14:15:00



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

GF MCS7 HT20: Mid Channel, 0.15 MHz to 30 MHz



Date: 17.OCT.2019 14:12:36



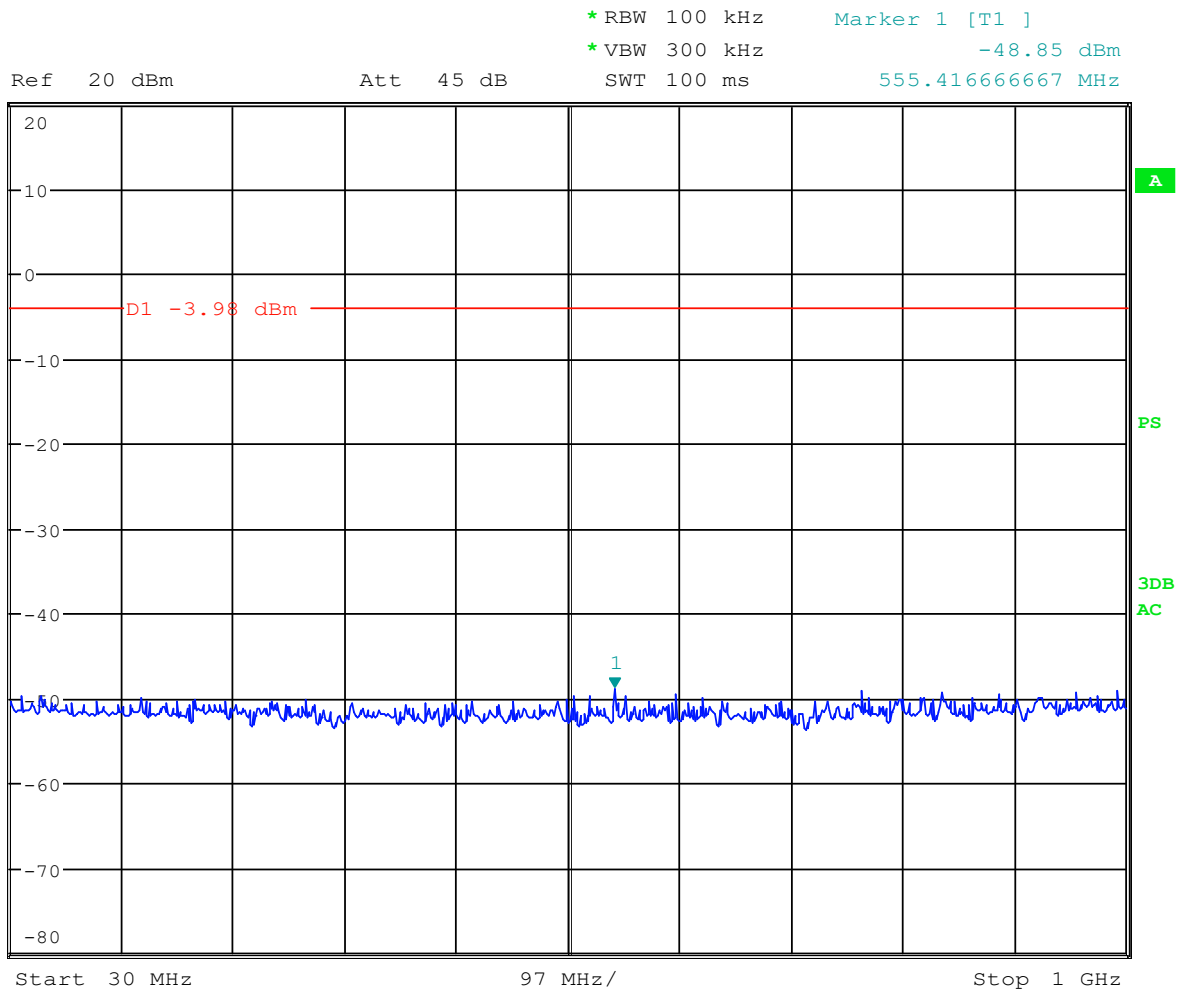
Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

GF MCS7 HT20: Mid Channel, 30 MHz to 1000 MHz



1 PK
VIEW



Date: 17.OCT.2019 14:10:17



Order Number: F2P21582A

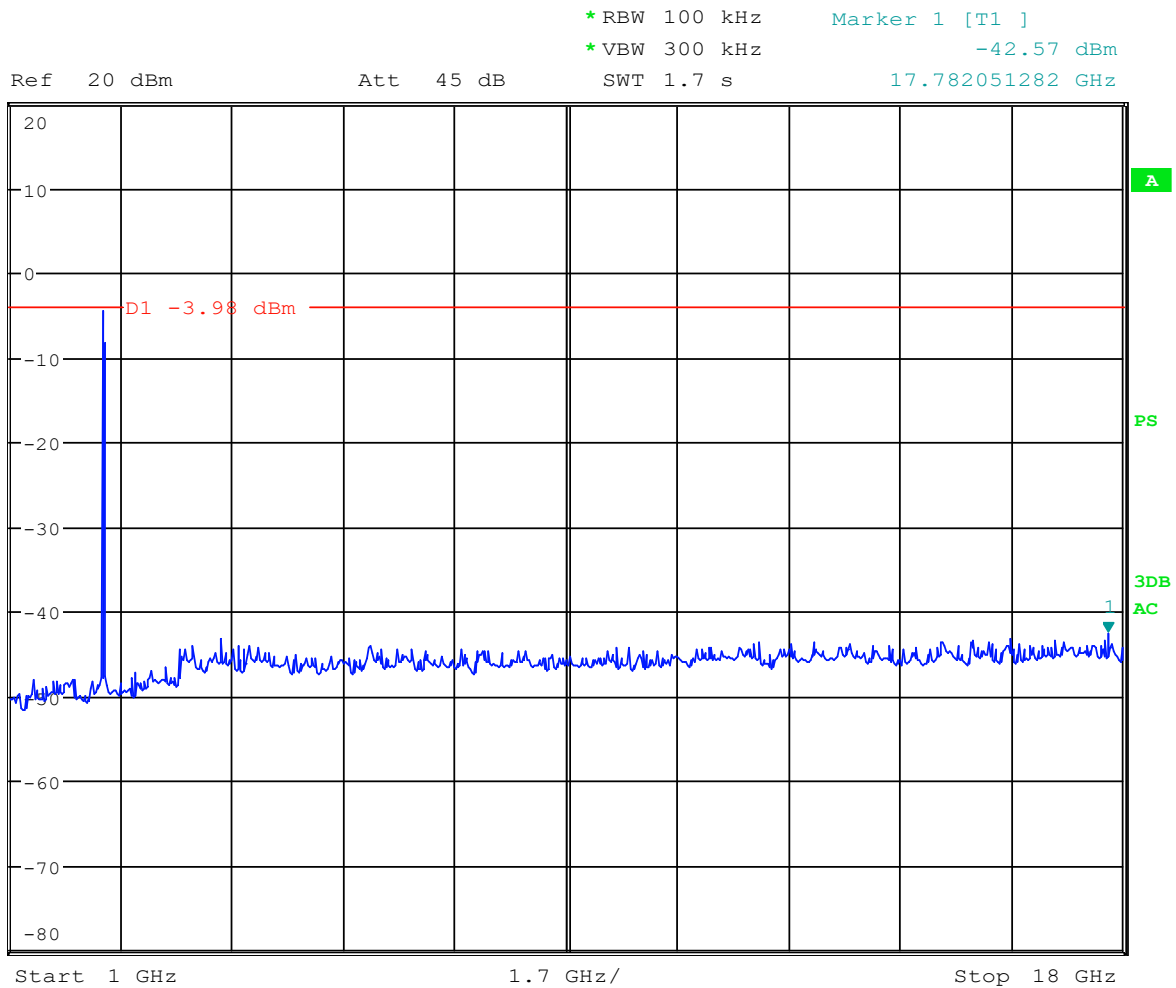
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: Mid Channel, 1 GHz to 18 GHz



1 PK
VIEW



Date: 17.OCT.2019 14:05:41



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

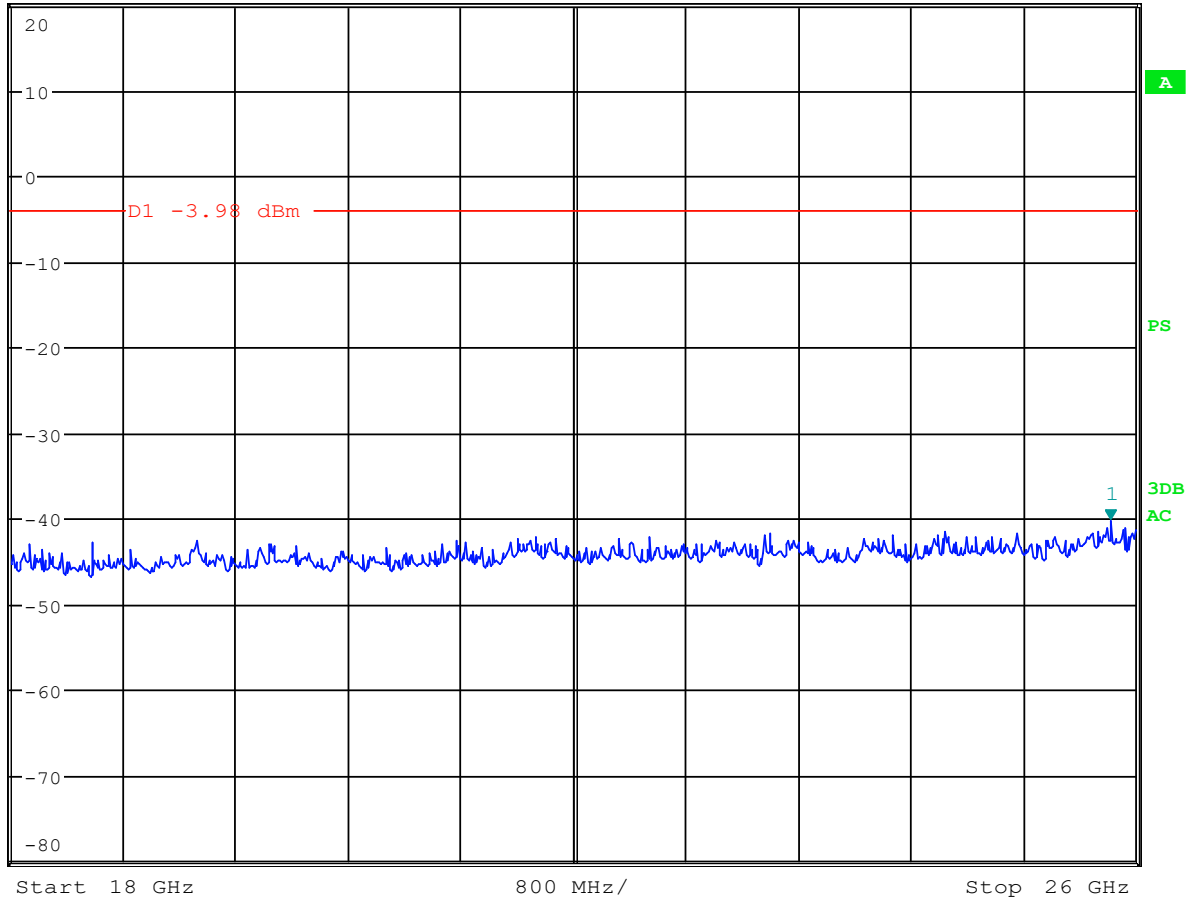
GF MCS7 HT20: Mid Channel, 18 GHz to 26 GHz



Ref 20 dBm Att 45 dB SWT 800 ms

*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz -40.20 dBm
25.820512821 GHz

1 PK
VIEW



Date: 17.OCT.2019 14:02:03

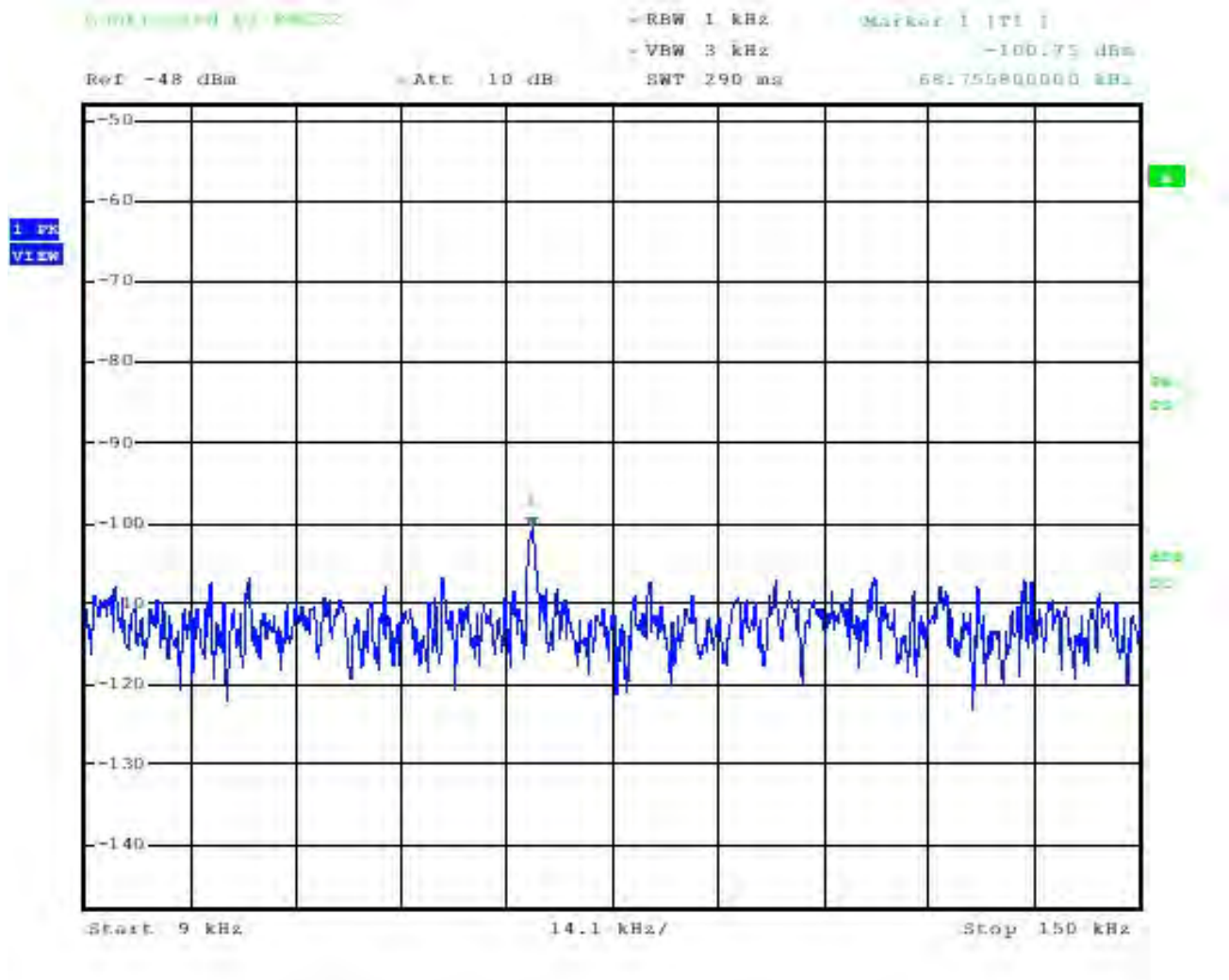


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: High Channel, 0.009 MHz to 0.15 MHz



Date: 19.NOV.2019 12:52:56

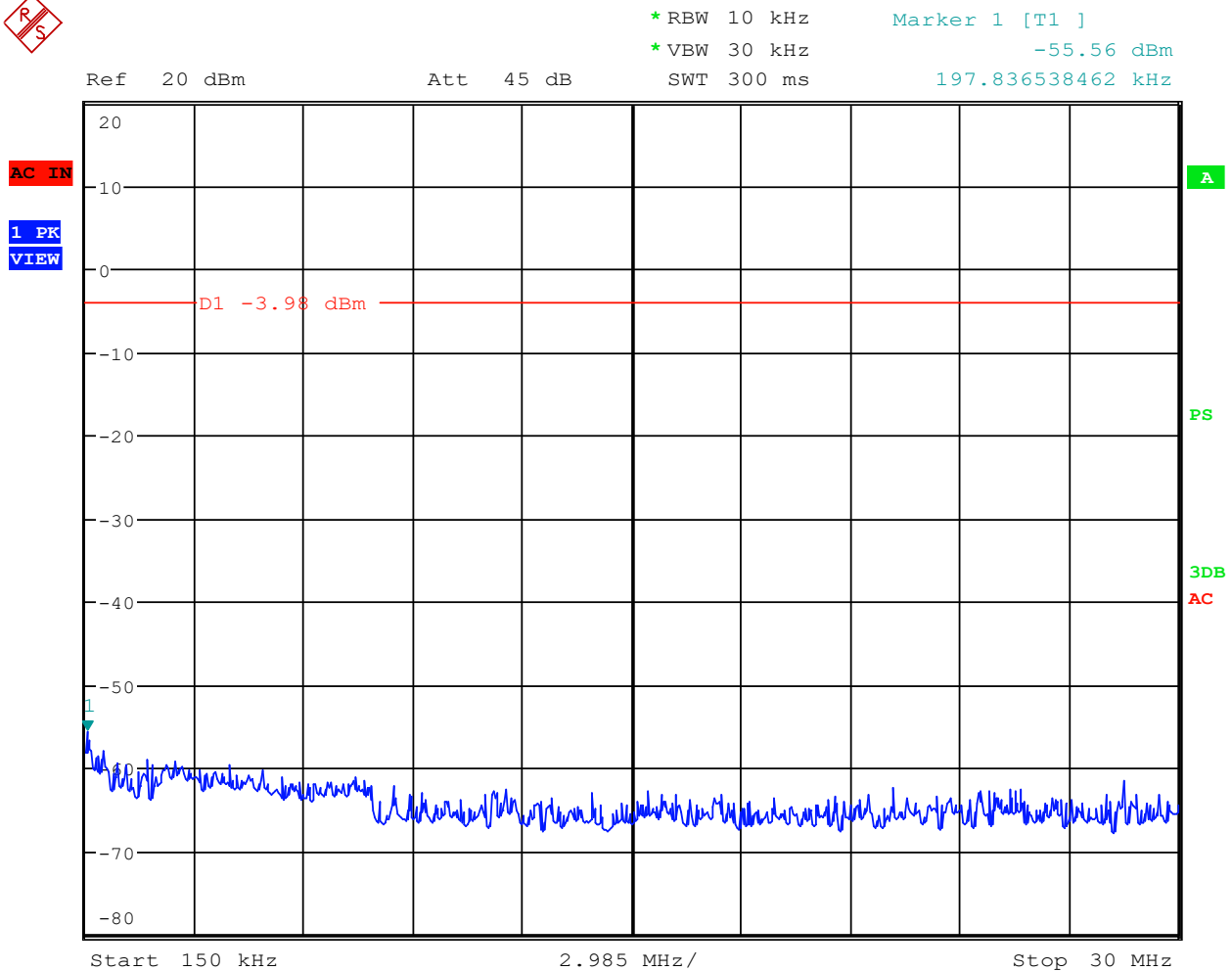


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: High Channel, 0.15 MHz to 30 MHz



