



FCC 47 CFR PART 22 SUBPART G
INDUSTRY CANADA RSS-127 ISSUE 1

CERTIFICATION TEST REPORT

FOR

Air-To-Ground Transceiver

MODEL NUMBER: ATGB

FCC ID: WPX-ATGB
IC: 8014A-ATGB

REPORT NUMBER:

ISSUE DATE: July 31, 2014

Prepared for
GOGO Inc.
1250 N. Arlington Heights Road
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Revision History

Rev.	Issue Date	Revisions	Revised By
--	07-21-2014	Initial Issue	BM

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. CALIBRATION AND UNCERTAINTY	5
4.1. <i>MEASURING INSTRUMENT CALIBRATION</i>	5
4.2. <i>SAMPLE CALCULATION</i>	5
4.3. <i>MEASUREMENT UNCERTAINTY</i>	5
5. EQUIPMENT UNDER TEST	6
5.1. <i>DESCRIPTION OF EUT</i>	6
5.2. <i>MAXIMUM OUTPUT POWER</i>	6
5.3. <i>DESCRIPTION OF AVAILABLE ANTENNAS</i>	6
5.4. <i>SOFTWARE AND FIRMWARE</i>	6
5.5. <i>WORST-CASE CONFIGURATION AND MODE</i>	6
5.6. <i>DESCRIPTION OF TEST SETUP</i>	7
5.7. <i>TEST AND MEASUREMENT EQUIPMENT</i>	9
5.7.1. OCCUPIED BANDWIDTH	10
5.7.2. OUTPUT POWER	13
5.7.3. FREQUENCY STABILITY	26
5.7.4. SPURIOUS EMISSION AT ANTENNA TERMINAL	27
5.7.5. FIELD STRENGTH OF SPURIOUS RADIATION	32
6. SETUP PHOTOS	35

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: **GOGO Inc.**
1250 N. Arlington Heights Road
Itasca, IL 60143

EUT DESCRIPTION: Air-To-Ground transceiver

MODEL: ATGB

SERIAL NUMBER: Not Provided

DATE TESTED: January 2014 to July 2014

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 22 Subpart G	Complaint
INDUSTRY CANADA RSS-127 Issue 1	Complaint

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:



Tested By:



Michael Ferrer
EMC ENGINEER
UL Verification Services Inc.

Bart Mucha
EMC ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22G, RSS-127 Issue 1, FCC Guidance for Certification of Licensed Digital Transmitters (971168 D01 Power Meas license Digital Systems V02r01).

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 333 Pfingsten Road, Northbrook, IL 60062, USA

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 100414-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/1004140.htm>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss} \\ &\quad (\text{dB}) - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an Air to Ground Transceiver

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Part 22G

Frequency Range (MHz)	Modulation	Peak Power (dBm)	Peak Power (mW)	Comments
894.75	PacketSize 8192	39.76	9462.37	Direct Output
894.75	Packet Size 8192	37.36	5445.03	At end of Single Length Cable
894.75	PacketSize 6144	34.915	3100.99	At end of Double Length Cable

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio can utilize various antennas. These antennas can have various gain could be omni-directional or directional. ERP Measurements were conducted with three different antennas.

5.4. SOFTWARE AND FIRMWARE

PROCEDURE USED TO ESTABLISH TEST SIGNAL

Agilent 8960 Series 10 E5515c (S/N GB46490279) was used to maintain communication between the EUT.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst case position for the antenna was determined by positioning the antennas in X, Y, and Z axis. Each antenna has two RF ports, J1 and J2. Each port was tested. The antennas were mounted on a ground-plane simulating section of fuselage.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

I/O CABLES

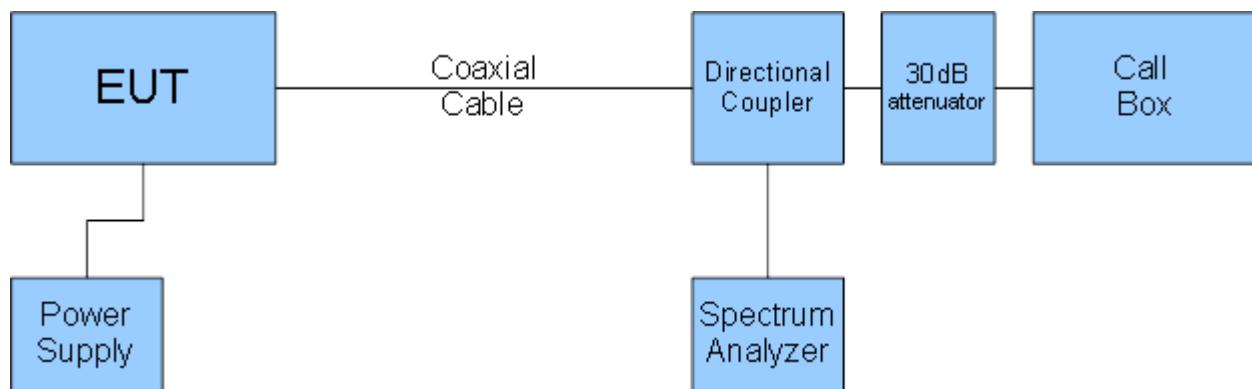
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	Custom	straight wire	1m	28VDC and 5VDC
2	Coax	1	SMA	50OHm Coax	30cm	Shielded patch Cable
3	Coax	1	N-M	LMR400	120ft	two 60ft pieces

TEST SETUP

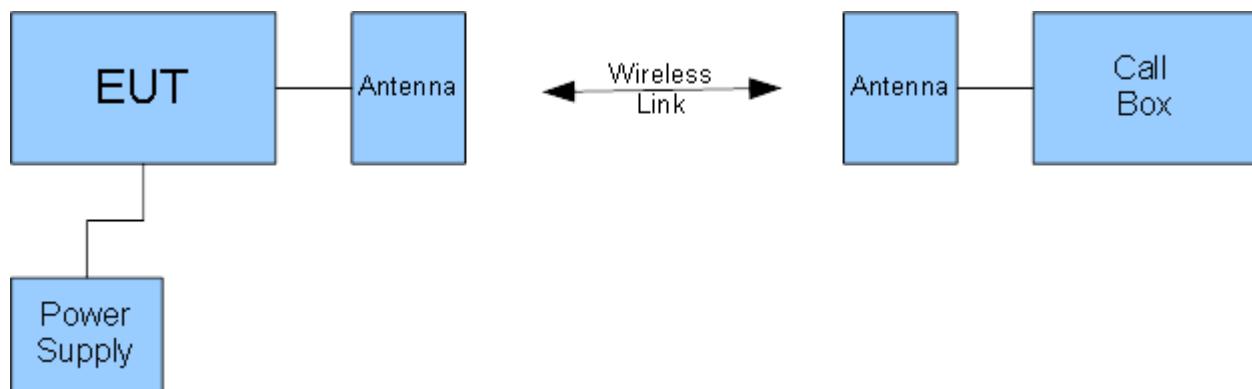
The EUT is tested as stand alone radio. It is connected either thru attenuator or via wireless to communication

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
DC Supply	DK Precision	1672	n/a	n/a
Directional Coupler	Midwest uWave	CPL-5231-20-001-79	n/a	n/a
Radio Comm test Box	Agilent	8960 Series 10	GB46490279	n/a
Side Antenna	DACA	P/N 00023001-1 Rev A	1135	n/a
Large Omni Antenna	Comant Cobham	P/N CI 5800 Rev C	424524	n/a
Small Omni antenna	Comant Comdat	P/N CI 5500 Rev B	5/15/2612	n/a

SETUP DIAGRAM FOR TESTS – Antenna Port Measurements



SETUP DIAGRAM FOR TESTS – Radiated ERP Measurements



5.7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESU	EMC4323	20131227	20141231
Bicon Antenna	Chase	VBA6106A	EMC4078	20130213	20140228
Log-P Antenna	Chase	UPA6109	EMC4313	20131003	20141003
Horn Antenna	EMCO	3115	EMC4030	20131211	20141231
Spectrum Analyzer	Rhode & Schwarz	FSEK	EMC4182	20131226	20141231
Antenna Array	UL	BOMS	EMC4276	20130912	20140930
Spectrum Analyzer	Agilent	N9030A (PXA)	EMC4360	20131221	20141221

* All other equipment such as the directional coupler and the coaxial cable between the directional coupler and the EUT were measured at the time of testing.

5.7.1. OCCUPIED BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

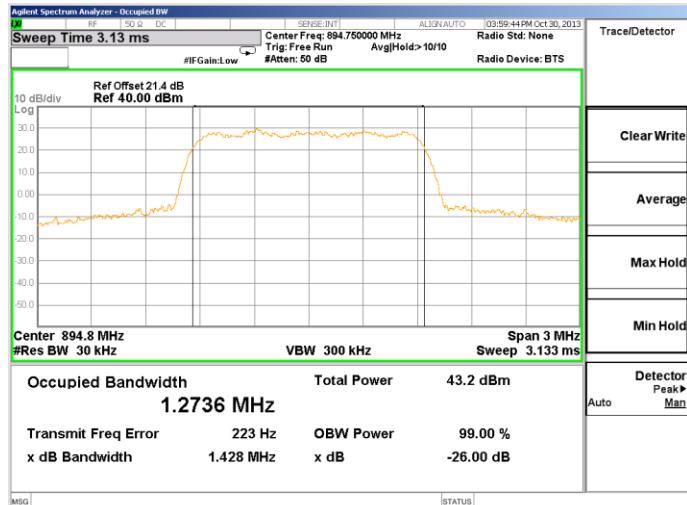
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the -26 dB bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal -26 dB bandwidth function is utilized.

RESULTS

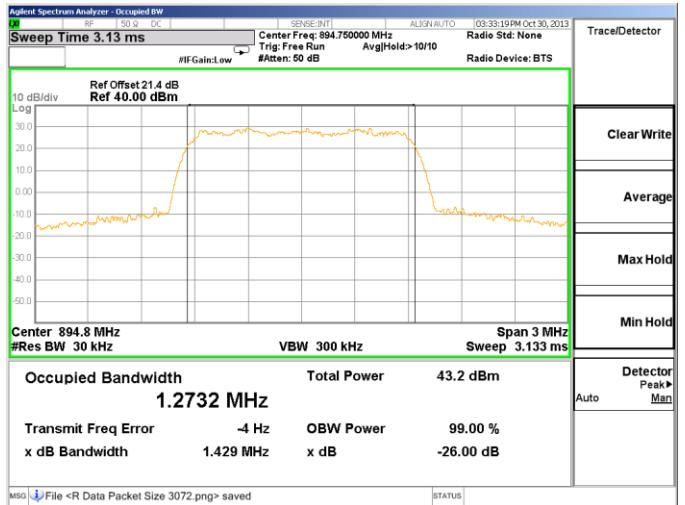
Packet Size	Frequency (MHz)	99% BW (MHz)	-26dB BW (MHz)
128	894.75	1.274	1.428
256	894.75	1.268	1.429
512	894.75	1.268	1.428
768	894.75	1.272	1.429
1024	894.75	1.271	1.427
1536	894.75	1.270	1.432
2048	894.75	1.273	1.429
3072	894.75	1.273	1.435
4096	894.75	1.278	1.434
6144	894.75	1.283	1.438
8192	894.75	1.279	1.447
12288	894.75	1.283	1.435

