



FCC TEST REPORT
FCC ID: 2A7BK-EF425
On Behalf of
EventFalcon Ltd
GPS Tracker
Model No.: EF425

Prepared for : EventFalcon Ltd
Address : 1 Abbeycourt, Kinsale, Co Cork, Ireland

Prepared By : Shenzhen Alpha Product Testing Co., Ltd.
Address : Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103,
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TEST REPORT DECLARATION

Applicant : EventFalcon Ltd

Address : 1 Abbeycourt, Kinsale, Co Cork, Ireland

Manufacturer : HuiZhou Cantrack Technology Co., Ltd

Address : 2nd floor, Building 3, Changguang Maosen Industrial Park, Chayuan, Qiuchang
Town, Huiyang District, Huizhou, Guangdong, China

EUT Description : GPS Tracker

(A) Model No. : EF425

(B) Trademark : N/A

Measurement Standard Used:

FCC CFR Title 47 Part 2

FCC CFR Title 47 Part 22 Subpart H

FCC CFR Title 47 Part 24 Subpart E

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....:

Lucas Pang
Project Engineer



Approved by (name + signature).....:

Simple Guan
Project Manager



Date of issue.....

June 14, 2022

Revision History

Revision	Issue Date	Revisions	Revised By
V0	June 14, 2022	Initial released Issue	Lucas Pang

1 Test Summary

Test Item	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307, Part 2.1093	Pass (Please refer to RF Exposure Evaluation assessment)
RF Output Power	Part 2.1046, Part 22.913 (a)(2), Part 24.232 (c)	Pass
Peak-to-Average Ratio	Part 2.1046, Part 24.232 (d)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049, Part 22.917, Part 24.238	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051, Part 22.917 (a), Part 24.238 (a)	Pass
Field Strength of Spurious Radiation	Part 2.1053, Part 22.917 (a), Part 24.238 (a)	Pass
Out of band emission, Band Edge	Part 22.917 (a), Part 24.238 (a)	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b)	Pass
Frequency stability vs. voltage	Part 2.1055(d)(1)(2)	Pass

Note:

1. Pass: The EUT complies with the essential requirements in the standard.
2. The conclusion of this test report is judged by actual test data without considering measurement uncertainty.

2 General Information

2.1 General Description of EUT

Description/PMN	: GPS Tracker
Model Number/HVIN(s)	: EF425
Diff	: /
Trademark	: N/A
Test Voltage	: DC 3.7V by battery(Built in battery), DC 12V by battery(External battery)
Power supply	: DC 9-36V
Support Networks	: GSM 850, PCS1900
Support Bands	: EGPRS850, EGPRS1900,
TX Frequency	: EGPRS850: 824.20MHz-848.80MHz EGPRS1900: 1850.20MHz-1909.80MHz
EGPRS Class	: 12
Modulation type	: EGPRS: GMSK/8PSK
Antenna type	: Internal antenna
Antenna gain	: Maximum Gain is 0dBi. Antenna information is provided by applicant.
Software version	: V1.0
Hardware version/FVIN	: V1.0

Remark: The worst-case simultaneous transmission configuration was evaluated with no non-compliance found. Results in this report are only for 2G function, and there is no other transmitter involved.

Operation Frequency List:

EGPRS 850		EGPRS 1900	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.20	512	1850.20
129	824.40	513	1850.40
· ∴	· ∴	· ∴	· ∴
189	836.40	660	1879.80
190	836.60	661	1880.00
191	836.80	662	1880.20
· ∴	· ∴	· ∴	· ∴
250	848.60	809	1909.60
251	848.80	810	1909.80

Regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Final test channel:

EGPR 850		PCS 1900	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.20	512	1850.20
190	836.60	661	1880.00
251	848.80	810	1909.80

2.2 Related Submittal(s)/Grant (s)

This submittal(s) (test report) is filing to comply with Section Part 22 subpart H and Part 24 subpart E of the FCC CFR 47 Rules.

