

FCC Test Report

Product Name	GPS-SAT
Model No.	i-Q350LX GPS-SAT
FCC ID.	OO4-ILR-IQ350SAT

Applicant	Identec Solutions AG
Address	Millennium Park 2, 6890 Lustenau, Austria

Date of Receipt	July. 16, 2014
Issued Date	Aug. 07, 2014
Report No.	1470394R-RFUSP66V00
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of Quietek Corporation.

Test Report

Issued Date: Aug. 07, 2014

Report No. : 1470394R-RFUSP66V00



Product Name	GPS-SAT
Applicant	Identec Solutions AG
Address	Millennium Park 2, 6890 Lustenau, Austria
Manufacturer	Identec Solutions AG
Model No.	i-Q350LX GPS-SAT
FCC ID.	OO4-ILR-IQ350SAT
EUT Rated Voltage	DC 3.6V (Power by battery)
EUT Test Voltage	DC 3.6V (Power by battery)
Trade Name	Identec Solutions
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2014 ANSI C63.10
Test Result	Complied

Documented By : 
(Senior Adm. Specialist / Leven Huang)

Tested By : 
(Engineer / Jack Hsu)

Approved By : 
(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	GPS-SAT
Trade Name	Identec Solutions
FCC ID.	OO4-ILR-IQ350SAT
Model No.	i-Q350LX GPS-SAT
Frequency Range	919MHz-920MHz
Type of Modulation	GFSK
Number of Channels	2
Channel Control	Auto
Antenna Type	Chip Antenna
Antenna Gain	Refer to the table "Antenna List"

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	WURTH ELEKTRONIK	7488910092	Chip Antenna	-0.7dBi

Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency
Channel 1:	919MHz	Channel 2:	920MHz

Note:

1. The EUT is a GPS-SAT with a built-in 919MHz-920MHz transceiver.
2. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249.
3. Quietek verified among construction and function in typical operation.

Test Mode	Mode 1: Transmit
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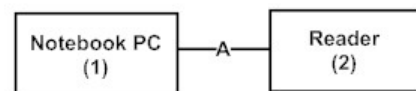
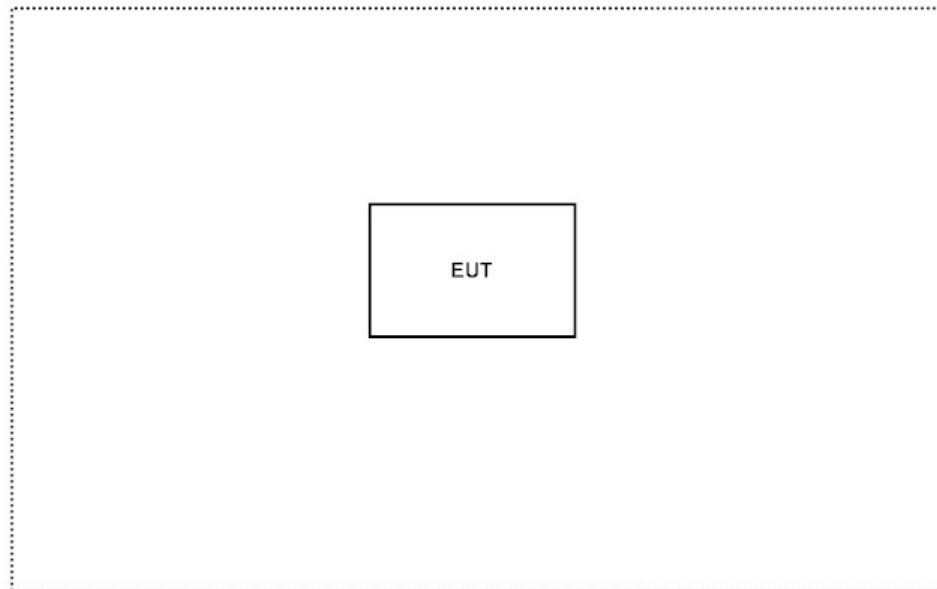
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	PPT	N/A
2	Reader	Identec Solutions	i-PORT M350	N/A

Signal Cable Type	Signal cable Description
A	USB Cable
	Shielded, 1.8m

1.4. Configuration of Test System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4.
- (2) The Notebook PC via reader remote control the EUT.
- (3) Execute program “Gen3 Tag Certification Tool V1.0.0.20823” on the Notebook PC.
- (4) Start transmits continually.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>
The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Site Name: Quietek Corporation
Site Address: No.5-22, Ruishukeng Linkou Dist., New Taipei City
24451, Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