Bandwidth Data

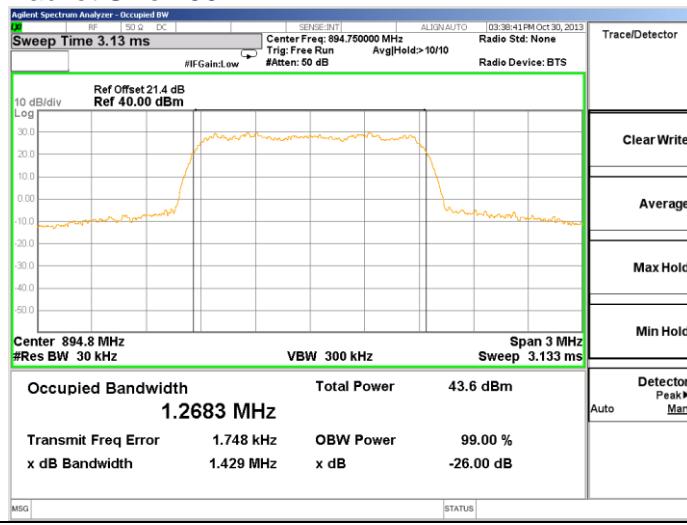
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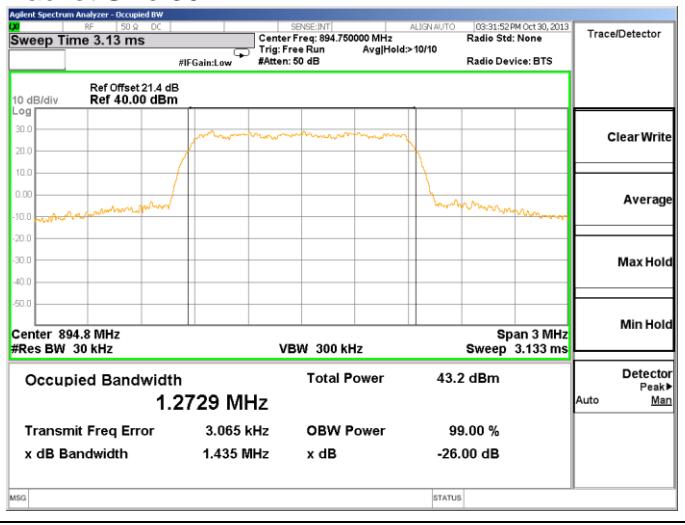
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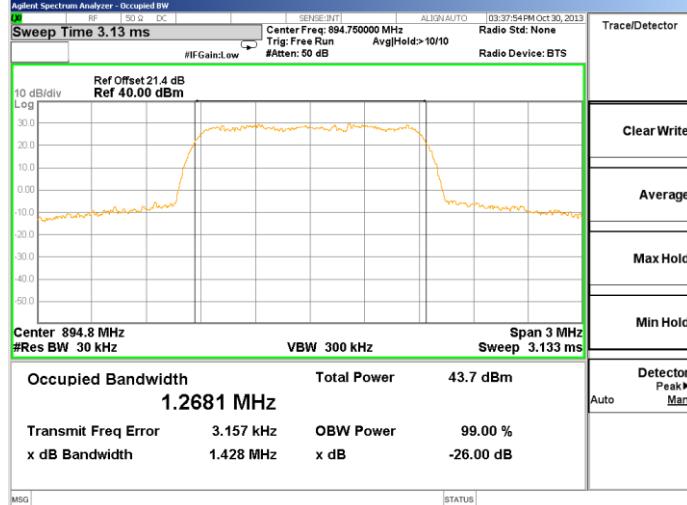
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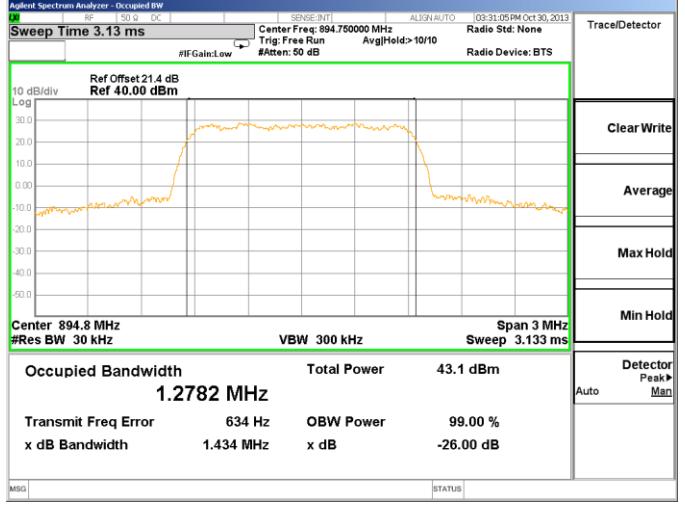
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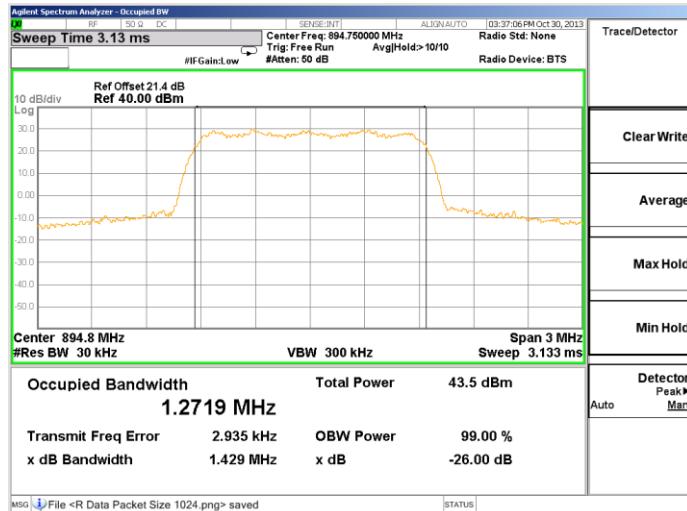
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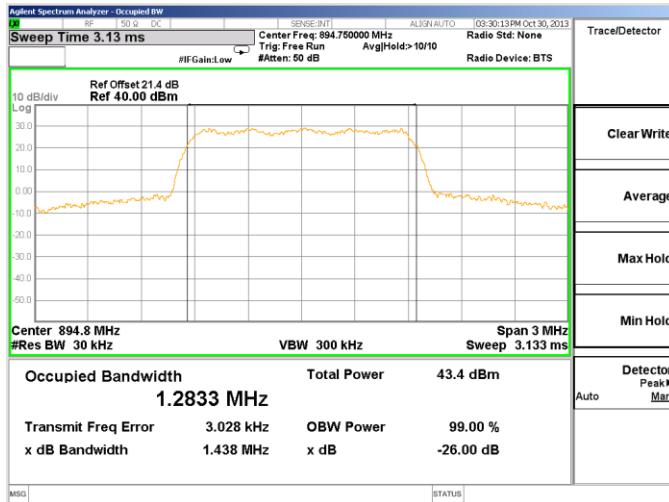
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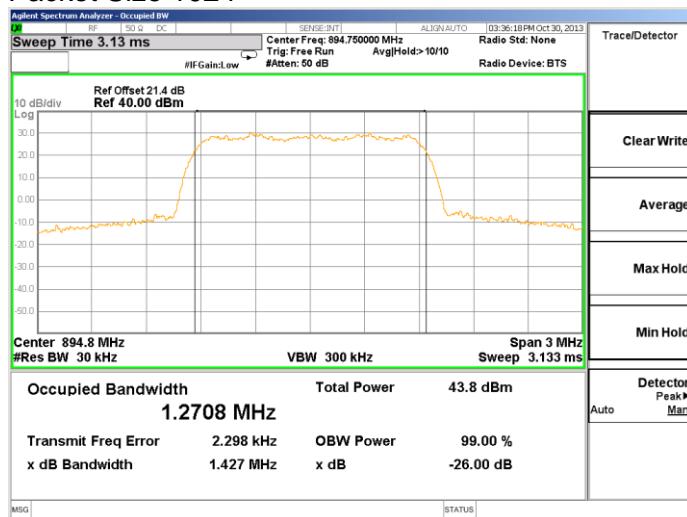
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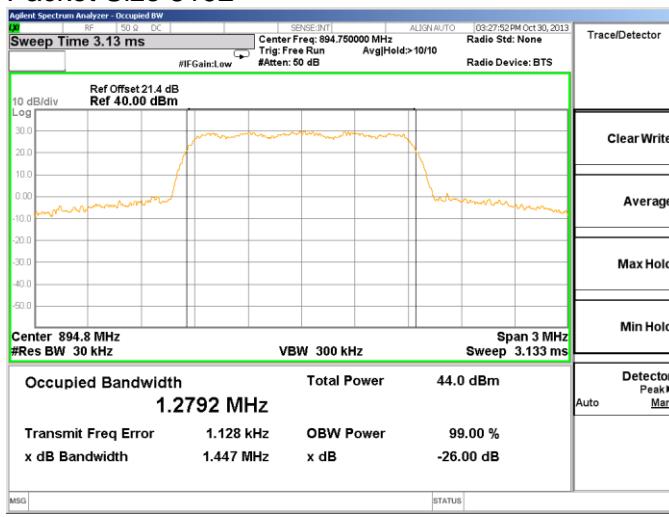
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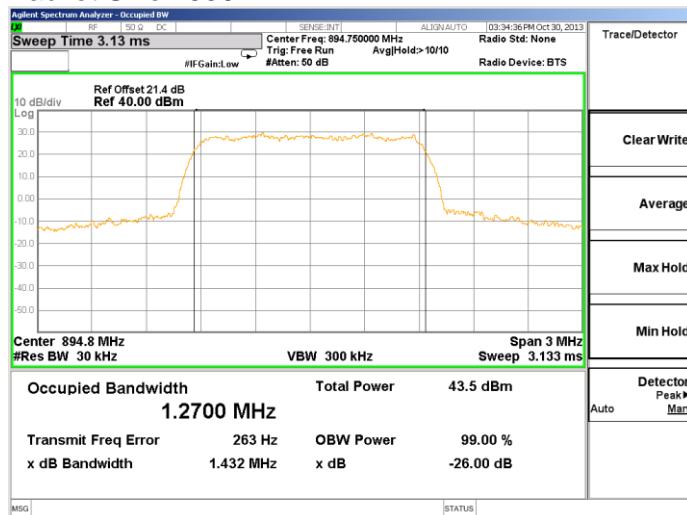
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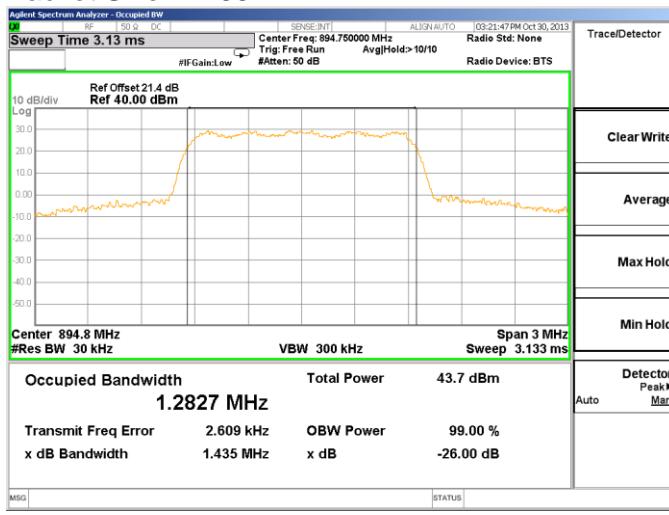
Packet Size 8192



Packet Size 1536



Packet Size 12288



5.7.2. OUTPUT POWER

LIMITS

FCC Part 22.867 and IC RSS-127 Issue 1, 5.4 - The Peak ERP of airborne mobile station transmitters must not exceed 12 Watts.

TEST PROCEDURE

FCC Guidance (971168 D01 Power Meas Licensed Digital Systems v02r01), Section 5.0

RESULTS

894MHz to 896MHz Commercial Aviation air-ground system
Short Patch Cable

Packet Size	Frequency (MHz)	Peak Power (dBm)	Peak Power (mW)
128	894.75	39.34	8598.05
256	894.75	39.30	8503.54
512	894.75	39.29	8482.03
768	894.75	38.90	7766.05
1024	894.75	39.09	8107.74
1536	894.75	39.21	8336.81
2048	894.75	39.20	8317.64
3072	894.75	39.46	8820.64
4096	894.75	39.72	9375.62
6144	894.75	39.53	8976.35
8192	894.75	39.76	9455.84
12288	894.75	39.63	9172.76

894MHz to 896MHz Commercial Aviation air-ground system

Long Cable (Single Length Cable)

Packet Size	Frequency (MHz)	Peak Power (dBm)	Peak Power (mW)
128	894.75	37.10	5125.07
256	894.75	37.18	5226.37
512	894.75	37.03	5046.61
768	894.75	37.12	5154.66
1024	894.75	37.12	5152.29
1536	894.75	37.21	5263.81
2048	894.75	37.29	5355.50
3072	894.75	37.20	5245.66
4096	894.75	37.27	5328.44
6144	894.75	37.34	5422.51
8192	894.75	37.36	5443.77
12288	894.75	37.27	5333.35

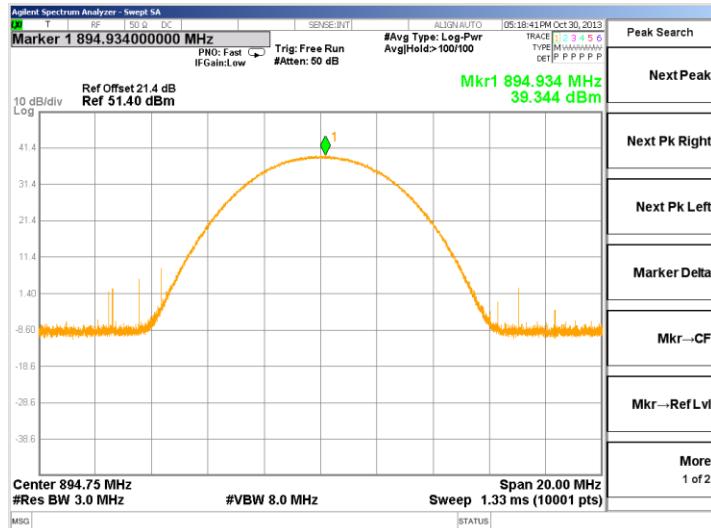
894MHz to 896MHz Commercial Aviation air-ground system

Long Cable (Double Length Cable)