2.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on TIA/EIA 603 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

2.4 Test Facility

Shenzhen Alpha Product Testing Co., Ltd
Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961

July 25, 2017 Certificated by IC
Registration Number: CN0085

2.5 Accessories of Device (EUT)

Accessories : /
Manufacturer : /
Model : /
Input : /
Output : /

2.6 Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or SDOC
1.	--	--	--	--	--

2.7 Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	24℃
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	98kPa

2.8 Measurement Uncertainty

Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	1.63dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	3.5dB
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.74dB(Polarize: V)
	3.76dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	3.77dB(Polarize: V)
	3.80dB(Polarize: H)
Uncertainty for radio frequency	5.06×10^{-8} GHz
Uncertainty for conducted RF Power	0.40dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

3 Test Instruments list

Equipment	Manufacture	Model No.	Firmware version	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	N/A	N/A	2020.09.02	3Year
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	2.3	102137	2021.08.25	1Year
Spectrum analyzer	Agilent	N9020A	A.14.16	MY499100060	2021.08.25	1Year
Receiver	ROHDE&SCHWARZ	ESR	2.28 SP1	1316.3003K03-102082-Wa	2021.08.25	1Year
Receiver	R&S	ESCI	4.42 SP1	101165	2021.08.25	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	N/A	VULB 9168#627	2021.08.30	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	N/A	2106	2021.08.30	2Year
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	N/A	00059	2021.08.30	2Year
RF Cable	Resenberger	Cable 1	N/A	RE1	2021.08.25	1Year
RF Cable	Resenberger	Cable 2	N/A	RE2	2021.08.25	1Year
RF Cable	Resenberger	Cable 3	N/A	CE1	2021.08.25	1Year
Pre-amplifier	HP	HP8347A	N/A	2834A00455	2021.08.25	1Year
Pre-amplifier	Agilent	8449B	N/A	3008A02664	2021.08.25	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	N/A	8126-466	2021.08.25	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	N/A	101043	2021.08.25	1 Year
Horn Antenna	SCHWARZBECK	BBHA9170	N/A	00946	2021.08.30	2 Year
Preamplifier	SKET	LNPA_1840-50	N/A	SK2018101801	2021.08.25	1 Year
Power Meter	Agilent	E9300A	N/A	MY41496628	2021.08.25	1 Year
Power Sensor	DARE	RPR3006W	N/A	15100041SNO91	2021.08.25	1 Year
Temp. & Humid. Chamber	Wei Huang	WHTH-1000-40-880	N/A	100631	2022.04.22	1 Year
Switching Mode Power Supply	JUNKE	JK12010S	N/A	20140927-6	2021.08.25	1 Year
Adjustable attenuator	MWRFTest	N/A	N/A	N/A	N/A	N/A
10dB Attenuator	Mini-Circuits	DC-6G	N/A	N/A	N/A	N/A

Software Information			
Test Item	Software Name	Manufacturer	Version
RE	EZ-EMC	farad	Alpha-3A1
CE	EZ-EMC	farad	Alpha-3A1
RF-CE	MTS 8310	MWRFtest	2.0.0.0