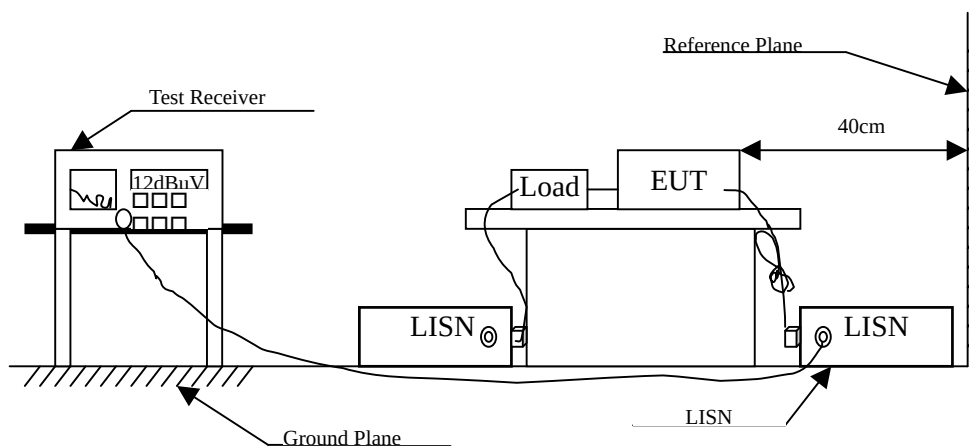
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2013	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2014	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2014	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2014	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2014	
	No.8 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBUV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Owing to the DC operation of EUT, this test item is not performed.

3. Radiated Emission

3.1. Test Equipment

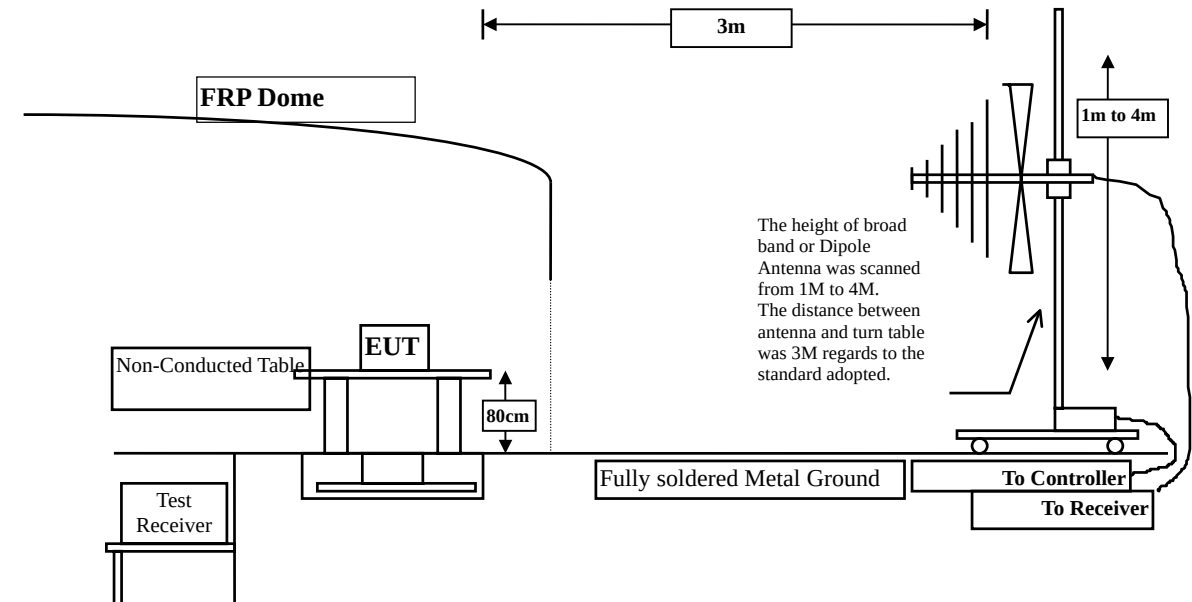
The following test equipment are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2014
	X Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	X Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
	X Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	X Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2013
	X Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	X Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2014
	X Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X Coaxial Switch	Anritsu	MP59B/6200265729	N/A

