



**FCC Part 15, Subpart C, Section 15.247
Test Report**

On

**Asset Tracking Device
FCC ID: 2ABRI-TRACKBLUE120**

Customer Name: TrackBlue

Customer P.O.: 450075837

Date of Report: April 25, 2014

Test Report No: R-5813N-1

Test Start Date: February 18, 2014

Test Finish Date: February 19, 2014

Test Technician: M. Seamans

Approved By: S. Wentworth

Report Prepared By: J. Ramsey

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Technical Information

Report Number: R-5813N-1

Customer: TrackBlue

Address: 98 Federal Hill Road
Hollis, NH 03049

Manufacturer: TrackBlue

Test Sample: Asset Tracking Device

Model Numbers: TB-200, TB-130

Serial Numbers: N/A

Brand Name: TrackBlue

Power Requirements: 3VDC Internal Battery

Frequency Band of Operation 2400 to 2483.5MHz

Frequencies Tested (Low, Mid and High): 2402.0MHz, 2440.0MHz, 2480.0 MHz

Antenna Type: PCB Trace – No External Antenna

Equipment Use: Asset Tracking

Test Specification:

FCC Rules and Regulations Part 15, Subpart C, Section 15.247, Section 15.205 and Section 15.209

Test Procedure:

ANSI C63.4:2003 & FCC Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under 15.247, 10/4/2012



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Report No. R-5813N-1

EUT Description:

The Asset Tracking Device is a Low Energy Bluetooth Devices using digital modulation operating in the 2400 MHz to 2483.5 MHz band and containing a receiver operating in the 902 MHz to 928 MHz Band. Both units are powered by an internal battery.

The only differences between the TB-200 and TB-130 models are in the battery configuration and the TB-200 Model also contains a passive NFC Receiver. The TB-130 can be considered a depopulated version of the TB-200. The TB-200 was subjected to all test methods specified below. The TBD-130 was subjected to spurious radiated emissions testing to ensure compliance as it is depopulated when compared to the TBD-200 and in a smaller physical package.

Tests Performed

The test methods performed on the Asset Tracking Device is shown below:

FCC Part 15, Subpart C	Test Method
15.247(a)(2)	Occupied Bandwidth
15.247(b)(3)	Power Output
15.247(d)	Antenna Terminal Out of Band/Band Edge Conducted Emissions (30 MHz – 25 GHz)
15.247(d)	Out of Band/Band Edge Radiated Emissions (30 MHz to 25 GHz)
15.247(e)	Power Density

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Report No. R-5813N-1

General Test Requirements

1. The measurement procedures of ANSI C63.4:2003 were utilized as specified in FCC Part 15, Subpart C, Section 15.31(a)(3).
2. All radiated emissions measurements were performed on an Open Area Test Site (OATS), listed with the FCC, in accordance with FCC Section 15.31(d).
3. All measurements were performed at the specified 3 meter test distance as required by FCC Section 15.31(f).
4. The EUT was rotated throughout 360 degrees for all radiated emissions measurements as specified in FCC Section 15.31(f)(5).
5. All readily accessible EUT controls were adjusted in such a manner as to maximize the level of emissions in accordance with FCC Section 15.31(g).
6. Appropriate accessories were attached to all EUT ports during the performance of radiated emissions measurements as required by FCC Section 15.31(i).
7. The EUT operated over the frequency range of 2400 MHz to 2483.5 MHz. Testing was performed with the device operating at 3 frequencies, 1 at the top, 1 in the middle and 1 at the bottom of the range of operation in accordance with FCC Section 15.31(m).
8. The frequency spectrum was investigated from the lowest frequency generated in the device up to the 10th harmonic of the highest fundamental frequency in accordance with FCC Section 15.33(a)(1).
9. The EUT utilizes an internal PCB Antenna and does not have an antenna connector/external antenna and is therefore in compliance with 15.203.



Retlif Testing Laboratories

Report No. R-5813N-1

Certification and Signatures

We certify that this report is a true representation of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.



Scott Wentworth
Branch Manager
NVLAP Approved Signatory



Todd Hannemann
Laboratory Supervisor
iNARTE Certified Technician ATL-0255-T

Non-Warranty Provision

The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

Non-Endorsement

This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



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Report No. R-5813N-1

Requirements and Test Results

FCC Section 15.247 (a)(2) - Occupied Bandwidth

For systems using digital modulation techniques operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725 – 5850 MHz bands the minimum 6 dB bandwidth shall be at least 500 kHz.

- Results: The minimum 6dB bandwidth measured was 701.402 kHz and the device was found to meet the requirement of 15.247 (a)(2).

FCC Section 15.247 (b)(3) - Power Output

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g.: alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

- Results: The maximum measured conducted output power was 887.38uW. The maximum antenna gain of the PCB antenna is 3.3 dBi. The device was found to meet the power output requirements of 15.247 (b)(3) including de facto EIRP.



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Report No. R-5813N-1

Requirements and Test Results (con't)

FCC Section 15.247(d) – Unwanted Emissions

Antenna Terminal Out of Band/Band Edge Conducted Emissions

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under Paragraph (b)(3) of Section 15.247, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

- Results: All measured out of band/band edge conducted emissions were below the specified limits and the device was found to meet the requirements of 15.247 (d).

FCC Section 15.247(d) – Unwanted Emissions

Radiated Spurious Emissions/Restricted Bands/Band Edge

Emissions which fall into restricted bands, as defined in 15.205(a) must comply with the radiated emissions limits specified in 15.209(a) and shown below in Table 1. Emissions emanating from the EUT cabinet and cables must also comply with the radiated emissions limits. Radiated emissions measurements were also performed at the band edges to ensure band edge compliance.

Table 1 - Radiated Emission Limits

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 to 88	100	3
88 to 216	150	3
216 to 960	200	3
Above 960	500	3

- **Results:**
All spurious emissions were measured and found to be in compliance with the limits specified in 15.209(a). Band edge emissions were also found to be in compliance with the limits specified in 15.209(a).



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Report No. R-5813N-1

Requirements and Test Results (con't)

FCC Section 15.247(e) – Power Density

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

- **Results:** The measured power spectral density was below the specified limit and the device was found to meet the requirements of 15.247 (e).

FCC Section 15.247(i) – RF Exposure

Transmitters operating under 15.247 must be operated in a manner that ensures the public is not exposed to RF energy levels in excess of the commission's guidelines. The user/installation manual contains the proper cautionary statements and specifies that the device be installed and operated so that a minimum separation distance of 20cm will be maintained. Based on the transmitter power and maximum antenna gain (see calculation below) the 20cm separation distance exceeds the calculated distance for acceptable MPE power density levels to meet both the Occupational/Controlled Exposure and the General Population/Uncontrolled Exposure requirements of 1.1310. The calculation below uses the more stringent General Population MPE Limits.

$$S = \frac{PG}{4\pi D^2}$$

D = Minimum Separation Distance in cm

S = Max allowed Power Density in mW/cm²

Per 1.1310 For Frequency of 2400MHz = 1mW/cm²

Power = Max Power Input to Antenna = 0.9 mW

Gain = Max Power Gain of Antenna = 3.3 dBi = 2.14 numeric

$$1\text{mW/cm}^2 = \frac{0.9 \times 2.14}{4 (3.14) \times D^2} = \frac{1.9300000}{12.56 \times D^2}$$

$$D^2 = \frac{1.93}{12.56 \times 1} = 0.1537$$

$$D = \text{sq. root } 0.1537 = 0.392 \text{ cm}$$



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Report No. R-5813N-1

Equipment Lists

FCC Section 15.247(a)(2) – Occupied Bandwidth

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5030B	NARDA	10DB ATTENUATOR	DC - 12.4 GHz	757C-10	1/14/2014	12/31/2014
5070	ROHDE & SCHWARZ	EMI TEST RECEIVER	20 Hz - 40 GHz	ESIB40	11/6/2012	11/30/2014

FCC Section 15.247(b)(3) – Power Output

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5030B	NARDA	10DB ATTENUATOR	DC - 12.4 GHz	757C-10	1/14/2014	12/31/2014
5070	ROHDE & SCHWARZ	EMI TEST RECEIVER	20 Hz - 40 GHz	ESIB40	11/6/2012	11/30/2014

FCC Section 15.247(d) – Antenna Terminal Out of Band/Band Edge Conducted Emissions, 30 MHz to 25 GHz

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5030B	NARDA	10DB ATTENUATOR	DC - 12.4 GHz	757C-10	1/14/2014	12/31/2014
5070	ROHDE & SCHWARZ	EMI TEST RECEIVER	20 Hz - 40 GHz	ESIB40	11/6/2012	11/30/2014

FCC Section 15.247(d) – Out of Band/Band Edge Radiated Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
1232	AGILENT / HP	PRE-AMPLIFIER	1 - 26.5GHz	8449B	6/26/2013	6/30/2014
3258	EMCO	DOUBLE RIDGED GUIDE ANTENNA	1 GHZ - 18GHZ	3115	9/4/2013	3/31/2015
3430	MCS	HORN ANTENNA	18 GHz - 26.5 GHz	K-5039	No Calibration Required	
4029	RETLIF	OPEN AREA TEST SITE	3 / 10 Meters	RNH	7/24/2012	7/24/2015
5070	ROHDE & SCHWARZ	EMI TEST RECEIVER	20 Hz - 40 GHz	ESIB40	11/6/2012	11/30/2014
5188	Cybertron	Control Computer	N/A	TSVQJA2221	No Calibration Required	

FCC Section 15.247(e) – Power Density

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
5030B	NARDA	10DB ATTENUATOR	DC - 12.4 GHz	757C-10	1/14/2014	12/31/2014
5070	ROHDE & SCHWARZ	EMI TEST RECEIVER	20 Hz - 40 GHz	ESIB40	11/6/2012	11/30/2014



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Report No. R-5813N-1

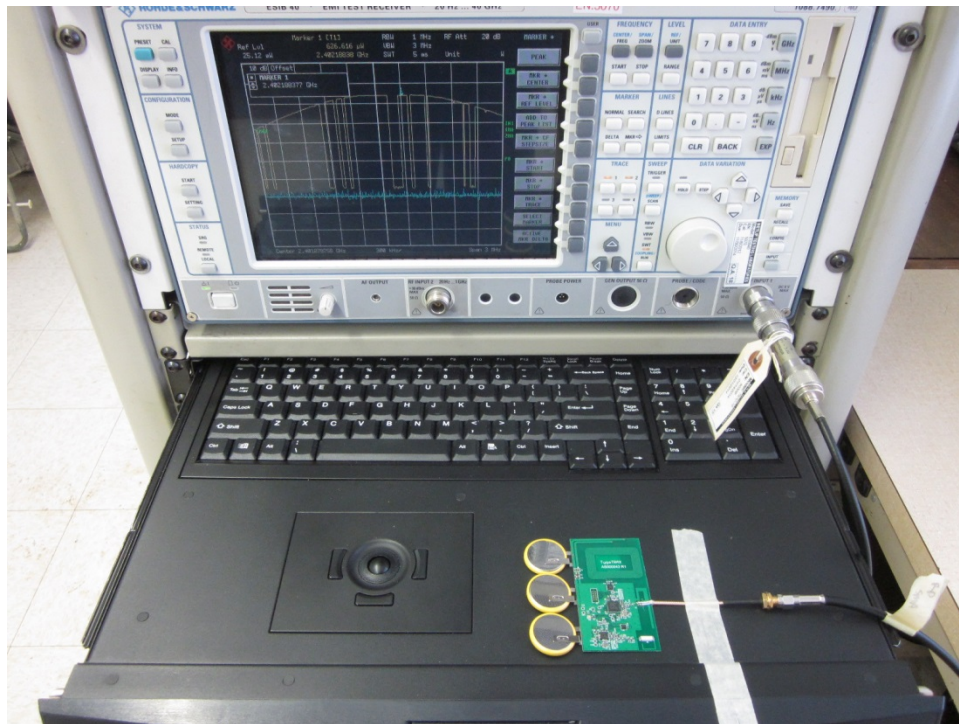
**Test Photograph(s)
Occupied Bandwidth
FCC Section 15.247(a)(2)**