4 System test configuration

4.1 Test mode

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

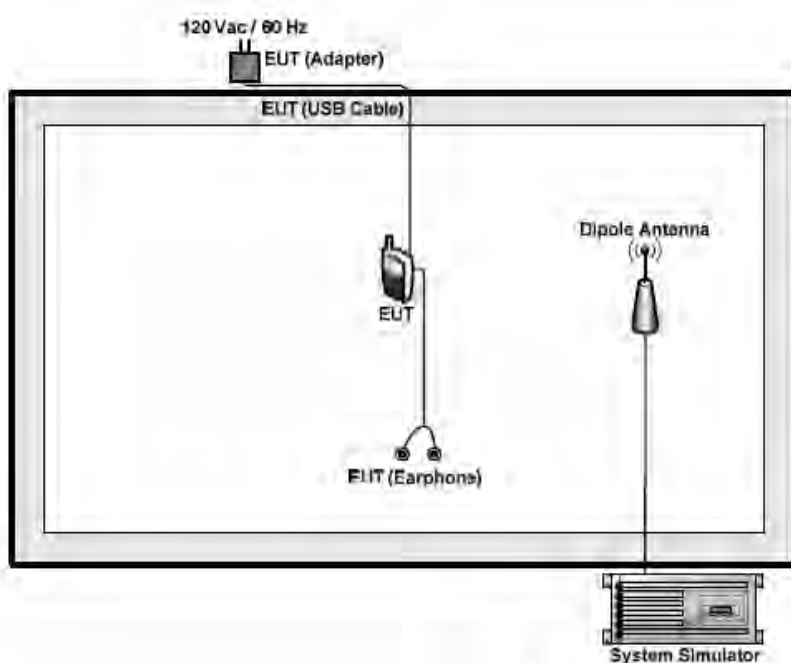
Test modes		
Band	Radiated	Conducted
GSM 850	■ EPRS 1 link	■ EGPRS 1 link
PCS 1900	■ EGPRS 1 link	■ EGPRS 1 link

Note: The maximum power levels is EGPRS multi-slot class 8 mode for 8PSK link

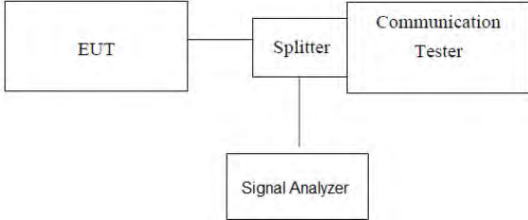
The conducted power tables are as follows:

Conducted Power (dBm)						
Band	EGPRS850			EPGRS1900		
Channel	128	190	251	512	661	810
Frequency	824.20	836.60	848.80	1850.20	1880.00	1909.80
EGPRS (8PSK, 1 TX slot)	30.52	30.42	30.03	28.63	28.03	28.03
EGPRS (8PSK, 2 TX slot)	30.45	30.18	29.67	27.49	27.12	27.02
EGPRS (8PSK, 3 TX slot)	29.65	29.87	29.24	27.86	27.73	27.81
EGPRS (8PSK, 4 TX slot)	28.85	28.60	28.54	27.10	27.62	27.62

4.2 Configuration of Tested System



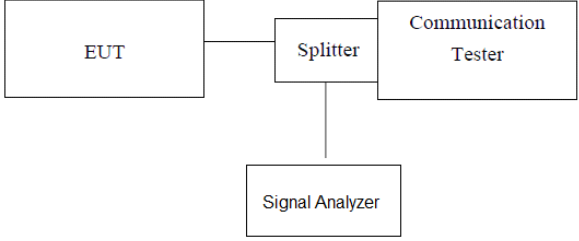
4.3 Conducted AV Output Power

Test Requirement:	FCC part22.913(a) and FCC part24.232(b), FCC part 27.50 (d)(4)
Test Method:	FCC part2.1046
Limit:	EGPRS850: 7W(38.45dbm) EGPRS1900: 2W(33.01dbm)
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1. The transmitter output port was connected to base station. 2. The RF output of EUT was connected to the Signal Analyzer by RF cable and attenuator, the path loss was compensated to the results for each measurement. 3. Set EUT at maximum power through base station. 4. Select lowest, middle, and highest channels for each band and different modulation. 5. Measure the maximum burst average power.
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data

Conducted Burst Power (dBm)						
Band	EGPRS850			EGPRS1900		
Channel	128	190	251	512	661	810
Frequency	824.20	836.60	848.80	1850.20	1880.00	1909.80
EGPRS (8PSK, 1 TX slot)	31.85	31.39	31.77	29.52	29.04	29.16
EGPRS (8PSK, 2 TX slot)	30.63	30.28	30.29	28.55	28.29	28.67
EGPRS (8PSK, 3 TX slot)	30.49	30.71	30.44	28.46	28.80	28.45
EGPRS (8PSK, 4 TX slot)	30.04	30.94	30.92	28.92	28.26	28.91