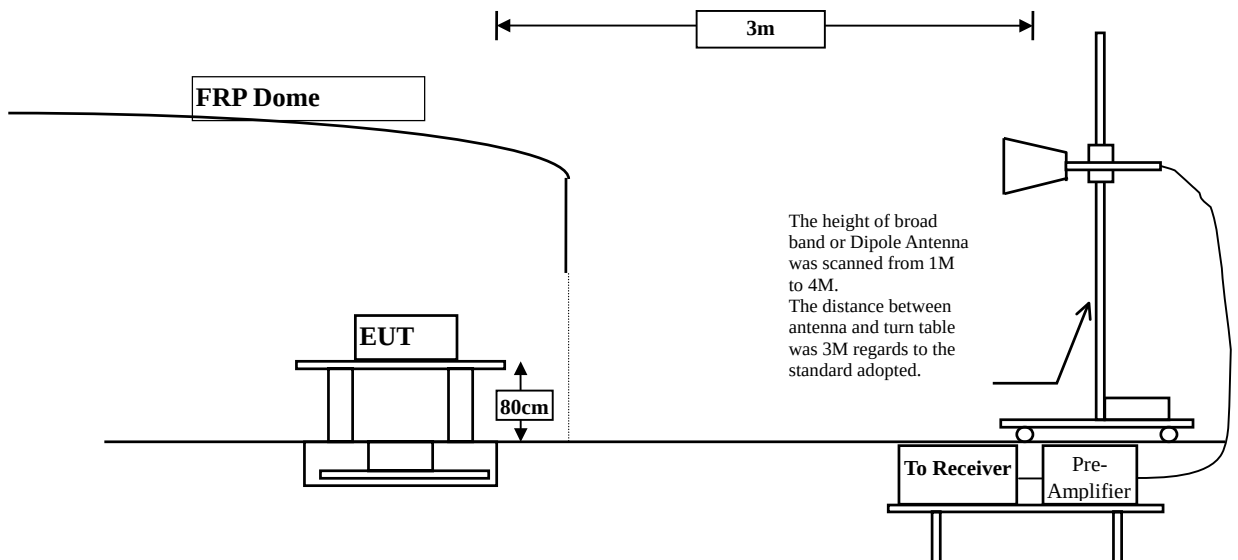
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

Below 1GHz



Above 1GHz



3.3. Limits

➤ Fundamental and Harmonics Emission Limits

FCC Part 15 Subpart C Paragraph 15.249 Limits				
Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonics	
	(mV/m @3m)	(dBuV/m @3m)	(uV/m @3m)	(dBuV/m @3m)
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54

Remarks : 1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

➤ General Radiated Emission Limits

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

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks : 1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2009 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

3.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

3.6. Test Result of Radiated Emission

Product : GPS-SAT
 Test Item : Fundamental Radiated Emission
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit (X-axis)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
919.000	-6.205	95.570	89.365	-4.635	94.000
920.000	-6.195	95.600	89.405	-4.595	94.000
Vertical					
919.000	-5.160	82.060	76.900	-17.100	94.000
920.000	-5.160	82.130	76.970	-17.030	94.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Product : GPS-SAT
 Test Item : Fundamental Radiated Emission
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit (Y-asix)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
919.000	-6.205	89.730	83.525	-10.475	94.000
920.000	-6.195	90.430	84.235	-9.765	94.000
Vertical					
919.000	-5.160	92.750	87.590	-6.410	94.000
920.000	-5.160	93.460	88.300	-5.700	94.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Product : GPS-SAT
 Test Item : Fundamental Radiated Emission
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit (Z-asix)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
919.000	-6.205	91.500	85.295	-8.705	94.000
920.000	-6.195	90.800	84.605	-9.395	94.000
Vertical					
919.000	-5.160	89.830	84.670	-9.330	94.000
920.000	-5.160	90.430	85.270	-8.730	94.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna Factor + Cable Loss – PreAMP.