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Report No. R-5813N-1

Test Photograph(s) Occupied Bandwidth



Test Setup



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Report No. R-5813N-1

**Occupied Bandwidth
Test Data**

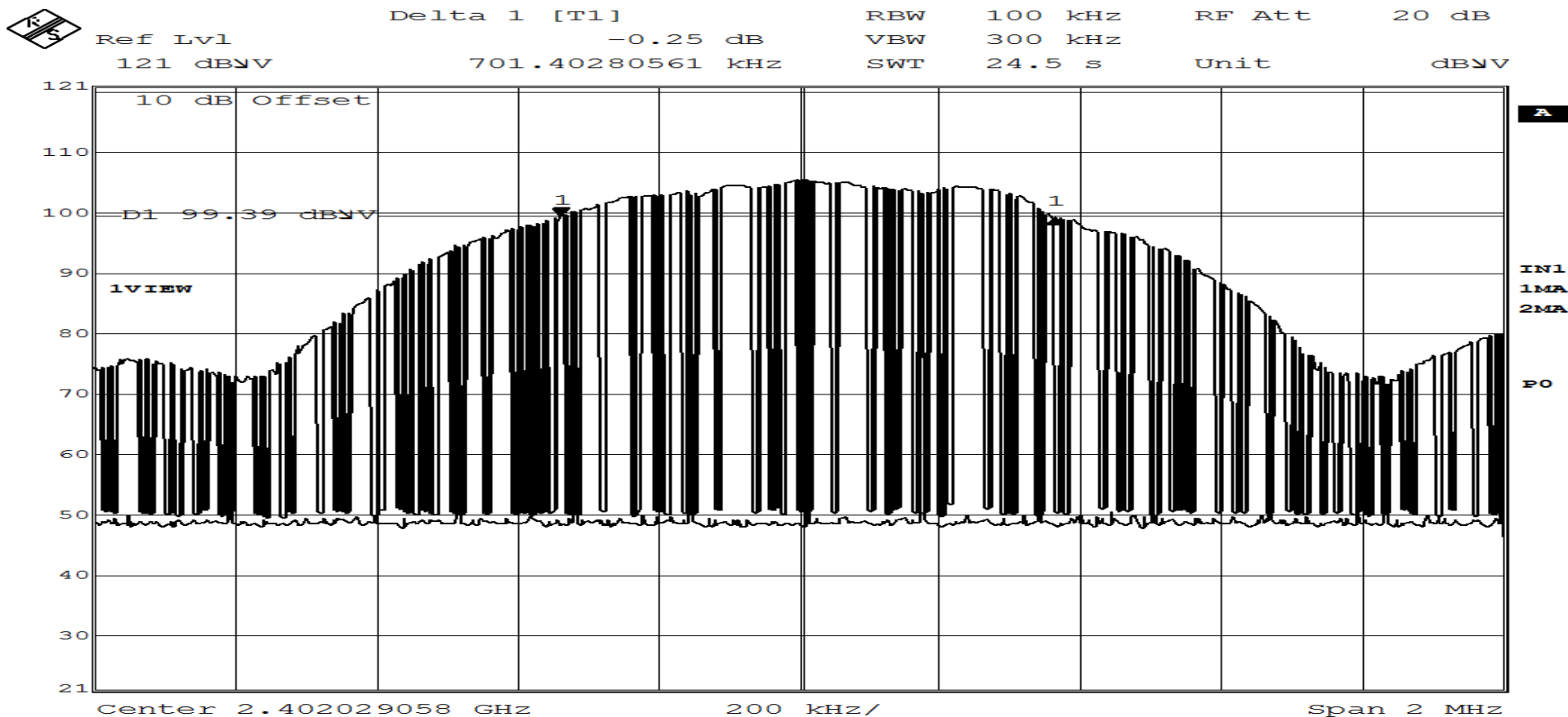


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Report No. R-5813N-1

RETLIF TESTING LABORATORIES

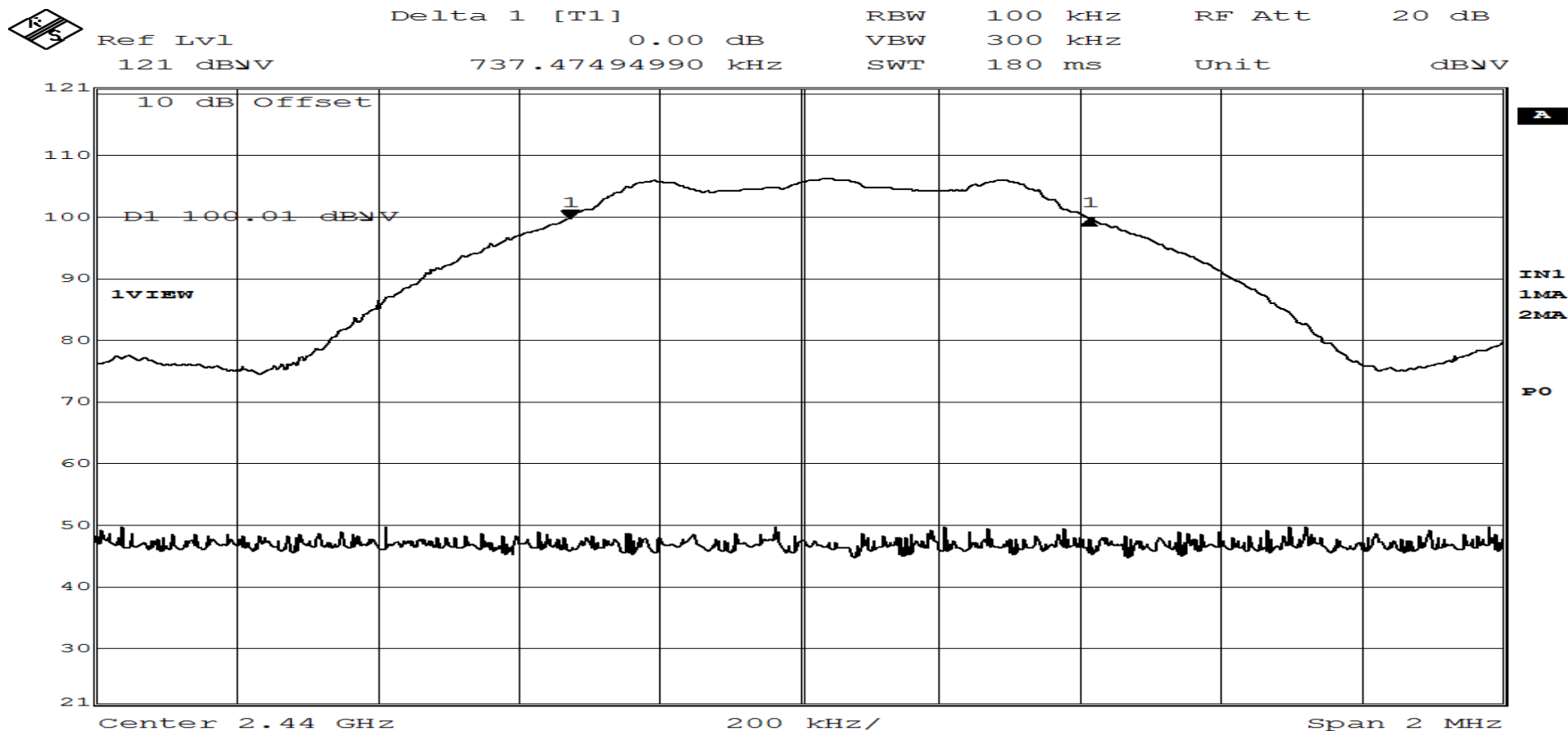
Test Method	6dB Channel Bandwidth		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.402 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)		
Technician	M. Seamans	Date	Feb. 19 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	6dB Bandwidth: 701.402 kHz		



Date: 18.FEB.2014 10:26:15

RETLIF TESTING LABORATORIES

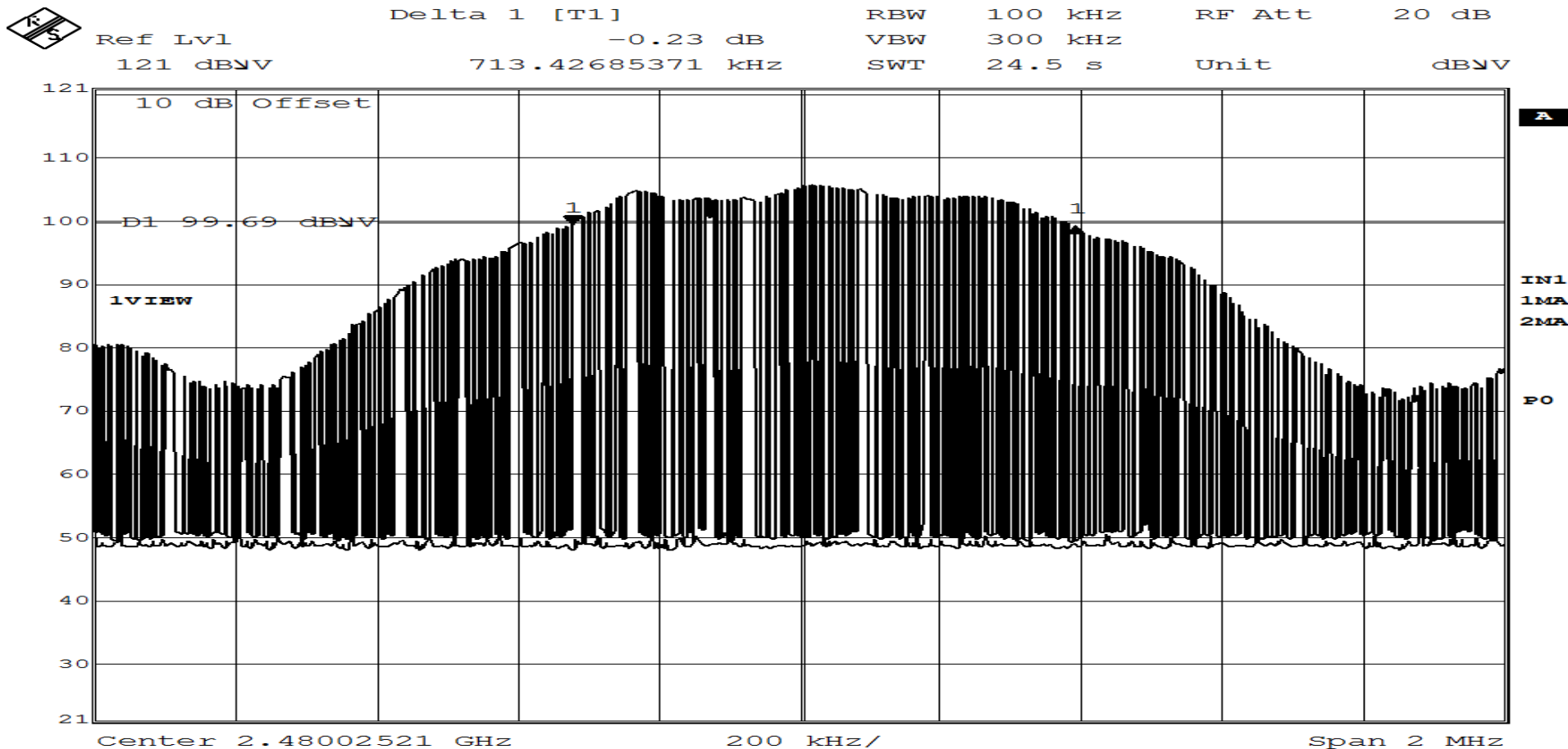
Test Method	6dB Channel Bandwidth		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.440 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)		
Technician	M. Seamans	Date	Feb. 19 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	6dB Bandwidth: 737.474 kHz		



Date: 18.FEB.2014 10:37:30

RETLIF TESTING LABORATORIES

Test Method	6dB Channel Bandwidth		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.480 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (a)(2)		
Technician	M. Seamans	Date	Feb. 19 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	6dB Bandwidth: 713.426 kHz		



Date: 18.FEB.2014 10:59:24

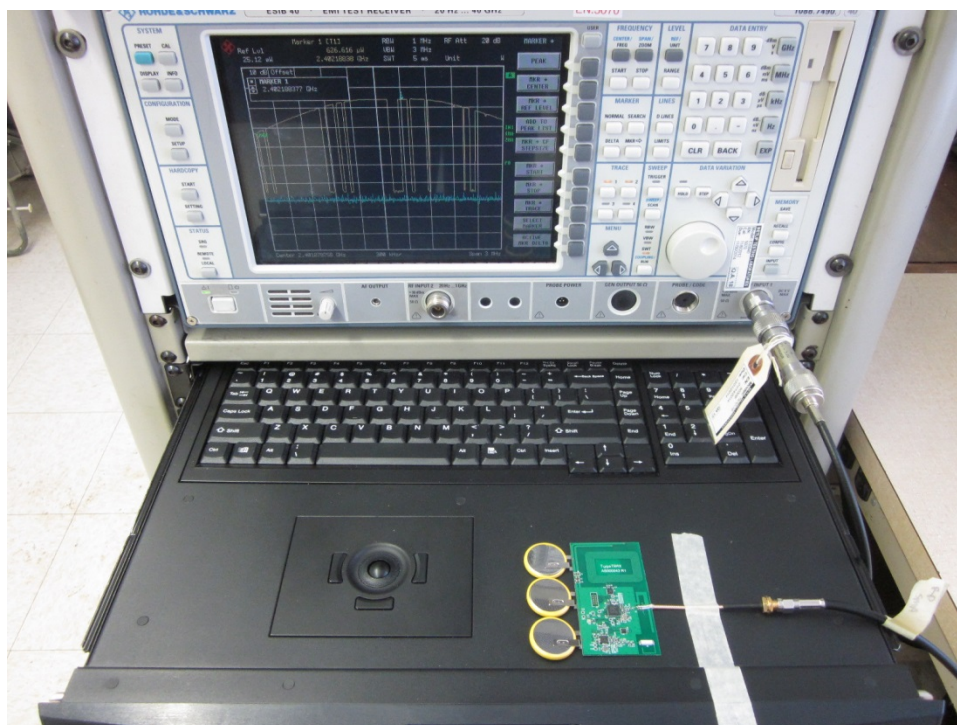
**Test Photograph(s)
Power Output
FCC Section 15.247(b)(3)**



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Report No. R-5813N-1

Test Photograph(s) Power Output



Test Setup



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Report No. R-5813N-1

**Power Output
Test Data**



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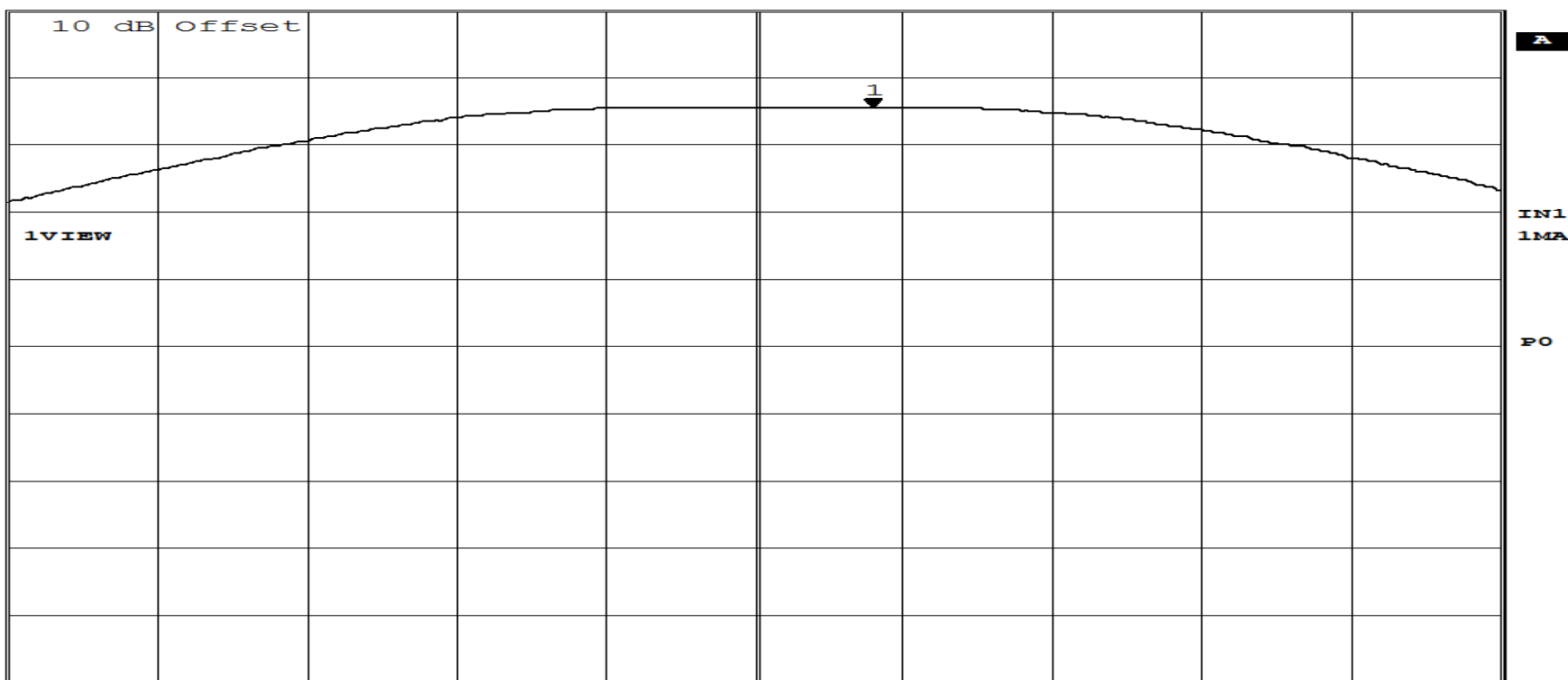
Report No. R-5813N-1