4.4 Peak-to-Average Ratio

Test Requirement:	FCC part24.232(d)
Test Method:	FCC part2.1046
Limit:	13db
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1. The transmitter output port was connected to base station. 2. The RF output of EUT was connected to the Signal Analyzer by RF cable and attenuator, the path loss was compensated to the results for each measurement. 3. Set EUT at maximum power through base station. 4. Select lowest, middle, and highest channels for each band and different modulation. 5. Measure the maximum burst average power. 6. Record the maximum peak-to-average ratio value.
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement data

Test mode	Peak to Average Ratio (dB)			Limit (dB)	Result
	Low Ch.	Middle Ch.	High Ch.		
EGPRS850	10.52	10.90	10.89	13	PASS
EGPRS1900	10.85	10.34	11.07	13	PASS

Test Mode: GSM/TM1/GSM850 Low Ch.



Test Mode: GSM/TM1/GSM1900 Low Ch.



Middle Ch.



Middle Ch.



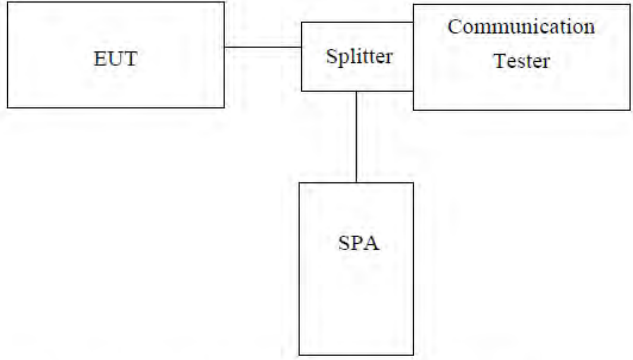
High Ch.



High Ch.



4.5 Occupy Bandwidth

Test Requirement:	FCC part22.913(a) and FCC part24.232(b)
Test Method:	FCC part2.1049
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. RBW was set to about 1% of emission BW, VBW= 3 times RBW. 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data

EUT Mode	Channel	Frequency (MHz)	99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
GSM 850 (EGPRS 1 link)	128	824.20	239.85	316.2
	190	836.60	238.36	307.1
	251	848.80	240.13	310.8
PCS 1900 (EGPRS 1 link)	512	1850.20	239.60	313.0
	661	1880.00	242.45	309.9
	810	1909.80	252.73	313.5

Test plot as follows:

GSM 850 (EGPRS 1 link)



Lowest channel

PCS 1900 (EGPRS 1 link)



Lowest channel



Middle channel



Middle channel



Highest channel

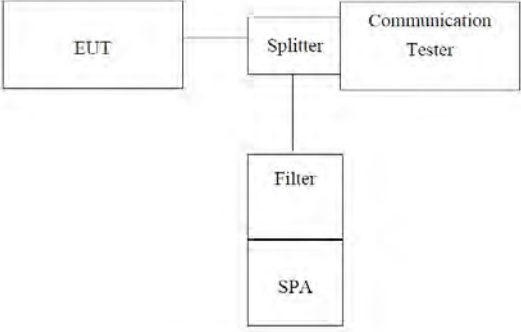


Highest channel

4.6 MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

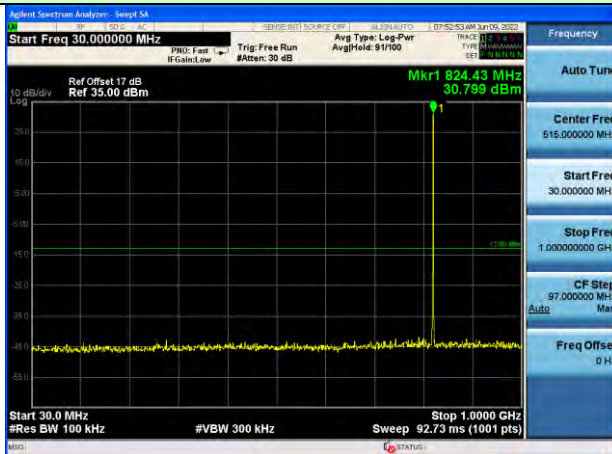
4.7 Out of band emission at antenna terminals