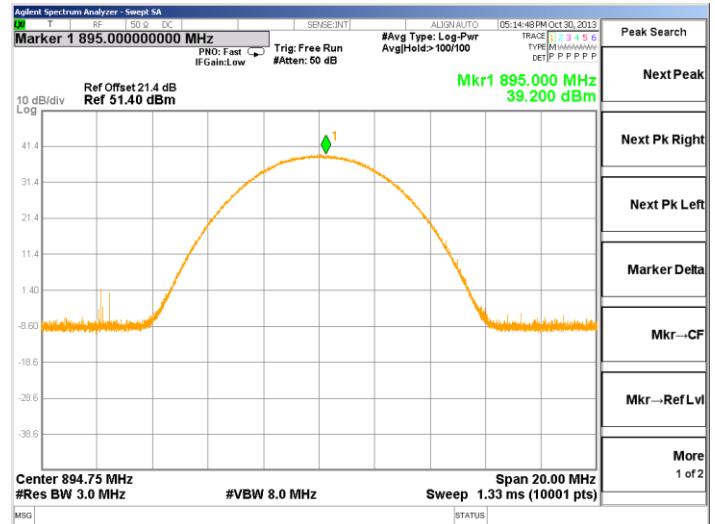
Packet Size	Frequency (MHz)	Peak Power (dBm)	Peak Power (mW)
128	894.75	34.51	2826.18
256	894.75	34.51	2822.28
512	894.75	34.52	2828.13
768	894.75	34.50	2815.79
1024	894.75	34.41	2759.94
1536	894.75	34.46	2792.54
2048	894.75	34.89	3081.77
3072	894.75	34.56	2855.62
4096	894.75	34.72	2966.88
6144	894.75	34.92	3100.99
8192	894.75	34.80	3022.73
12288	894.75	34.59	2876.07

Short Patch Cable Peak Power Measurement

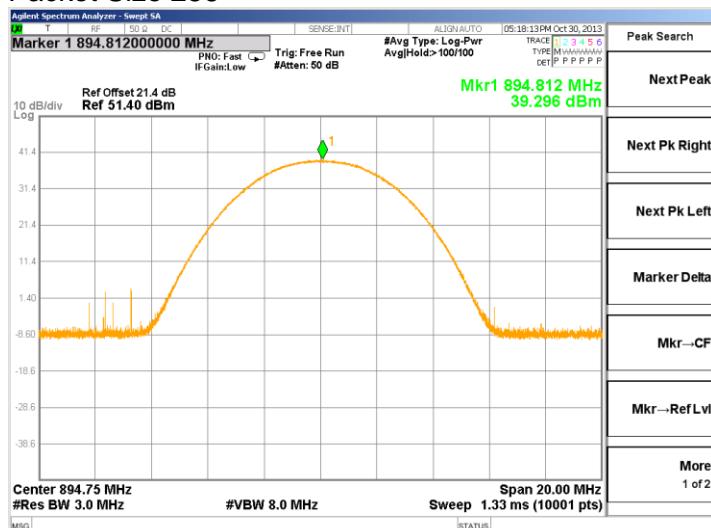
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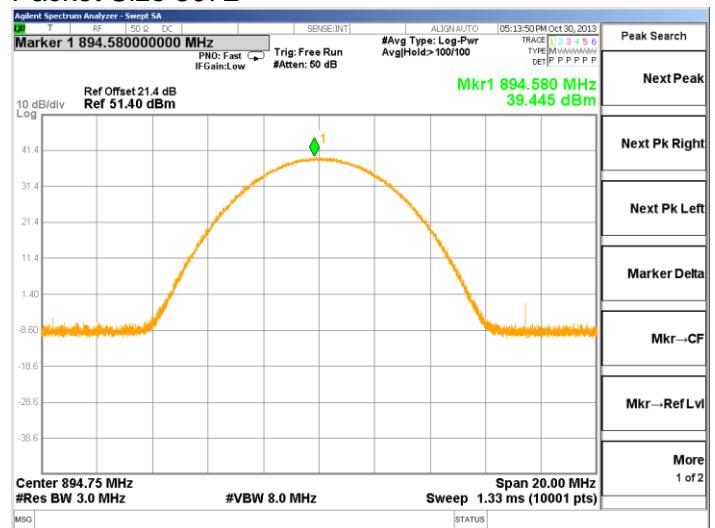
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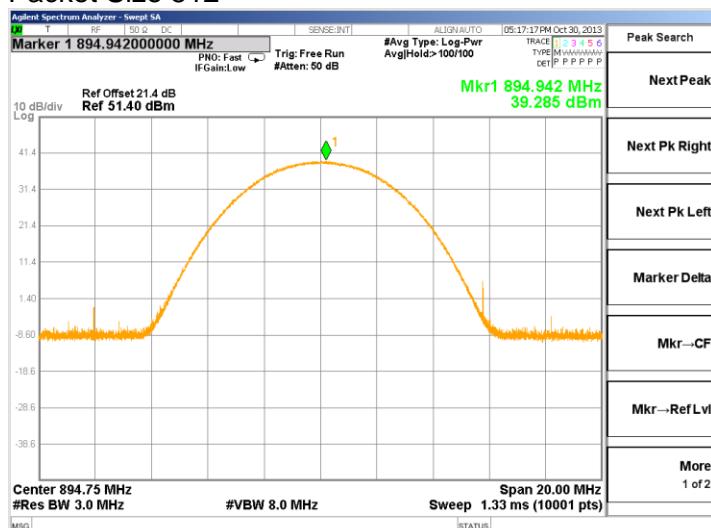
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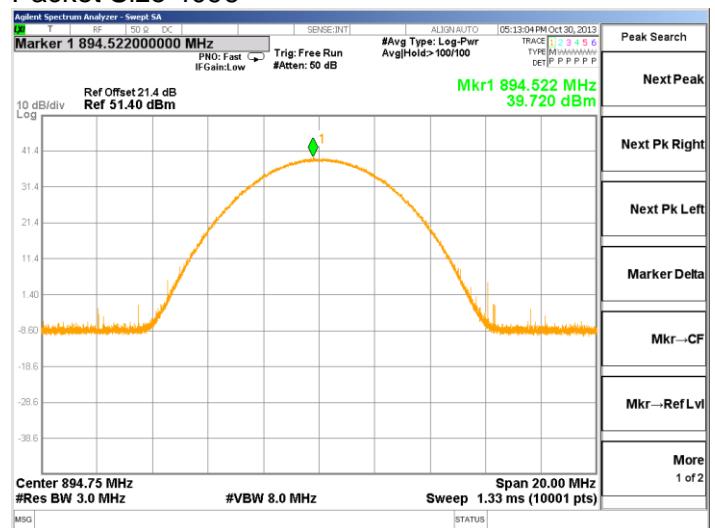
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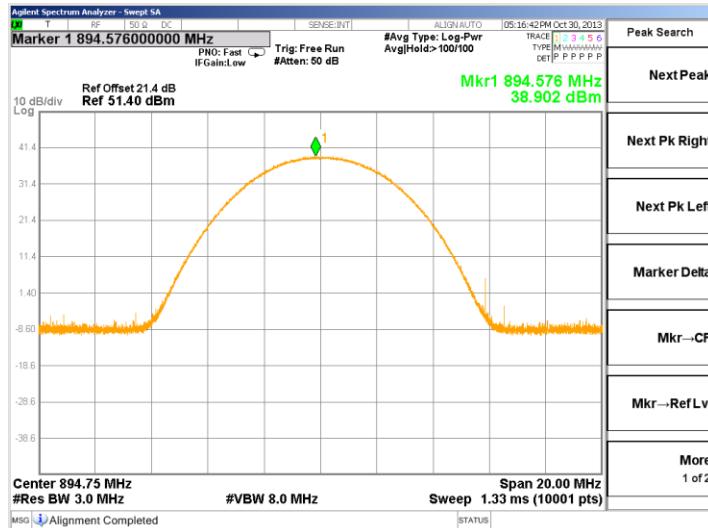
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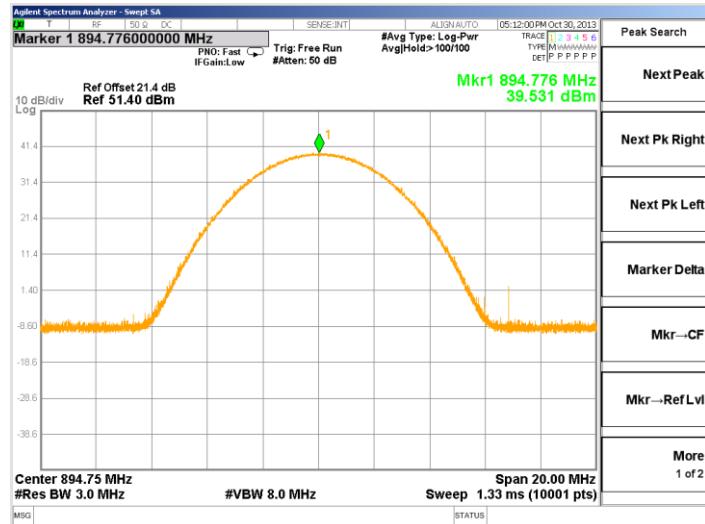
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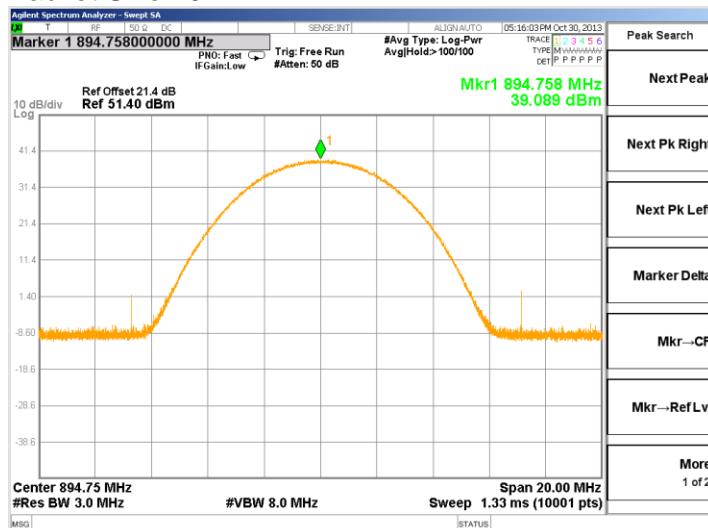
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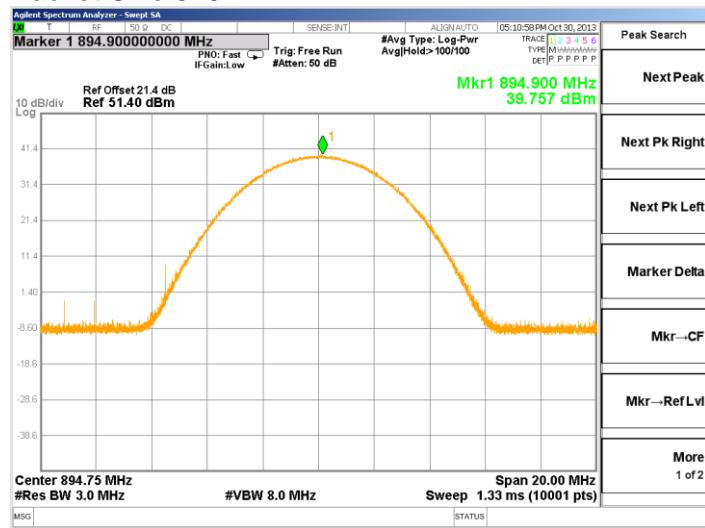
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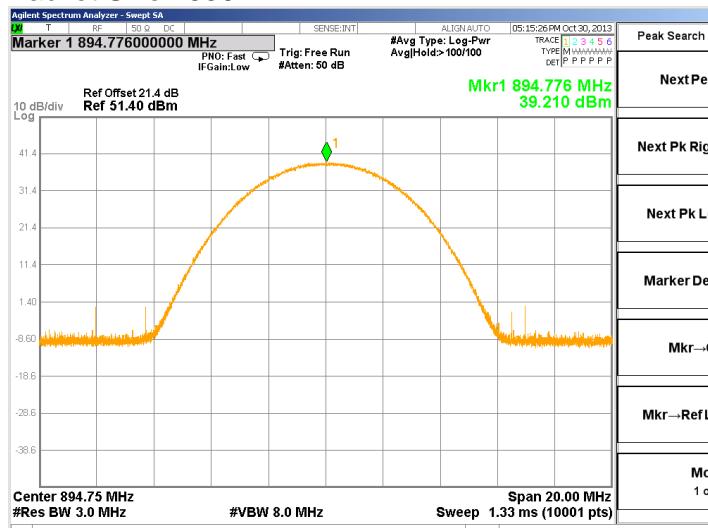
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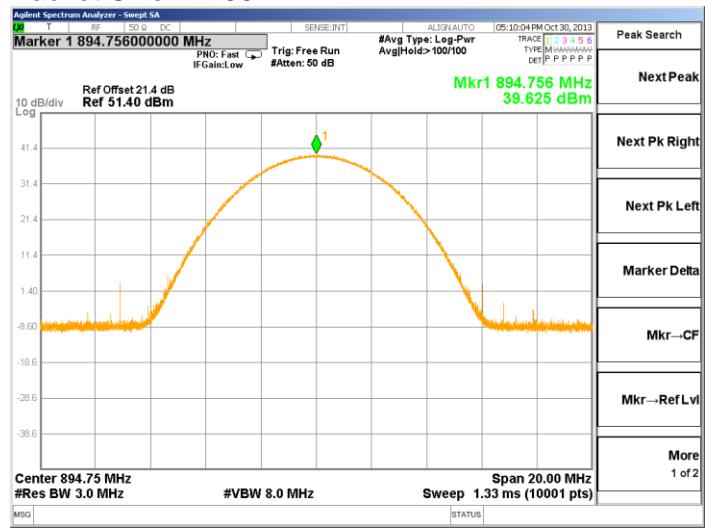
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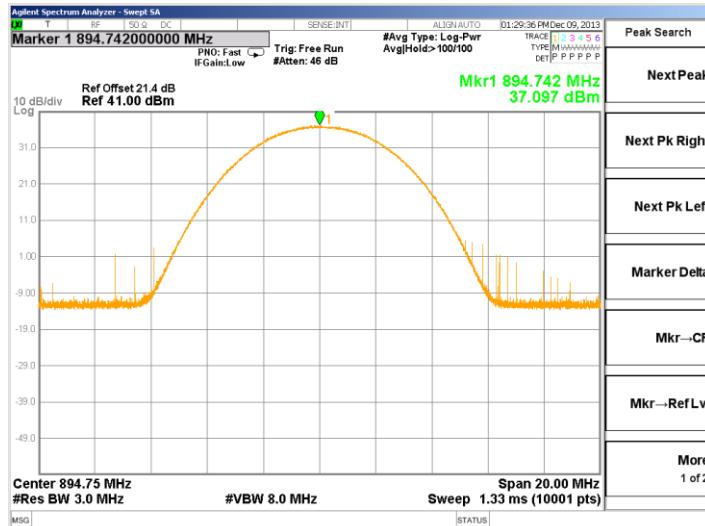