RETLIF TESTING LABORATORIES

Test Method	Peak Power Output		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Devices		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.402 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Peak Power Output: 887.380 uW		



Marker 1 [T1] RBW 1 MHz RF Att 20 dB
 Ref Lvl 887.380 uW VBW 3 MHz
 25.12 mW 2.40223747 GHz SWT 60 s Unit W



Center 2.402 GHz 300 kHz/ Span 3 MHz

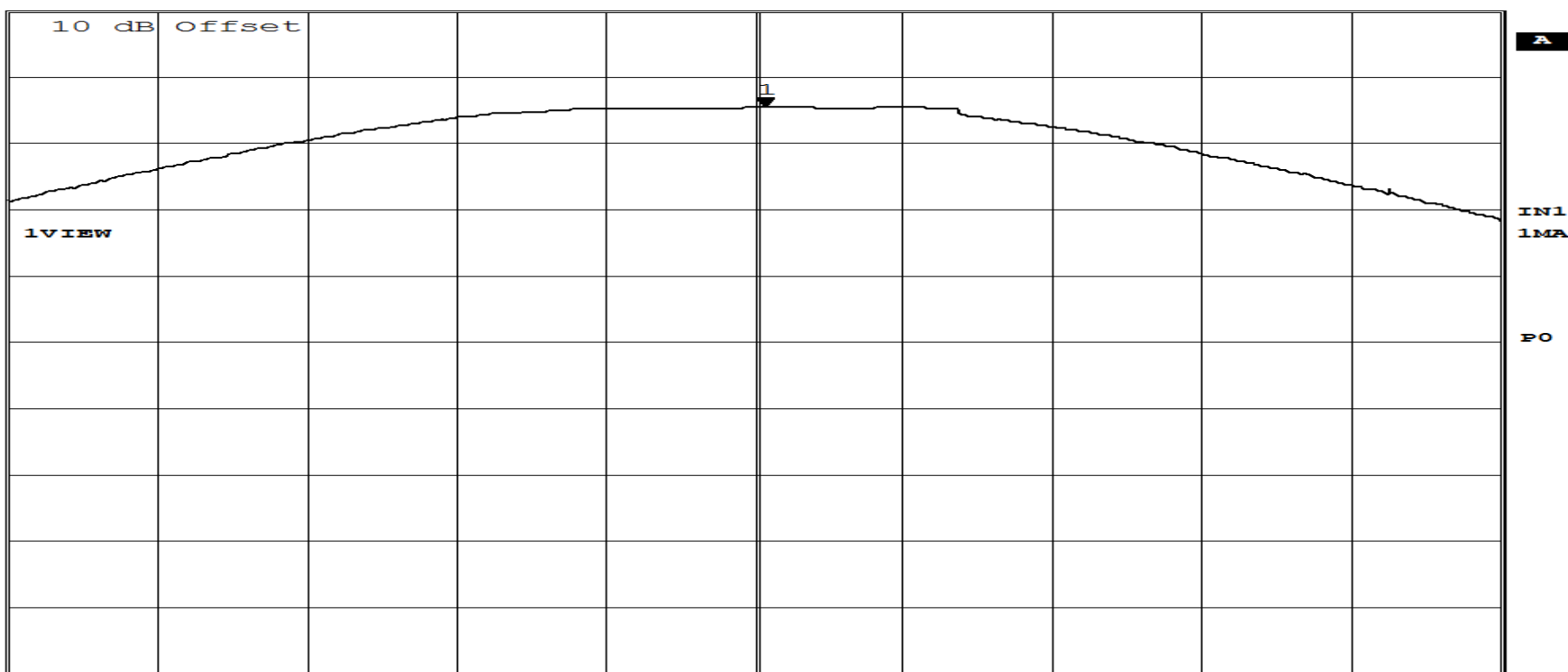
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RETLIF TESTING LABORATORIES

Test Method	Peak Power Output		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Devices		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.440 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Peak Power Output: 859.970 uW		



Marker 1 [T1] RBW 1 MHz RF Att 20 dB
 Ref Lvl 859.970 uW VBW 3 MHz
 25.12 mW 2.44002104 GHz SWT 60 s Unit W



Center 2.44 GHz 300 kHz/ Span 3 MHz

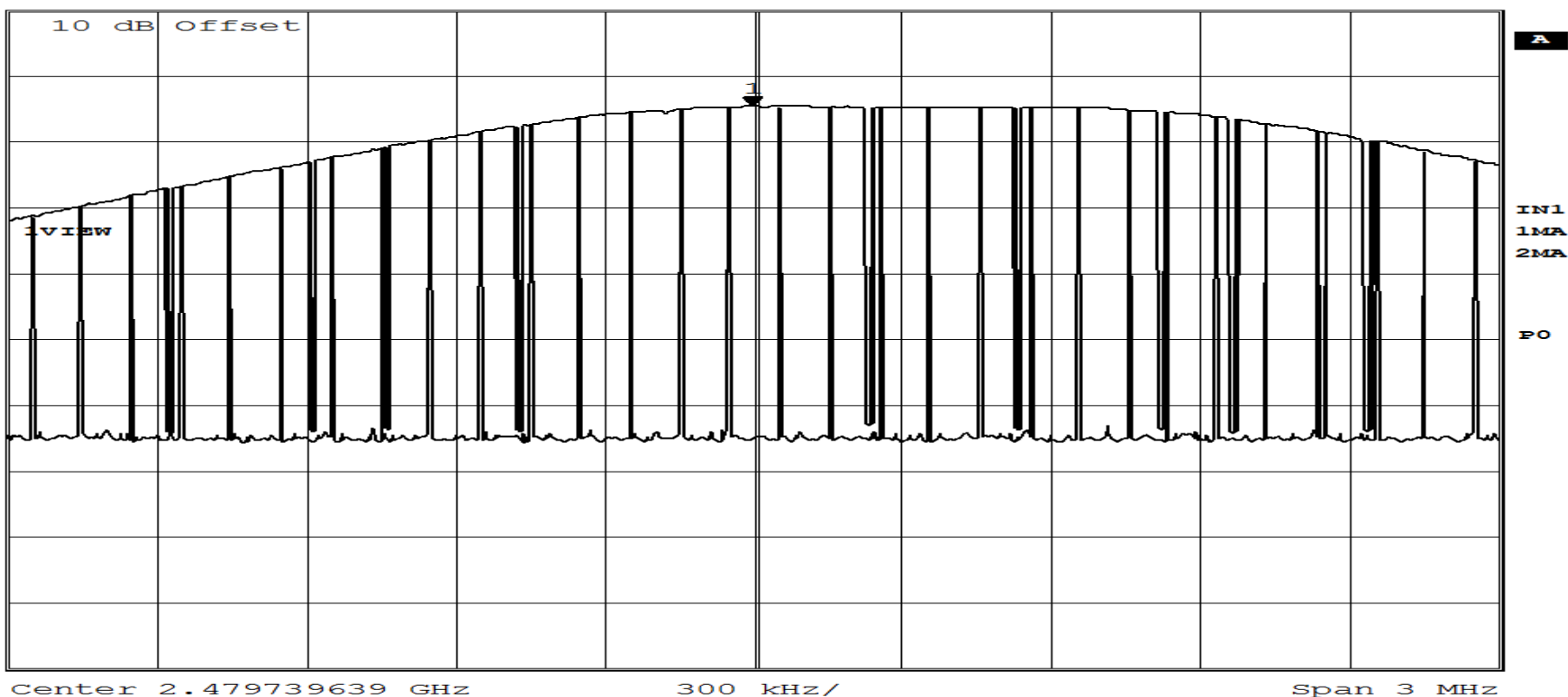
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RETLIF TESTING LABORATORIES

Test Method	Peak Power Output		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Devices		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.480 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Peak Power Output: 859.970 uW		



Marker 1 [T1] RBW 1 MHz RF Att 20 dB
 Ref Lvl 859.970 uW VBW 3 MHz
 25.12 mW 2.47973663 GHz SWT 60 s Unit W



Date: 18.FEB.2014 11:30:15

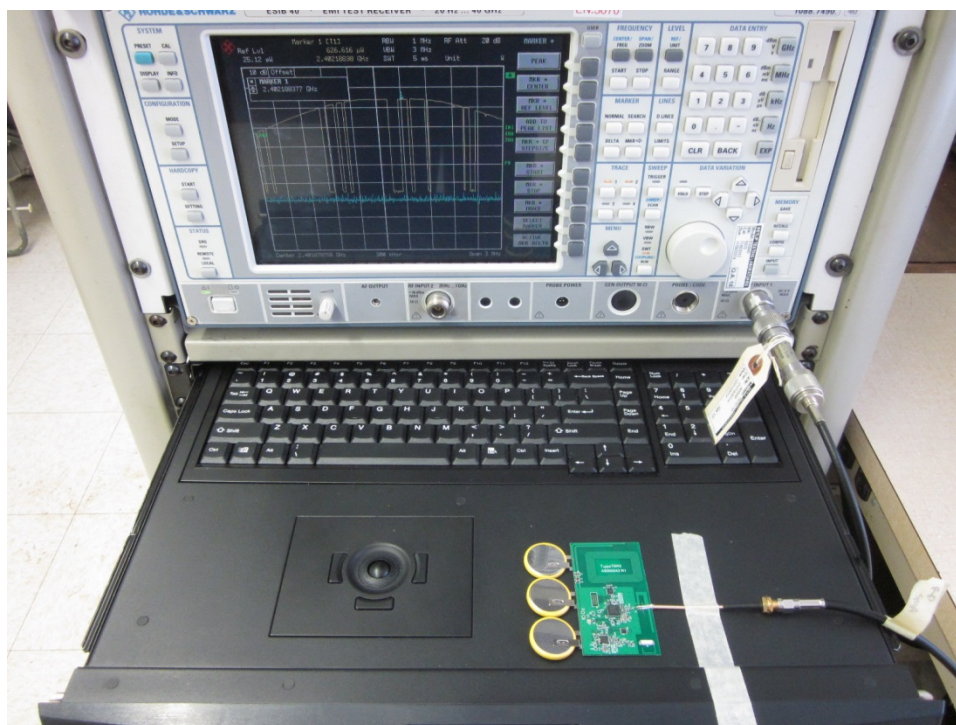
Test Photograph(s)
Antenna Terminal Out of Band/Band Edge Conducted Emissions, 30 MHz to 25 GHz
FCC Section 15.247(d)



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Report No. R-5813N-1

Test Photograph(s)
Antenna Terminal Out of Band/Band Edge Conducted Emissions, 30 MHz to 25 GHz



Test Setup



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Report No. R-5813N-1

**Antenna Terminal Out of Band/Band Edge Conducted Emissions, 30 MHz to 25 GHz
Test Data**



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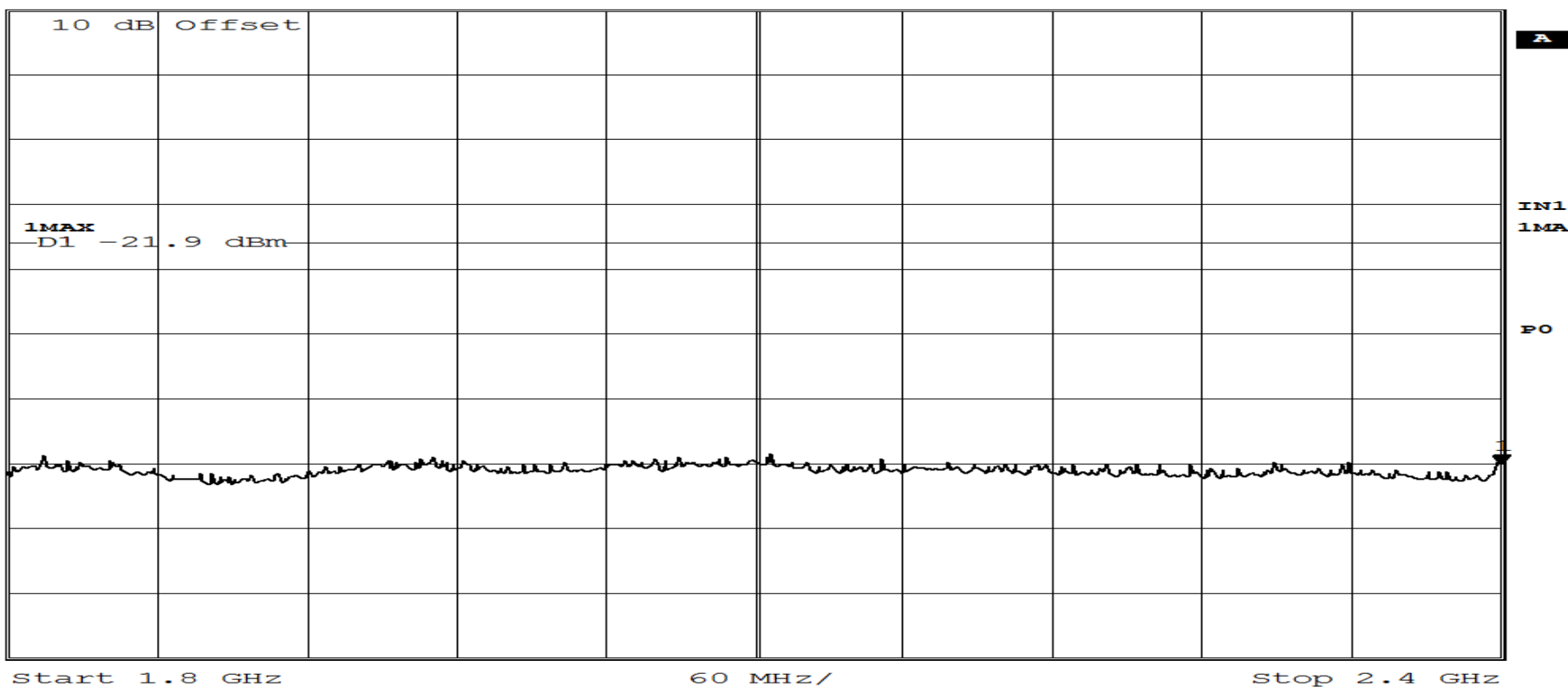
Report No. R-5813N-1