Date: 17.OCT.2019 14:11:53



Order Number: F2P21582A

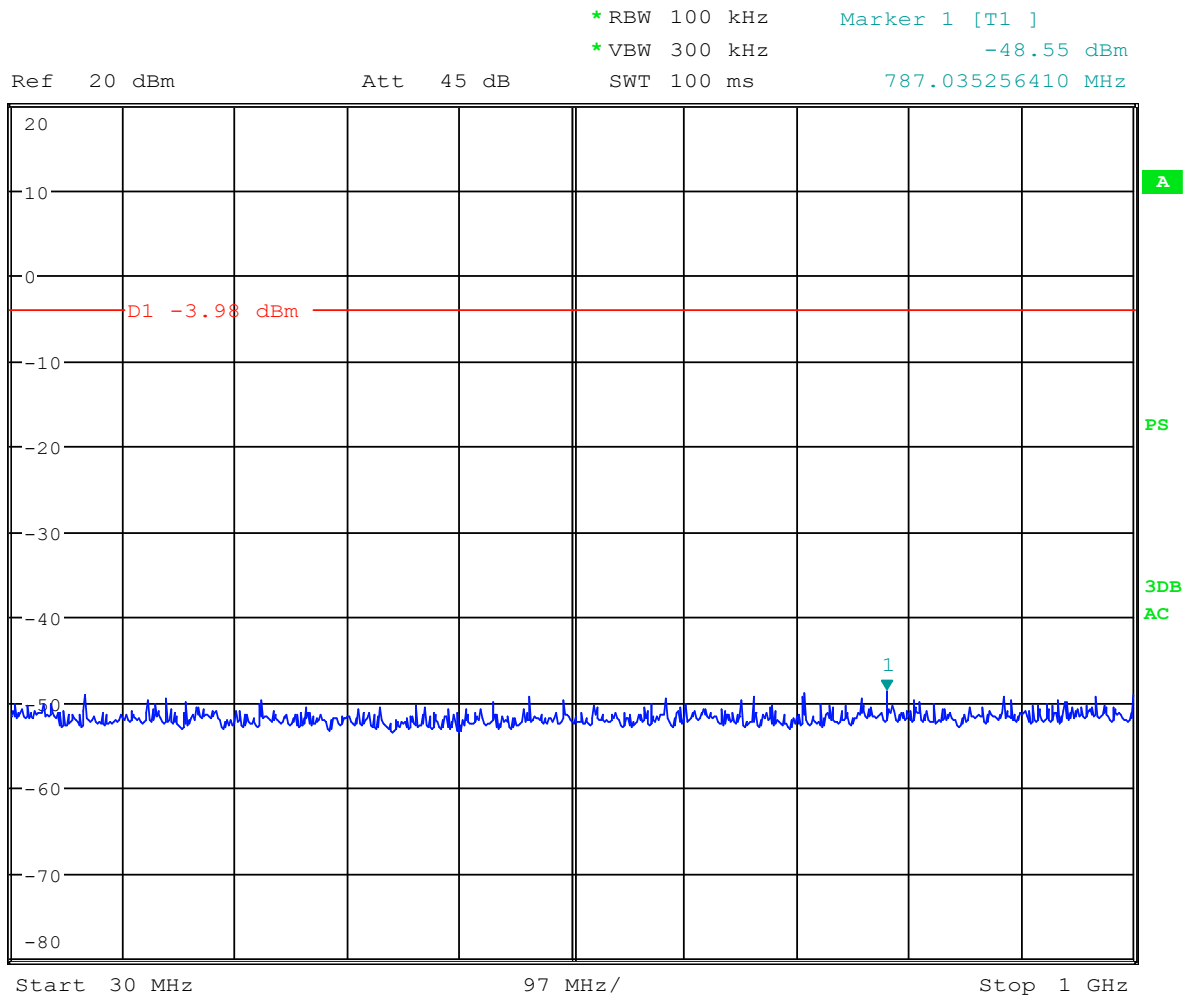
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: High Channel, 30 MHz to 1000 MHz



1 PK
VIEW



Date: 17.OCT.2019 14:11:00



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: High Channel, 1 GHz to 18 GHz



*RBW 100 kHz

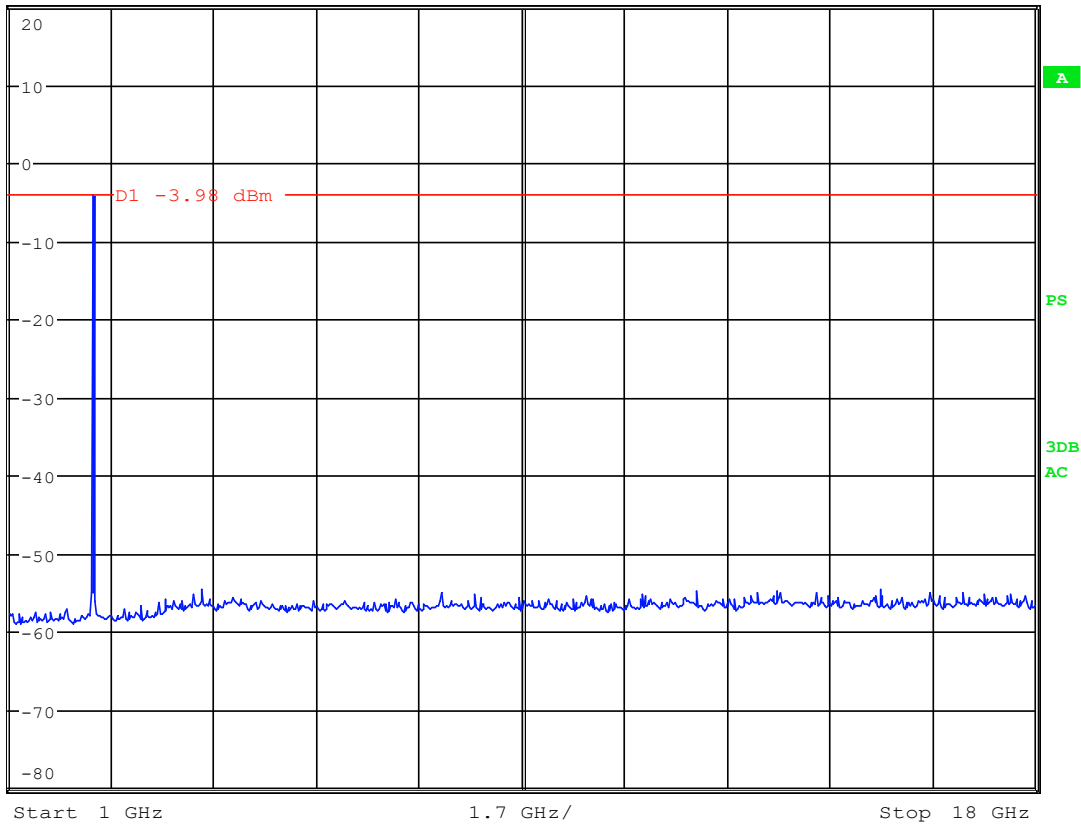
*VBW 300 kHz

Ref 20 dBm

*Att 30 dB

SWT 1.7 s

1 PK
MAXH





Order Number: F2P21582A

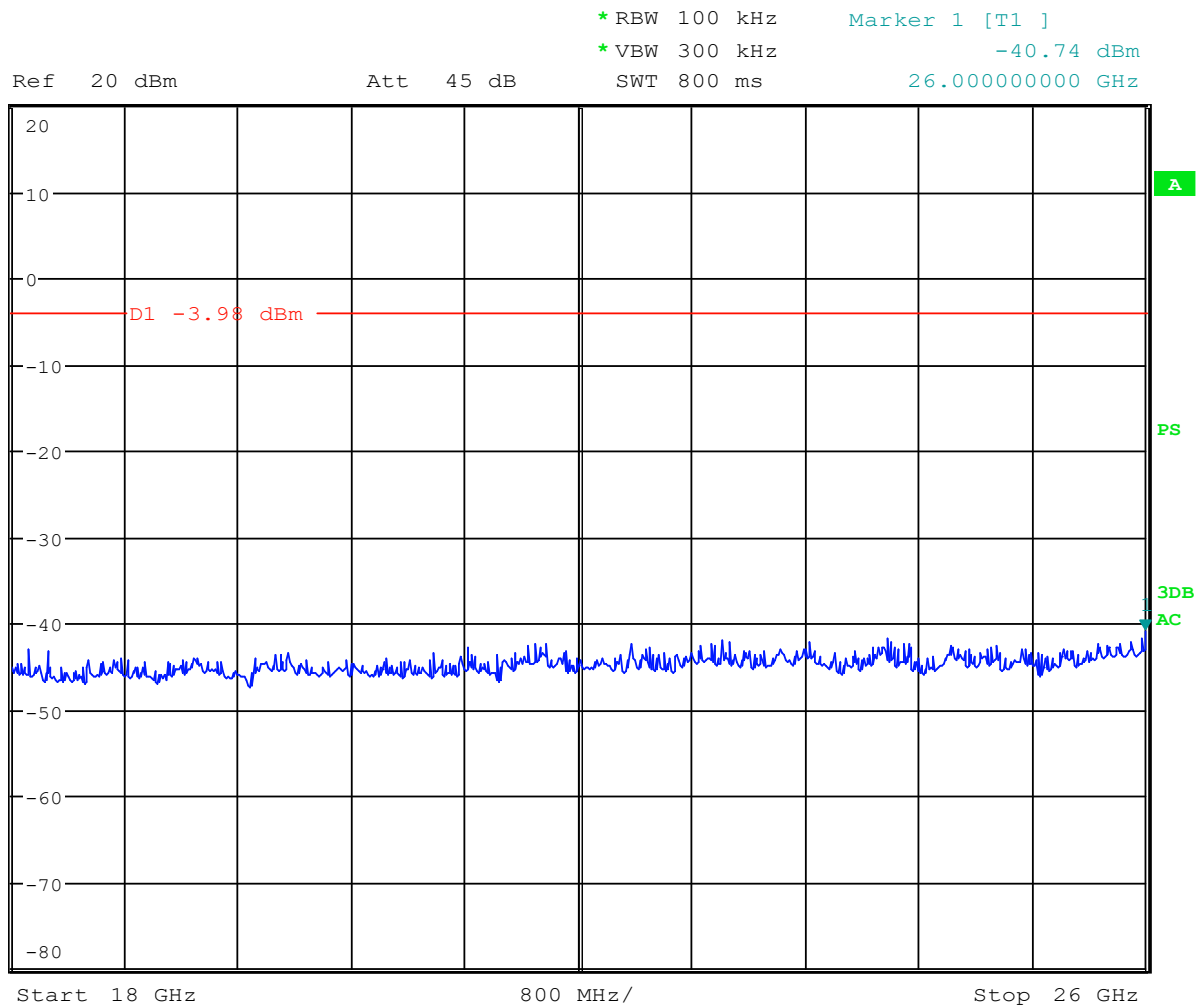
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: High Channel, 18 GHz to 26 GHz



1 PK
VIEW



Date: 17.OCT.2019 14:03:01



11 RADIATED SPURIOUS EMISSION

The EUT antenna port was fitted with its integral/internal antenna. Radiated emissions were measured in a Semi-Anechoic Chamber. All emissions generated that fall in the restricted bands per FCC Part 15.205 were examined.

11.1 Requirements:

All emissions that fall in the restricted bands defined in FCC Part 15.205 shall not exceed the maximum field strength listed in FCC Part 15.209(a).



11.2 Radiated Spurious Emission Test Data

Test Date(s):	Oct. 25, 2019	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(d); Part 15.209 / KDB558074	Air Temperature:	18.0°C
		Relative Humidity:	46%

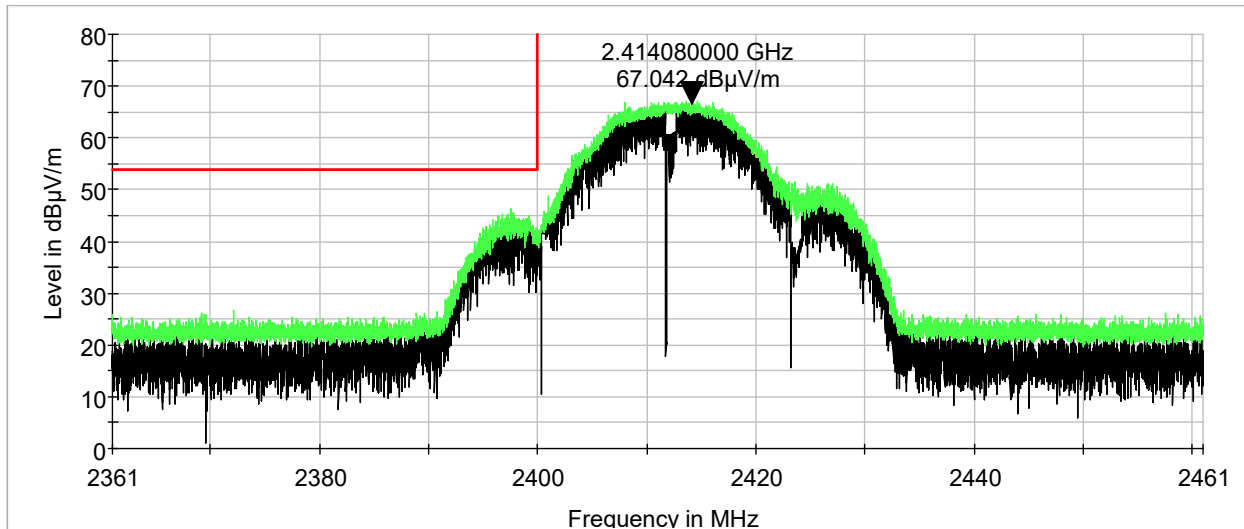
Notes: Plots are peak, max hold prescan data included only to determine what frequencies to investigate and measure. The EUT was initially placed in a semi-anechoic chamber, and rotated in all three orthogonal positions to maximize the emissions. Characterization measurements were then performed to determine at which frequencies significant emissions occurred. These graphs are shown below.

The equipment was fully exercised with all cabling attached to the EUT and was positioned in the SAC for maximum emissions. While the equipment was energized, the receiving antenna was scanned from 1.0 meter to 4.0 meters in both vertical and horizontal polarities while the turntable was adjusted 360 degrees to determine the maximum field strength. The tables of measured results can be found below.

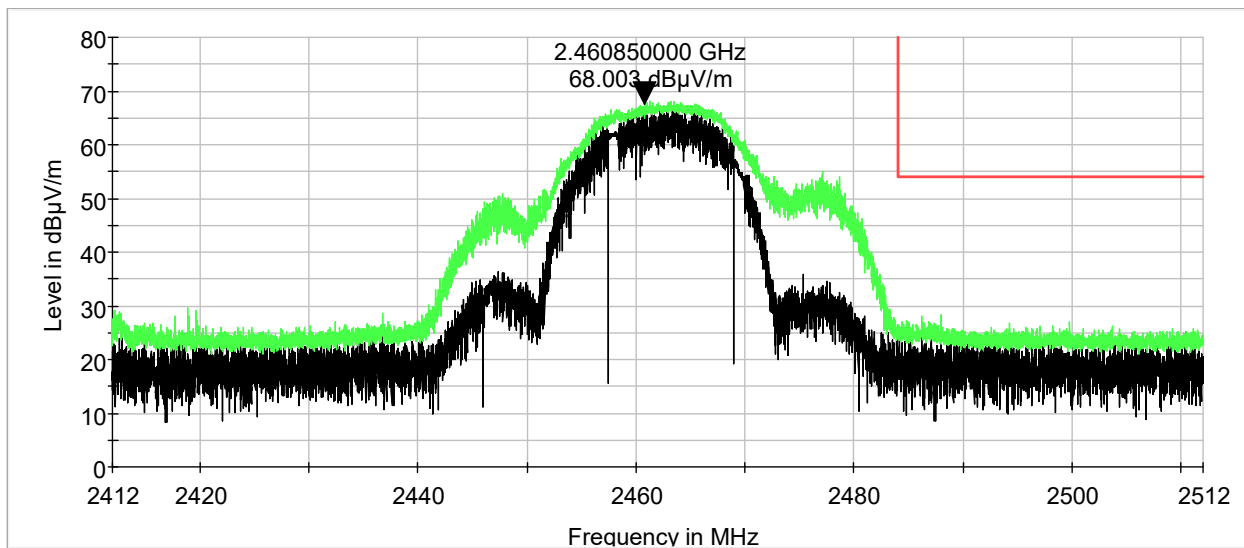
In the following plots, the black line indicates the active scan and the green line indicates the Max Pk measurement with the EUT on during rotation. Emissions to be found by the EUT were measured and listed in tables. The plots are for reference only and the limit lines are not actual limit lines but merely a guide. The GF MCS7 HT20 bandwidth was found to be the worst-case emissions.