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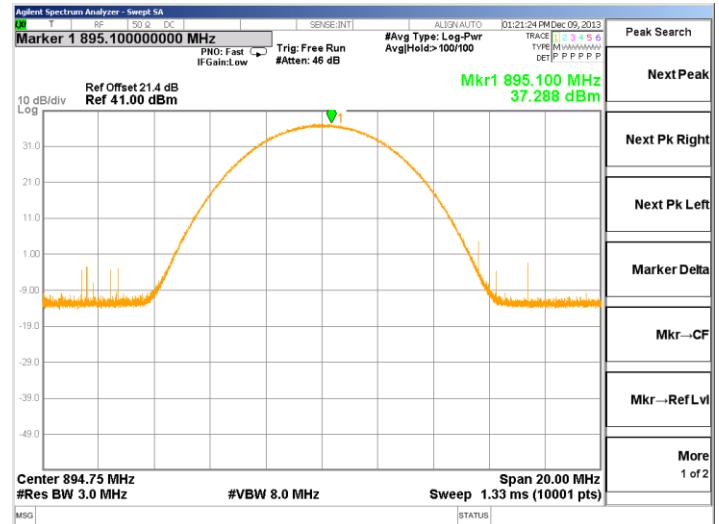


Single Length Cable Peak Power Measurements

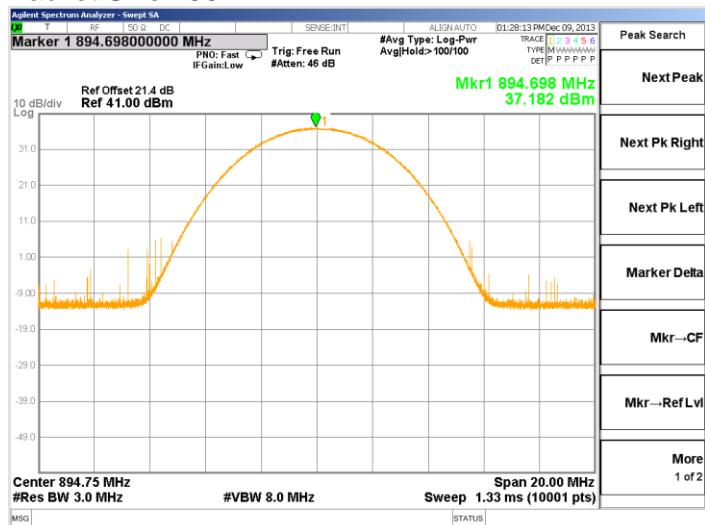
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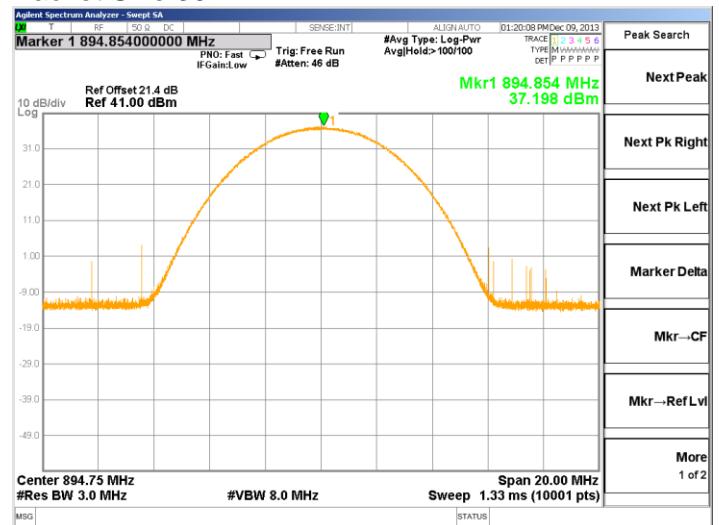
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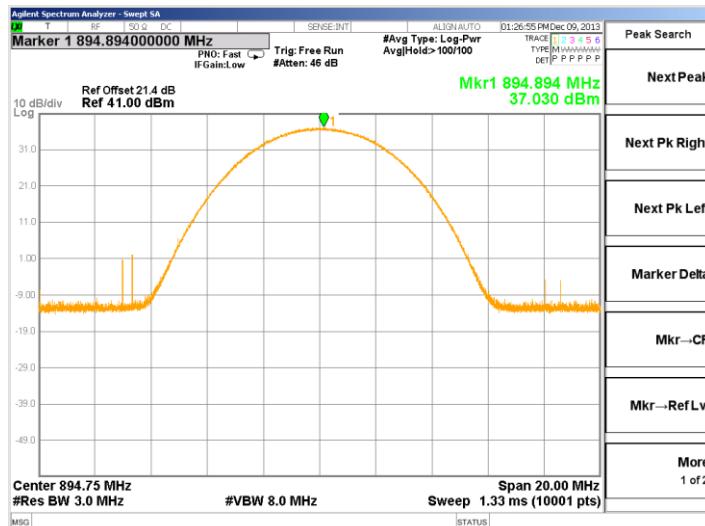
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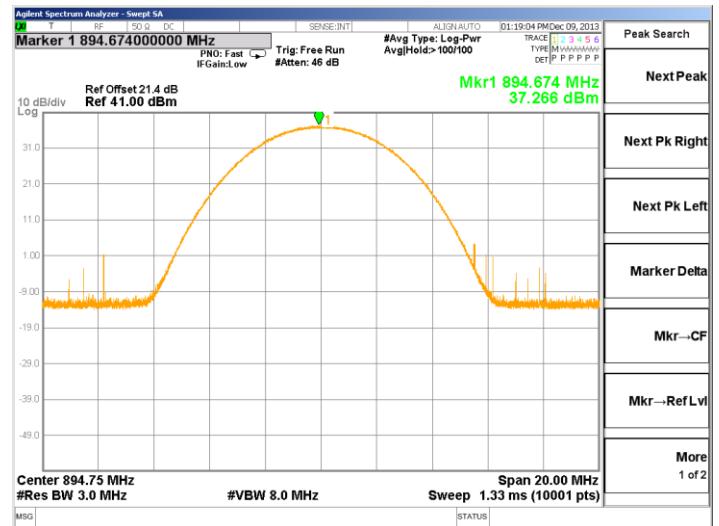
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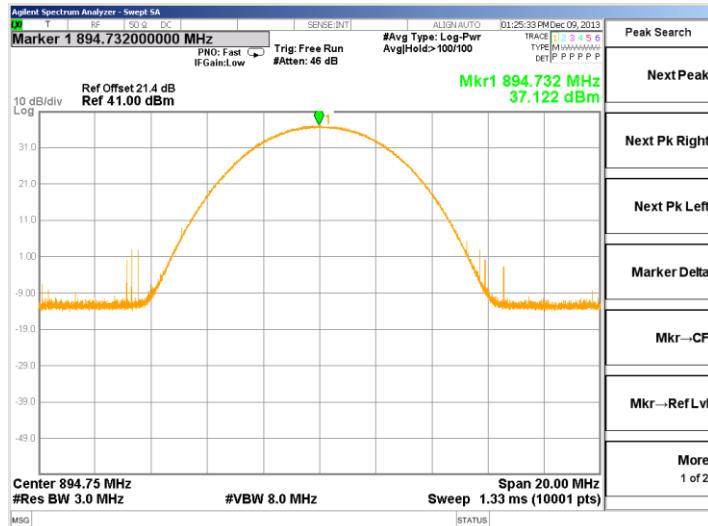
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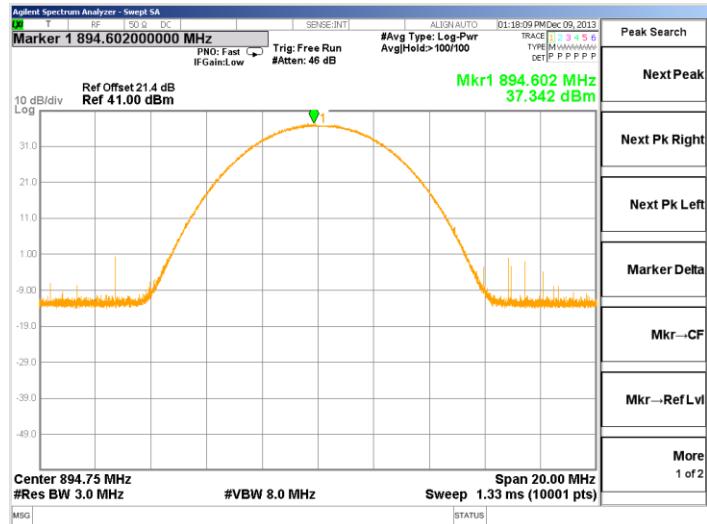
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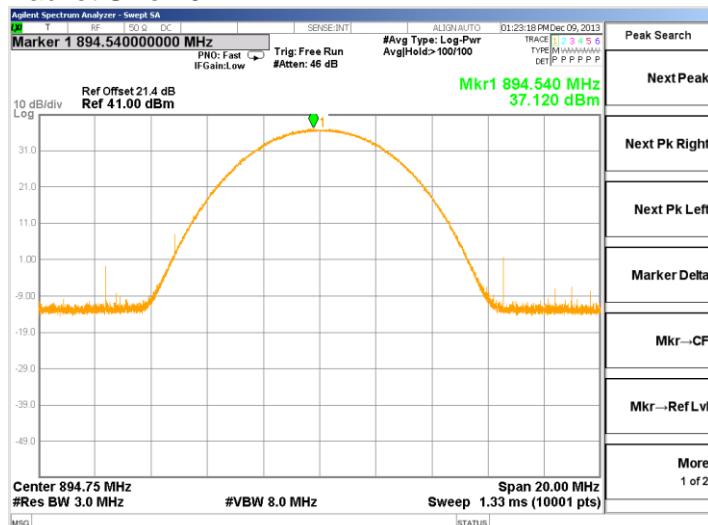
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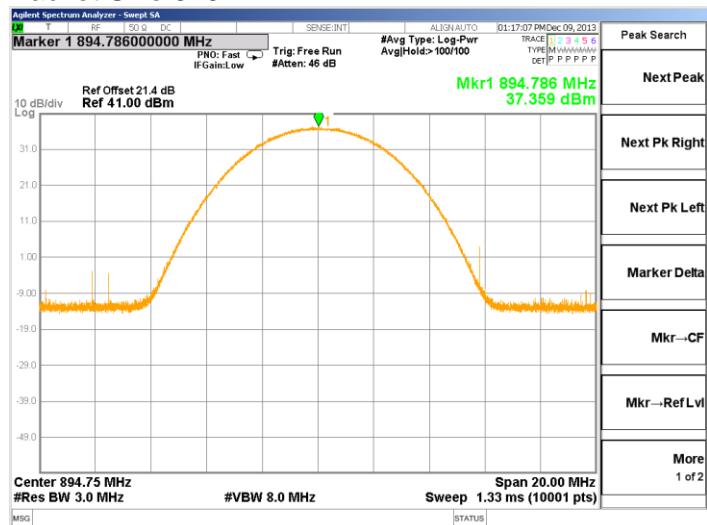
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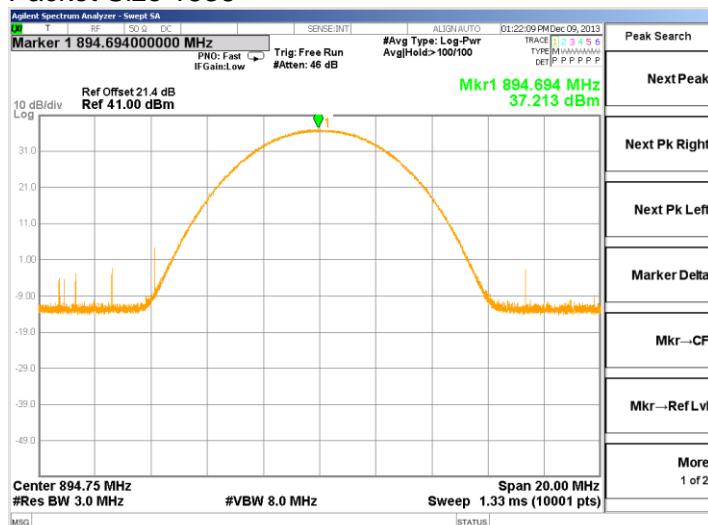
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Packet Size 8192