RETLIF TESTING LABORATORIES

Test Method	Band Edge		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Continuously transmitting signal at 2.402 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	Date	Feb.18 th , 2014
Climatic Conditions	Temp: 21.5 °C Relative Humidity: 40.0 %		
Notes	Lower Band Edge Reading: 2.499nW		



Ref Lvl Marker 1 [T1] RBW 100 kHz RF Att 20 dB
 25.12 mW 2.499 nW VBW 300 kHz
 2.40000000 GHz SWT 150 ms Unit W



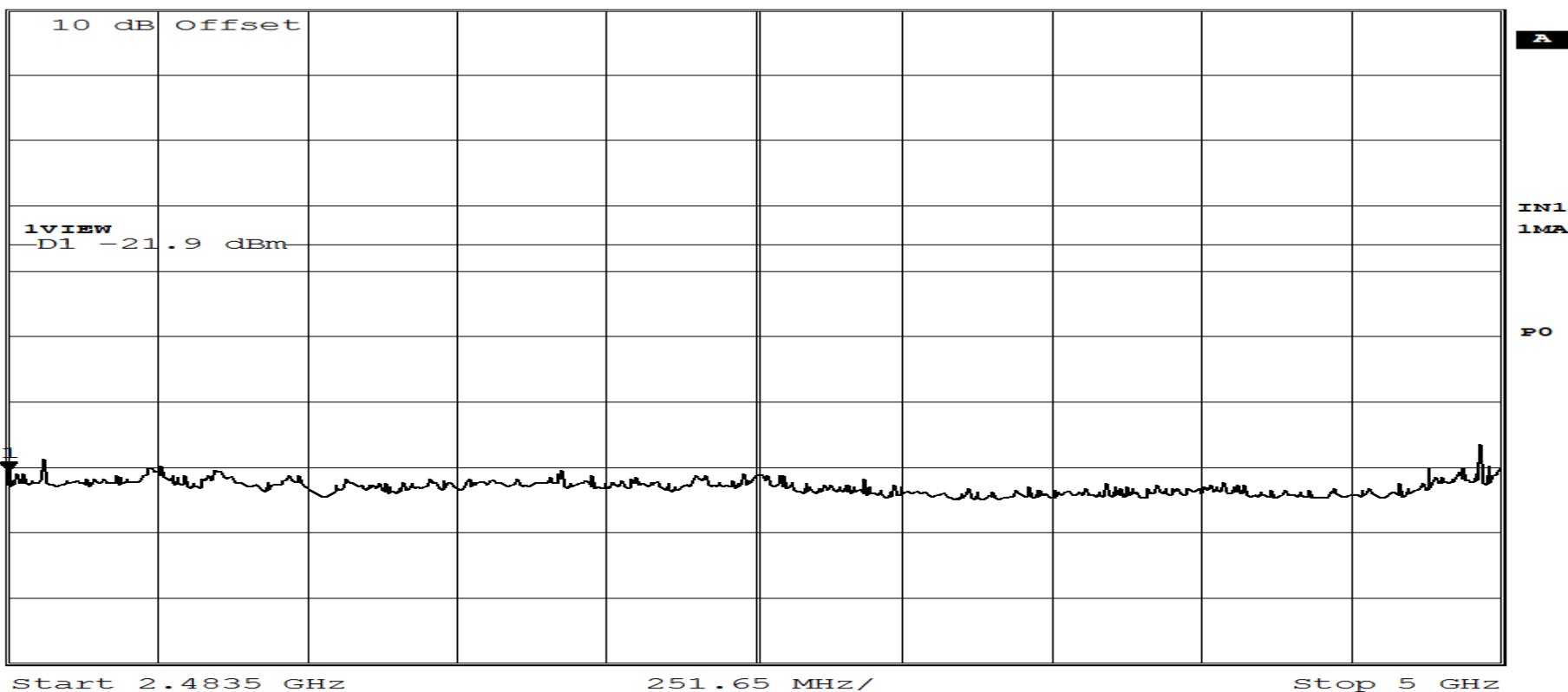
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RETLIF TESTING LABORATORIES

Test Method	Band Edge		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Continuously transmitting signal at 2.480 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	Date	Feb.18 th , 2014
Climatic Conditions	Temp: 21.5 °C Relative Humidity: 40.0 %		
Notes	Upper Band Edge Reading: 2.131nW		



Marker 1 [T1] RBW 100 kHz RF Att 20 dB
 Ref Lvl 2.131 nW VBW 300 kHz
 25.12 mW 2.48350000 GHz SWT 640 ms Unit W



Date: 18.FEB.2014 13:32:42

Unwanted Emissions into Non-Restricted Frequency Bands
Test Data

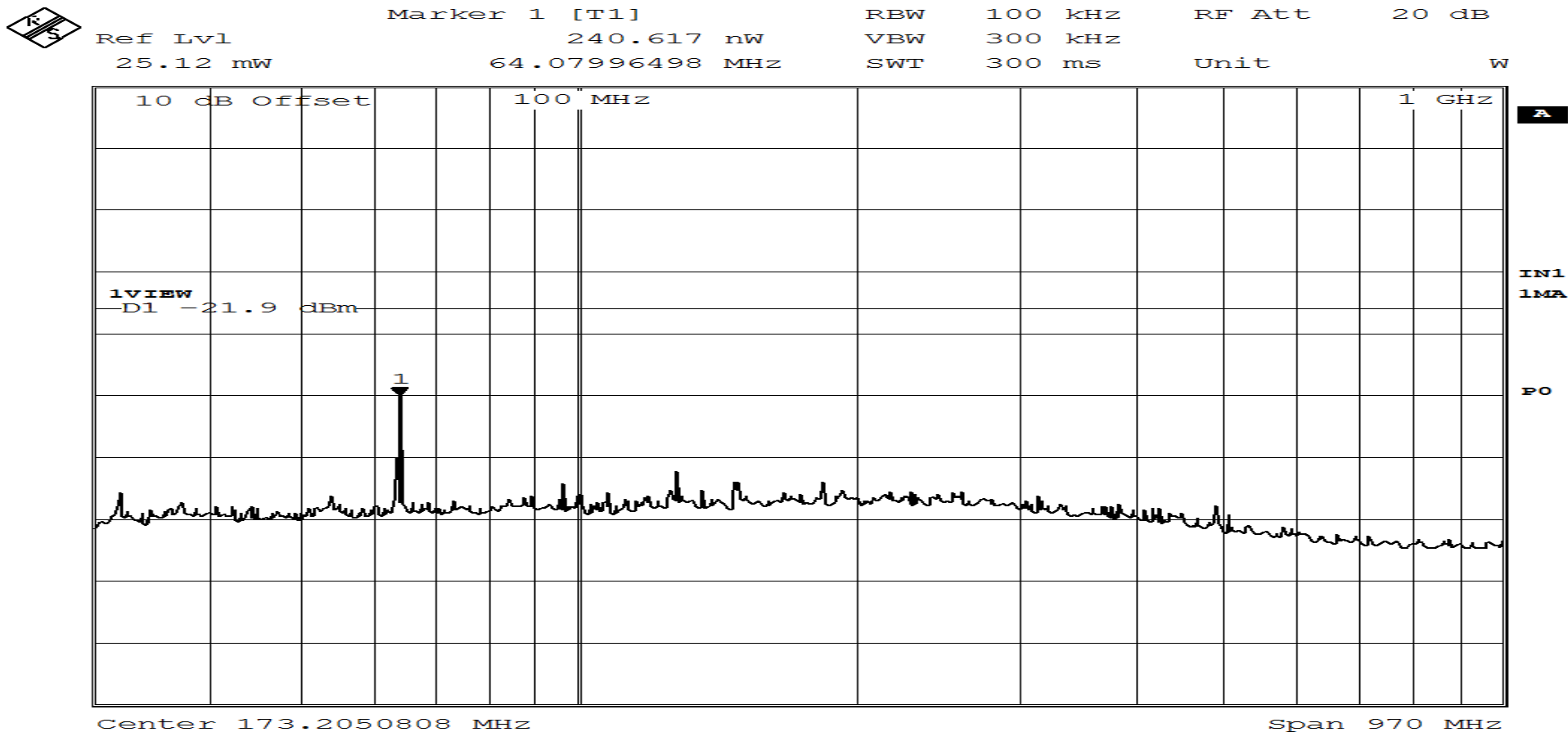


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Report No. R-5813N-1

RETLIF TESTING LABORATORIES

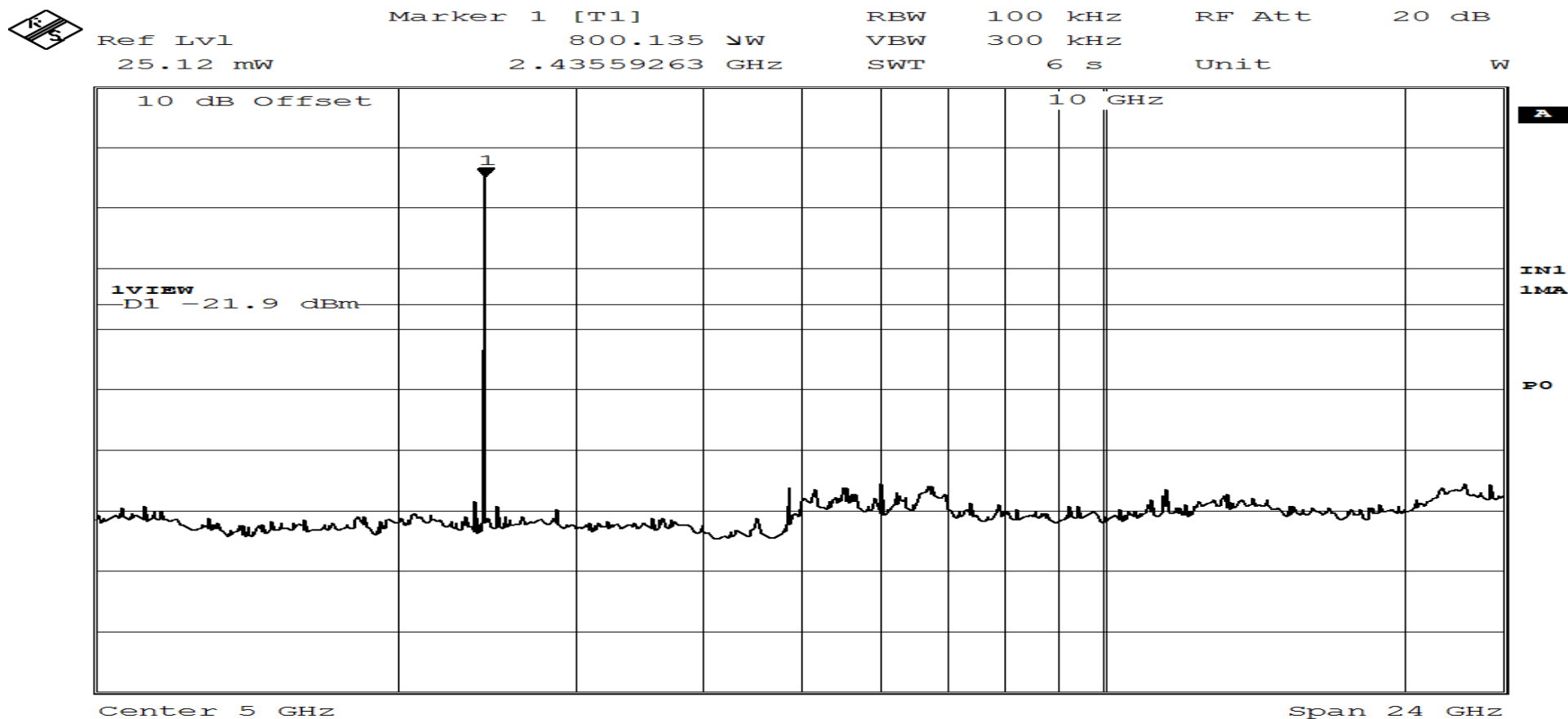
Test Method	Unwanted Emissions into Non-Restricted Frequency Bands 30 MHz to 25 GHz		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.402 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: -21.98 dBm, 6.457uW		



Date: 18.FEB.2014 13:22:30

RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands 30 MHz to 25 GHz		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.402 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: -21.98 dBm, 6.457uW		



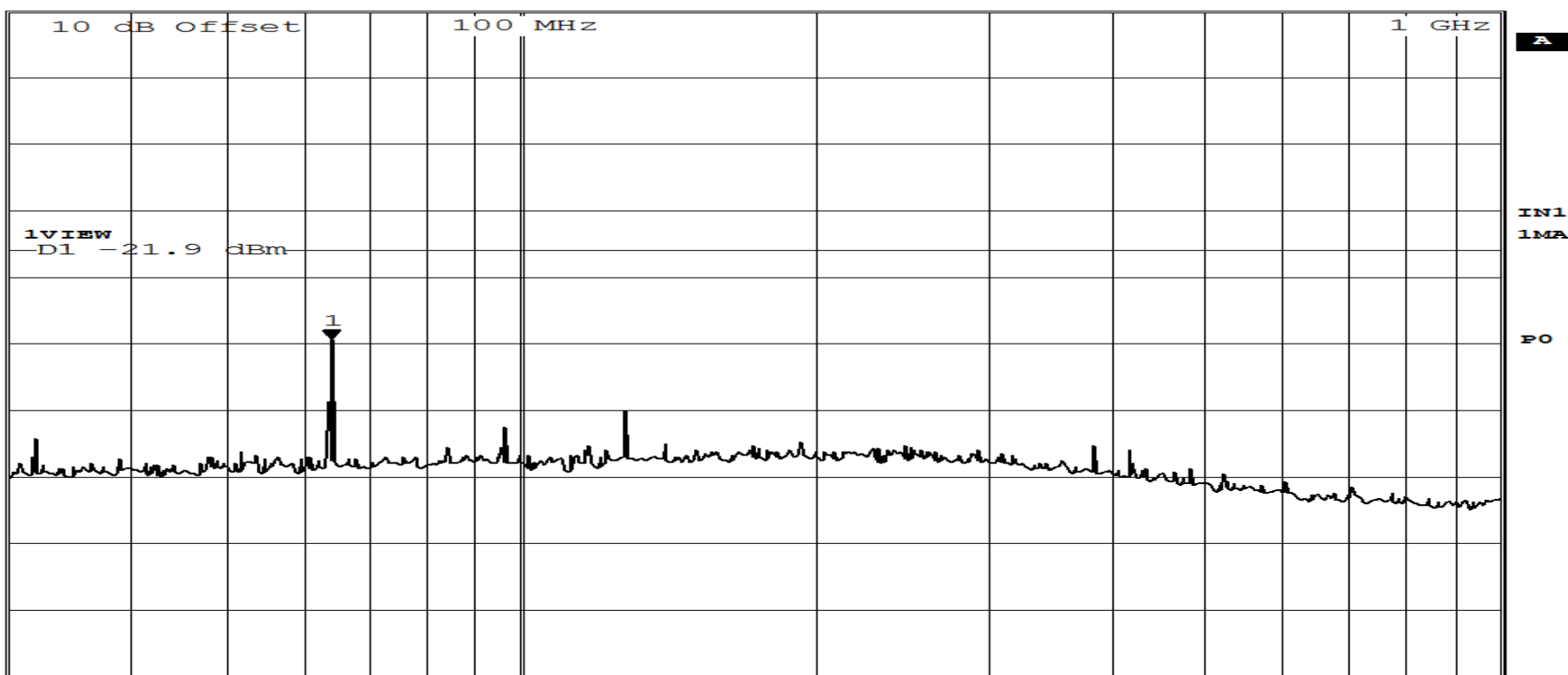
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RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands 30 MHz to 25 GHz		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.440 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: -21.98 dBm, 6.457uW		