CCK 11 Mbps: Low Band Edge, Vertical

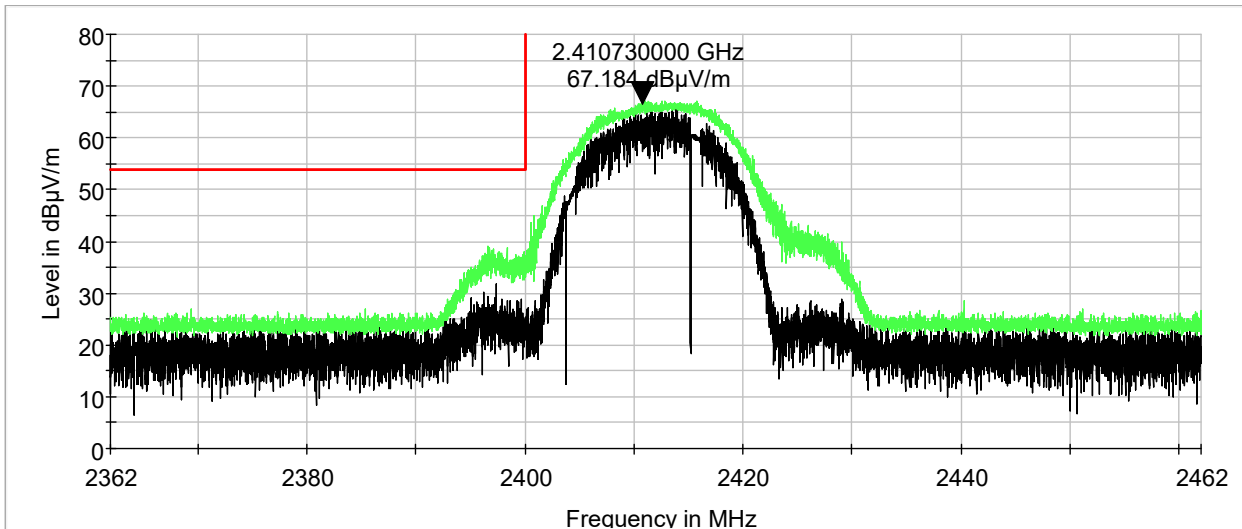


CCK 11 Mbps: High Band Edge, Vertical

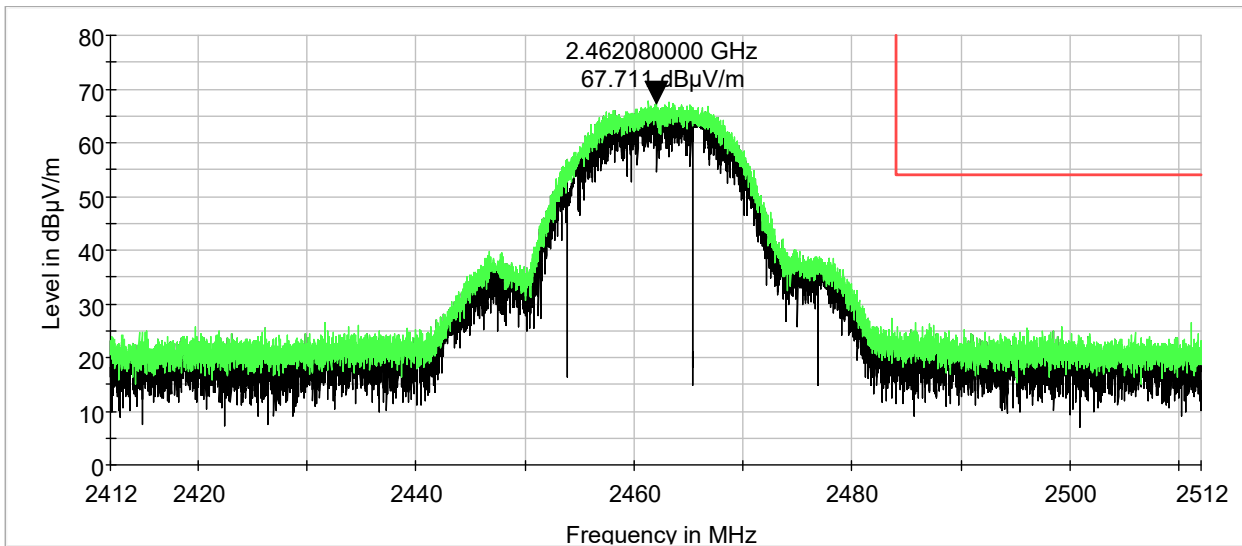


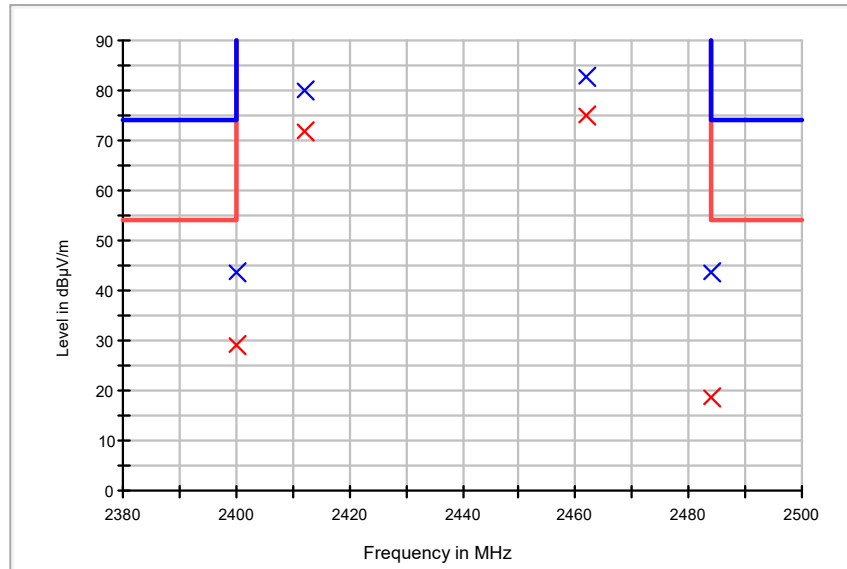


CCK 11 Mbps: Low Band Edge, Horizontal



CCK 11 Mbps: High Band Edge, Horizontal



**MAXPEAK**

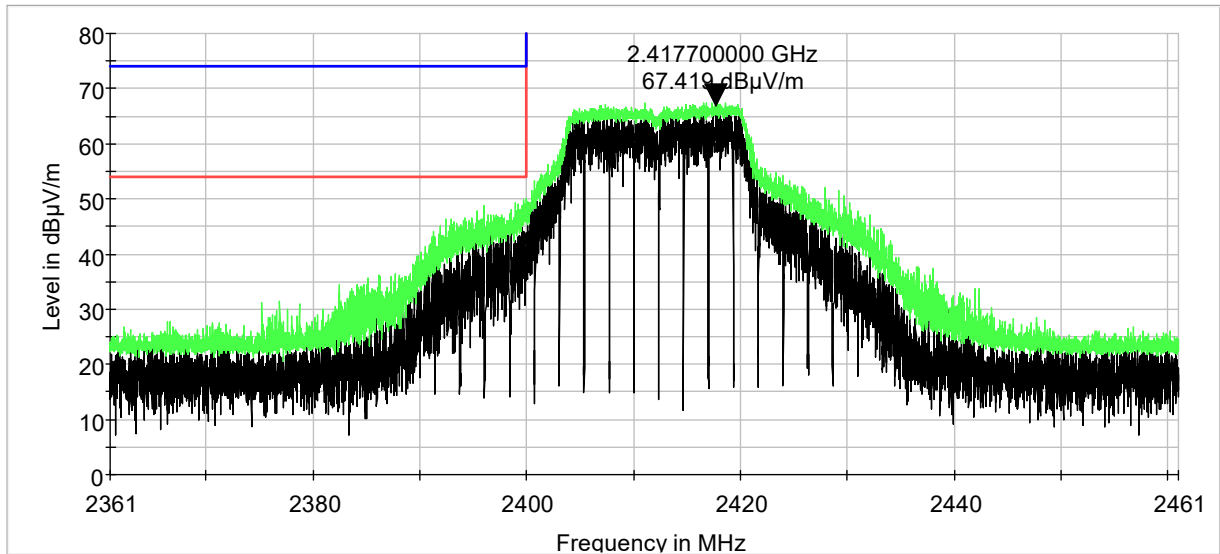
Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2400.000000	V	62.9	-19.4	43.50	74.0	-30.5
2483.500000	V	62.4	-19.0	43.40	74.0	-30.6

AVG

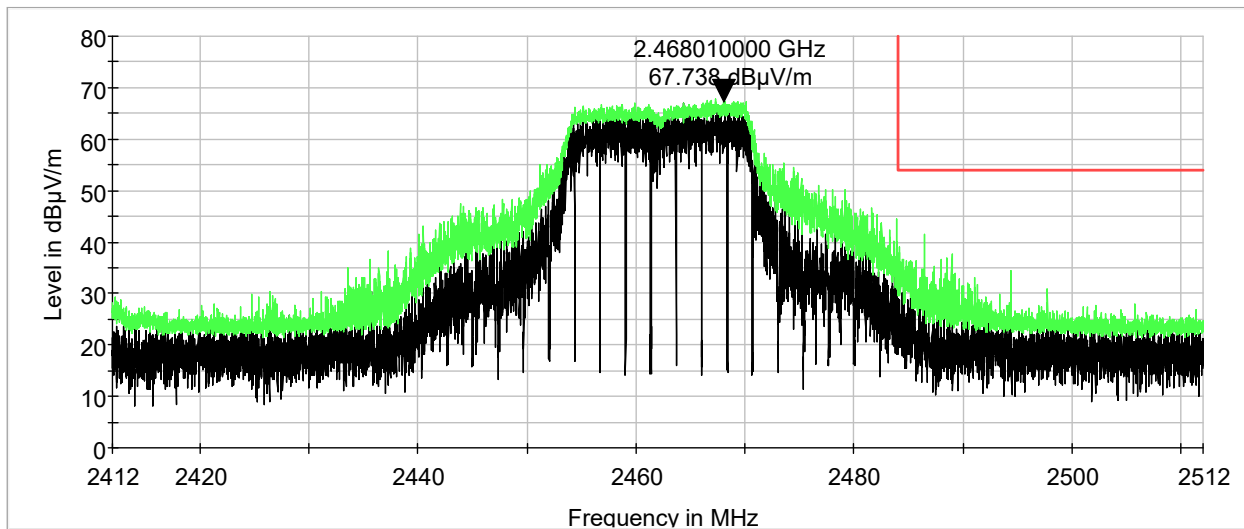
Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2400.000000	V	48.5	-19.4	29.10	54.0	-24.9
2483.500000	V	37.7	-19.0	18.70	54.0	-35.3



OFDM 54 Mbps: Low Band Edge, Vertical

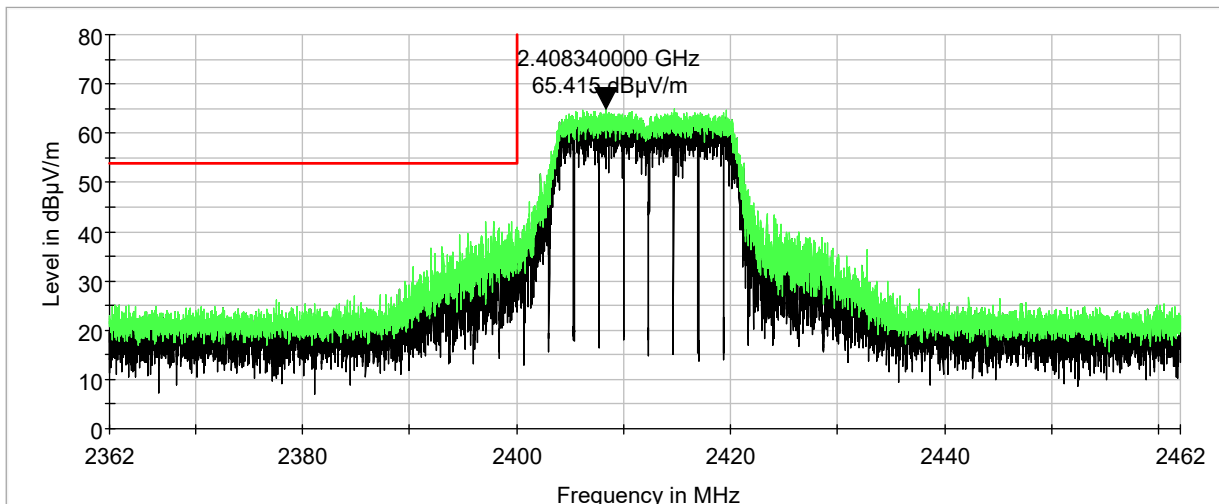


OFDM 54 Mbps: High Band Edge, Vertical

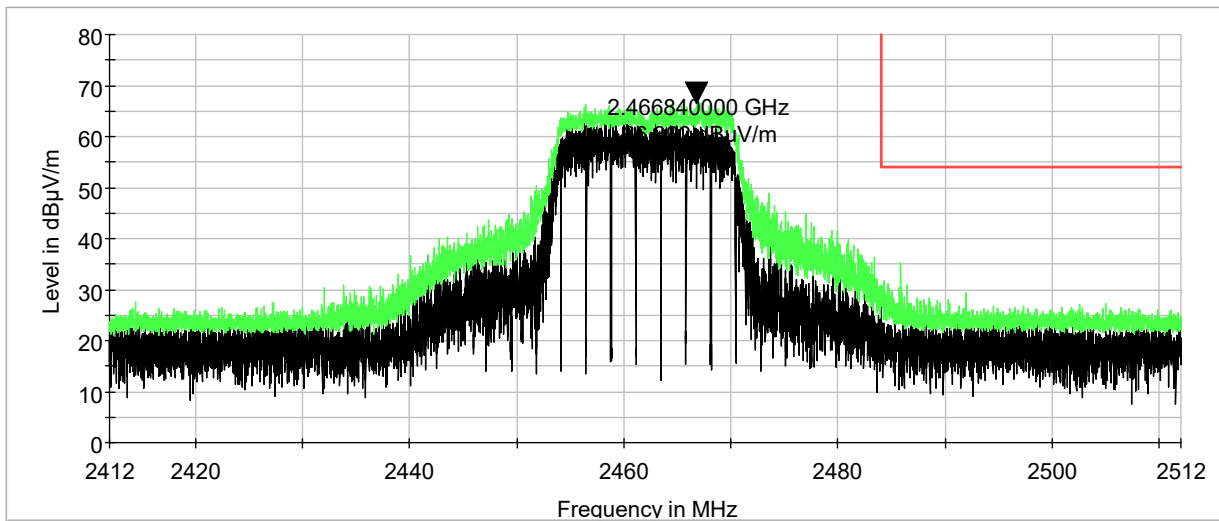


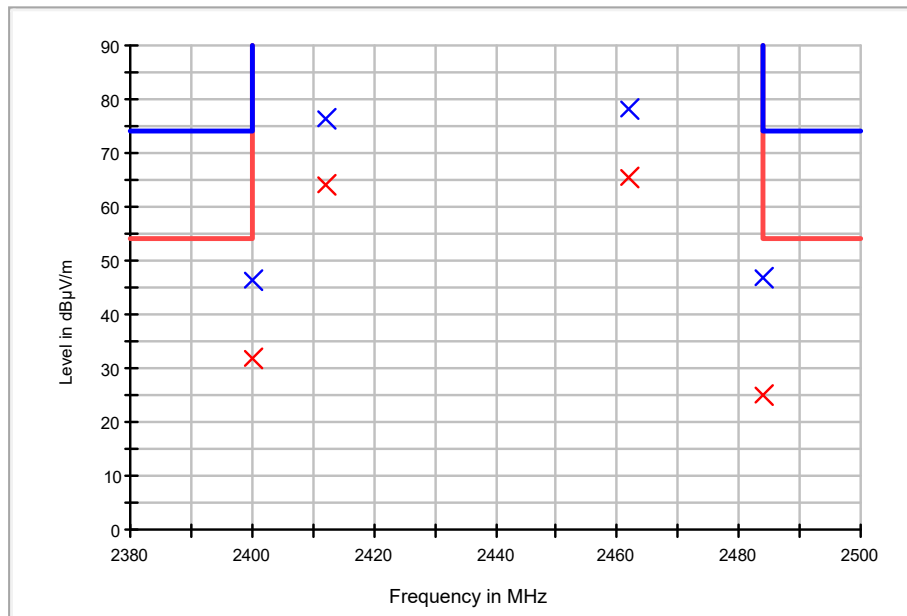


OFDM 54 Mbps: Low Band Edge, Horizontal



OFDM 54 Mbps: High Band Edge, Horizontal



**MAXPEAK**

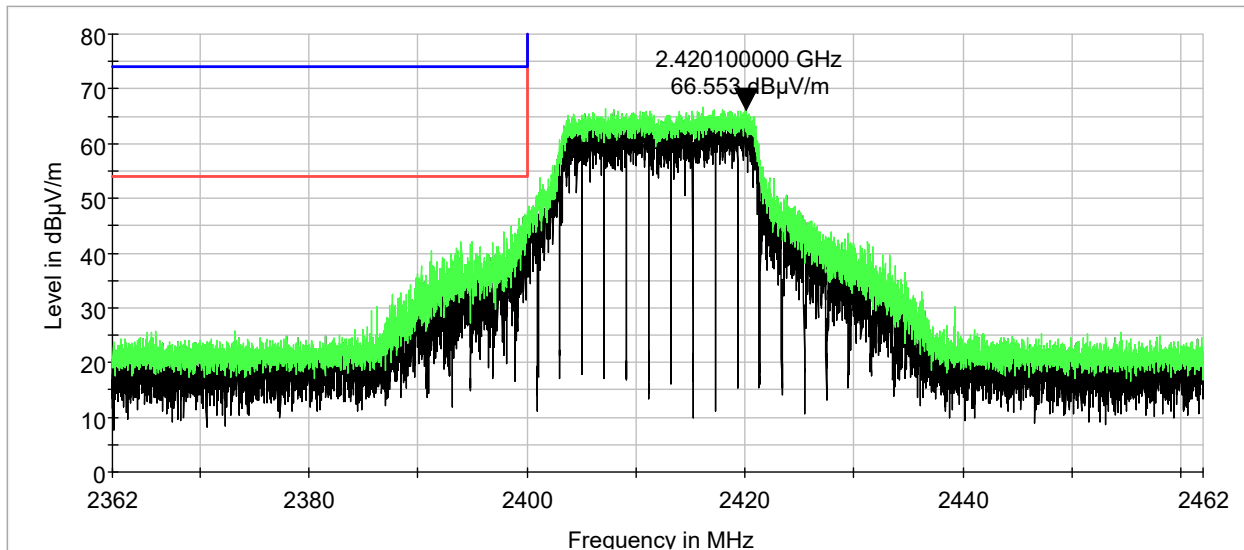
Frequency (MHz)	Antenna Polarization	Reading (dBµV)	Cable Loss & Antenna Factor (dB)	Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2400.000000	V	65.9	-19.4	46.50	74.0	-27.5
2483.500000	V	65.8	-19.0	46.80	74.0	-27.2

AVG

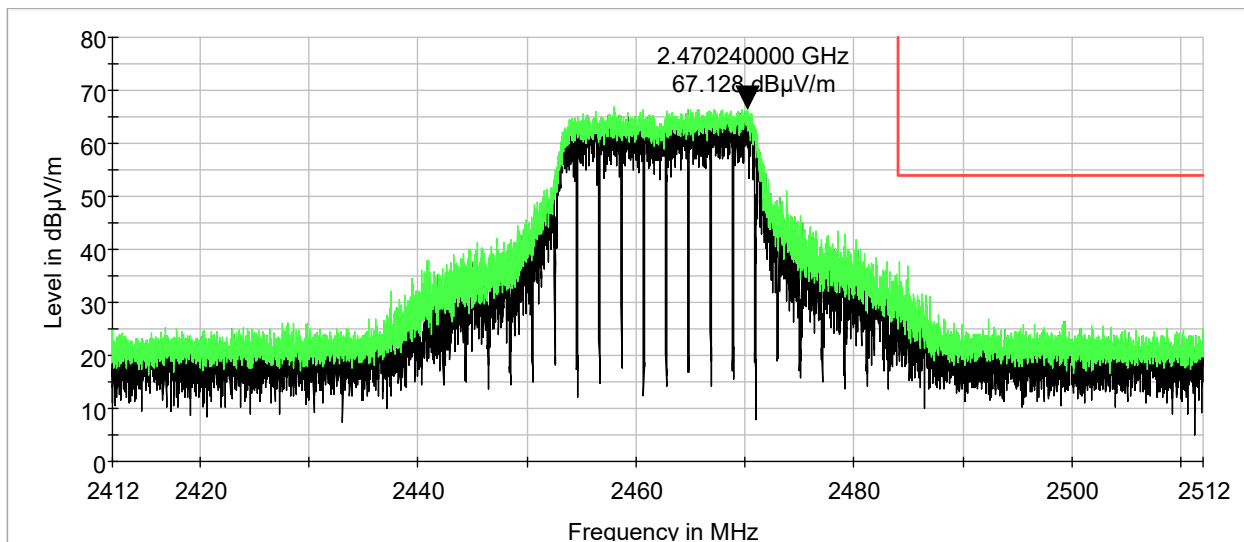
Frequency (MHz)	Antenna Polarization	Reading (dBµV)	Cable Loss & Antenna Factor (dB)	Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2400.000000	V	51.0	-19.4	31.60	54.0	-22.4
2483.500000	V	43.9	-19.0	24.90	54.0	-29.1