Packet Size 1536

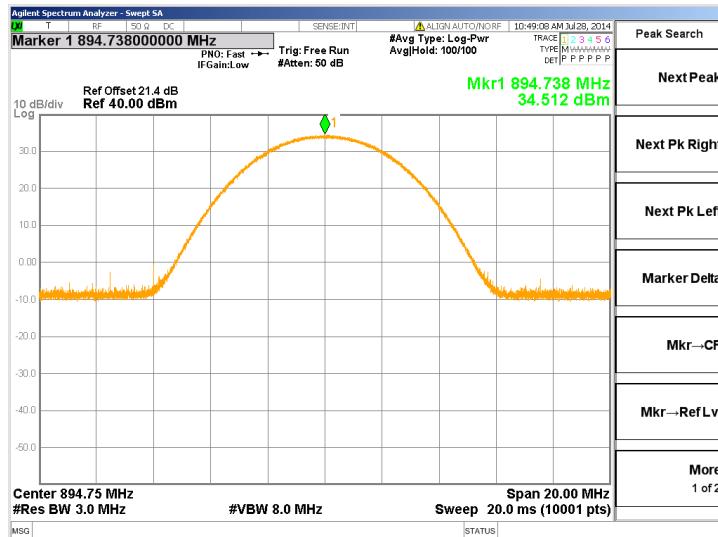


Packet Size 12288

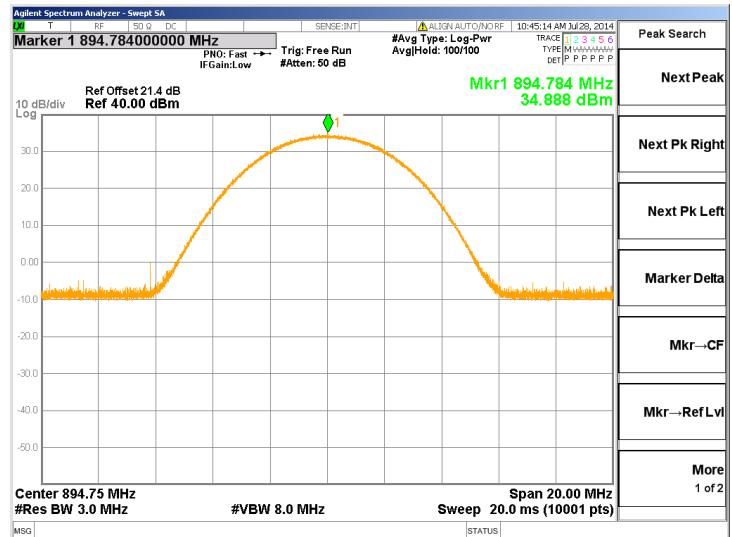


Double Length Cable Peak Power Measurements

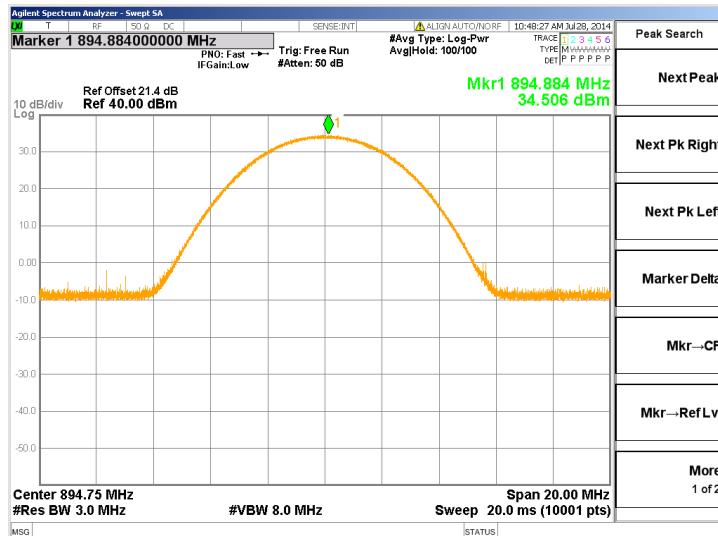
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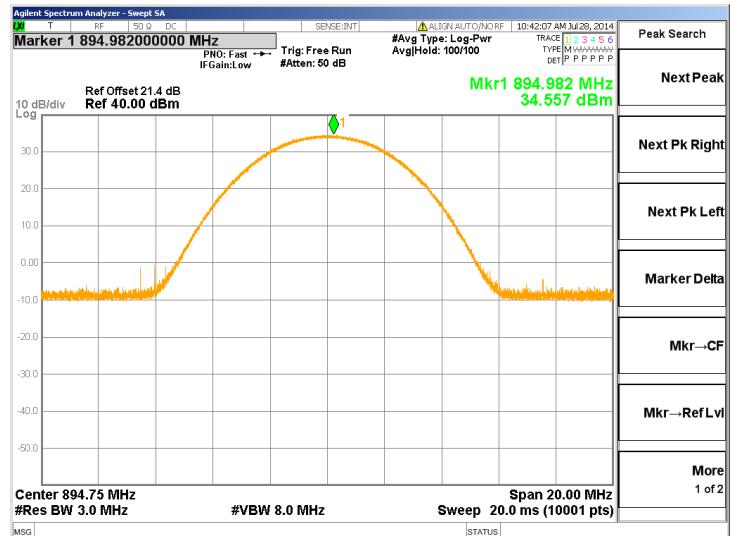
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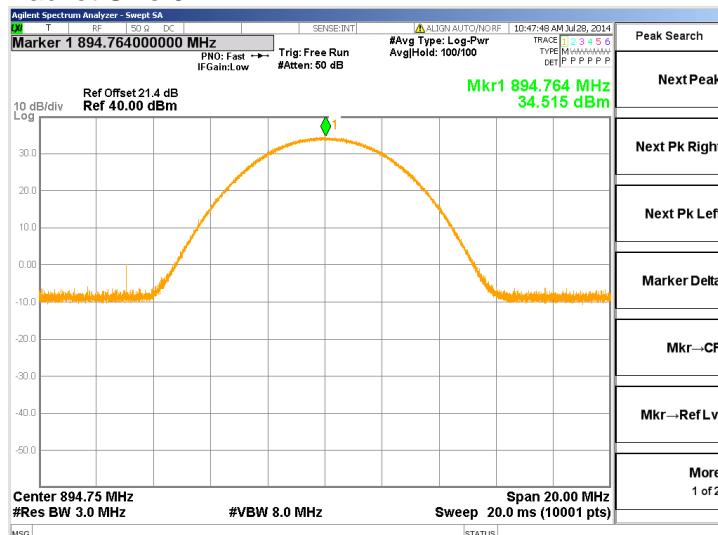
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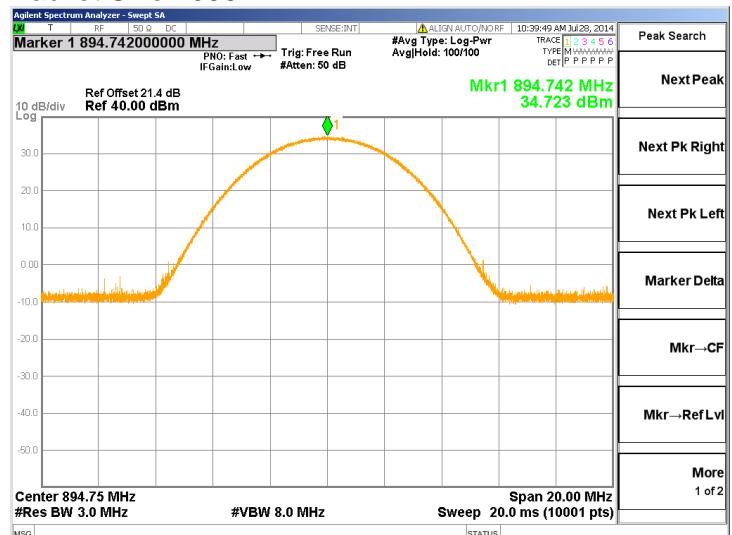
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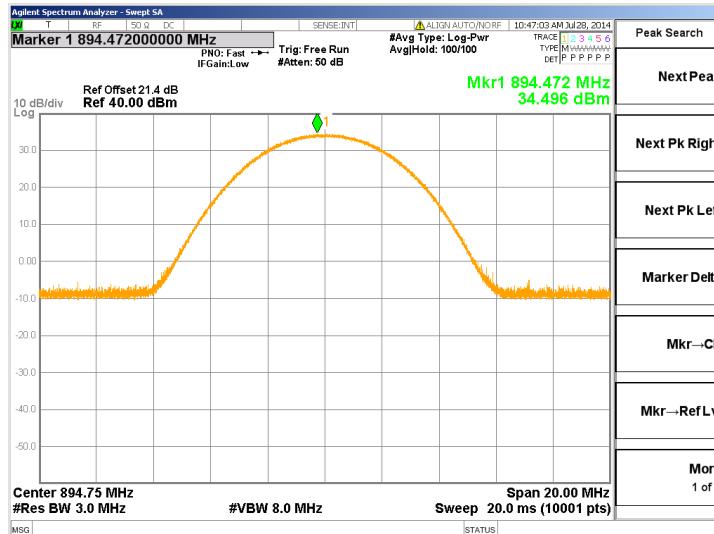
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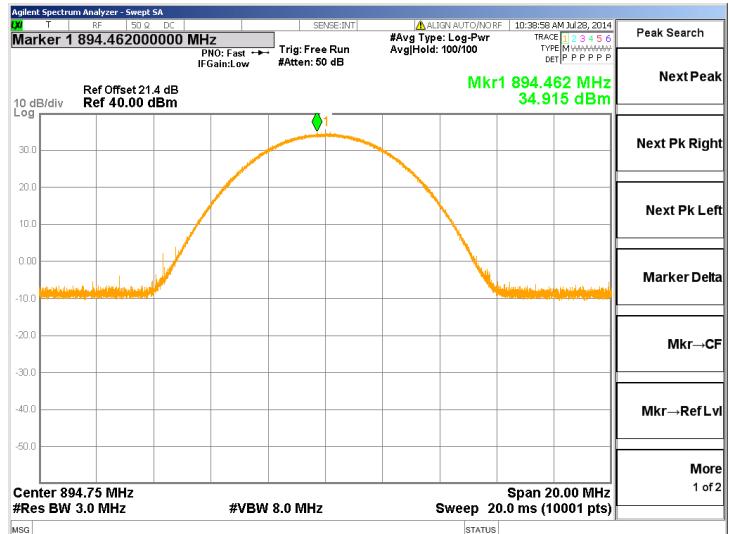
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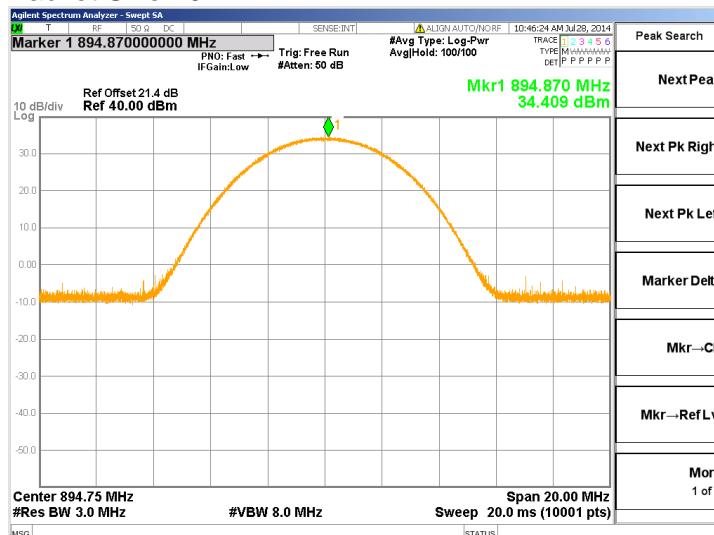
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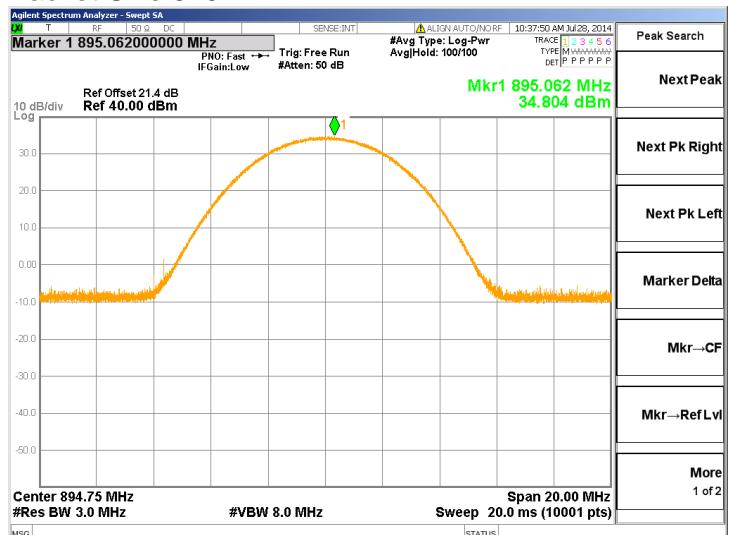
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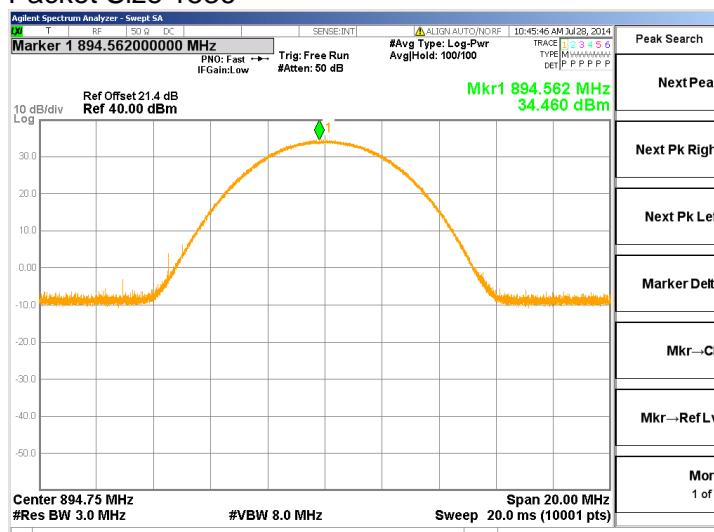
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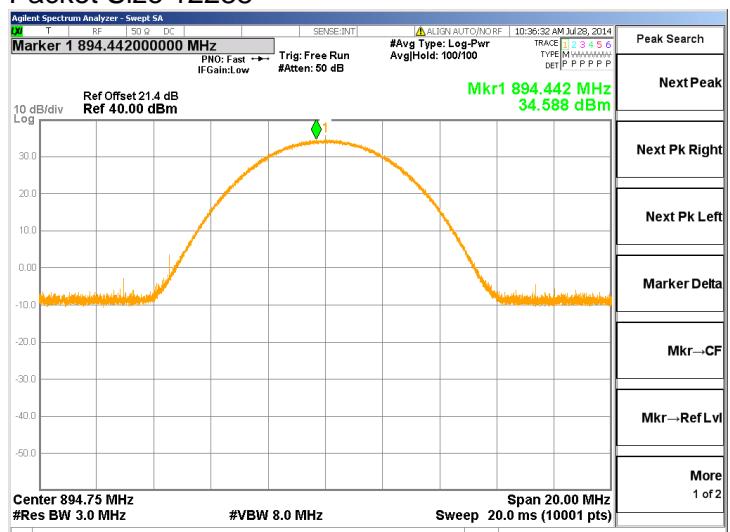
Packet Size 8192