Product : GPS-SAT
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (919MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
1838.000	-1.586	56.670	55.083	-18.917	74.000
2757.000	-1.861	40.940	39.079	-34.921	74.000
3676.000	-1.824	42.440	40.616	-33.384	74.000
4595.000	0.650	39.890	40.541	-33.459	74.000
5514.000	4.538	39.610	44.148	-29.852	74.000
6433.000	6.133	39.250	45.383	-28.617	74.000
7352.000	10.557	37.770	48.327	-25.673	74.000
8271.000	10.647	38.040	48.688	-25.312	74.000
9190.000	11.743	37.940	49.683	-24.317	74.000
Average Detector:					
1838.000	-1.586	54.320	52.733	-1.267	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : GPS-SAT
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (919MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Vertical					
Peak Detector:					
1838.000	-1.030	54.801	53.770	-20.230	74.000
2757.000	-2.749	40.500	37.751	-36.249	74.000
3676.000	-1.558	41.940	40.383	-33.617	74.000
4595.000	2.255	40.020	42.276	-31.724	74.000
5514.000	4.511	39.900	44.411	-29.589	74.000
6433.000	6.200	39.060	45.260	-28.740	74.000
7352.000	11.259	37.730	48.989	-25.011	74.000
8271.000	11.601	37.530	49.131	-24.869	74.000
9190.000	11.762	38.210	49.972	-24.028	74.000

Average Detector:

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Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : GPS-SAT
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (920MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
1840.000	-1.684	57.495	55.810	-18.190	74.000
2760.000	-1.855	44.750	42.895	-31.105	74.000
3680.000	-1.885	42.180	40.295	-33.705	74.000
4600.000	0.649	40.210	40.859	-33.141	74.000
5520.000	4.533	39.210	43.743	-30.257	74.000
6440.000	6.196	39.150	45.346	-28.654	74.000
7360.000	10.617	38.210	48.827	-25.173	74.000
8280.000	10.668	38.850	49.518	-24.482	74.000
9200.000	11.738	38.300	50.039	-23.961	74.000
Average Detector:					
1840.000	-1.684	52.910	51.225	-2.775	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : GPS-SAT
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (920MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Vertical					
Peak Detector:					
1840.000	-1.152	54.242	53.090	-20.910	74.000
2760.000	-2.747	41.760	39.013	-34.987	74.000
3680.000	-1.603	42.210	40.607	-33.393	74.000
4600.000	2.250	40.450	42.699	-31.301	74.000
5520.000	4.511	39.470	43.981	-30.019	74.000
6440.000	6.246	39.550	45.796	-28.204	74.000
7360.000	11.343	37.260	48.603	-25.397	74.000
8280.000	11.637	37.800	49.437	-24.563	74.000
9200.000	11.742	38.540	50.282	-23.718	74.000

Average Detector:

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Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : GPS-SAT
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (919MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
379.200	1.301	25.265	26.566	-19.434	46.000
520.820	3.198	25.098	28.295	-17.705	46.000
596.480	3.587	24.290	27.877	-18.123	46.000
676.020	2.841	24.470	27.312	-18.688	46.000
778.840	5.180	24.257	29.437	-16.563	46.000
852.560	7.106	24.097	31.203	-14.797	46.000
Vertical					
45.520	-10.625	39.930	29.305	-10.695	40.000
181.320	-1.910	23.880	21.970	-21.530	43.500
379.200	0.881	22.984	23.865	-22.135	46.000
530.520	1.192	23.121	24.313	-21.687	46.000
625.580	0.299	24.344	24.644	-21.356	46.000
811.820	2.851	23.674	26.525	-19.475	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : GPS-SAT
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (920MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
39.700	-3.625	32.634	29.009	-10.991	40.000
458.740	3.298	24.373	27.671	-18.329	46.000
534.400	3.162	23.507	26.669	-19.331	46.000
660.500	1.889	27.295	29.184	-16.816	46.000
765.260	5.091	26.188	31.279	-14.721	46.000
821.520	7.116	22.788	29.904	-16.096	46.000
Vertical					
41.640	-11.715	41.594	29.880	-10.120	40.000
381.140	0.816	23.323	24.139	-21.861	46.000
538.280	1.996	22.802	24.798	-21.202	46.000
610.060	2.087	23.248	25.335	-20.665	46.000
685.720	2.254	23.753	26.007	-19.993	46.000
804.060	3.371	23.875	27.246	-18.754	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