MM MCS7 HT20: Low Band Edge, Vertical

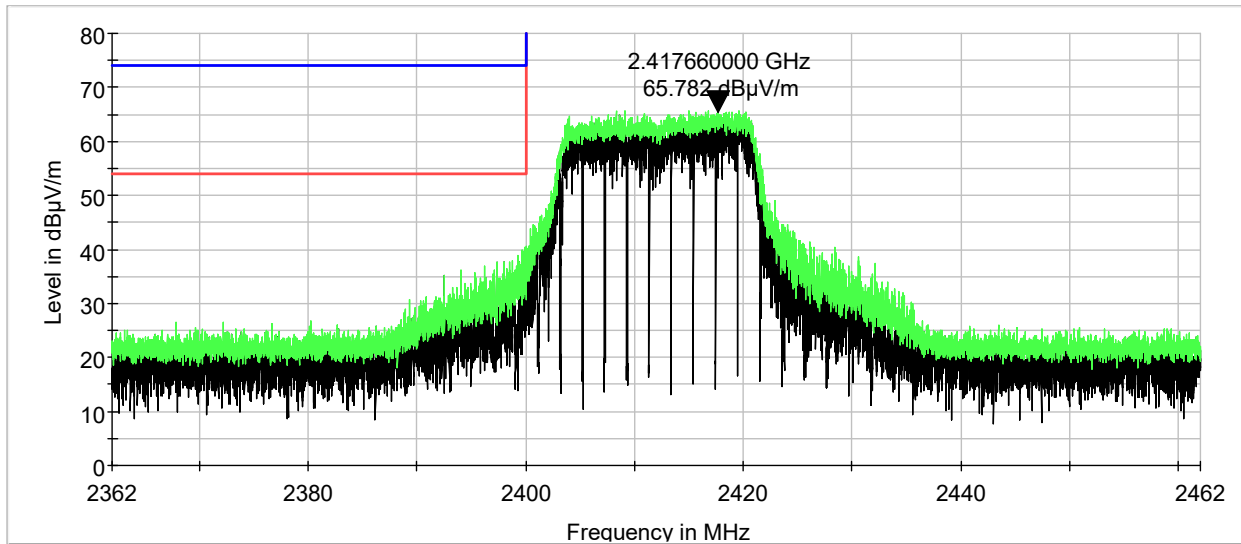


MM MCS7 HT20: High Band Edge, Vertical

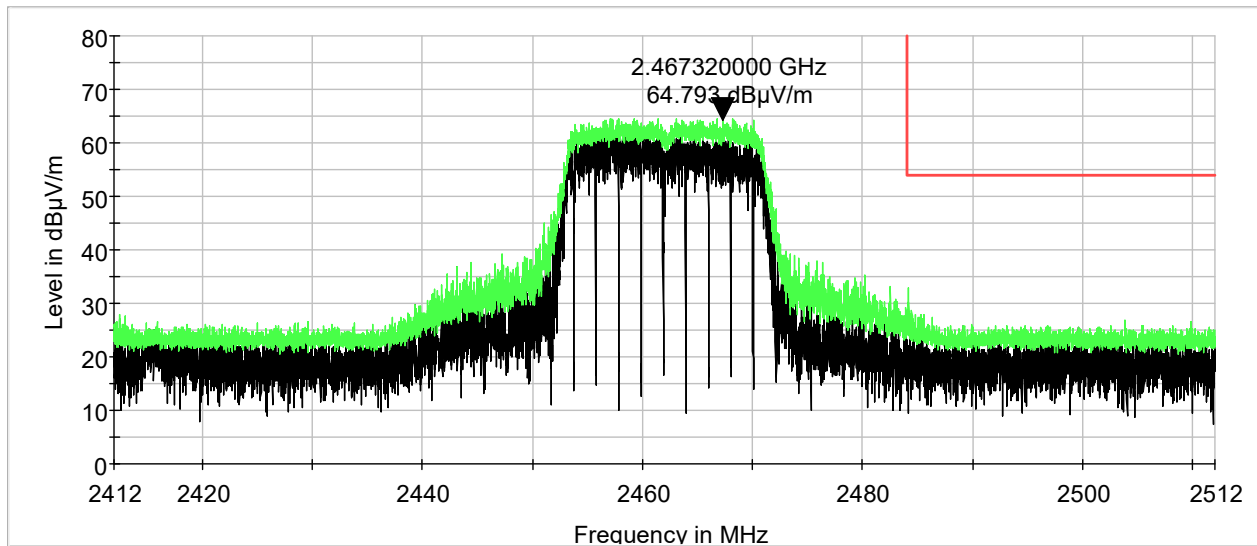


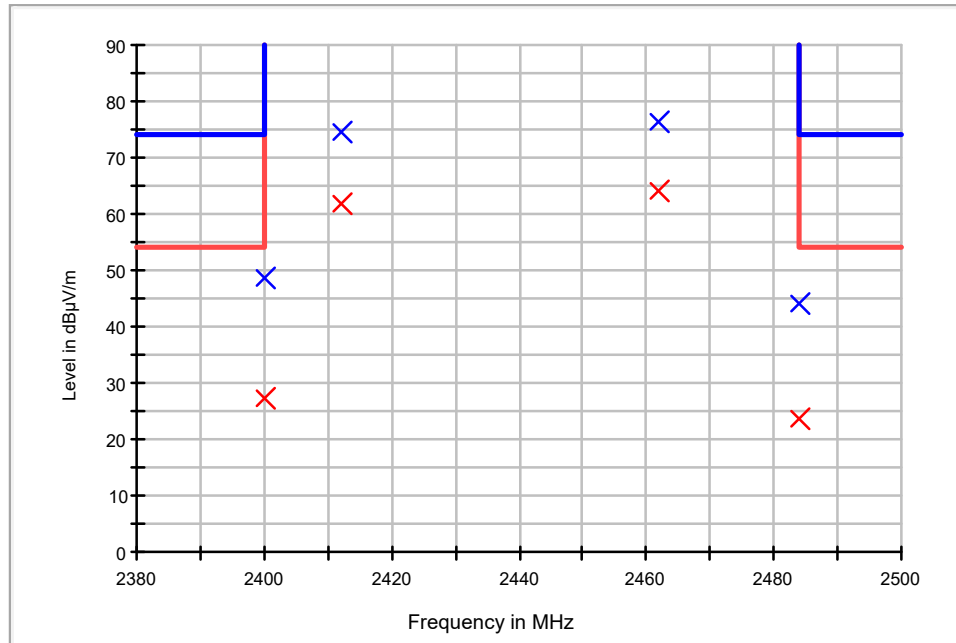


MM MCS7 HT20: Low Band Edge, Horizontal



MM MCS7 HT20: High Band Edge, Horizontal



**MAXPEAK**

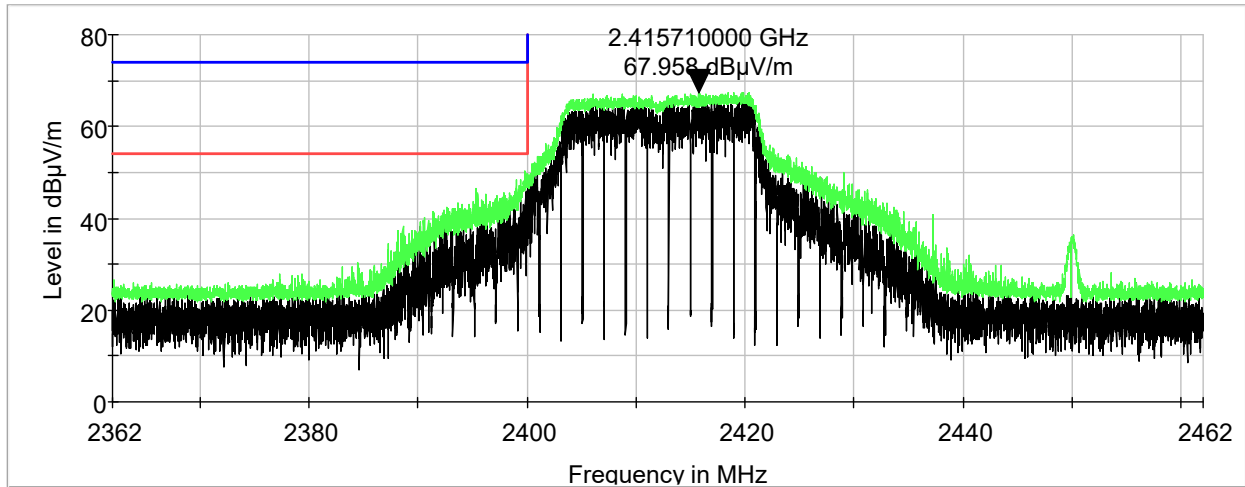
Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2400.000000	V	68.0	-19.4	48.60	74.0	-25.4
2483.500000	V	63.1	-19.0	44.10	74.0	-29.9

AVG

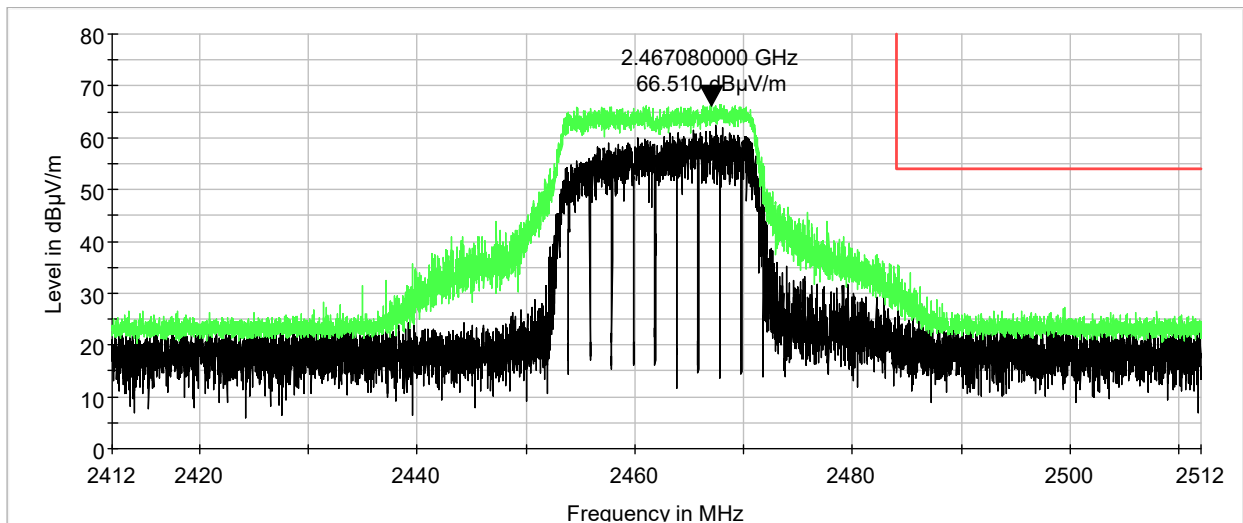
Frequency (MHz)	Antenna Polarization	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2400.000000	V	46.7	-19.4	27.30	54.0	-26.7
2483.500000	V	42.8	-19.0	23.80	54.0	-30.2



GF MCS7 HT20: Low Band Edge, Vertical

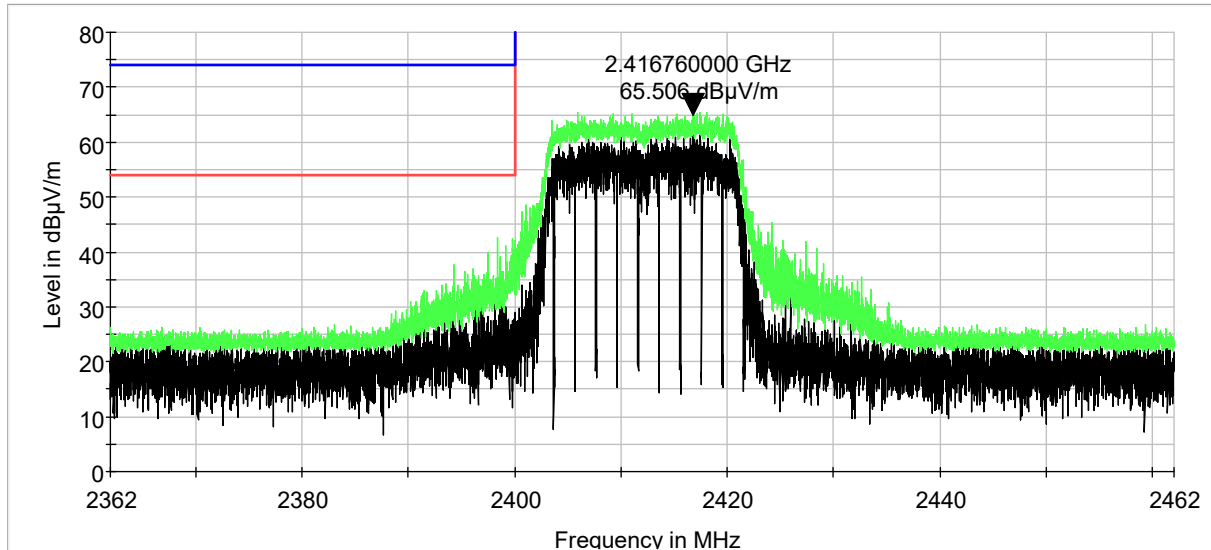


GF MCS7 HT20: High Band Edge, Vertical

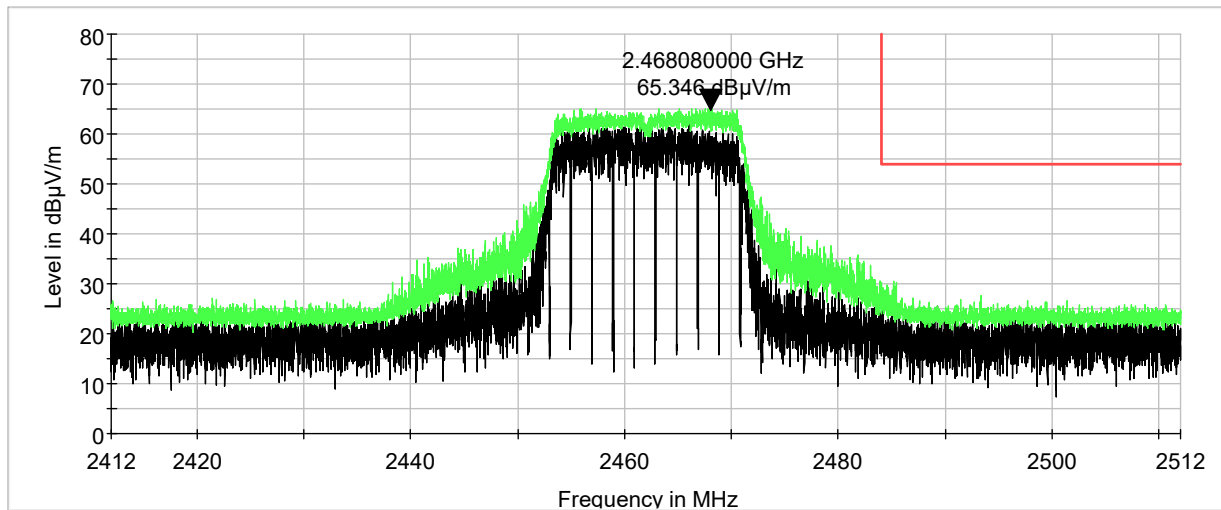


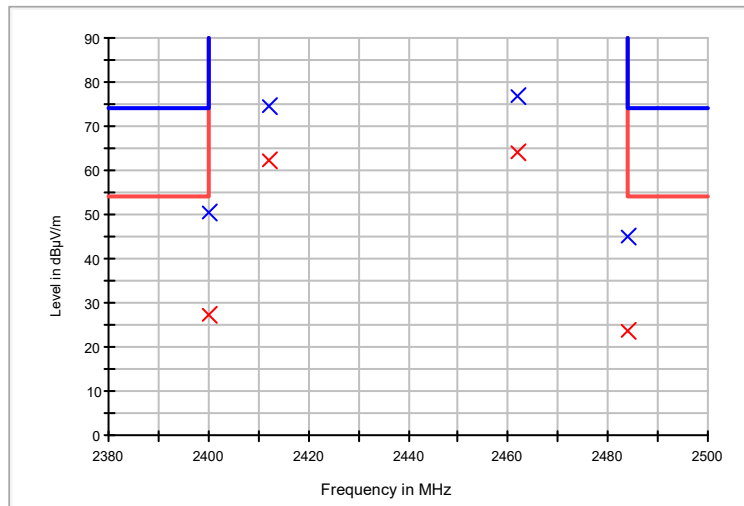


GF MCS7 HT20: Low Band Edge, Horizontal



GF MCS7 HT20: High Band Edge, Horizontal



**MAXPEAK**

Frequency (MHz)	Antenna Polarization	Reading (dBµV)	Cable Loss & Antenna Factor (dB)	Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2400.000000	V	69.9	-19.4	50.50	74.0	-23.5
2483.500000	V	64.2	-19.0	45.20	74.0	-28.8

AVG

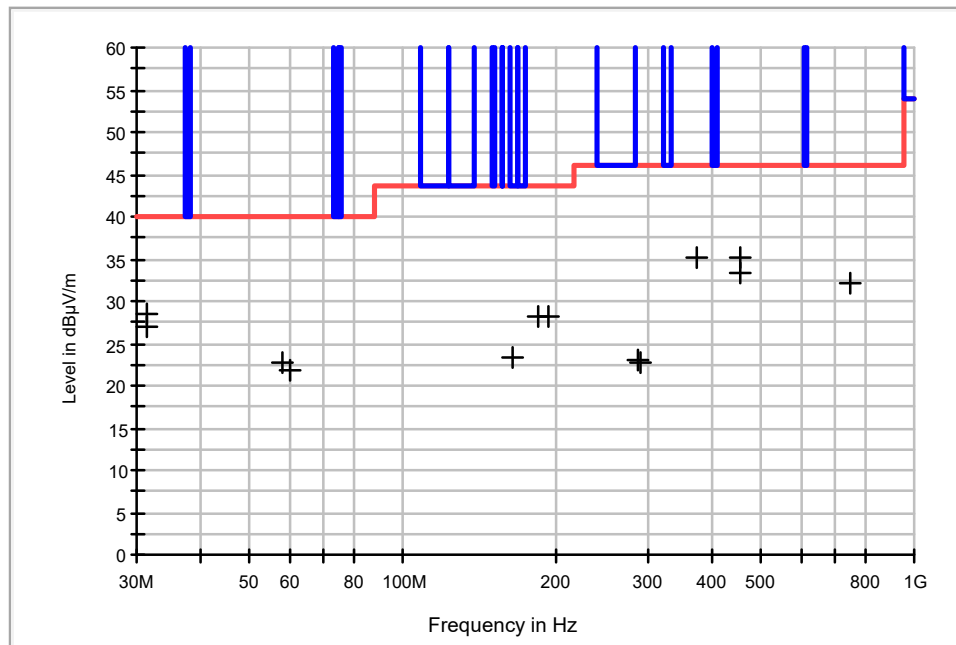
Frequency (MHz)	Antenna Polarization	Reading (dBµV)	Cable Loss & Antenna Factor (dB)	Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2400.000000	V	46.8	-19.4	27.40	54.0	-26.6
2483.500000	V	42.8	-19.0	23.80	54.0	-30.2



Measurements (worst case for all channels combined)

QuasiPeak

Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (deg)	Reading (dBμV)	Correction Factors (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
31.440000	H	100.00	15.00	21.3	5.6	26.90	40.0	-13.1
31.480000	V	100.00	342.00	23.1	5.5	28.60	40.0	-11.4
57.600000	V	100.00	173.00	30.2	-7.5	22.70	40.0	-17.3
59.840000	V	100.00	142.00	29.4	-7.5	21.90	40.0	-18.1
163.920000	V	102.00	285.00	26.6	-3.3	23.30	43.5	-20.2
184.080000	H	100.00	354.00	32.2	-4.1	28.10	43.5	-15.4
191.920000	V	100.00	260.00	31.7	-3.7	28.00	43.5	-15.5
288.560000	V	100.00	104.00	24.9	-1.9	23.00	46.0	-23.0
291.520000	H	100.00	83.00	24.6	-1.9	22.70	46.0	-23.3
375.080000	H	100.00	350.00	34.8	0.2	35.00	46.0	-11.0
458.280000	H	100.00	135.00	33.3	1.8	35.10	46.0	-10.9
458.280000	V	100.00	112.00	31.6	1.8	33.40	46.0	-12.6
750.040000	H	120.00	0.00	26.3	5.7	32.00	46.0	-14.0