Packet Size 1536



Packet Size 12288



ERP Measurements with Side Antenna (worst case orientation)

Port A, J1, X-Axis, with Minimum Cable Length	Test Frequency MHz	Meter Reading dBuV	Detector	AF 3m dB/m	CF dB	Corrected FS Level dBuV/m	Azimuth [Degs]	Height [cm]	Polarity	Notes	Substitution FS dBuBm	Substitution ERP Level dBm	Delta EUT-Sub FS dB	EUT ERP Level	Limit (12W ERP) dBm	Margin dB	
	894.4513	91.86	PK	22.8	9.9	124.56	164	112	H	1	115.07	15.75	9.49	25.24	23.09	40.79	-17.7
	894.6175	89.41	PK	22.8	10	122.21	164	112	H	2	115.07	15.75	7.14	22.89	20.74	40.79	-20.05
	894.3375	87.18	PK	22.8	9.9	119.88	164	112	H	3	115.07	15.75	4.81	20.56	18.41	40.79	-22.38
	894.6725	105.5	PK	22.8	10	138.3	183	142	V	1	112.58	15.75	25.72	41.47	39.32	40.79	-1.47
	894.7588	104.22	PK	22.8	10	137.02	183	142	V	2	112.58	15.75	24.44	40.19	38.04	40.79	-2.75
	894.8275	101.71	PK	22.8	10	134.51	183	142	V	3	112.58	15.75	21.93	37.68	35.53	40.79	-5.26

* The above measurements are conducted with double cable length that would normally be used in installation on aircraft with this specific antenna. In cases where the double length cable will not be used it must be ensured that the path between the radio and this specific antenna has minimum of 3.4dB of attenuation. This is calculated and its based on the insertion loss of single length cable which has total attenuation of 2.4dB and the above ERP level.

Notes:

1 - Peak

2 - Detector RMS, Power Average

3 - Detector RMS, Power Average, Trace Average



Antenna Configured in X-Axis Position

ERP Measurements with Large Omni-Directional Antenna (worst case orientation)

Port B, J2, X-Axis, with Minimum Cable Length	Test Frequency MHz	Meter Reading dBuV	Detector	AF 3m dB/m	CF dB	Corrected FS Level dBuV/m	Azimuth [Degs]	Height [cm]	Polarity	Notes	Substitution FS dBuBm	Substitution EIRP Level dBm	Delta EUT-Sub FS dB	EUT EIRP Level	EUT EIRP Level	Limit (12W ERP) dBm	Margin dB
	894.4975	90.88	PK	22.8	10	123.68	188	287	H	4	115.07	15.75	8.61	24.36	22.21	40.79	-18.58
	894.475	90.53	PK	22.8	10	123.33	188	287	H	5	115.07	15.75	8.26	24.01	21.86	40.79	-18.93
	894.805	88.08	PK	22.8	10	120.88	188	287	H	6	115.07	15.75	5.81	21.56	19.41	40.79	-21.38
	894.575	106.54	PK	22.8	10	139.34	232	101	V	4	112.58	15.75	26.76	42.51	40.36	40.79	-0.43
	895.125	103.78	PK	22.8	9.9	136.48	232	101	V	5	112.58	15.75	23.9	39.65	37.5	40.79	-3.29
	894.845	101.87	PK	22.8	9.9	134.57	232	101	V	6	112.58	15.75	21.99	37.74	35.59	40.79	-5.2

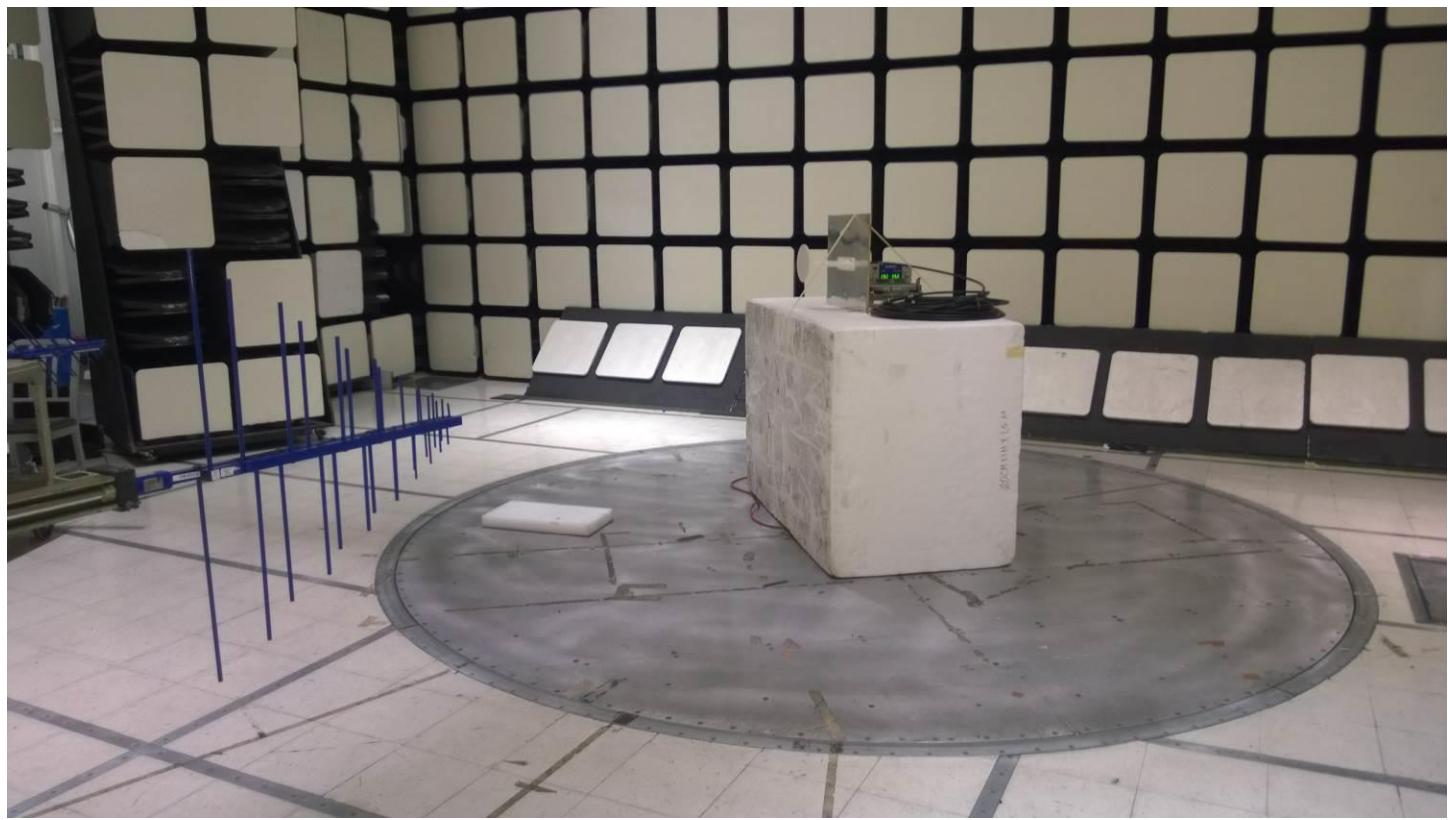
* The above measurements are conducted with double length cable that would normally be used in installation on aircraft with this specific antenna. In cases where the double length cable will not be used it must be ensured that the path between the radio and this specific antenna has minimum of 4.4dB of attenuation. This is calculated and its based on the insertion loss of single length cable which has total attenuation of 2.4dB and the above ERP level.

Notes:

1 - Peak

2 - Detector RMS, Power Average

3 - Detector RMS, Power Average, Trace Average



Antenna Configured in X-Axis Position

ERP Measurements with Small Omni-Directional Antenna (worst case orientation)

Port A, J1, Z-Axis Single Length Cable	Test Frequency MHz	Meter Reading dBuV	Detector	AF 3m dB/m	CF dB	Corrected FS Level dBuV/m	Azimuth [Degs]	Height [cm]	Polarity	Notes	Substitution FS dBuB/m	Substitution EIRP Level dBm	Delta EUT-Sub FS dB	EUT EIRP Level	EUT EIRP Level	Limit (12W ERP) dBm	Margin dB
	894.3643	98.37		PK	22.8	9.9	131.07	293	101	H	1	115.07	15.75	13.02	28.77	26.62	40.79
894.4493	96.12	PK	22.8	9.9	128.82	293	101	H	2	115.07	15.75	10.77	26.52	24.37	40.79	-16.42	
894.6693	93.65	PK	22.8	10	126.45	293	101	H	3	115.07	15.75	8.4	24.15	22	40.79	-18.79	
894.7023	108.62	PK	22.8	10	141.42	177	100	V	1	112.58	15.75	25.86	41.61	39.46	40.79	-1.33	
894.3373	105.81	PK	22.8	9.9	138.51	177	100	V	2	112.58	15.75	22.95	38.7	36.55	40.79	-4.24	
894.5653	103.55	PK	22.8	10	136.35	177	100	V	3	112.58	15.75	20.79	36.54	34.39	40.79	-6.4	

* The above measurements are conducted with single cable length which could normally be used in installation on aircraft with this specific antenna.