4. Band Edge

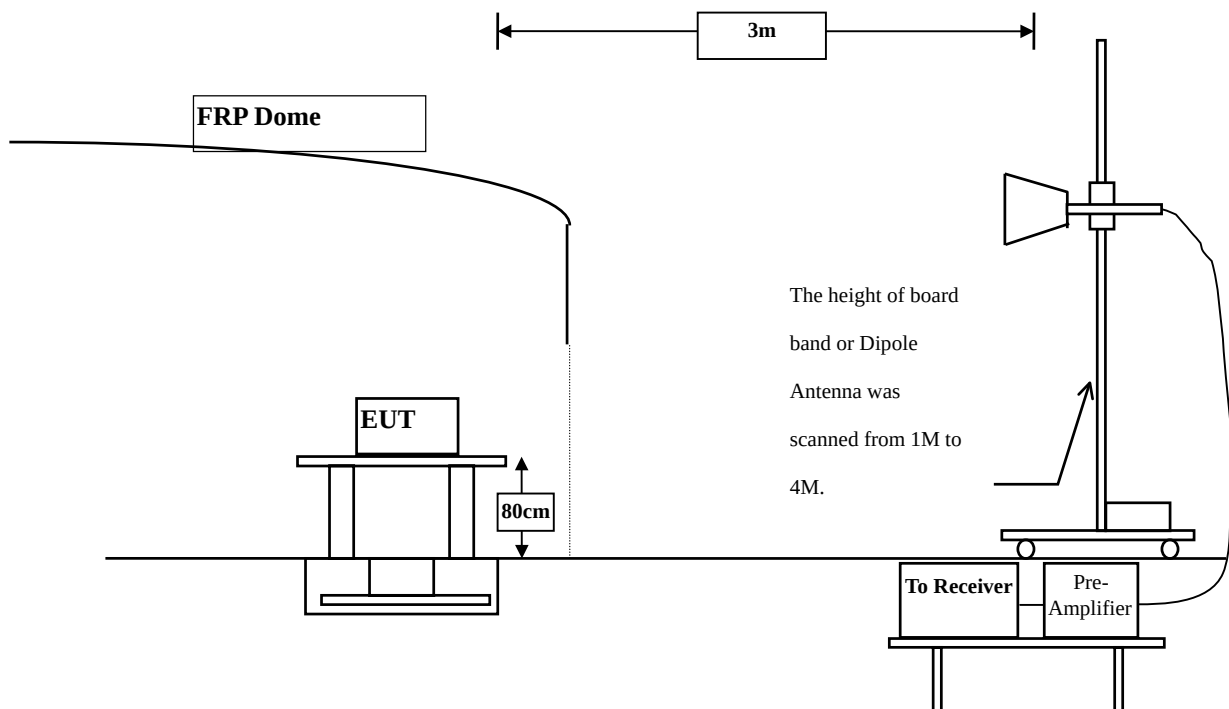
4.1. Test Equipment

The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2014
	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2013
	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	X Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X Contoller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated every one year.
2. The test equipments marked by “X” are used to measure the final test results.

4.2. Test Setup



4.3. Limit

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)).

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2009 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30)is 120 kHz, above 1GHz are 1 MHz.

4.5. Uncertainty

Radiated is ± 3.9 dB.

4.6. Test Result of Band Edge

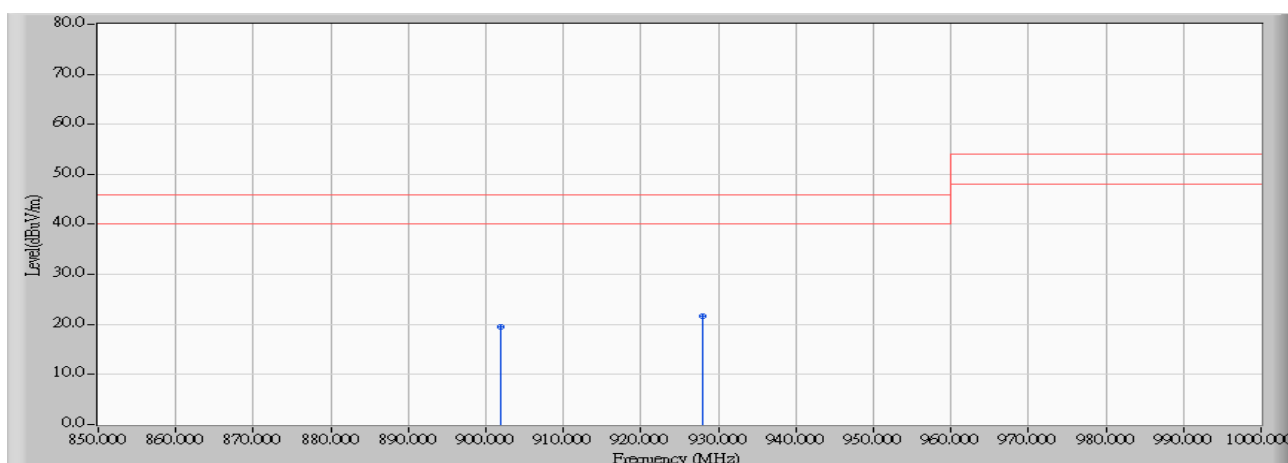
Product : GPS-SAT
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (919MHz)