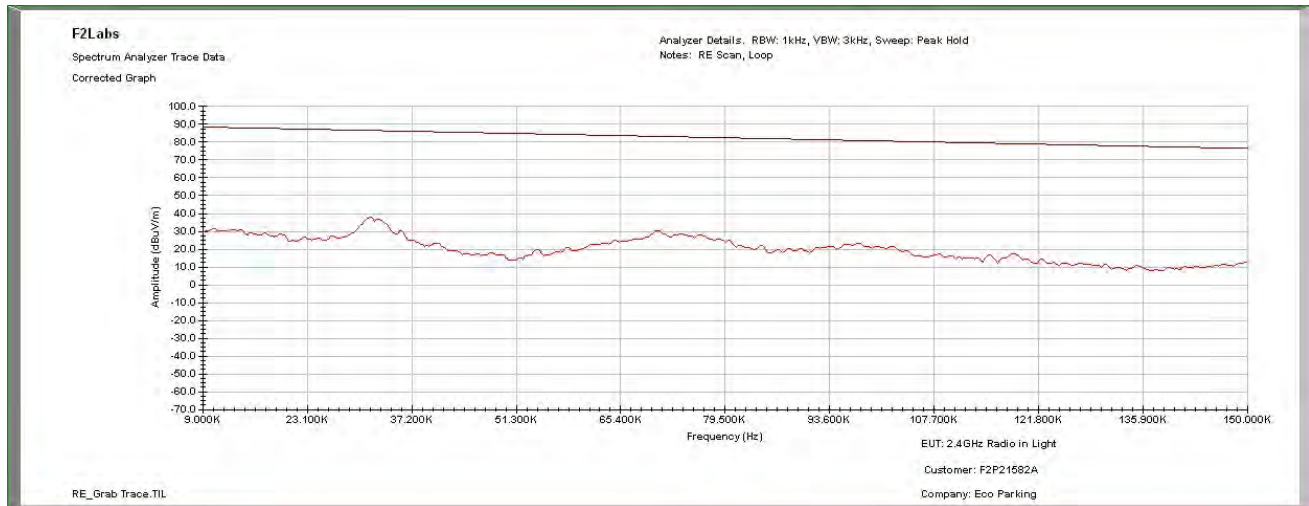


Order Number: F2P21582A

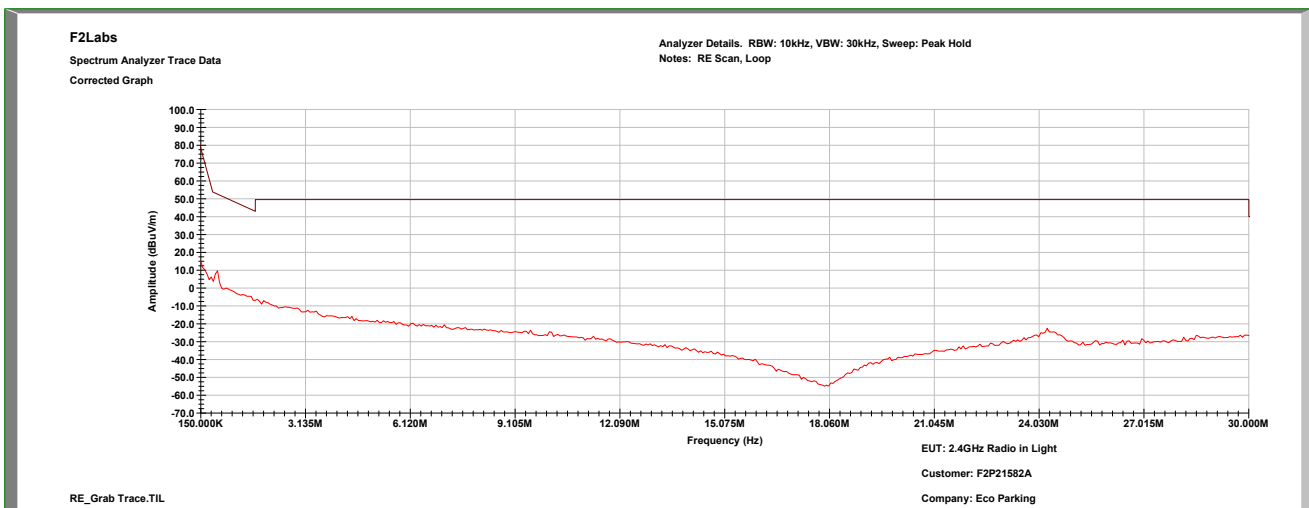
Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20: 0.009 MHz to 0.15 MHz (Loop)

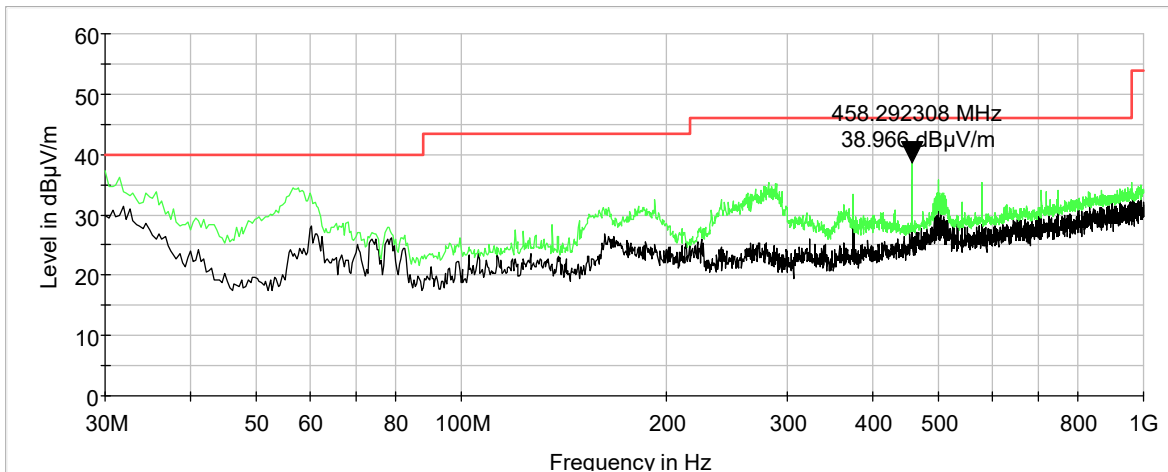


GF MCS7 HT20: 0.15 MHz to 30 MHz (Loop)

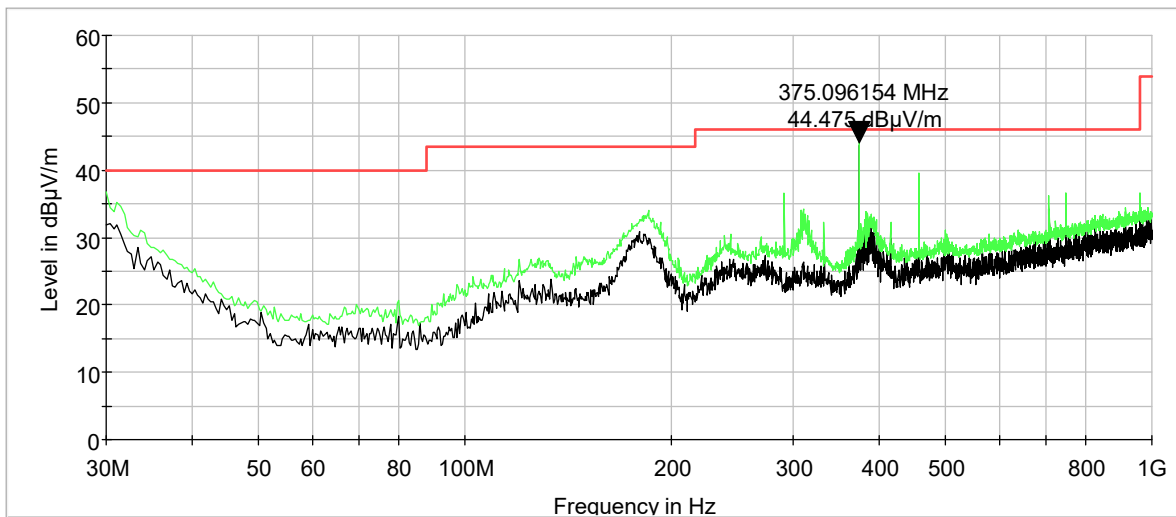




GF MCS7 HT20: 30 MHz to 1000 MHz, Vertical

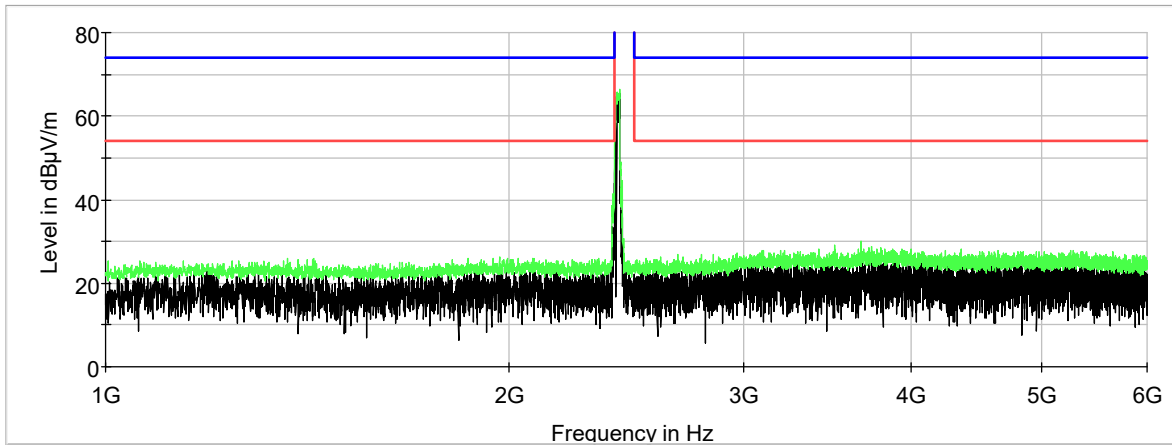


GF MCS7 HT20: 30 MHz to 1000 MHz, Horizontal

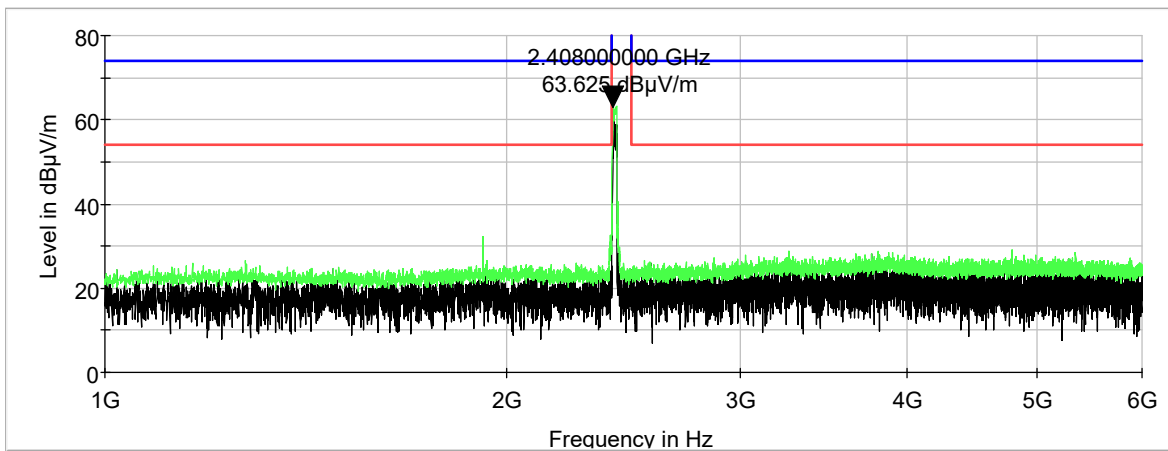




GF MCS7 HT20: 1 GHz to 6 GHz, Vertical

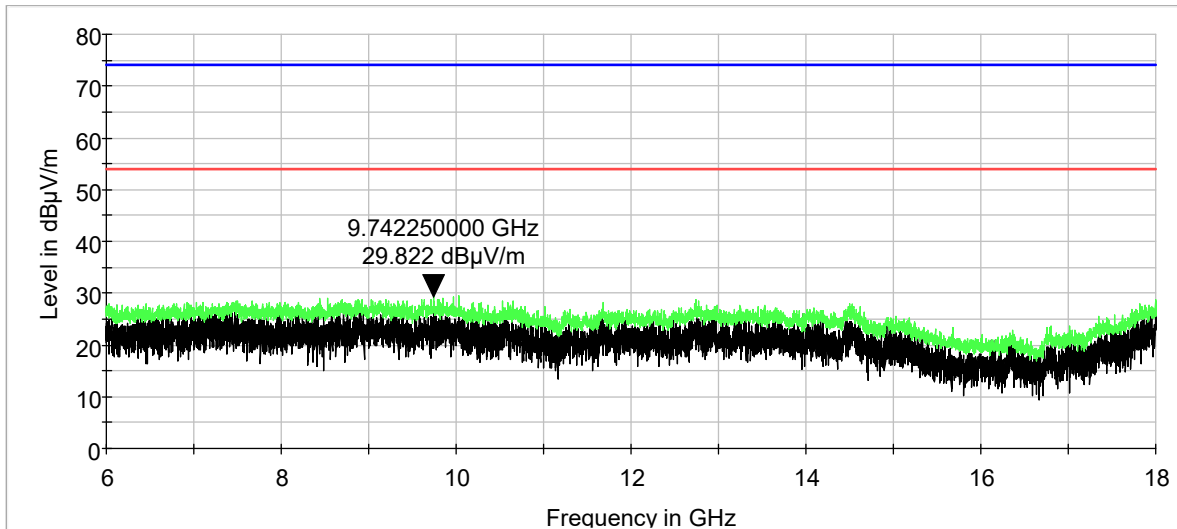


GF MCS7 HT20: 1 GHz to 6 GHz, Horizontal

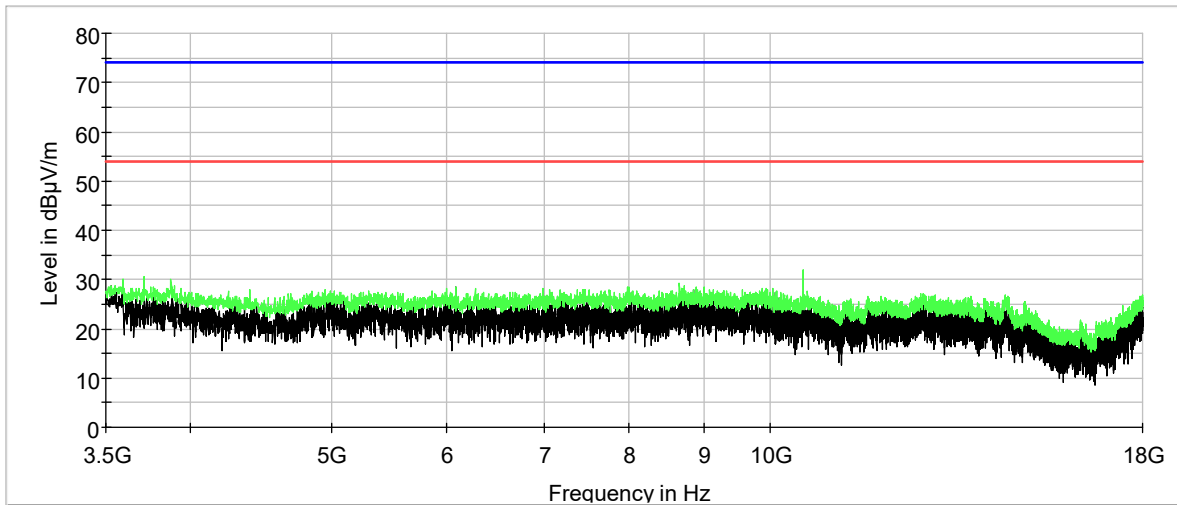




GF MCS7 HT20: 6 GHz to 18 GHz, Vertical

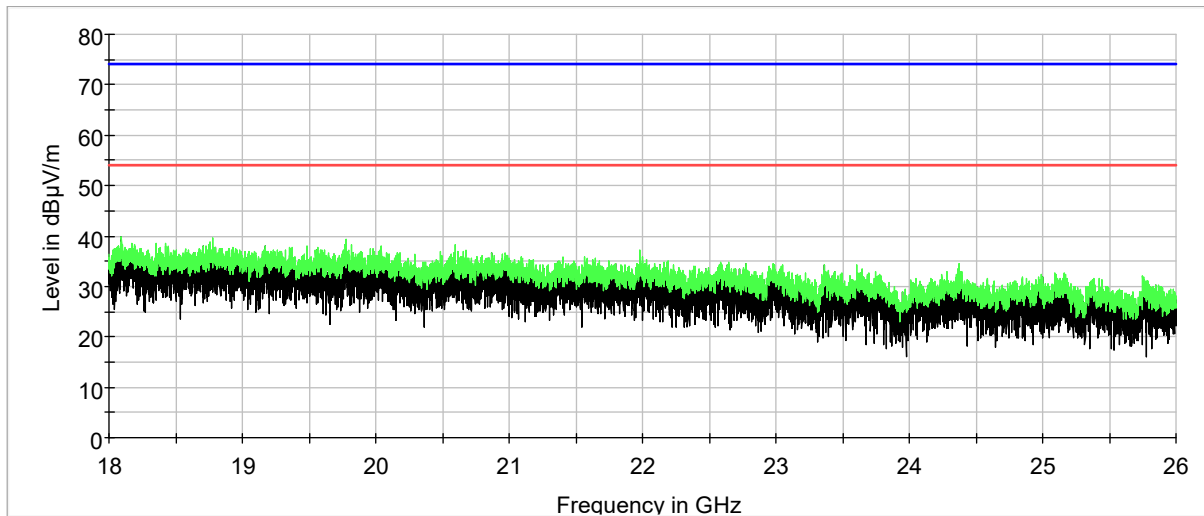


GF MCS7 HT20: 6 GHz to 18 GHz, Horizontal

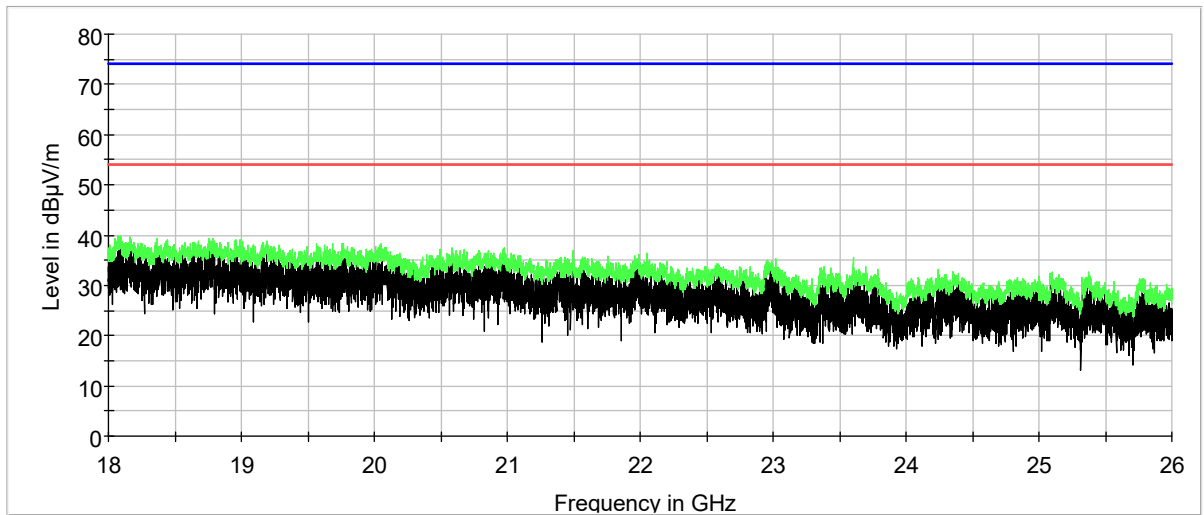




GF MCS7 HT20: 18 GHz to 26 GHz, Vertical



GF MCS7 HT20: 18 GHz to 26 GHz, Horizontal





12 PEAK POWER SPECTRAL DENSITY (PSD)

Peak power spectral density measurements were performed.