Port A, J1, Z-Axis, with Double Cable Length	Test Frequency MHz	Meter Reading dBuV	Detector	AF 3m dB/m	CF dB	Corrected FS Level dBuV/m	Azimuth [Degs]	Height [cm]	Polarity	Notes	Substitution FS dBuB/m	Substitution EIRP Level dBm	Delta EUT-Sub FS dB	EUT EIRP Level	EUT EIRP Level	Limit (12W ERP) dBm	Margin dB
	894.6883	89.61		PK	22.8	10	122.41	7	104	H	1	115.07	15.75	7.34	23.09	20.94	40.79
894.7345	89.01	PK	22.8	10	121.81	7	104	H	2	115.07	15.75	6.74	22.49	20.34	40.79	-20.45	
894.7558	87.13	PK	22.8	10	119.93	7	104	H	3	115.07	15.75	4.86	20.61	18.46	40.79	-22.33	
894.6283	102.69	PK	22.8	10	135.49	360	100	V	1	112.58	15.75	22.91	38.66	36.51	40.79	-4.28	
894.6245	99.69	PK	22.8	10	132.49	360	100	V	2	112.58	15.75	19.91	35.66	33.51	40.79	-7.28	
894.4008	97.92	PK	22.8	9.9	130.62	360	100	V	3	112.58	15.75	18.04	33.79	31.64	40.79	-9.15	

* The above measurements are conducted with double cable length that would normally be used in installation on aircraft with this specific antenna.

Notes:

1 - Peak

2 - Detector RMS, Power Average

3 - Detector RMS, Power Average, Trace Average

In cases where the different length cable will not be used it must be ensured that the path between the radio and this specific antenna has minimum of 1.1dB of attenuation. This is calculated and its based on the insertion loss of single length cable which has total attenuation of 2.4dB and the above ERP level.



Antenna Configured in Z-Axis Position

5.7.3. FREQUENCY STABILITY

LIMIT

FCC Part 22.863 & RSS-127, Section 5.3, The frequency stability of equipment used under this subpart shall be sufficient to ensure that, after accounting for Doppler Frequency Shifts, the occupied bandwidth of the fundamental emissions remains within the authorized frequency bands of operation.

TEST PROCEDURE

FCC Guidance (971168 D01 Power meas Licensed Digital Systems V02r01)

RESULTS

No non-compliance noted.

	Voltage	Temp degC	99%BW Point Freq Low MHz	99%BW Point Freq High MHz	Freq center MHz	Freq Error PPM from 894.75 MHz	Freq error PPM from Nominal
	28V/5V	-30	894.1037074	895.4083166	894.756012020	6.72	0.0000
	28V/5V	-20	894.1097194	895.4023046	894.756012025	6.72	0.0000
	28V/5V	-10	894.1097194	895.4023046	894.756012025	6.72	0.0000
	28V/5V	0	894.1157315	895.3962926	894.756012025	6.72	0.0000
	28V/5V	10	894.1157315	895.3962926	894.756012025	6.72	0.0000
Nominal	28V/5V	20	894.1157315	895.3962926	894.756012025	6.72	0.0000
	28V/5V	30	894.1157315	895.3962926	894.756012025	6.72	0.0000
	28V/5V	40	894.1157315	895.3962926	894.756012025	6.72	0.0000
	28V/5V	50	894.1097194	895.3962926	894.753006015	3.36	3.3596
	Low	20	894.11573146	895.39629259	894.756012025	6.72	0.0000
Nominal	Nominal	20	894.11573146	895.39629259	894.756012025	6.72	0.0000
	High	20	894.11573146	895.3902806	894.753006010	3.36	3.3596

5.7.4. SPURIOUS EMISSION AT ANTENNA TERMINAL

LIMIT

§22.816 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

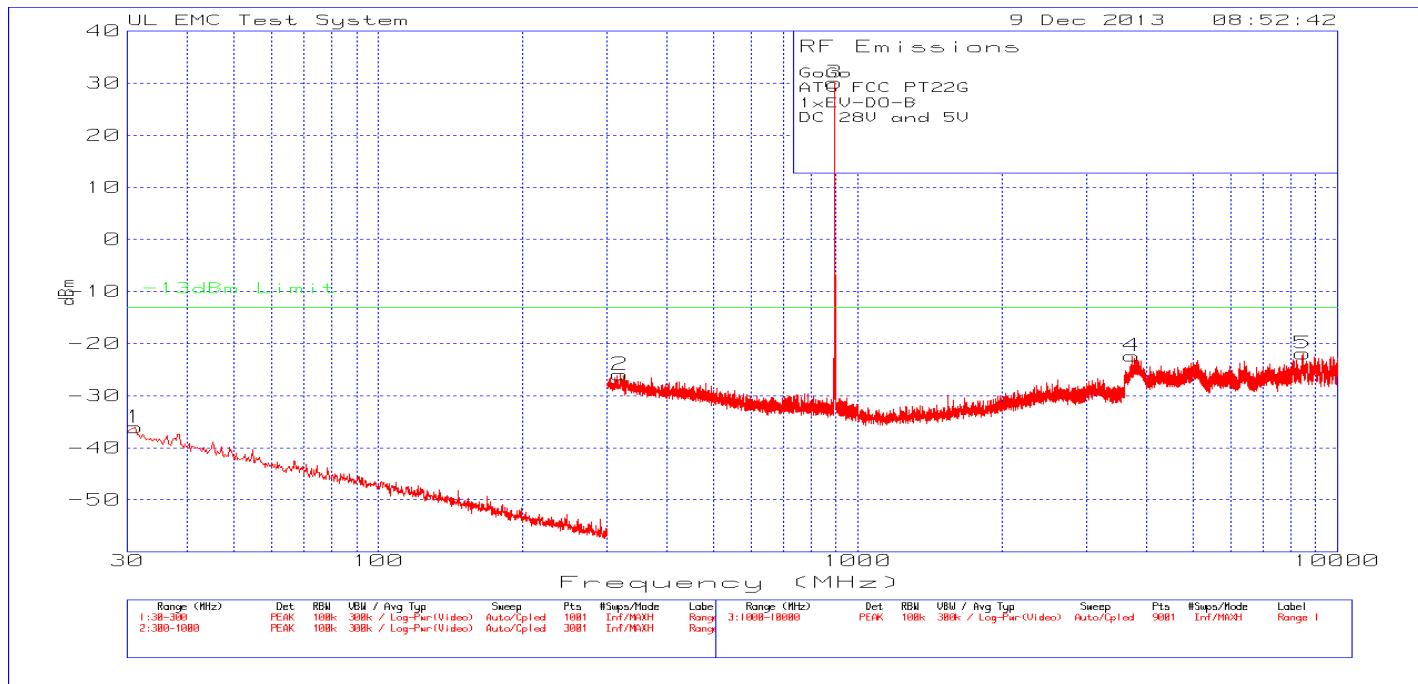
TEST PROCEDURE

Measurements conducted with long cable (minimum length used).

ANSI / TIA / EIA 603 Clause 3.2.13 & FCC 22.861 (a)

RESULTS

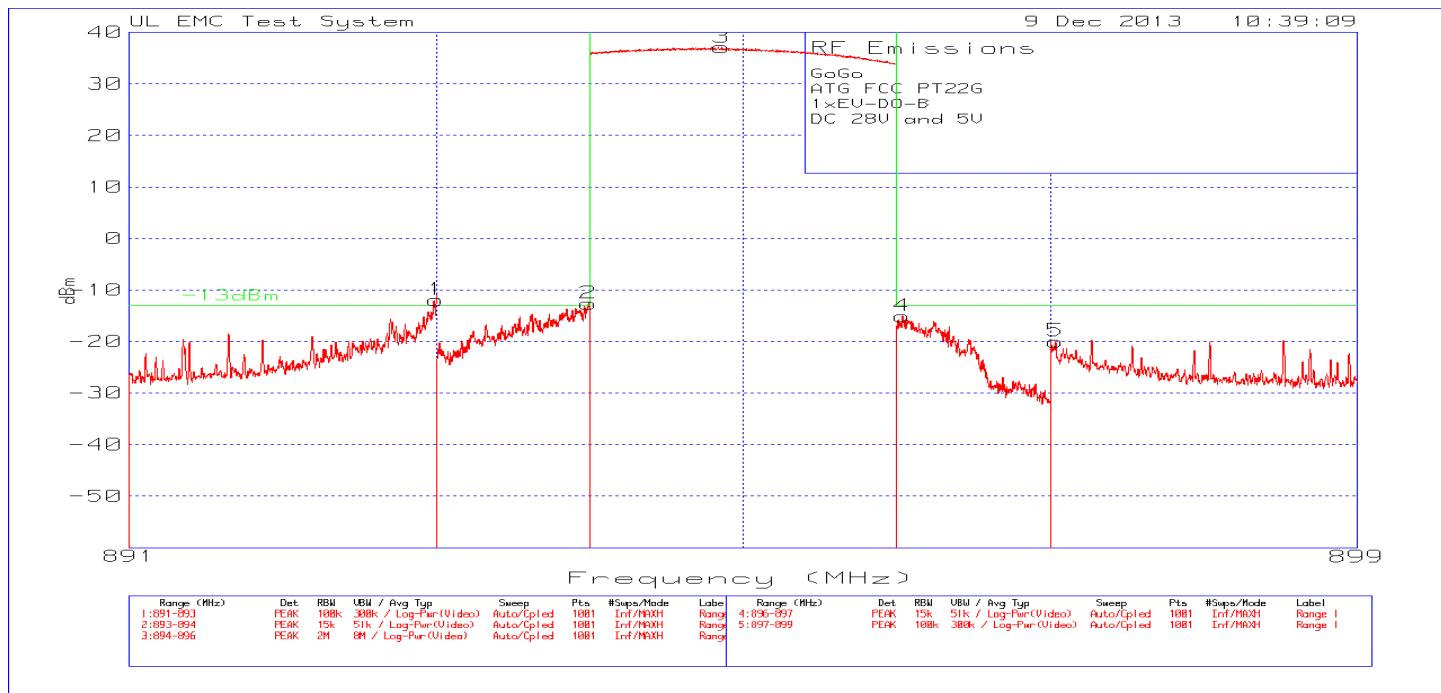
Antenna Port Out-Of-Band Emissions with patch cable (worst case)



GoGo ATG FCC PT22G 1xEV-DO-B DC 28V and 5V Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Path Factor dB	Level dBm	-13dBm Limit	Margin (dB)
1	31.08	-83.59	PK	47.5	-36.09	-13	-23.09
2	319.1333	-53.94	PK	28	-25.94	-13	-12.94
3	894.5333	8.61	PK	21.5	30.11	-	-
4	3726	-43.84	PK	21.5	-22.34	-13	-9.34
5	8475	-46.86	PK	25	-21.86	-13	-8.86

PK - Peak detector

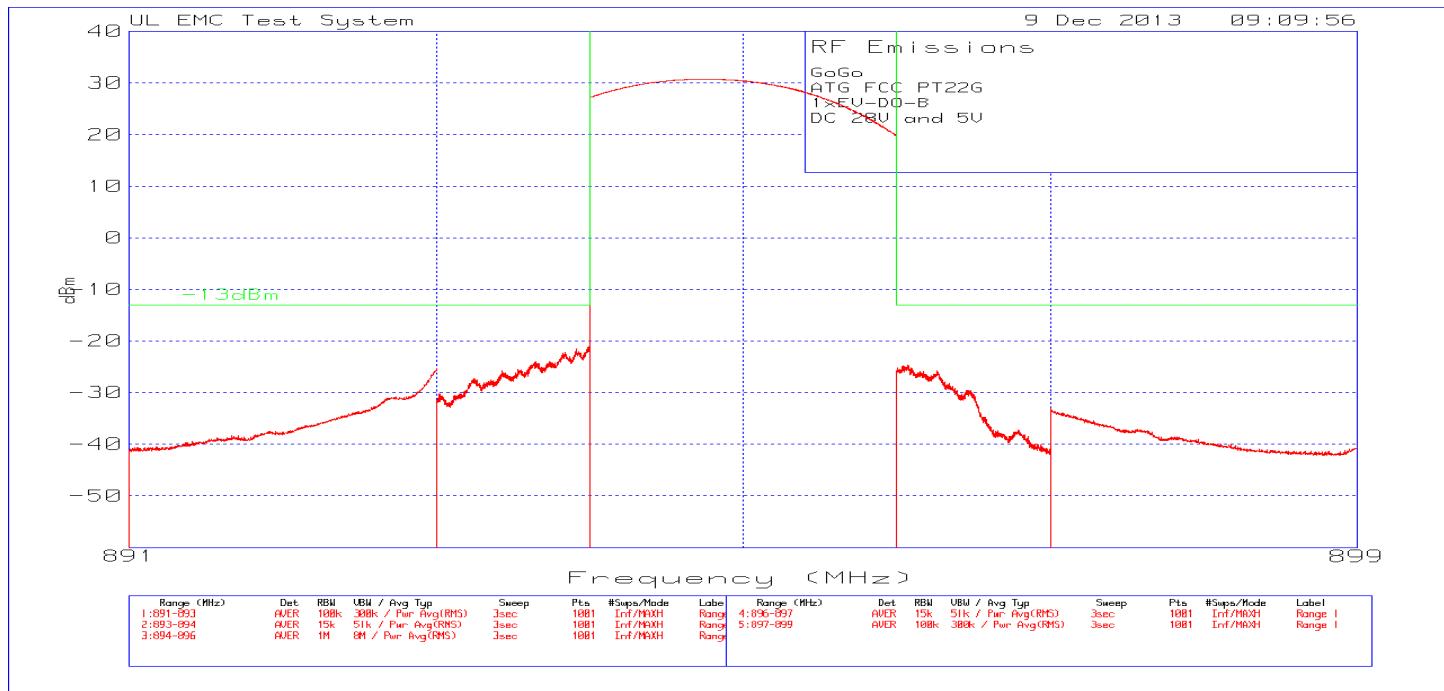
Antenna Port Band Edge Emissions – Peak (with patch cable)



* Above data is peak data. FCC allows the use of average detector for bandedge measurements. Average data is included below.