Marker 1 [T1] RBW 100 kHz RF Att 20 dB
 Ref Lvl 284.267 nW VBW 300 kHz
 25.12 mW 64.07996498 MHz SWT 300 ms Unit W

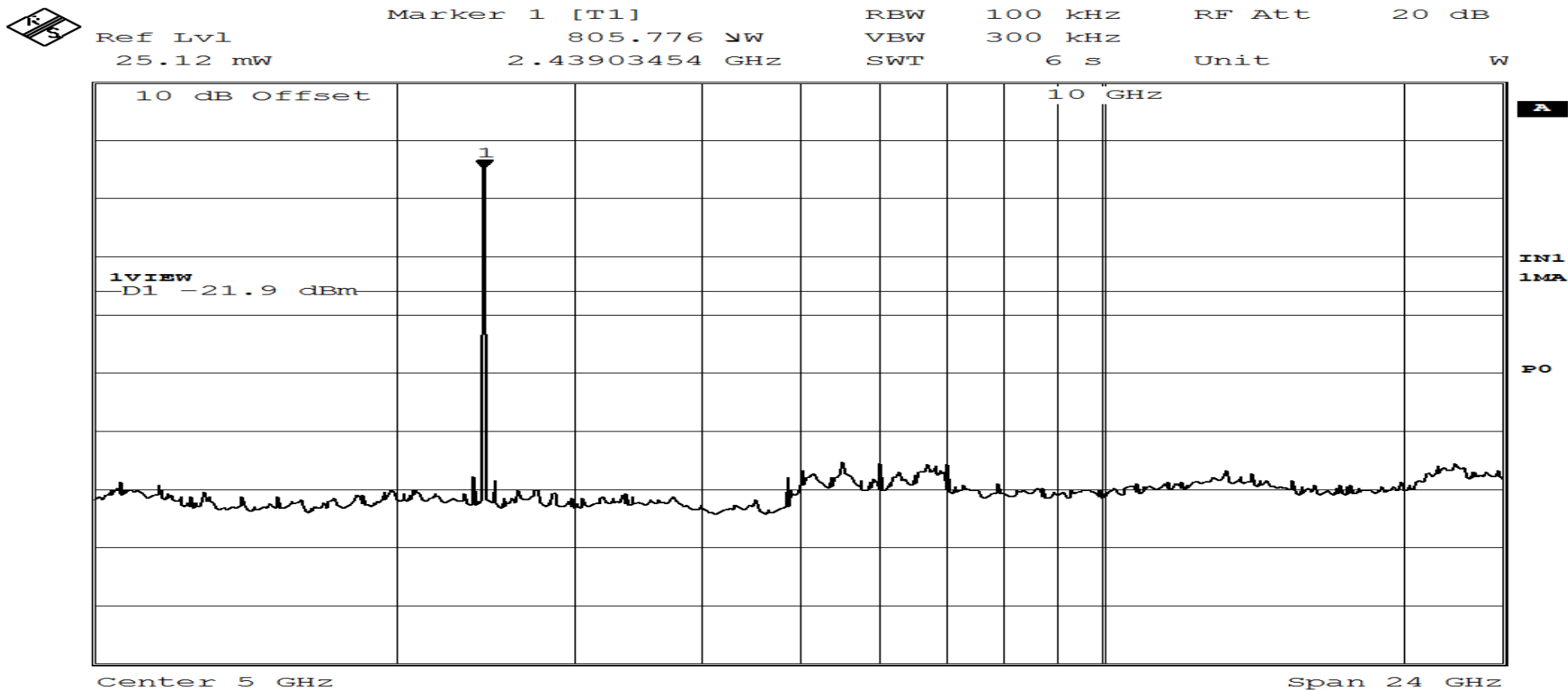


Center 173.2050808 MHz Span 970 MHz

Date: 18.FEB.2014 13:11:54

RETLIF TESTING LABORATORIES

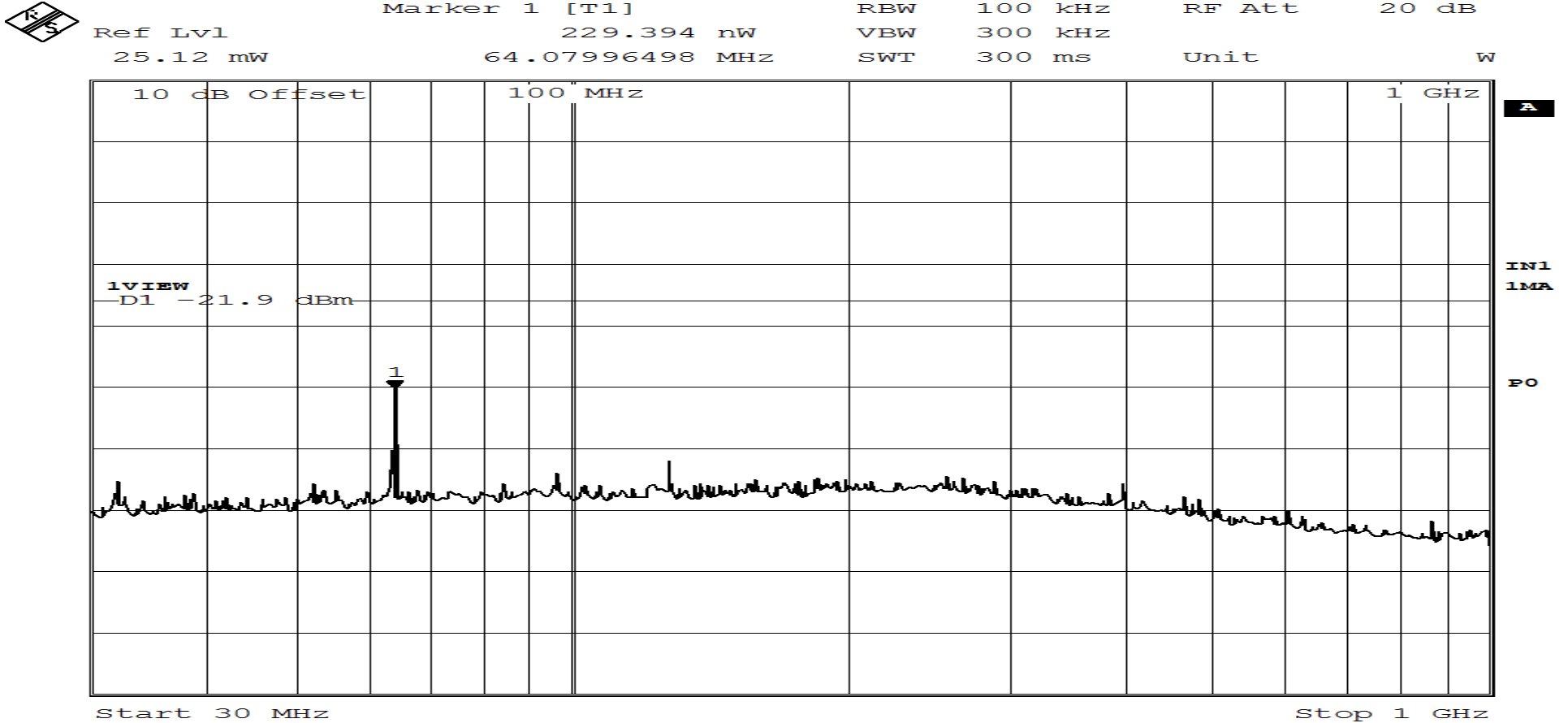
Test Method	Unwanted Emissions into Non-Restricted Frequency Bands 30 MHz to 25 GHz		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.440 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: -21.98 dBm, 6.457uW		



Date: 18.FEB.2014 13:15:24

RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands 30 MHz to 25 GHz		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.480 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: -21.98 dBm, 6.457uW		



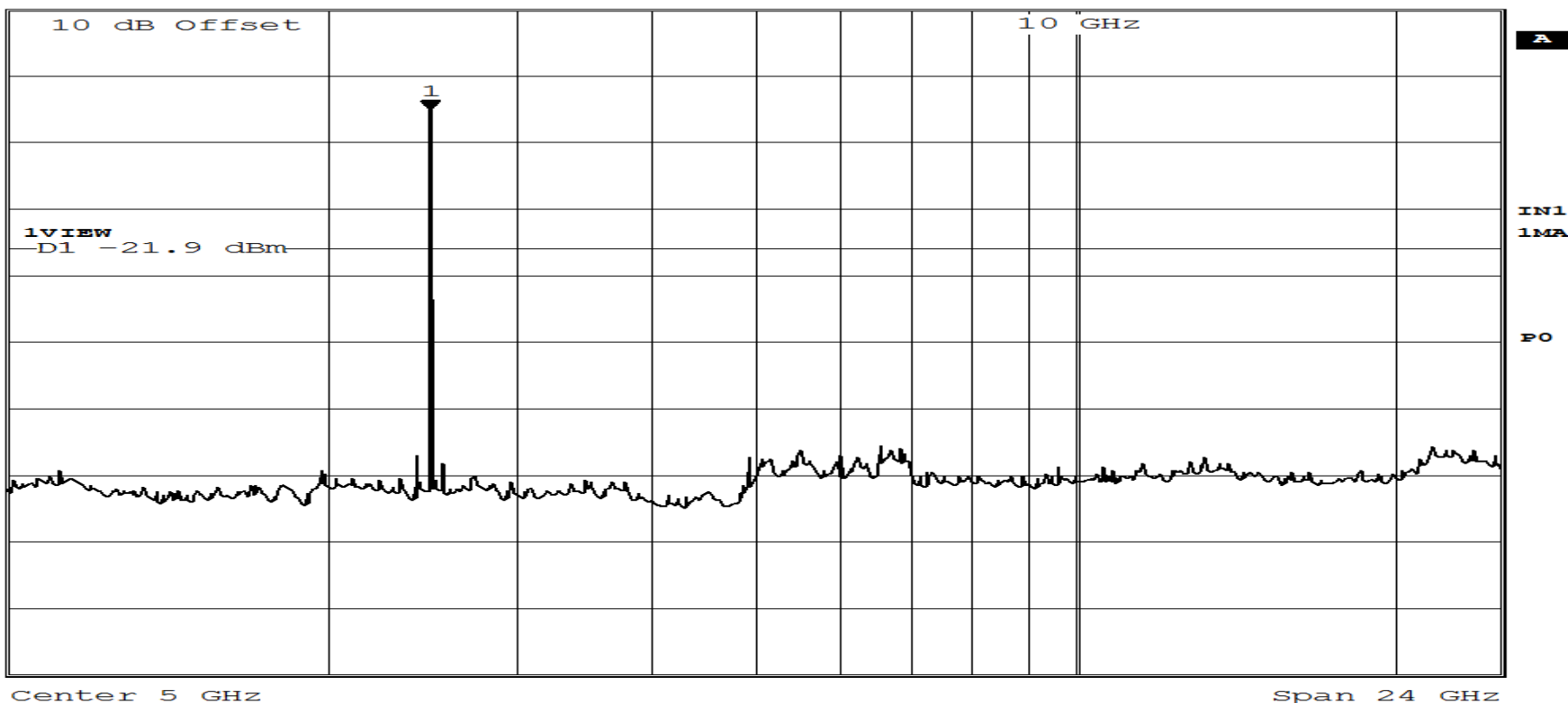
Date: 18.FEB.2014 13:29:19

RETLIF TESTING LABORATORIES

Test Method	Unwanted Emissions into Non-Restricted Frequency Bands 30 MHz to 25 GHz		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Device		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.480 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (d)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: -21.98 dBm, 6.457uW		



Marker 1 [T1] RBW 100 kHz RF Att 20 dB
 Ref Lvl 751.821 μW VBW 300 kHz
 25.12 mW 2.48028056 GHz SWT 6 s Unit W