12.1 Requirements:

The peak power spectral density shall not exceed +8dBm in any 3 kHz band during any time interval of continuous transmission.

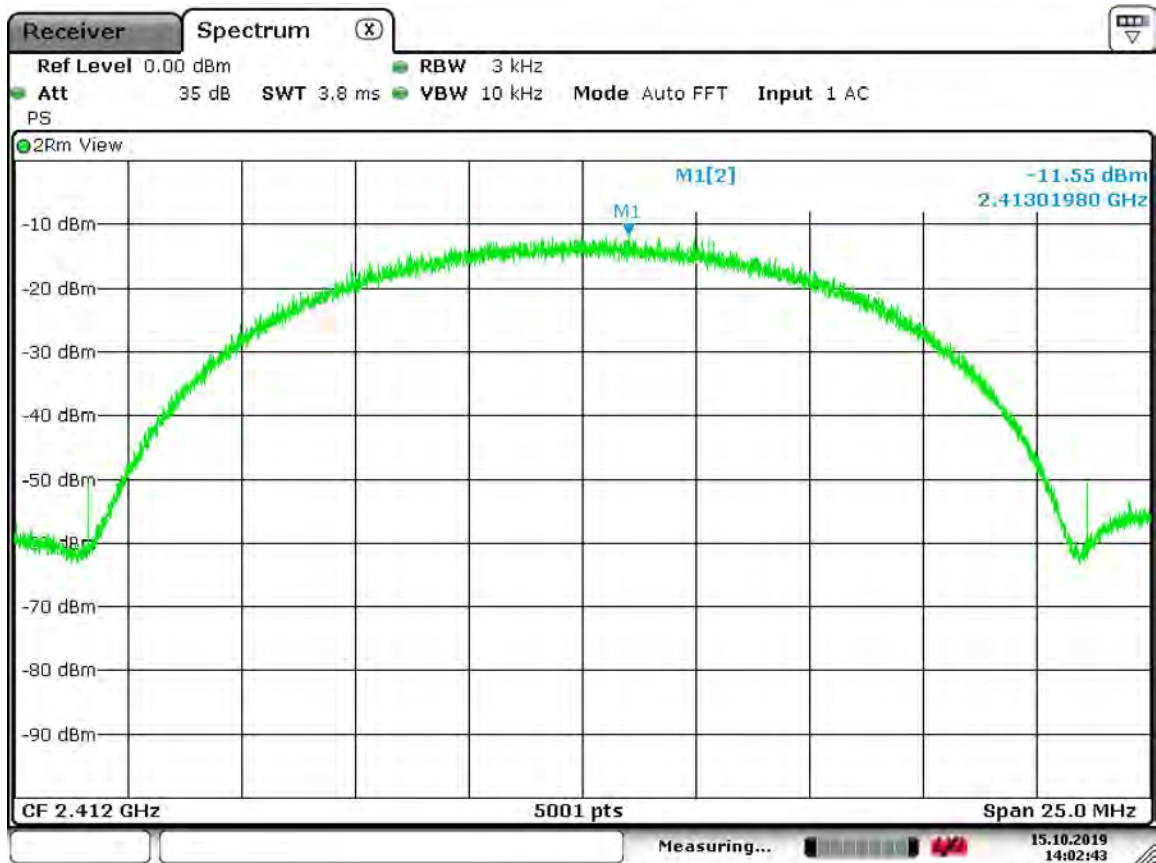
Power spectral density measurements were performed at a resolution bandwidth of 3 kHz (video bandwidth set at 10 KHz). The peak spectral densities were measured at the low, mid, and upper channels.



12.2 Peak Power Spectral Density Test Data

Test Date(s):	Oct. 15, 2019	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(e); KDB558074	Air Temperature:	21.5°C
		Relative Humidity:	47%