RF Radiated Measurement (Horizontal):

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Quasi-Peak Limit (dBuV/m)	Result
01(Quasi-Peak)	902.000	-6.370	25.900	19.530	46.000	Pass
02(Quasi-Peak)	928.000	-6.122	27.800	21.678	46.000	Pass

Figure Channel 01:

Horizontal (Quasi-Peak)



Note:

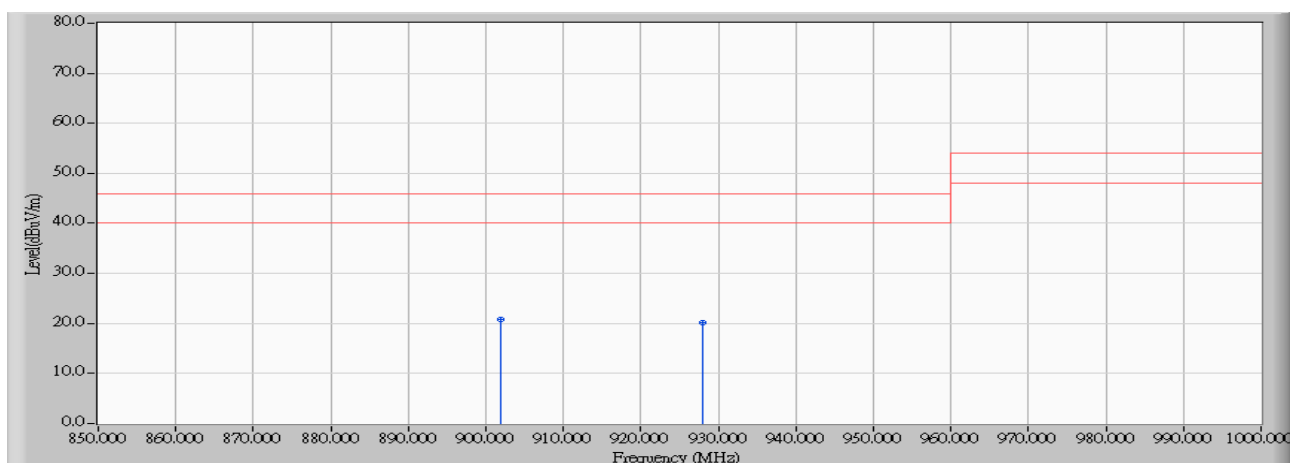
1. Quasi-Peak measurements: RBW=100kHz, VBW=1MHz, Sweep: Auto.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : GPS-SAT
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (919MHz)

RF Radiated Measurement (Vertical):

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Quasi-Peak Limit (dBuV/m)	Result
01(Quasi-Peak)	902.000	-5.220	26.100	20.880	46.000	Pass
02(Quasi-Peak)	928.000	-5.142	25.200	20.058	46.000	Pass

Figure Channel 01: Vertical (Quasi-Peak)



Note:

1. Quasi-Peak measurements: RBW=100kHz,VBW=1MHz,Sweep: Auto.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

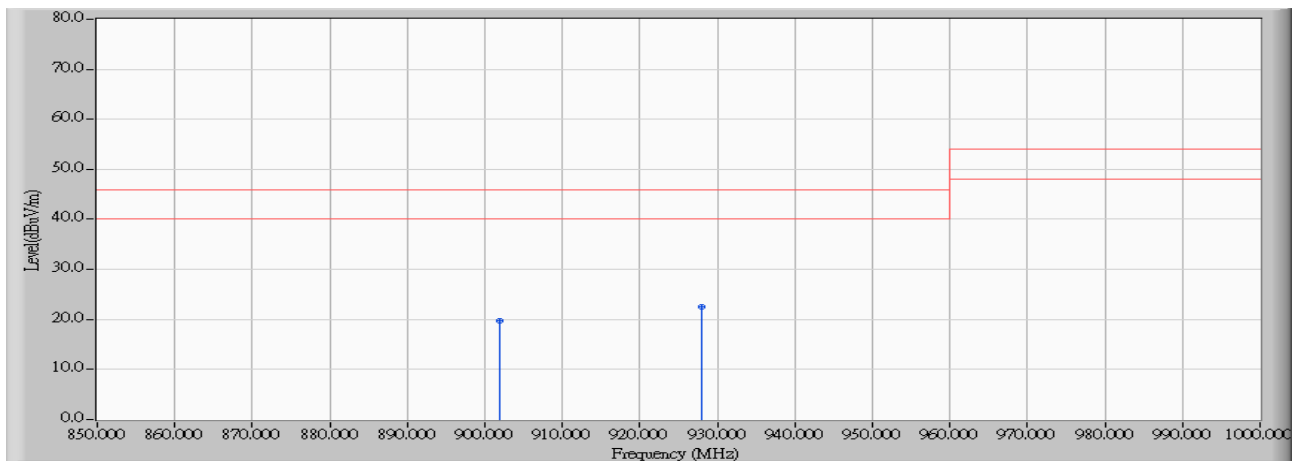
Product : GPS-SAT
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (920MHz)

RF Radiated Measurement (Horizontal):

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Quasi-Peak Limit (dBuV/m)	Result
01(Quasi-Peak)	902.000	-6.370	26.100	19.730	46.000	Pass
02(Quasi-Peak)	928.000	-6.122	28.700	22.578	46.000	Pass

Figure Channel 01:

Horizontal (Quasi-Peak)



Note:

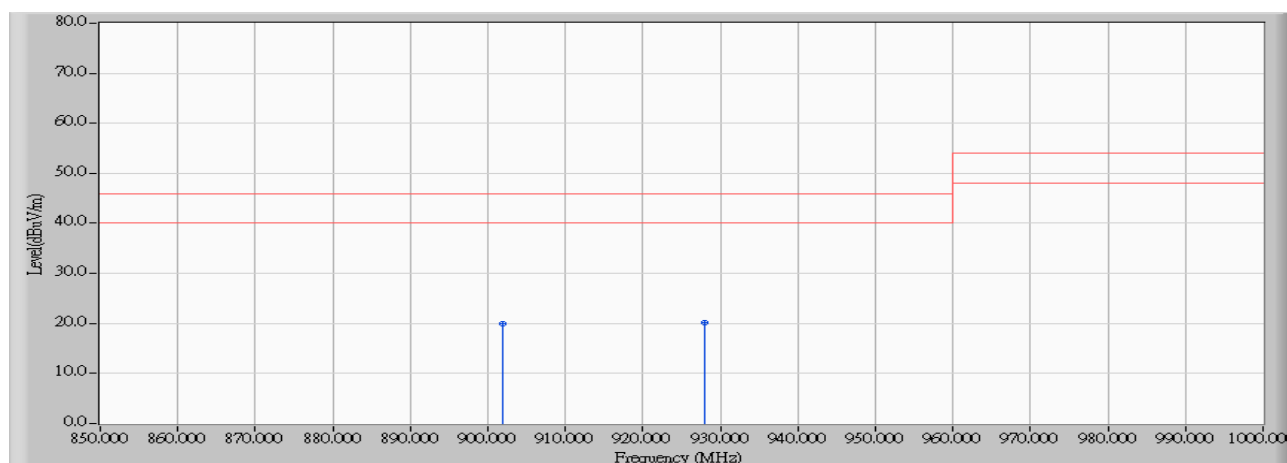
1. Quasi-Peak measurements: RBW=100kHz,VBW=1MHz,Sweep: Auto.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Product : GPS-SAT
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (920MHz)

RF Radiated Measurement (Vertical):

No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Quasi-Peak Limit (dBuV/m)	Result
01(Quasi-Peak)	902.000	-5.220	25.200	19.980	46.000	Pass
02(Quasi-Peak)	928.000	-5.142	25.300	20.158	46.000	Pass

Figure Channel 01: Vertical (Quasi-Peak)



Note:

1. Quasi-Peak measurements: RBW=100kHz,VBW=1MHz,Sweep: Auto.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

5. EMI Reduction Method During Compliance Testing

No modification was made during testing.