Date: 18.FEB.2014 13:28:45

**Test Photograph(s)
Out of Band/Band Edge Radiated Emissions
FCC Section 15.247(d)**



Retlif Testing Laboratories

Report No. R-5813N-1

Test Photograph(s)
Out of Band/Band Edge Radiated Emissions



Oats Configuration, Model: TB-200



Oats Configuration, Model: TB-200



Retlif Testing Laboratories

Report No. R-5813N-1

Test Photograph(s)
Out of Band/Band Edge Radiated Emissions



Oats Setup, 30 MHz to 1 GHz, Horizontal Polarization, Model: TB-200



Oats Setup, 30 MHz to 1 GHz, Vertical Polarization, Model: TB-200



Retlif Testing Laboratories

Report No. R-5813N-1

Test Photograph(s)
Out of Band/Band Edge Radiated Emissions



Oats Setup, 1 GHz to 18 GHz, Horizontal Polarization, Model: TB-200



Oats Setup, 1 GHz to 18 GHz, Vertical Polarization, Model: TB-200



Retlif Testing Laboratories

Report No. R-5813N-1

Test Photograph(s)
Out of Band/Band Edge Radiated Emissions



Oats Setup, 18 GHz to 25 GHz, Model: TB-200



Retlif Testing Laboratories

Report No. R-5813N-1

**Unwanted Emissions into Restricted Frequency Bands
30 MHz to 25 GHz
Test Data
TB-130 Transmitting at 2.480 GHz**



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
37.50	-	-	-	-			-	100.00
	-	-	-	-			-	I
38.25	-	-	-	-			-	100.00
73.00	-	-	-	-			-	100.00
	-	-	-	-			-	I
74.60	-	-	-	-			-	100.00
74.80	-	-	-	-			-	100.00
	-	-	-	-			-	I
	75.00	8.47	7.73	16.2	*		6.46	
	-	-	-	-			-	
75.20	-	-	-	-			-	100.00
108.00	-	-	-	-			-	150.00
	-	-	-	-			-	
121.94	-	-	-	-			-	150.00
123.00	-	-	-	-			-	150.00
	-	-	-	-			-	
	125.00	8.02	9.08	17.1	*		7.16	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 1 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
138.00	-	-	-	-			-	150.00
149.90	-	-	-	-			-	150.00
	-	-	-	-			-	
150.05	-	-	-	-			-	150.00
156.52	-	-	-	-			-	150.00
	-	-	-	-			-	
156.52	-	-	-	-			-	150.00
156.70	-	-	-	-			-	150.00
	-	-	-	-			-	
156.90	-	-	-	-			-	150.00
162.01	-	-	-	-			-	150.00
	-	-	-	-			-	
167.17	-	-	-	-			-	150.00
167.72	-	-	-	-			-	150.00
	170.00	9.01	10.69	19.70	*		9.66	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 2 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
173.20	-	-	-	-			-	150.00
240.00	-	-	-	-			-	200.00
	-	-	-	-			-	
285.00	-	-	-	-			-	200.00
322.80	-	-	-	-			-	200.00
	330.00	7.45	17.65	25.10	*		17.99	
335.40	-	-	-	-			-	200.00
399.90	-	-	-	-			-	200.00
	-	-	-	-			-	
410.00	-	-	-	-			-	200.00
608.00	-	-	-	-			-	200.00
	-	-	-	-			-	
614.00	-	-	-	-			-	200.00
960.00	-	-	-	-			-	500.00
	975.00	9.34	28.96	38.30	*		82.22	
1240.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 3 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
1300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1427.00	-	-	-	-			-	500.00
1435.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1646.50	-	-	-	-			-	500.00
1660.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1710.00	-	-	-	-			-	500.00
1718.80	-	-	-	-			-	500.00
	-	-	-	-			-	
1722.20	-	-	-	-			-	500.00
2200.00	-	-	-	-			-	500.00
	-	-	-	-			-	
2300.00	-	-	-	-			-	500.00
2310.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 4 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
2390.00	-	-	-	-			-	500.00
2483.5	-	-	-	-			-	500.00
2500.00	-	-	-	-			-	500.00
2690.00	-	-	-	-			-	500.00
2900.00	-	-	-	-			-	500.00
3260.00	-	-	-	-			-	500.00
3267.00	-	-	-	-			-	500.00
3332.00	-	-	-	-			-	500.00
3339.00	-	-	-	-			-	500.00
3345.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 5 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
3358.00	-	-	-	-			-	500.00
3600.00	-	-	-	-			-	500.00
	-	-	-	-			-	
4400.00	-	-	-	-			-	500.00
4500.00	-	-	-	-			-	500.00
	4960.00	43.65	-0.44	43.21			144.71	
5150.00	-	-	-	-			-	500.00
5350.00	-	-	-	-			-	500.00
	-	-	-	-			-	
5460.00	-	-	-	-			-	500.00
7250.00	-	-	-	-			-	500.00
	7440.00	46.49	2.41	48.90			278.61	
7750.00	-	-	-	-			-	500.00
8025.00	-	-	-	-			-	500.00
	-	-	-	-			-	
8500.00	-	-	-	-			-	500.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

Data Sheet 6 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
9000.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9200.00	-	-	-	-			-	500.00
9300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9500.00	-	-	-	-			-	500.00
10600.00	-	-	-	-			-	500.00
	12400.00	32.75	3.64	36.39	*		65.99	
12700.00	-	-	-	-			-	500.00
13250.00	-	-	-	-			-	500.00
	-	-	-	-			-	
13400.00	-	-	-	-			-	500.00
14470.00	-	-	-	-			-	500.00
	-	-	-	-			-	
14500.00	-	-	-	-			-	500.00
15350.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 7 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
16200.00	-	-	-	-			-	500.00
17700.00	-	-	-	-			-	500.00
19840.00	19840.00	33.73	-10.30	23.43	*		14.84	500.00
21400.00	-	-	-	-			-	500.00
22010.00	-	-	-	-			-	500.00
22320.00	22320.00	34.05	-10.30	23.75	*		15.40	500.00
23120.00	-	-	-	-			-	500.00
23600.00	-	-	-	-			-	500.00
24000.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 8 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

**Unwanted Emissions into Restricted Frequency Bands
30 MHz to 25 GHz
Test Data
TB-130 Transmitting at 2.402 GHz**



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
37.50	-	-	-	-			-	100.00
	-	-	-	-			-	I
38.25	-	-	-	-			-	100.00
73.00	-	-	-	-			-	100.00
	-	-	-	-			-	I
74.60	-	-	-	-			-	100.00
74.80	-	-	-	-			-	100.00
	-	-	-	-			-	I
	75.00	8.47	7.73	16.2	*		6.46	
	-	-	-	-			-	
75.20	-	-	-	-			-	100.00
108.00	-	-	-	-			-	150.00
	-	-	-	-			-	
121.94	-	-	-	-			-	150.00
123.00	-	-	-	-			-	150.00
	-	-	-	-			-	
	125.00	8.02	9.08	17.1	*		7.16	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 1 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
138.00	-	-	-	-			-	150.00
149.90	-	-	-	-			-	150.00
	-	-	-	-			-	
150.05	-	-	-	-			-	150.00
156.52	-	-	-	-			-	150.00
	-	-	-	-			-	
156.52	-	-	-	-			-	150.00
156.70	-	-	-	-			-	150.00
	-	-	-	-			-	
156.90	-	-	-	-			-	150.00
162.01	-	-	-	-			-	150.00
	-	-	-	-			-	
167.17	-	-	-	-			-	150.00
167.72	-	-	-	-			-	150.00
	170.00	9.01	10.69	19.70	*		9.66	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 2 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
173.20	-	-	-	-			-	150.00
240.00	-	-	-	-			-	200.00
	-	-	-	-			-	
285.00	-	-	-	-			-	200.00
322.80	-	-	-	-			-	200.00
	330.00	7.45	17.65	25.10	*		17.99	
335.40	-	-	-	-			-	200.00
399.90	-	-	-	-			-	200.00
	-	-	-	-			-	
410.00	-	-	-	-			-	200.00
608.00	-	-	-	-			-	200.00
	-	-	-	-			-	
614.00	-	-	-	-			-	200.00
960.00	-	-	-	-			-	500.00
	975.00	9.34	28.96	38.30	*		82.22	
1240.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 3 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
1300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1427.00	-	-	-	-			-	500.00
1435.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1646.50	-	-	-	-			-	500.00
1660.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1710.00	-	-	-	-			-	500.00
1718.80	-	-	-	-			-	500.00
	-	-	-	-			-	
1722.20	-	-	-	-			-	500.00
2200.00	-	-	-	-			-	500.00
	-	-	-	-			-	
2300.00	-	-	-	-			-	500.00
2310.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 4 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
2390.00	-	-	-	-			-	500.00
2483.5	-	-	-	-			-	500.00
2500.00	-	-	-	-			-	500.00
2690.00	-	-	-	-			-	500.00
2900.00	-	-	-	-			-	500.00
3260.00	-	-	-	-			-	500.00
3267.00	-	-	-	-			-	500.00
3332.00	-	-	-	-			-	500.00
3339.00	-	-	-	-			-	500.00
3345.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 5 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
3358.00	-	-	-	-			-	500.00
3600.00	-	-	-	-			-	500.00
	-	-	-	-			-	
4400.00	-	-	-	-			-	500.00
4500.00	-	-	-	-			-	500.00
	4804.00	41.19	-0.44	40.75			109.02	
5150.00	-	-	-	-			-	500.00
5350.00	-	-	-	-			-	500.00
	-	-	-	-			-	
5460.00	-	-	-	-			-	500.00
7250.00	-	-	-	-			-	500.00
	-	-	-	-			-	
7750.00	-	-	-	-			-	500.00
8025.00	-	-	-	-			-	500.00
	-	-	-	-			-	
8500.00	-	-	-	-			-	500.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

Data Sheet 6 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
9000.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9200.00	-	-	-	-			-	500.00
9300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9500.00	-	-	-	-			-	500.00
10600.00	-	-	-	-			-	500.00
	12010.00	33.32	3.64	36.96	*		70.47	
12700.00	-	-	-	-			-	500.00
13250.00	-	-	-	-			-	500.00
	-	-	-	-			-	
13400.00	-	-	-	-			-	500.00
14470.00	-	-	-	-			-	500.00
	-	-	-	-			-	
14500.00	-	-	-	-			-	500.00
15350.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 7 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
16200.00	-	-	-	-			-	500.00
17700.00	-	-	-	-			-	500.00
21400.00	19216.00	33.22	-10.30	22.92	*		14.00	500.00
22010.00	-	-	-	-			-	500.00
23120.00	-	-	-	-			-	500.00
23600.00	-	-	-	-			-	500.00
24000.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 8 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

**Unwanted Emissions into Restricted Frequency Bands
30 MHz to 25 GHz
Test Data
TB-130 Transmitting at 2.440 GHz**



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
37.50	-	-	-	-			-	100.00
	-	-	-	-			-	I
38.25	-	-	-	-			-	100.00
73.00	-	-	-	-			-	100.00
	-	-	-	-			-	I
74.60	-	-	-	-			-	100.00
74.80	-	-	-	-			-	100.00
	-	-	-	-			-	I
	75.00	8.47	7.73	16.2	*		6.46	
	-	-	-	-			-	
75.20	-	-	-	-			-	100.00
108.00	-	-	-	-			-	150.00
	-	-	-	-			-	
121.94	-	-	-	-			-	150.00
123.00	-	-	-	-			-	150.00
	-	-	-	-			-	
	125.00	8.02	9.08	17.1	*		7.16	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters

Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
138.00	-	-	-	-			-	150.00
149.90	-	-	-	-			-	150.00
	-	-	-	-			-	
150.05	-	-	-	-			-	150.00
156.52	-	-	-	-			-	150.00
	-	-	-	-			-	
156.52	-	-	-	-			-	150.00
156.70	-	-	-	-			-	150.00
	-	-	-	-			-	
156.90	-	-	-	-			-	150.00
162.01	-	-	-	-			-	150.00
	-	-	-	-			-	
167.17	-	-	-	-			-	150.00
167.72	-	-	-	-			-	150.00
	170.00	9.01	10.69	19.70	*		9.66	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
173.20	-	-	-	-			-	150.00
240.00	-	-	-	-			-	200.00
	-	-	-	-			-	
285.00	-	-	-	-			-	200.00
322.80	-	-	-	-			-	200.00
	330.00	7.45	17.65	25.10	*		17.99	
335.40	-	-	-	-			-	200.00
399.90	-	-	-	-			-	200.00
	-	-	-	-			-	
410.00	-	-	-	-			-	200.00
608.00	-	-	-	-			-	200.00
	-	-	-	-			-	
614.00	-	-	-	-			-	200.00
960.00	-	-	-	-			-	500.00
	975.00	9.34	28.96	38.30	*		82.22	
1240.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 3 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
1300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1427.00	-	-	-	-			-	500.00
1435.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1646.50	-	-	-	-			-	500.00
1660.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1710.00	-	-	-	-			-	500.00
1718.80	-	-	-	-			-	500.00
	-	-	-	-			-	
1722.20	-	-	-	-			-	500.00
2200.00	-	-	-	-			-	500.00
	-	-	-	-			-	
2300.00	-	-	-	-			-	500.00
2310.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 4 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
2390.00	-	-	-	-			-	500.00
2483.5	-	-	-	-			-	500.00
	-	-	-	-			-	
2500.00	-	-	-	-			-	500.00
2690.00	-	-	-	-			-	500.00
	-	-	-	-			-	
2900.00	-	-	-	-			-	500.00
3260.00	-	-	-	-			-	500.00
	-	-	-	-			-	
3267.00	-	-	-	-			-	500.00
3332.00	-	-	-	-			-	500.00
	-	-	-	-			-	
3339.00	-	-	-	-			-	500.00
3345.00	-	-	-	-			-	500.00
	-	-	-	-			-	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 5 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
3358.00	-	-	-	-			-	500.00
3600.00	-	-	-	-			-	500.00
	-	-	-	-			-	
4400.00	-	-	-	-			-	500.00
4500.00	-	-	-	-			-	500.00
	4880.00	43.75	-0.44	43.31			146.39	
5150.00	-	-	-	-			-	500.00
5350.00	-	-	-	-			-	500.00
	-	-	-	-			-	
5460.00	-	-	-	-			-	500.00
7250.00	-	-	-	-			-	500.00
	7320.00	49.16	2.41	51.57			378.88	
7750.00	-	-	-	-			-	500.00
8025.00	-	-	-	-			-	500.00
	-	-	-	-			-	
8500.00	-	-	-	-			-	500.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

Data Sheet 6 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
9000.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9200.00	-	-	-	-			-	500.00
9300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9500.00	-	-	-	-			-	500.00
10600.00	-	-	-	-			-	500.00
	12200.00	33.36	3.64	37.00	*		70.79	
12700.00	-	-	-	-			-	500.00
13250.00	-	-	-	-			-	500.00
	-	-	-	-			-	
13400.00	-	-	-	-			-	500.00
14470.00	-	-	-	-			-	500.00
	-	-	-	-			-	
14500.00	-	-	-	-			-	500.00
15350.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 7 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-130	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
16200.00	-	-	-	-			-	500.00
17700.00	-	-	-	-			-	500.00
	19520.00	33.41	-10.30	23.11	*		14.31	
21400.00	-	-	-	-			-	500.00
22010.00	-	-	-	-			-	500.00
	-	-	-	-			-	
23120.00	-	-	-	-			-	500.00
23600.00	-	-	-	-			-	500.00
	-	-	-	-			-	
24000.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 8 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