CCK 11 Mbps, Low Channel



Date: 15.OCT.2019 14:02:43

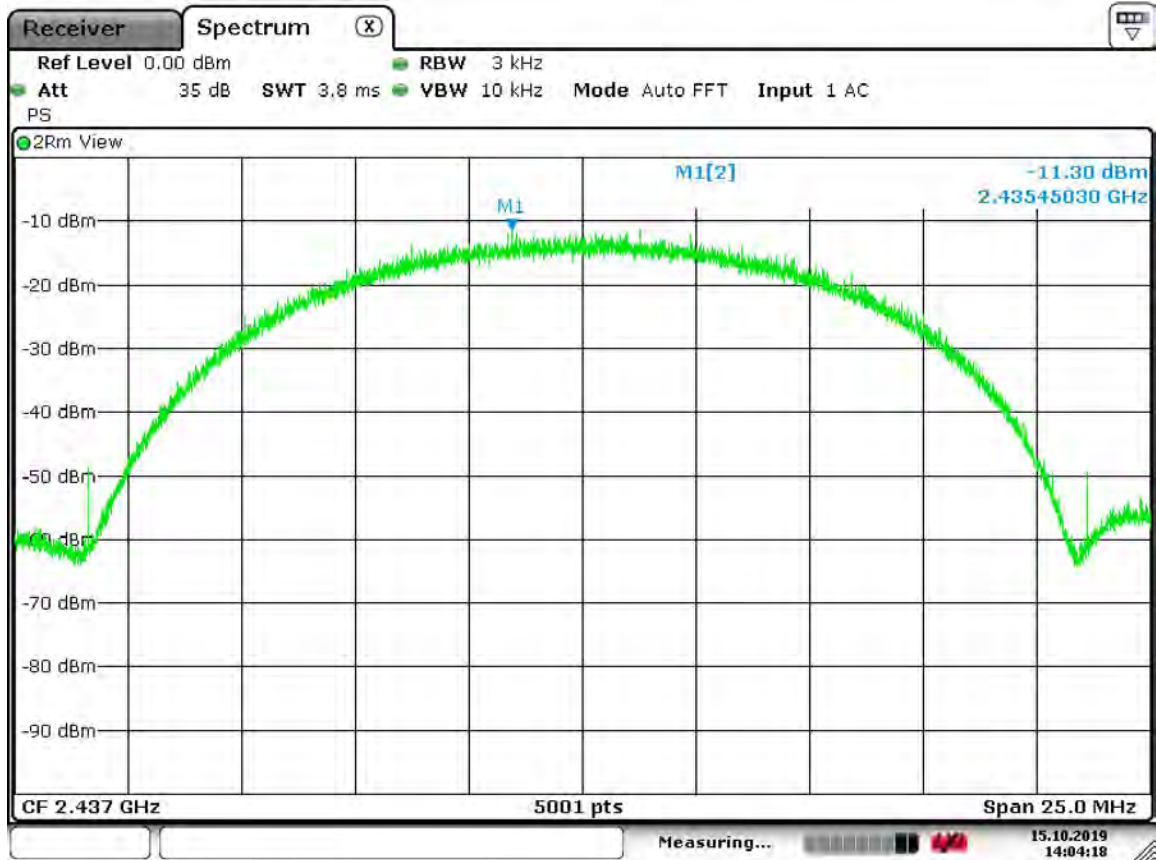


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps, Mid Channel



Date: 15.OCT.2019 14:04:18

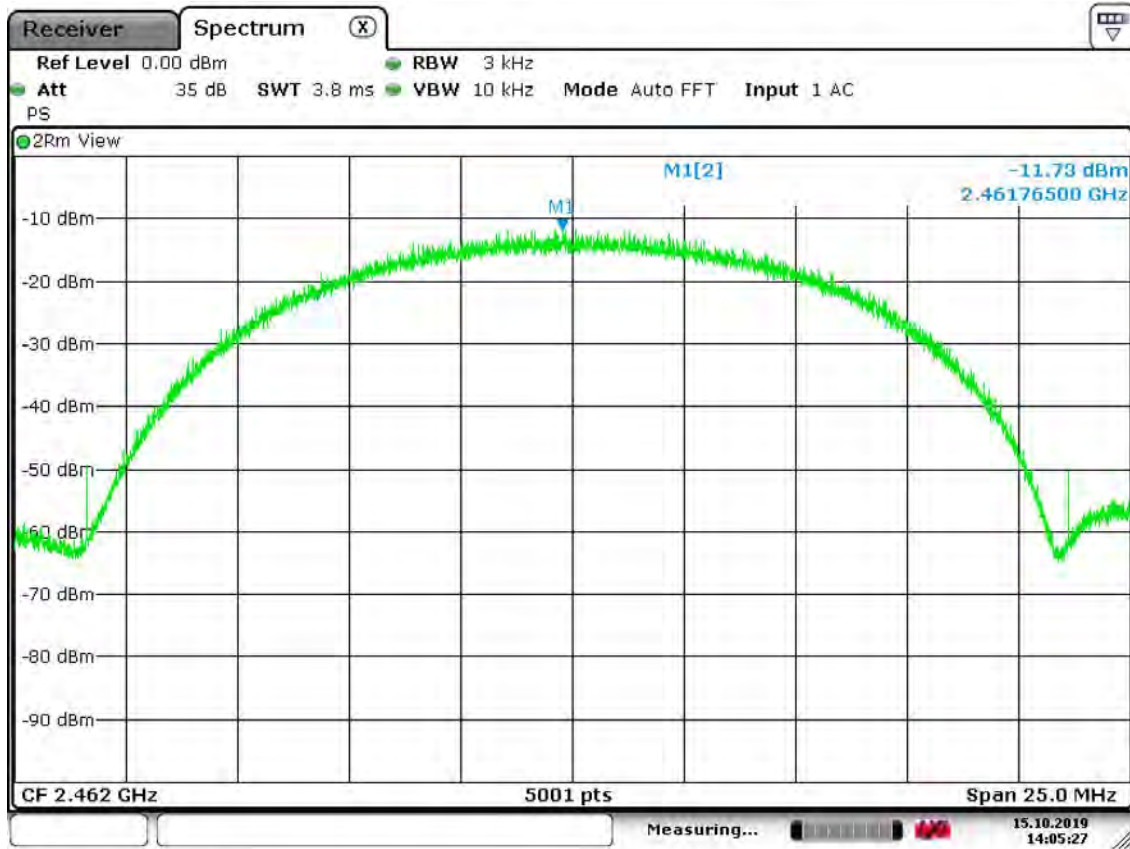


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

CCK 11 Mbps, High Channel



Date: 15.OCT.2019 14:05:27

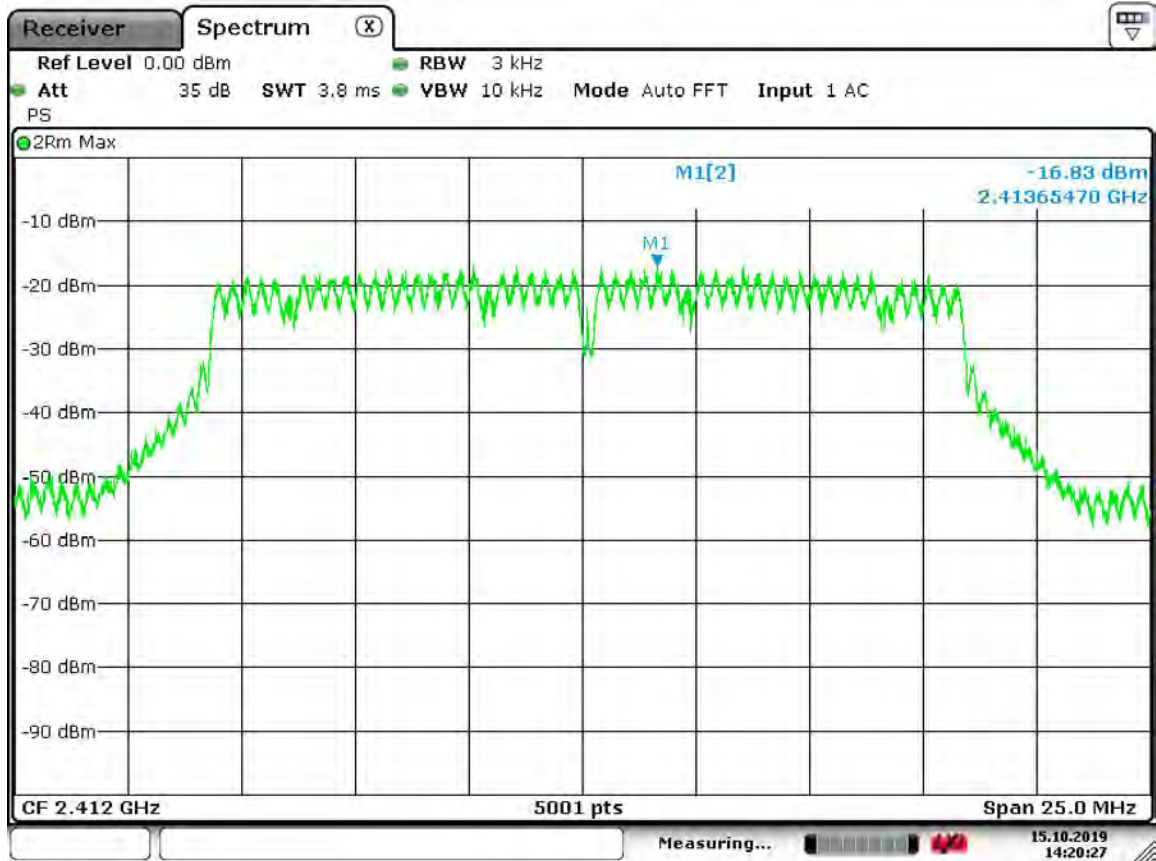


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

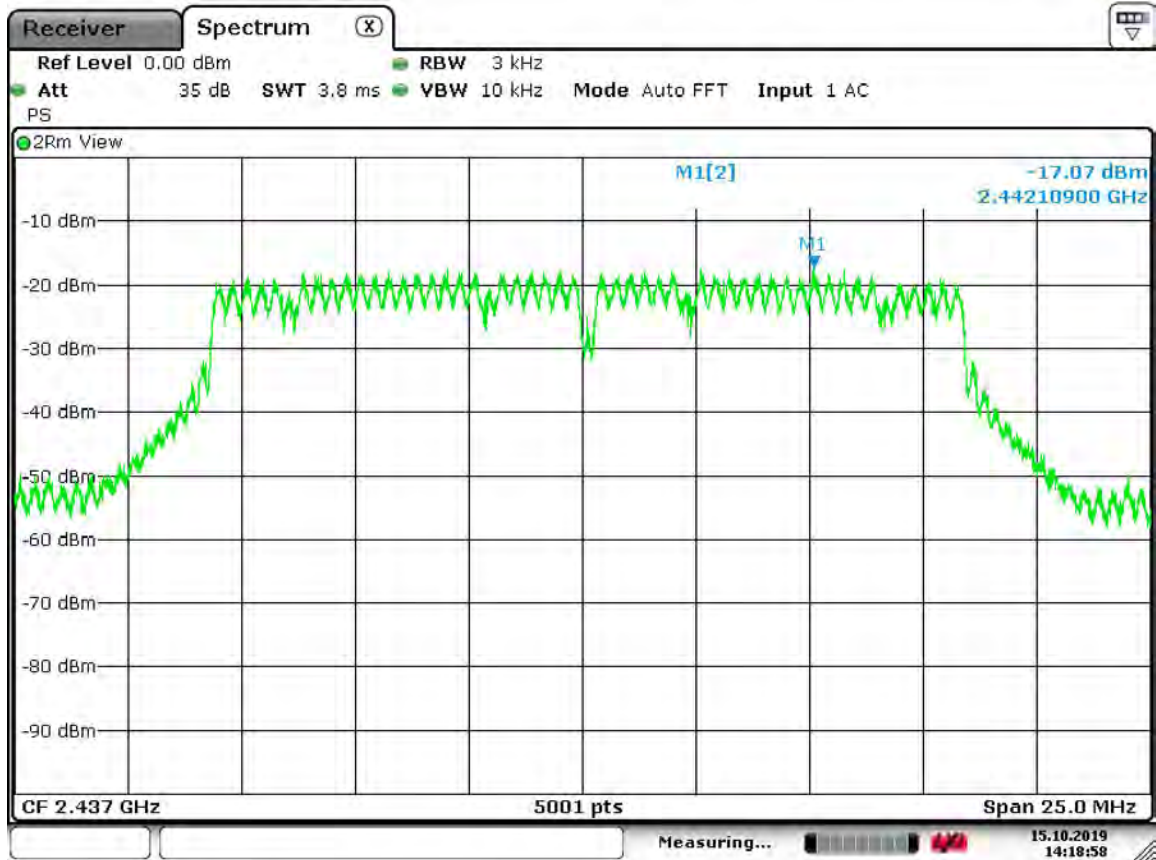
OFDM 54 Mbps, Low Channel



Date: 15.OCT.2019 14:20:27



OFDM 54 Mbps, Mid Channel



Date: 15.OCT.2019 14:18:58

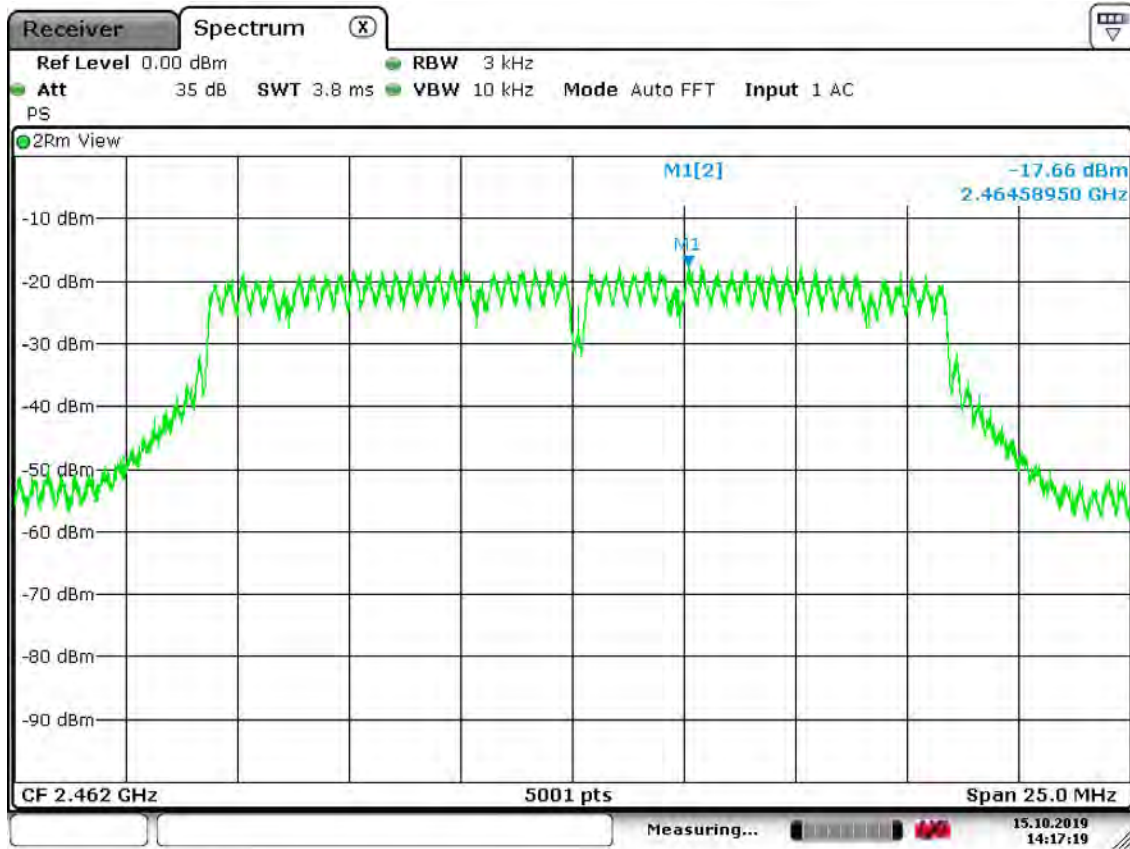


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

OFDM 54 Mbps, High Channel



Date: 15.OCT.2019 14:17:19

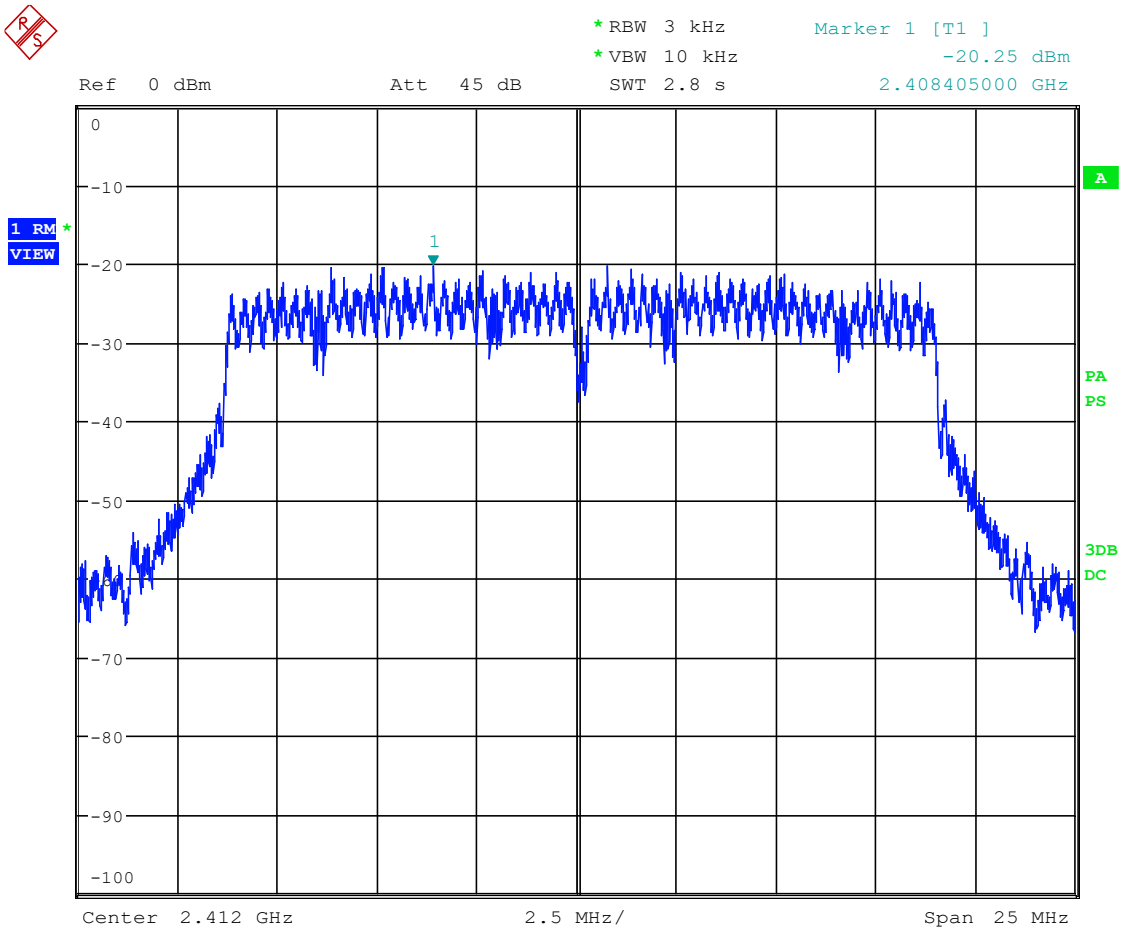


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20, Low Channel



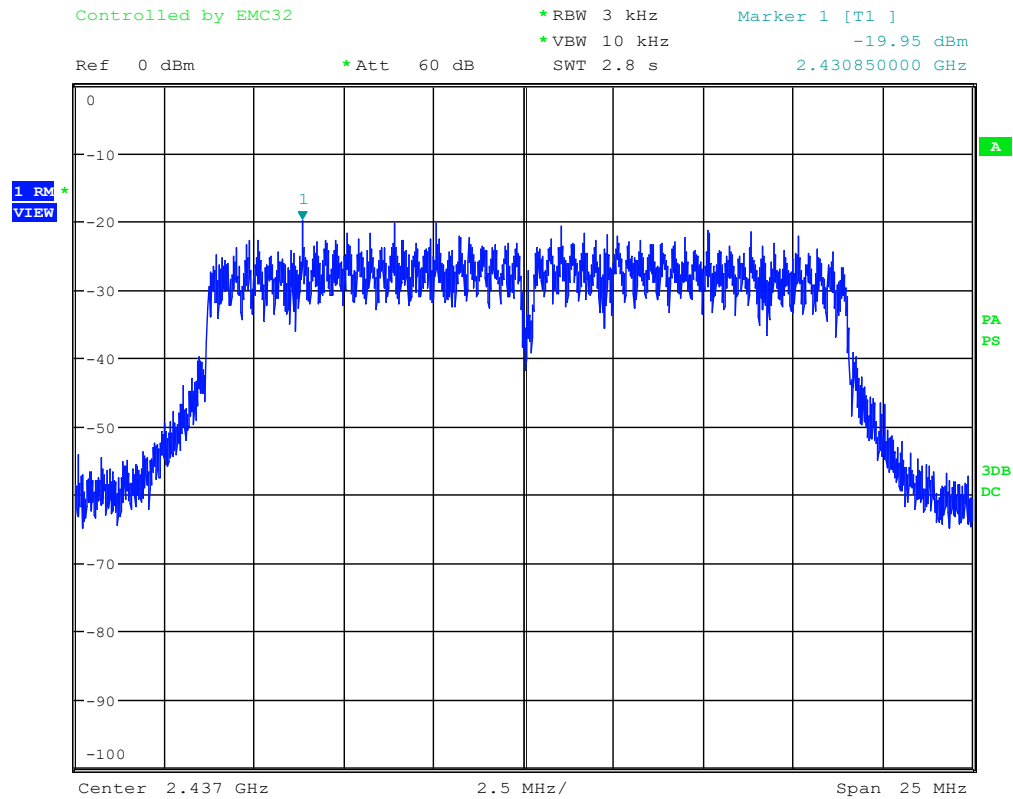
Date: 19.JUN.2020 10:36:27



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

MM MCS7 HT20, Mid Channel



Date: 15.OCT.2019 18:31:23

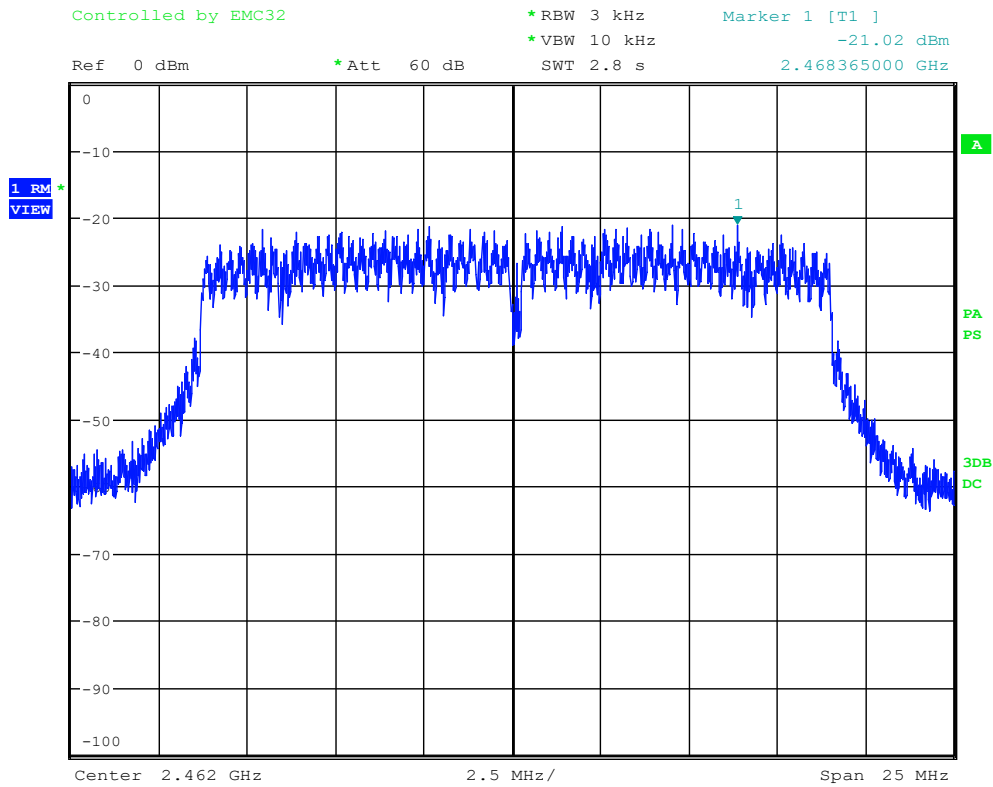


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

MM MCS7 HT20, High Channel



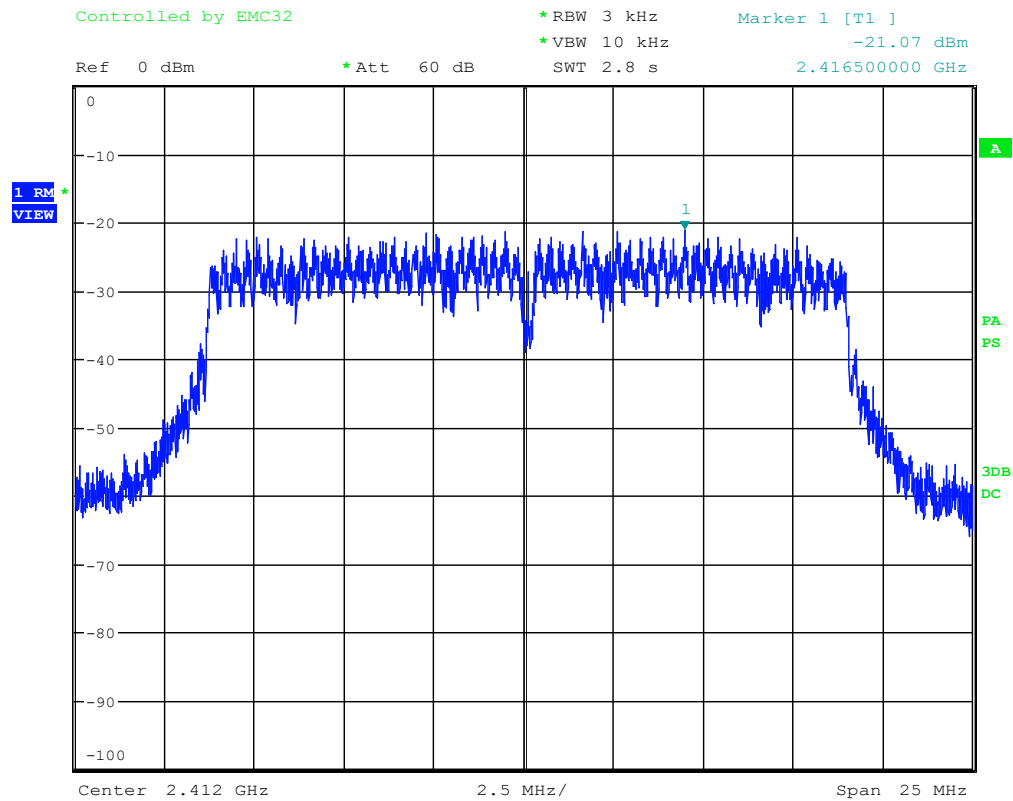
Date: 15.OCT.2019 18:29:59



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

GF MCS7 HT20, Low Channel



Date: 15.OCT.2019 18:25:51

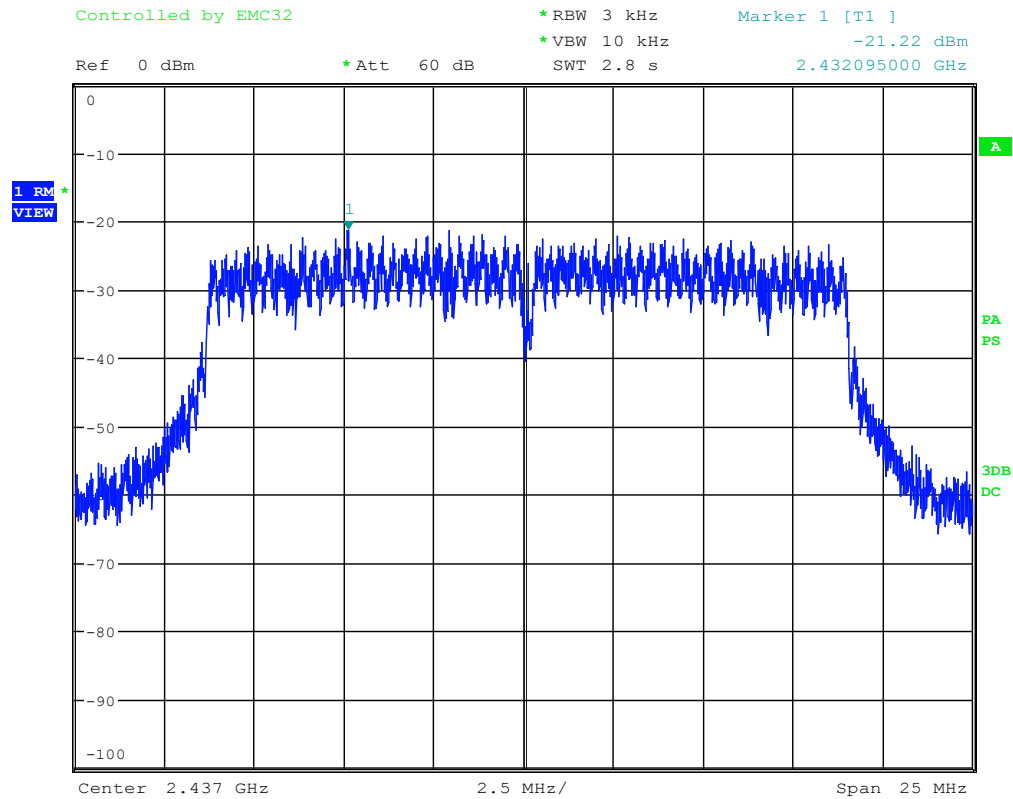


Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC

Model: ECO FALCON – Rev B

GF MCS7 HT20, Mid Channel



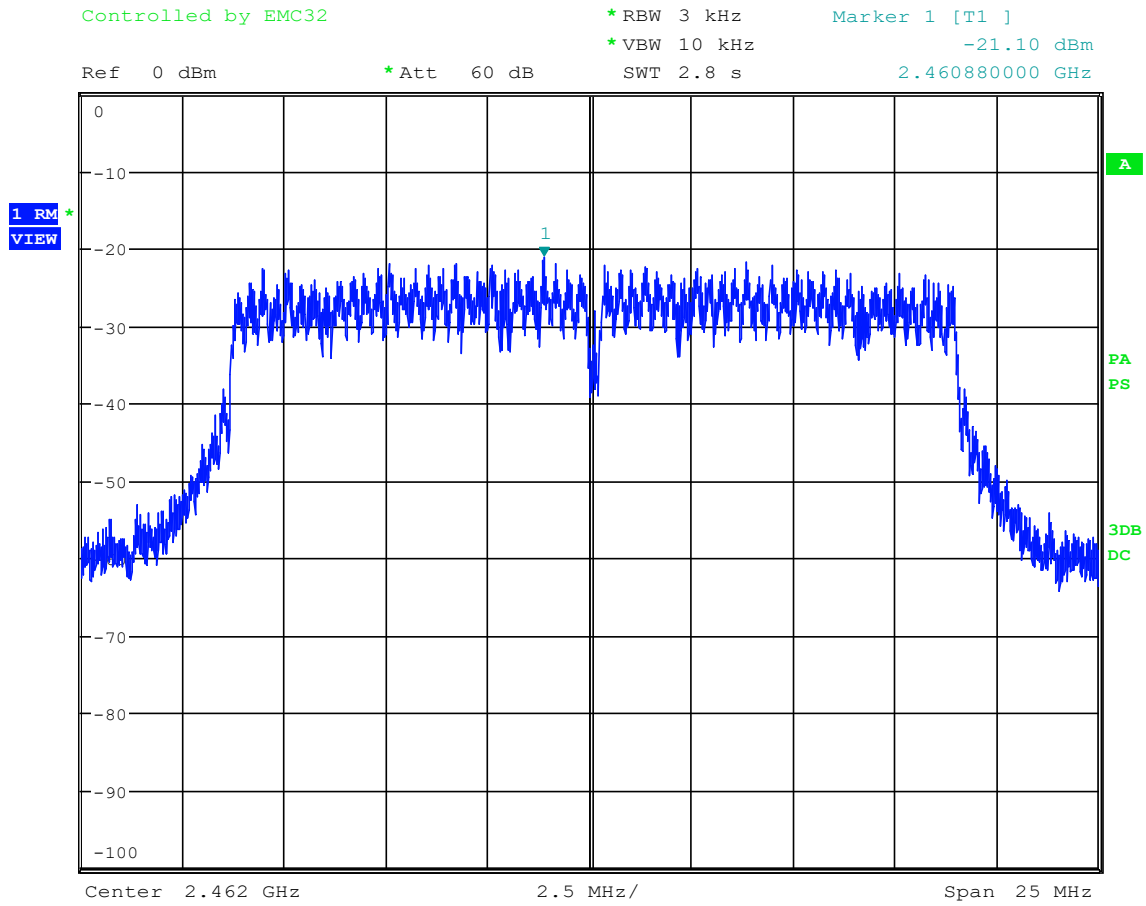
Date: 15.OCT.2019 18:22:57



Order Number: F2P21582A

Applicant: ECO Parking Technologies, LLC
Model: ECO FALCON – Rev B

GF MCS7 HT20, High Channel



Date: 15.OCT.2019 18:27:31



13 CONDUCTED EMISSIONS

13.1 Requirements

In accordance with FCC CFR 47 Part 15.207(a), “Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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.