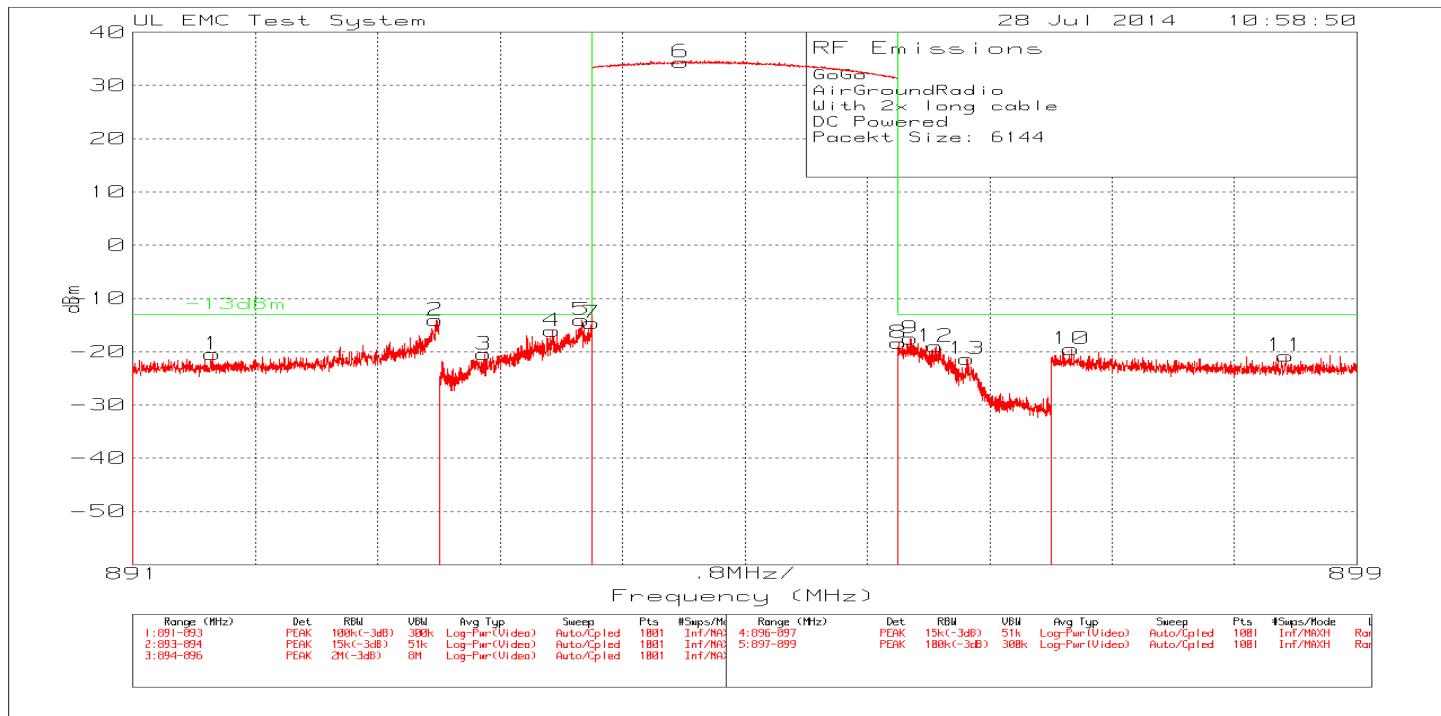
GoGo ATG FCC PT22G 1xEV-DO-B DC 28V and 5V Trace Markers							
Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Path Factor dB	Level dBm	-13dBm	PK Margin (dB)
1	892.998	-33.45	PK	21.5	-11.95	-13	1.05
2	893.99	-34.15	PK	21.5	-12.65	-13	0.35
3	894.86	15.61	PK	21.5	37.11	-	-
4	896.038	-36.49	PK	21.4	-15.09	-13	-2.09
5	897.036	-41.37	PK	21.4	-19.97	-13	-6.97
PK - Peak detector							

Antenna Port Band Edge Emissions – Average



* All Emissions 6dB or more under the limit.

Antenna Port Band Edge Emissions – Peak with Double Length Cable



Marker No.	Test Frequency (MHz)	Meter Reading (dBm)	Detector	Path Factor dB	Level dBm	-13dBm Limit	Margin (dB)
1	891.52	-41.97	PK	21.5	-20.47	-13	-7.47
2	892.978	-35.58	PK	21.5	-14.08	-13	-1.08
3	893.295	-41.97	PK	21.5	-20.47	-13	-7.47
4	893.74	-37.6	PK	21.5	-16.1	-13	-3.1
5	893.933	-35.51	PK	21.5	-14.01	-13	-1.01
7	893.9995	-36.04	PK	21.5	-14.54	-13	-1.54
6	894.58	12.85	PK	21.5	34.35	-	-
8	896.004	-39.76	PK	21.4	-18.36	-13	-5.36
9	896.082	-38.93	PK	21.4	-17.53	-13	-4.53
12	896.246	-40.4	PK	21.4	-19	-13	-6
13	896.451	-42.75	PK	21.4	-21.35	-13	-8.35
10	897.134	-40.89	PK	21.4	-19.49	-13	-6.49
11	898.534	-42.18	PK	21.4	-20.78	-13	-7.78

PK - Peak detector

5.7.5. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

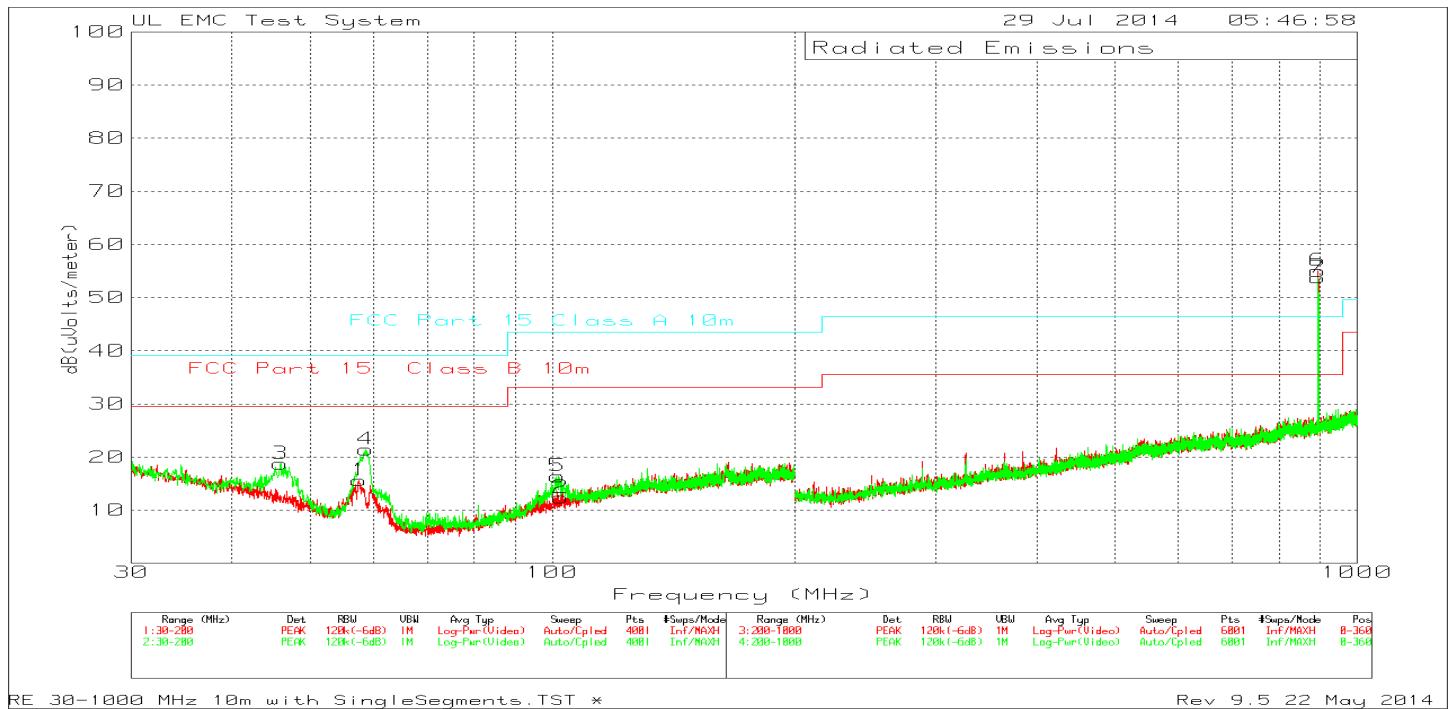
TEST PROCEDURE

The antenna port was terminated with artificial non-radiating antenna by connecting it directly to communication test box.

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.861 (a)

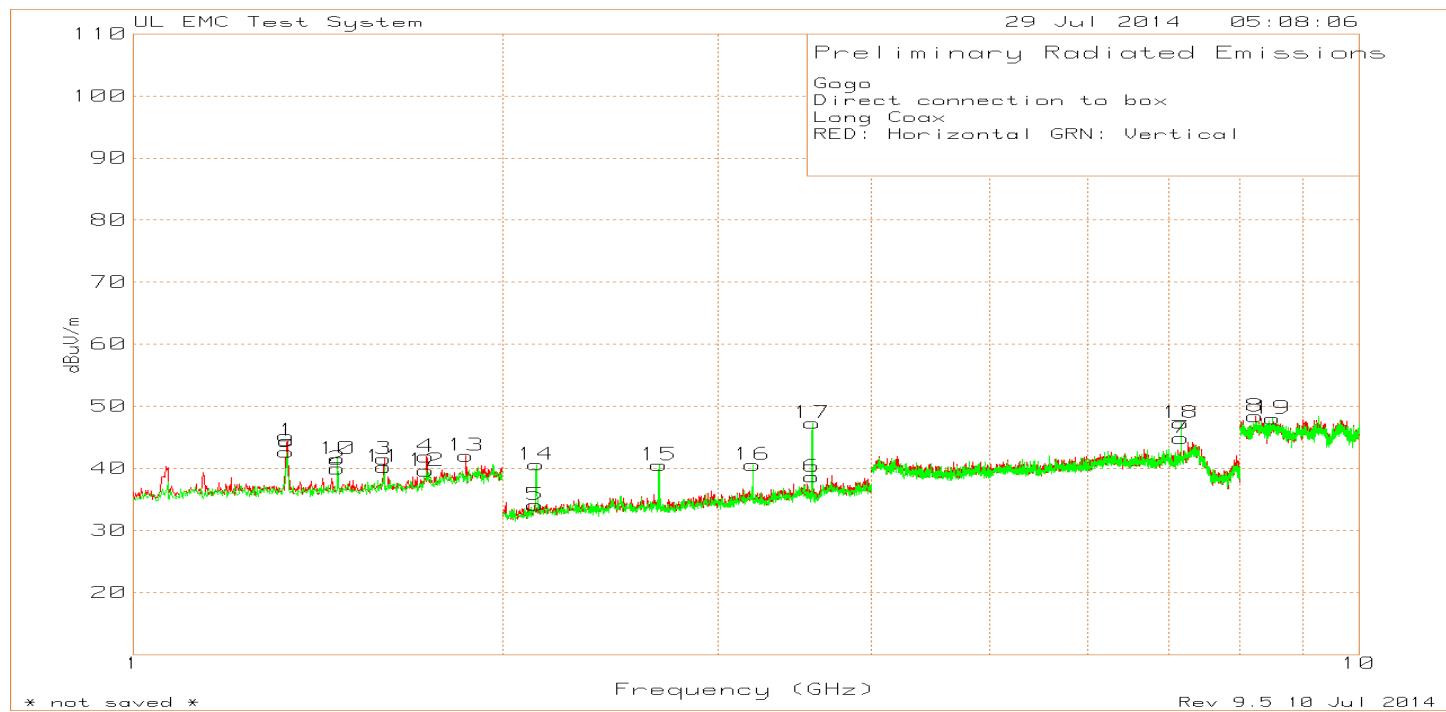
RESULTS

FIELD STRENGTH OF SPURIOUS RADIATION Below 1GHz:



* There were no emissions within 20dB of the -13dBm ERP Limit recorded. The -13dBm limit was calculated at 71.7dB_V/m @ 10 meter distance. The frequency at 894.75MHz is the fundamental frequency radiating from the attenuator and the cable.

FIELD STRENGTH OF SPURIOUS RADIATION Above 1GHz:



* There were no emissions within 20dB of the -13dBm ERP Limit recorded. The -13dBm limit was calculated at 80.2dBuV/m @ 3 meter distance.