**Unwanted Emissions into Restricted Frequency Bands
30 MHz to 25 GHz
Test Data
TB-200 Transmitting at 2.480 GHz**



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
37.50	-	-	-	-			-	100.00
	-	-	-	-			-	I
38.25	-	-	-	-			-	100.00
73.00	-	-	-	-			-	100.00
	-	-	-	-			-	I
74.60	-	-	-	-			-	100.00
74.80	-	-	-	-			-	100.00
	-	-	-	-			-	I
	75.00	8.47	7.73	16.2	*		6.46	
	-	-	-	-			-	
75.20	-	-	-	-			-	100.00
108.00	-	-	-	-			-	150.00
	-	-	-	-			-	
121.94	-	-	-	-			-	150.00
123.00	-	-	-	-			-	150.00
	-	-	-	-			-	
	125.00	8.02	9.08	17.1	*		7.16	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 1 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
138.00	-	-	-	-			-	150.00
149.90	-	-	-	-			-	150.00
	-	-	-	-			-	
150.05	-	-	-	-			-	150.00
156.52	-	-	-	-			-	150.00
	-	-	-	-			-	
156.52	-	-	-	-			-	150.00
156.70	-	-	-	-			-	150.00
	-	-	-	-			-	
156.90	-	-	-	-			-	150.00
162.01	-	-	-	-			-	150.00
	-	-	-	-			-	
167.17	-	-	-	-			-	150.00
167.72	-	-	-	-			-	150.00
	170.00	9.01	10.69	19.70	*		9.66	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 2 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
173.20	-	-	-	-			-	150.00
240.00	-	-	-	-			-	200.00
	-	-	-	-			-	
285.00	-	-	-	-			-	200.00
322.80	-	-	-	-			-	200.00
	330.00	7.45	17.65	25.10	*		17.99	
335.40	-	-	-	-			-	200.00
399.90	-	-	-	-			-	200.00
	-	-	-	-			-	
410.00	-	-	-	-			-	200.00
608.00	-	-	-	-			-	200.00
	-	-	-	-			-	
614.00	-	-	-	-			-	200.00
960.00	-	-	-	-			-	500.00
	975.00	9.34	28.96	38.30	*		82.22	
1240.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 3 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
1300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1427.00	-	-	-	-			-	500.00
1435.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1646.50	-	-	-	-			-	500.00
1660.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1710.00	-	-	-	-			-	500.00
1718.80	-	-	-	-			-	500.00
	-	-	-	-			-	
1722.20	-	-	-	-			-	500.00
2200.00	-	-	-	-			-	500.00
	-	-	-	-			-	
2300.00	-	-	-	-			-	500.00
2310.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 4 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
2390.00	-	-	-	-			-	500.00
2483.5	-	-	-	-			-	500.00
	-	-	-	-			-	
2500.00	-	-	-	-			-	500.00
2690.00	-	-	-	-			-	500.00
	-	-	-	-			-	
2900.00	-	-	-	-			-	500.00
3260.00	-	-	-	-			-	500.00
	-	-	-	-			-	
3267.00	-	-	-	-			-	500.00
3332.00	-	-	-	-			-	500.00
	-	-	-	-			-	
3339.00	-	-	-	-			-	500.00
3345.00	-	-	-	-			-	500.00
	-	-	-	-			-	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 5 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
3358.00	-	-	-	-			-	500.00
3600.00	-	-	-	-			-	500.00
	-	-	-	-			-	
4400.00	-	-	-	-			-	500.00
4500.00	-	-	-	-			-	500.00
	4960.00	53.91	-0.44	53.47			471.52	
5150.00	-	-	-	-			-	500.00
5350.00	-	-	-	-			-	500.00
	-	-	-	-			-	
5460.00	-	-	-	-			-	500.00
7250.00	-	-	-	-			-	500.00
	7440.00	50.56	2.41	52.97			445.14	
7750.00	-	-	-	-			-	500.00
8025.00	-	-	-	-			-	500.00
	-	-	-	-			-	
8500.00	-	-	-	-			-	500.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

Data Sheet 6 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
9000.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9200.00	-	-	-	-			-	500.00
9300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9500.00	-	-	-	-			-	500.00
10600.00	-	-	-	-			-	500.00
	12400.00	32.98	3.64	36.62	*		67.76	
12700.00	-	-	-	-			-	500.00
13250.00	-	-	-	-			-	500.00
	-	-	-	-			-	
13400.00	-	-	-	-			-	500.00
14470.00	-	-	-	-			-	500.00
	-	-	-	-			-	
14500.00	-	-	-	-			-	500.00
15350.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 7 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.480 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
16200.00	-	-	-	-			-	500.00
17700.00	-	-	-	-			-	500.00
19840.00	19840.00	33.41	-10.30	23.11	*		14.31	500.00
21400.00	-	-	-	-			-	500.00
22010.00	-	-	-	-			-	500.00
22320.00	22320.00	33.89	-10.30	23.59	*		15.12	500.00
23120.00	-	-	-	-			-	500.00
23600.00	-	-	-	-			-	500.00
24000.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 8 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

**Unwanted Emissions into Restricted Frequency Bands
30 MHz to 25 GHz
Test Data
TB-200 Transmitting at 2.402 GHz**



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
37.50	-	-	-	-			-	100.00
	-	-	-	-			-	I
38.25	-	-	-	-			-	100.00
73.00	-	-	-	-			-	100.00
	-	-	-	-			-	I
74.60	-	-	-	-			-	100.00
74.80	-	-	-	-			-	100.00
	-	-	-	-			-	I
	75.00	8.47	7.73	16.2	*		6.46	
	-	-	-	-			-	
75.20	-	-	-	-			-	100.00
108.00	-	-	-	-			-	150.00
	-	-	-	-			-	
121.94	-	-	-	-			-	150.00
123.00	-	-	-	-			-	150.00
	-	-	-	-			-	
	125.00	8.02	9.08	17.1	*		7.16	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 1 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
138.00	-	-	-	-			-	150.00
149.90	-	-	-	-			-	150.00
	-	-	-	-			-	
150.05	-	-	-	-			-	150.00
156.52	-	-	-	-			-	150.00
	-	-	-	-			-	
156.52	-	-	-	-			-	150.00
156.70	-	-	-	-			-	150.00
	-	-	-	-			-	
156.90	-	-	-	-			-	150.00
162.01	-	-	-	-			-	150.00
	-	-	-	-			-	
167.17	-	-	-	-			-	150.00
167.72	-	-	-	-			-	150.00
	170.00	9.01	10.69	19.70	*		9.66	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 2 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
173.20	-	-	-	-			-	150.00
240.00	-	-	-	-			-	200.00
	-	-	-	-			-	
285.00	-	-	-	-			-	200.00
322.80	-	-	-	-			-	200.00
	330.00	7.45	17.65	25.10	*		17.99	
335.40	-	-	-	-			-	200.00
399.90	-	-	-	-			-	200.00
	-	-	-	-			-	
410.00	-	-	-	-			-	200.00
608.00	-	-	-	-			-	200.00
	-	-	-	-			-	
614.00	-	-	-	-			-	200.00
960.00	-	-	-	-			-	500.00
	975.00	9.34	28.96	38.30	*		82.22	
1240.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 3 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
1300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1427.00	-	-	-	-			-	500.00
1435.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1646.50	-	-	-	-			-	500.00
1660.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1710.00	-	-	-	-			-	500.00
1718.80	-	-	-	-			-	500.00
	-	-	-	-			-	
1722.20	-	-	-	-			-	500.00
2200.00	-	-	-	-			-	500.00
	-	-	-	-			-	
2300.00	-	-	-	-			-	500.00
2310.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 4 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
2390.00	-	-	-	-			-	500.00
2483.5	-	-	-	-			-	500.00
2500.00	-	-	-	-			-	500.00
2690.00	-	-	-	-			-	500.00
2900.00	-	-	-	-			-	500.00
3260.00	-	-	-	-			-	500.00
3267.00	-	-	-	-			-	500.00
3332.00	-	-	-	-			-	500.00
3339.00	-	-	-	-			-	500.00
3345.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 5 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
3358.00	-	-	-	-			-	500.00
3600.00	-	-	-	-			-	500.00
	-	-	-	-			-	
4400.00	-	-	-	-			-	500.00
4500.00	-	-	-	-			-	500.00
	4804.00	53.04	-0.44	52.06			426.58	
5150.00	-	-	-	-			-	500.00
5350.00	-	-	-	-			-	500.00
	-	-	-	-			-	
5460.00	-	-	-	-			-	500.00
7250.00	-	-	-	-			-	500.00
	-	-	-	-			-	
7750.00	-	-	-	-			-	500.00
8025.00	-	-	-	-			-	500.00
	-	-	-	-			-	
8500.00	-	-	-	-			-	500.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

Data Sheet 6 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
9000.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9200.00	-	-	-	-			-	500.00
9300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9500.00	-	-	-	-			-	500.00
10600.00	-	-	-	-			-	500.00
	12010.00	33.41	3.64	37.05	*		71.20	
12700.00	-	-	-	-			-	500.00
13250.00	-	-	-	-			-	500.00
	-	-	-	-			-	
13400.00	-	-	-	-			-	500.00
14470.00	-	-	-	-			-	500.00
	-	-	-	-			-	
14500.00	-	-	-	-			-	500.00
15350.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 7 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.402 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
16200.00	-	-	-	-			-	500.00
17700.00	-	-	-	-			-	500.00
19216.00	19216.00	33.51	-10.30	23.21	*		14.47	500.00
21400.00	-	-	-	-			-	500.00
22010.00	-	-	-	-			-	500.00
23120.00	-	-	-	-			-	500.00
23600.00	-	-	-	-			-	500.00
24000.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 8 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

**Unwanted Emissions into Restricted Frequency Bands
30 MHz to 25 GHz
Test Data
TB-200 Transmitting at 2.440 GHz**



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
37.50	-	-	-	-			-	100.00
	-	-	-	-			-	I
38.25	-	-	-	-			-	100.00
73.00	-	-	-	-			-	100.00
	-	-	-	-			-	I
74.60	-	-	-	-			-	100.00
74.80	-	-	-	-			-	100.00
	-	-	-	-			-	I
	75.00	8.47	7.73	16.2	*		6.46	
	-	-	-	-			-	
75.20	-	-	-	-			-	100.00
108.00	-	-	-	-			-	150.00
	-	-	-	-			-	
121.94	-	-	-	-			-	150.00
123.00	-	-	-	-			-	150.00
	-	-	-	-			-	
	125.00	8.02	9.08	17.1	*		7.16	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 1 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
	-	-	-	-			-	
138.00	-	-	-	-			-	150.00
149.90	-	-	-	-			-	150.00
	-	-	-	-			-	
150.05	-	-	-	-			-	150.00
156.52	-	-	-	-			-	150.00
	-	-	-	-			-	
156.52	-	-	-	-			-	150.00
156.70	-	-	-	-			-	150.00
	-	-	-	-			-	
156.90	-	-	-	-			-	150.00
162.01	-	-	-	-			-	150.00
	-	-	-	-			-	
167.17	-	-	-	-			-	150.00
167.72	-	-	-	-			-	150.00
	170.00	9.01	10.69	19.70	*		9.66	

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 2 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
173.20	-	-	-	-			-	150.00
240.00	-	-	-	-			-	200.00
	-	-	-	-			-	
285.00	-	-	-	-			-	200.00
322.80	-	-	-	-			-	200.00
	330.00	7.45	17.65	25.10	*		17.99	
335.40	-	-	-	-			-	200.00
399.90	-	-	-	-			-	200.00
	-	-	-	-			-	
410.00	-	-	-	-			-	200.00
608.00	-	-	-	-			-	200.00
	-	-	-	-			-	
614.00	-	-	-	-			-	200.00
960.00	-	-	-	-			-	500.00
	975.00	9.34	28.96	38.30	*		82.22	
1240.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 3 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
1300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1427.00	-	-	-	-			-	500.00
1435.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1646.50	-	-	-	-			-	500.00
1660.00	-	-	-	-			-	500.00
	-	-	-	-			-	
1710.00	-	-	-	-			-	500.00
1718.80	-	-	-	-			-	500.00
	-	-	-	-			-	
1722.20	-	-	-	-			-	500.00
2200.00	-	-	-	-			-	500.00
	-	-	-	-			-	
2300.00	-	-	-	-			-	500.00
2310.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 4 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
2390.00	-	-	-	-			-	500.00
2483.5	-	-	-	-			-	500.00
2500.00	-	-	-	-			-	500.00
2690.00	-	-	-	-			-	500.00
2900.00	-	-	-	-			-	500.00
3260.00	-	-	-	-			-	500.00
3267.00	-	-	-	-			-	500.00
3332.00	-	-	-	-			-	500.00
3339.00	-	-	-	-			-	500.00
3345.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 5 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
3358.00	-	-	-	-			-	500.00
3600.00	-	-	-	-			-	500.00
	-	-	-	-			-	
4400.00	-	-	-	-			-	500.00
4500.00	-	-	-	-			-	500.00
	4880.00	53.81	-0.44	53.37			466.12	
5150.00	-	-	-	-			-	500.00
5350.00	-	-	-	-			-	500.00
	-	-	-	-			-	
5460.00	-	-	-	-			-	500.00
7250.00	-	-	-	-			-	500.00
	7320.00	32.91	2.41	52.75			434.01	
7750.00	-	-	-	-			-	500.00
8025.00	-	-	-	-			-	500.00
	-	-	-	-			-	
8500.00	-	-	-	-			-	500.00

EUT emissions observed throughout the given frequency spectrum were recorded and evaluated. Emission levels closest to the limit are listed on this data sheet.

Data Sheet 6 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
9000.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9200.00	-	-	-	-			-	500.00
9300.00	-	-	-	-			-	500.00
	-	-	-	-			-	
9500.00	-	-	-	-			-	500.00
10600.00	-	-	-	-			-	500.00
	12200.00	33.63	3.64	37.27	*		73.03	
12700.00	-	-	-	-			-	500.00
13250.00	-	-	-	-			-	500.00
	-	-	-	-			-	
13400.00	-	-	-	-			-	500.00
14470.00	-	-	-	-			-	500.00
	-	-	-	-			-	
14500.00	-	-	-	-			-	500.00
15350.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 7 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

EMISSIONS TEST DATA SHEET

Test Method	Unwanted Emissions into Restricted Frequency Bands	
Customer	TrackBlue	
Job Number	R-5813N-1	
Test Sample	Asset Tracking Device	
Model Number	TB-200	
Serial Number	N/A	
Test Specification	FCC Part 15 Subpart C	Paragraph: 15.247(d)
Operating Mode	Transmitting at 2.440 GHz	
Technician	M. Seamans	
Date	Feb. 19 th , 2013	

Notes: Antenna Test Distance: 3 meters Detector: Quasi-Peak >1GHz, Average <1GHz

TEST PARAMETERS

Restricted Band	Measured Frequency	Meter Reading	Correction Factor	Corrected Reading			Converted Reading	Limit at 3M
MHz	MHz	dBuV	dB	dBuV/m			uV/m	uV/m
16200.00	-	-	-	-			-	500.00
17700.00	-	-	-	-			-	500.00
19520.00	19520.00	33.43	-10.30	23.13	*		14.34	500.00
21400.00	-	-	-	-			-	500.00
22010.00	-	-	-	-			-	500.00
23120.00	-	-	-	-			-	500.00
23600.00	-	-	-	-			-	500.00
24000.00	-	-	-	-			-	500.00

No EUT emissions within 10 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum. * This emission is not from the EUT. It is a measurement of minimum measurement system sensitivity (Noise Floor).