13.2 Procedure

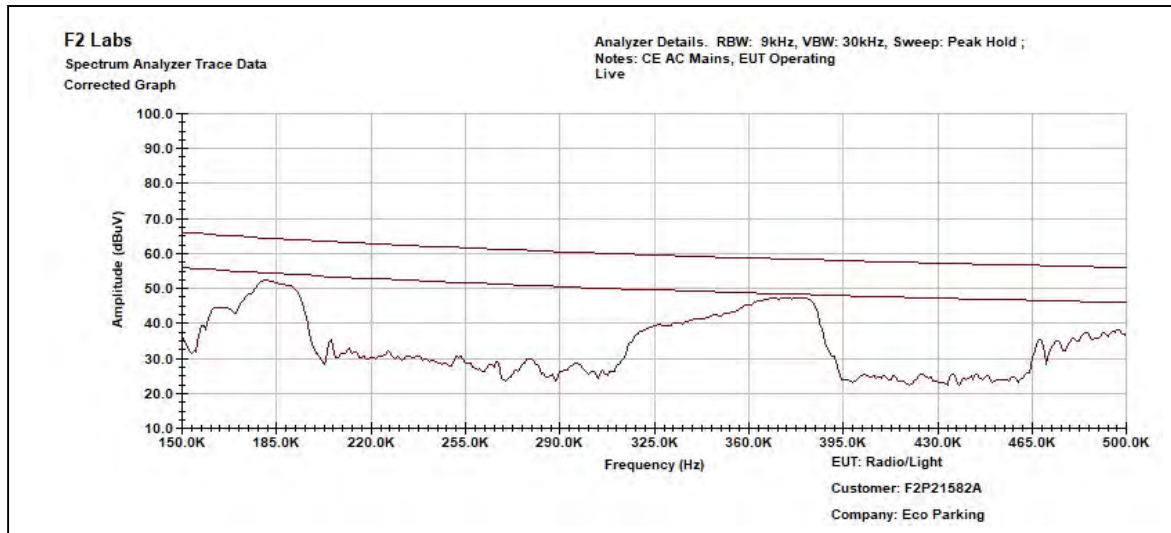
The EUT was placed on a 1.0 x 1.5 meter non-conductive table, 0.8 meter above a horizontal ground plane and 0.4 meter from a vertical ground plane. Power was provided to the EUT through a LISN bonded to a 3 x 2 meter ground plane. The LISN and peripherals were supplied power through a filtered AC power source. The output of the LISN was connected to the input of the receiver via a transient limiter, and emissions in the range 150 kHz to 30 MHz were measured. The measurements were recorded using the quasi-peak and average detectors as directed by the standard, and the resolution bandwidth during testing was 9 kHz. The raw measurements were corrected to allow for attenuation from the LISN, transient limiter and cables.



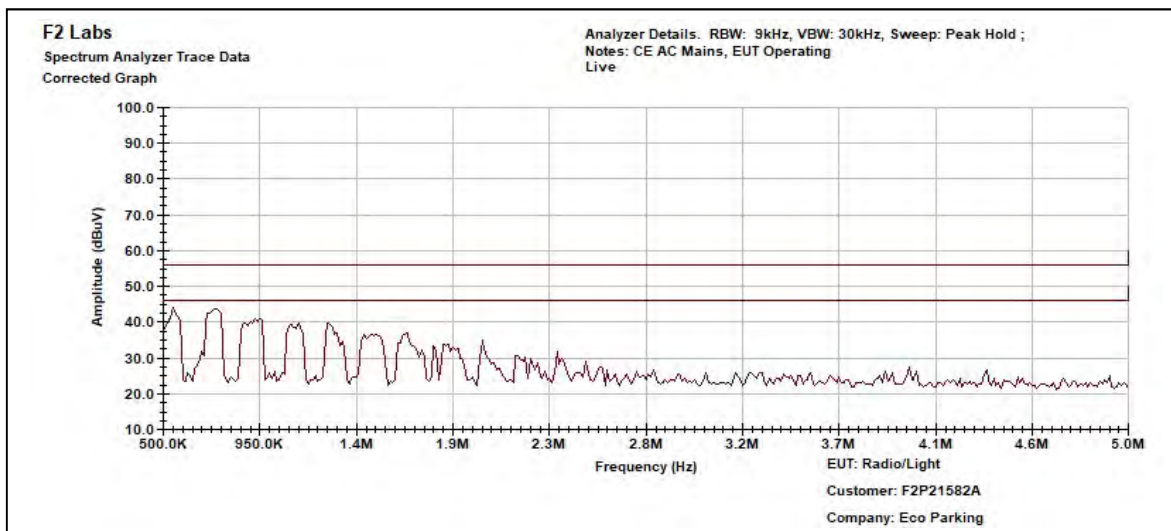
13.3 Conducted Emissions Test Data

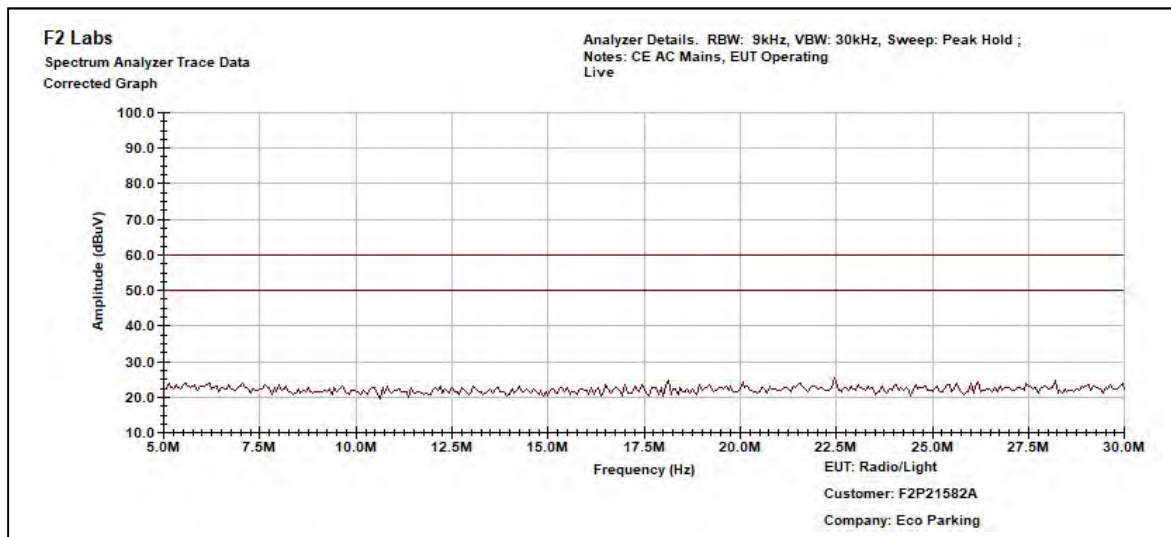
Test Date:	Oct. 25, 2019	Test Engineer:	J. Chiller
Rule:	15.207	Air Temperature:	19.4° C
Test Results:	Pass	Relative Humidity:	40%

Conducted Test – Live: 0.15 MHz to 0.5 MHz



Conducted Test – Live: 0.5 MHz to 5.0 MHz



**Conducted Test – Live: 5.0 MHz to 30.0 MHz**

Top Discrete Measurements								
No.	Conductor	Frequency (MHz)	Detector	Level (dBμV)	Adjustment (dB)	Results (dBμV)	Limit (dBμV)	Margin (dB)
1	Live	0.17975	Quasi-Peak	39.68	11.278	50.96	64.498	-13.5
			Average	30.84	11.278	42.12	54.498	-12.4
2	Live	0.191125	Quasi-Peak	39.19	11.167	50.36	63.988	-13.6
			Average	31.22	11.167	42.39	53.988	-11.6
3	Live	0.36525	Quasi-Peak	32.96	10.591	43.55	58.608	-15.1
			Average	23.34	10.591	33.93	43.608	-9.7
4	Live	0.374875	Quasi-Peak	34.8	10.585	45.39	58.393	-13.0
			Average	23.88	10.585	34.47	48.393	-13.9
5	Live	0.381875	Quasi-Peak	35.76	10.581	46.34	58.239	-11.9
			Average	23.74	10.581	34.32	48.239	-13.9
6	Live	0.545	Quasi-Peak	31.54	10.528	42.07	56.0	-13.9
			Average	18.84	10.528	29.37	46.0	-16.6
7	Live	0.7475	Quasi-Peak	31.26	10.391	41.65	56.0	-14.3
			Average	14.73	10.391	25.12	46.0	-20.9

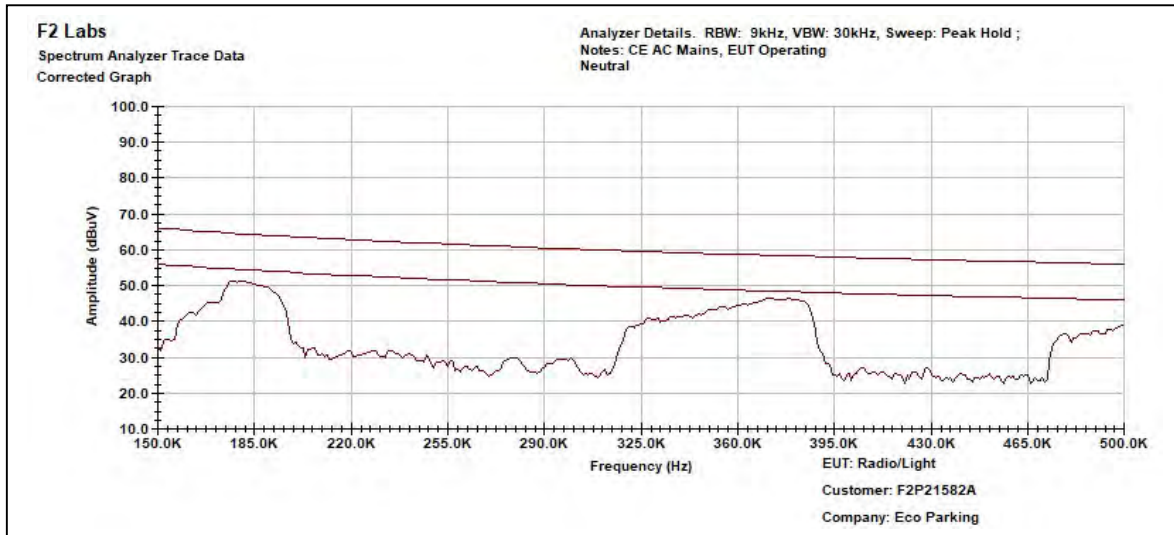


Order Number: F2P21582A

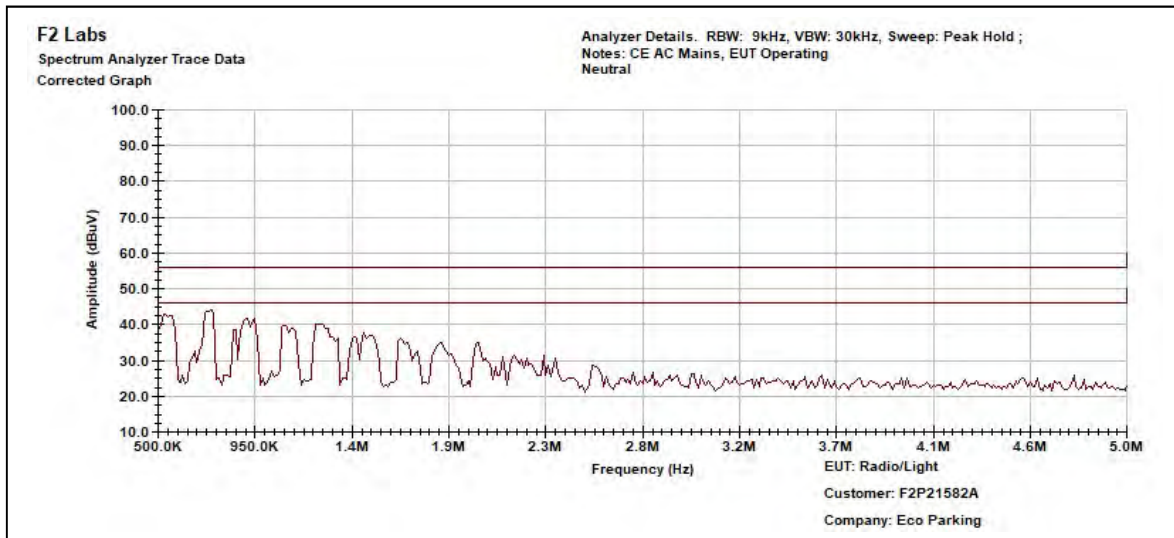
Applicant: ECO Parking Technologies, LLC

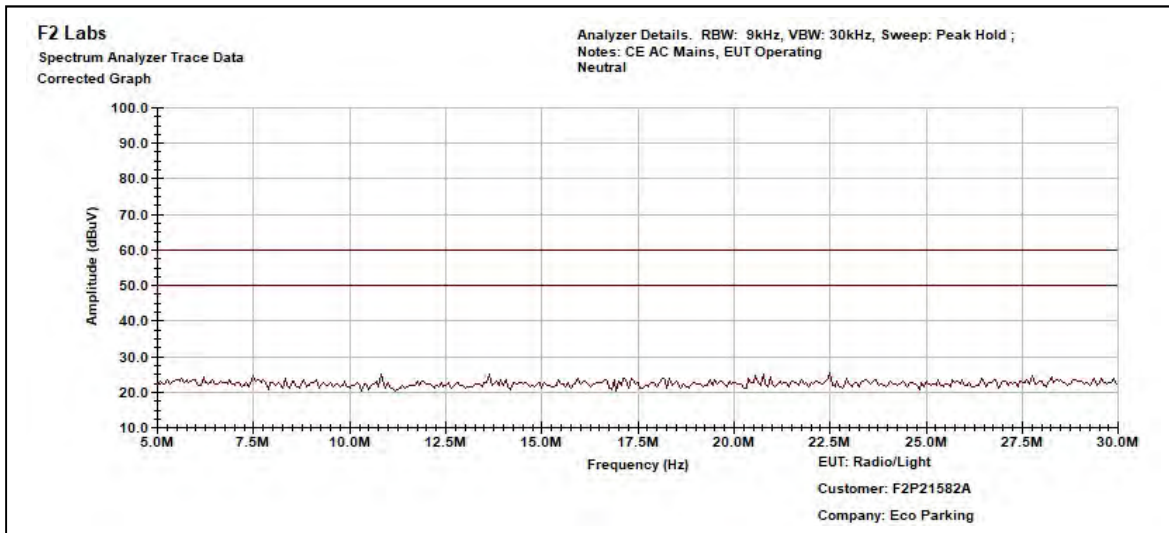
Model: ECO FALCON – Rev B

Conducted Test – Neutral: 0.15 MHz to 0.5 MHz



Conducted Test – Neutral: 0.5 MHz to 5.0 MHz



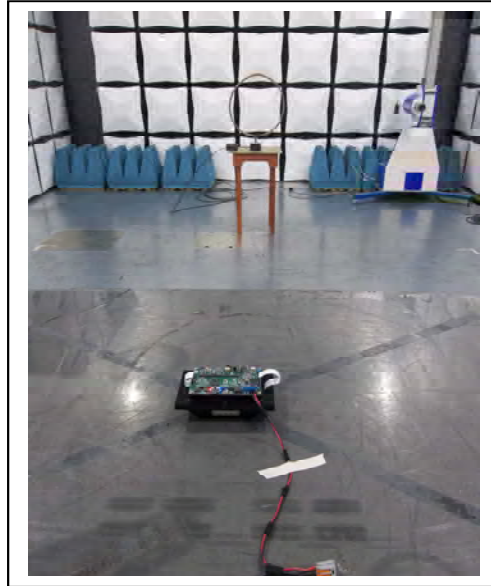
**Conducted Test – Neutral: 5.0 MHz to 30.0 MHz**

Top Discrete Measurements								
No.	Conductor	Frequency (MHz)	Detector	Level (dB μ V)	Adjustment (dB)	Results (dB μ V)	Limit (dB μ V)	Margin (dB)
1	Neutral	0.177	Quasi-Peak	39	11.352	50.35	64.621	-14.3
			Average	29.04	11.352	40.39	54.621	-14.2
2	Neutral	0.1885	Quasi-Peak	38.96	11.232	50.19	64.103	-13.9
			Average	29.78	11.232	41.01	54.103	-13.1
3	Neutral	0.369625	Quasi-Peak	34.04	10.585	44.63	58.509	-13.9
			Average	23.9	10.585	34.49	48.509	-14.0
4	Neutral	0.37925	Quasi-Peak	33.65	10.58	44.23	58.296	-14.1
			Average	23.57	10.58	34.15	48.296	-14.1
5	Neutral	0.567	Quasi-Peak	29.43	10.486	39.92	56.0	-16.1
			Average	15.11	10.486	25.60	46.0	-20.4
6	Neutral	0.747	Quasi-Peak	31.9	10.397	42.30	56.0	-13.7
			Average	14.44	10.397	24.84	46.0	-21.2
7	Neutral	0.950	Quasi-Peak	29.6	10.37	39.97	56.0	-16.0
			Average	14.63	10.37	25.00	46.0	-21.0



14 PHOTOGRAPHS

Radiated Spurious Emissions, Less Than 30 MHz

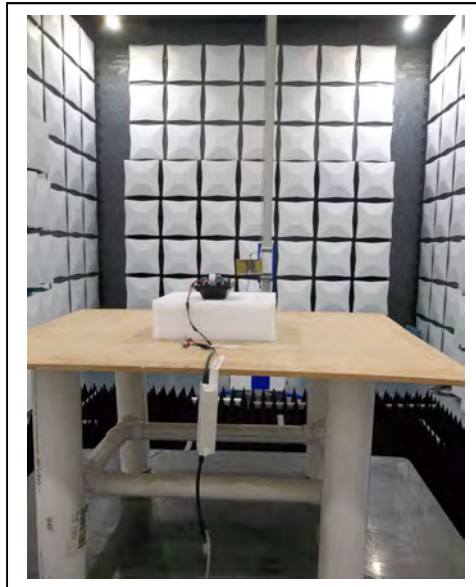


Radiated Spurious Emissions, 30 MHz to 1000 MHz





Radiated Spurious Emissions, 1 GHz to 18 GHz

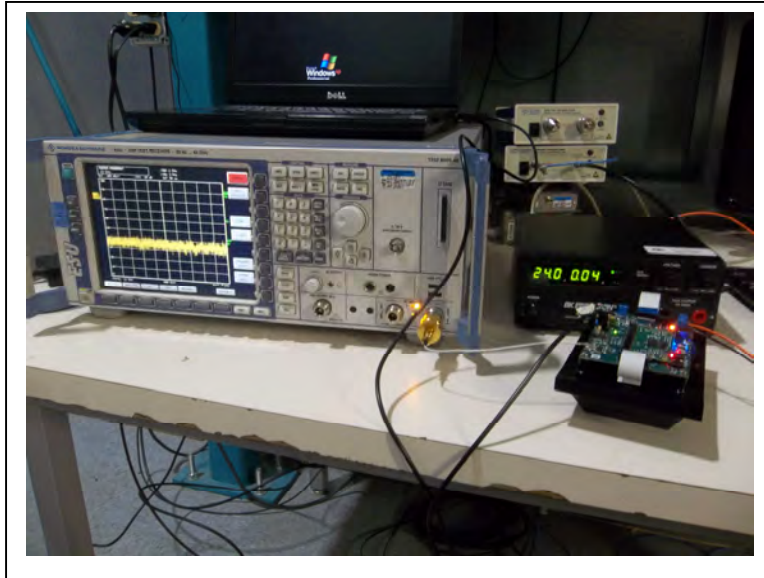


Radiated Spurious Emissions, 18 GHz to 26 GHz





Voltage Variations



RF Output Power, Peak Power Spectral Density, Occupied Bandwidth, and Conducted Spurious Emissions