Data Sheet 8 of 8



Retlif Testing Laboratories

Report No. R-5813N-1

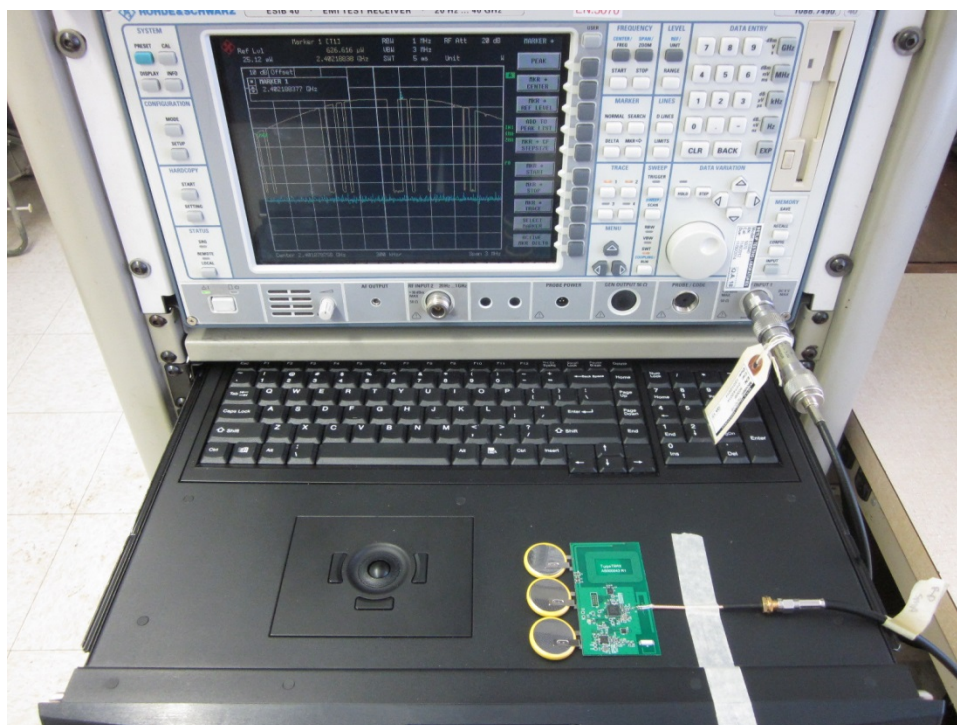
**Test Photograph(s)
Power Density
FCC Section 15.247(e)**



Retlif Testing Laboratories

Report No. R-5813N-1

Test Photograph(s) Power Density



Test Configuration



Retlif Testing Laboratories

Report No. R-5813N-1

**Power Spectral Density
Test Data**

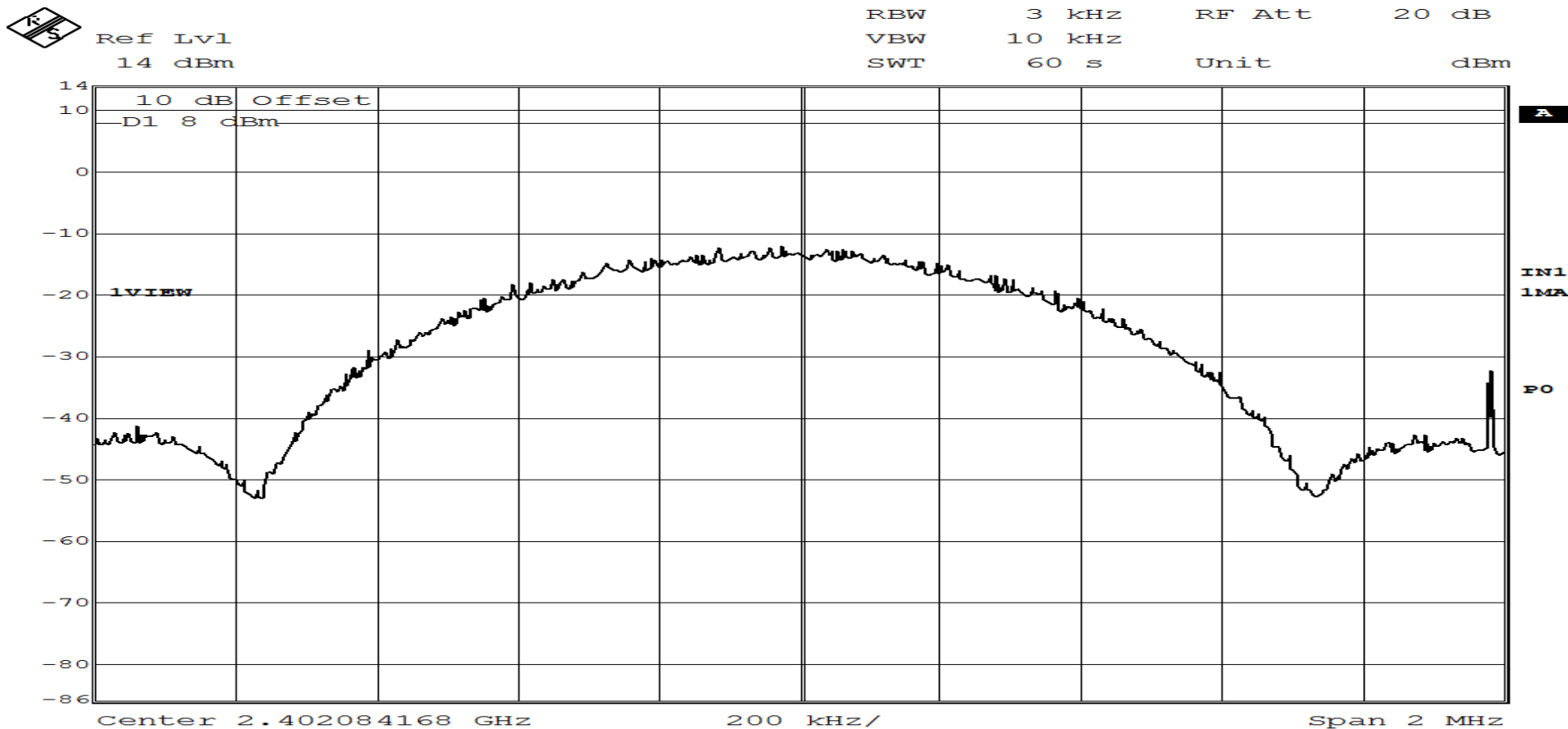


Retlif Testing Laboratories

Report No. R-5813N-1

RETLIF TESTING LABORATORIES

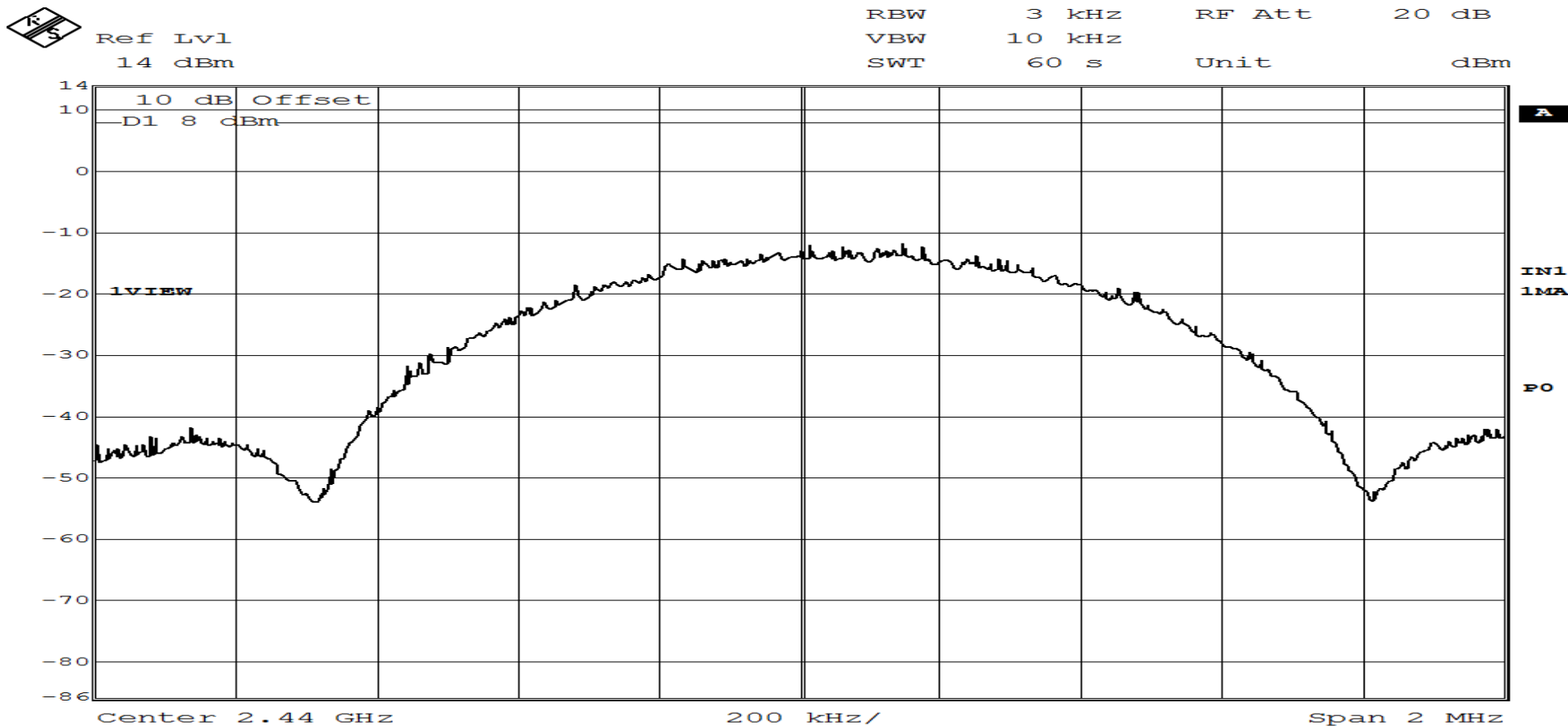
Test Method	Power Spectral Density		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Devices		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.402 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: 8dBm		



Date: 18.FEB.2014 11:59:53

RETLIF TESTING LABORATORIES

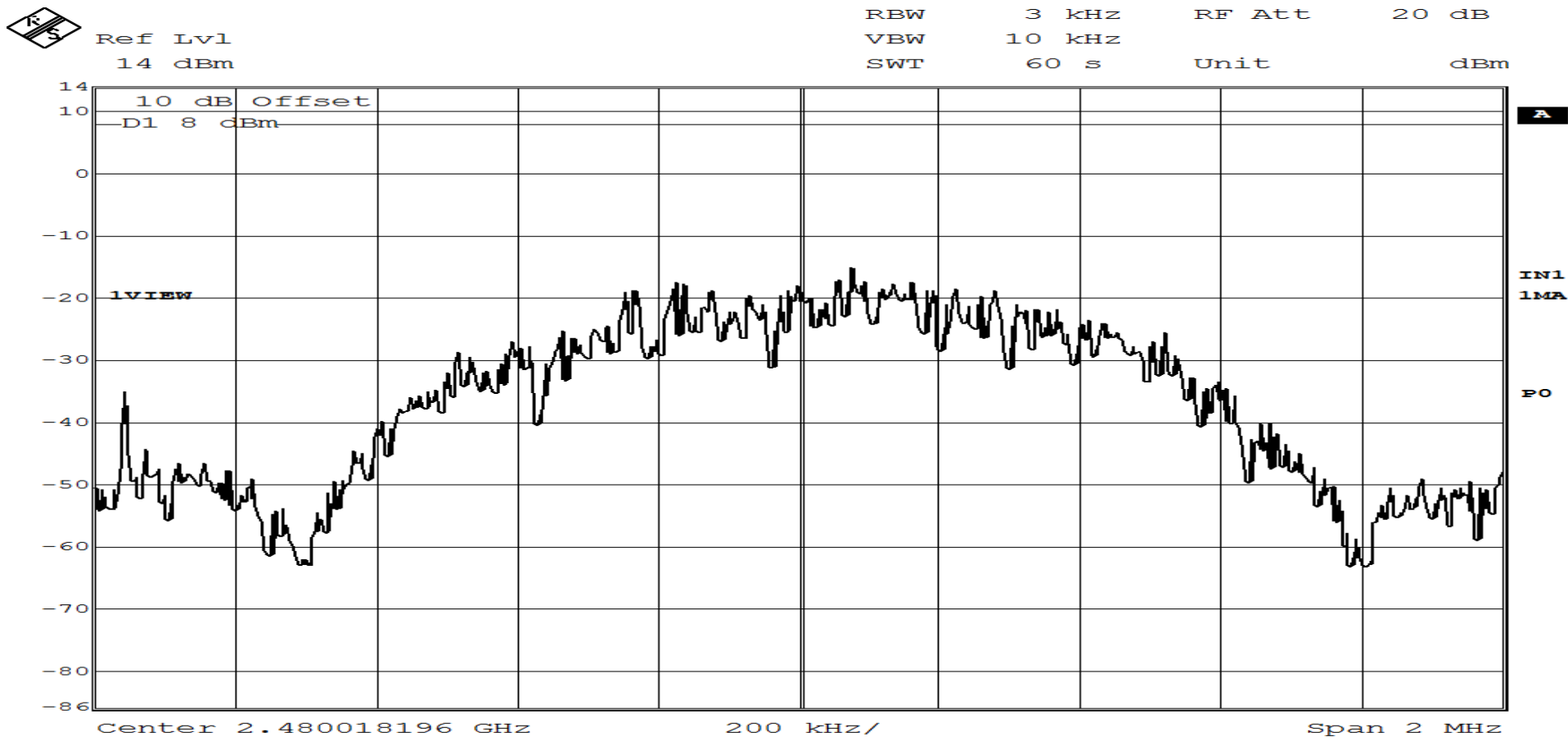
Test Method	Power Spectral Density		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Devices		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.440 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: 8dBm		



Date: 18.FEB.2014 13:00:06

RETLIF TESTING LABORATORIES

Test Method	Power Spectral Density		
Customer	TrackBlue	Job No.	R-5813N-1
Test Sample	Asset Tracking Devices		
Model Number	TB-200	Serial No.	N/A
Operating Mode	Transmitting continuously at 2.480 GHz		
Test Specification	FCC Part 15, Subpart C Paragraph: 15.247 (b)(3)		
Technician	M. Seamans	Date	Feb. 18 th , 2014
Climatic Conditions	Temp: 20.5 °C Relative Humidity: 23.5 %		
Notes	Limit: 8dBm		



Date: 18.FEB.2014 11:49:35