Test Requirement:	FCC part22.917(a) and FCC part24.238(a)
Test Method:	FCC part2.1051
Limit:	-13dBm
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic. 3 For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10th harmonic. 4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

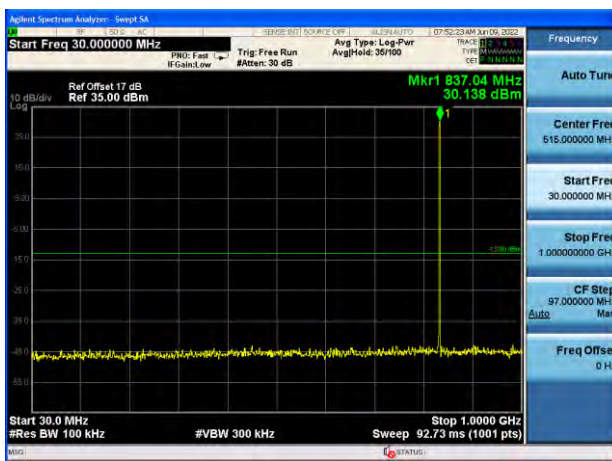
Test plot as follows:

Note: During the conducted spurious emission test, a band filter was used. The information of the filter is reported at section 6.0 (refer to item 24, 25).

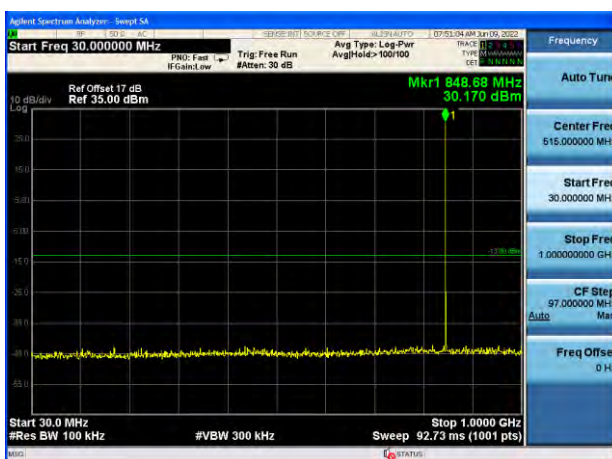
Test Mode: GSM 850 (EGPRS 1 link)



Lowest channel



Middle channel



Highest channel

Test Mode: PCS1900 (EGPRS 1 link)



Lowest channel



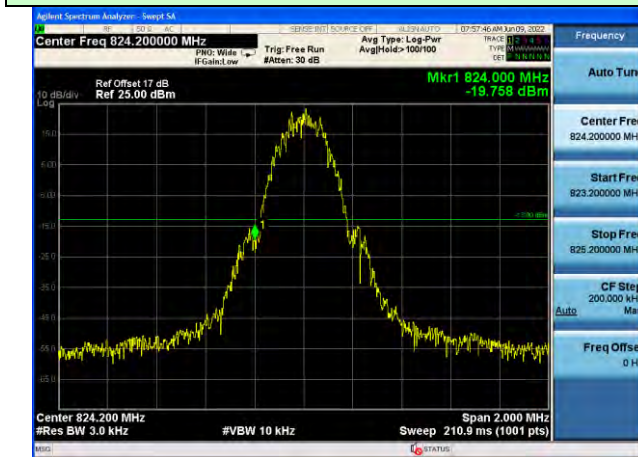
Middle channel



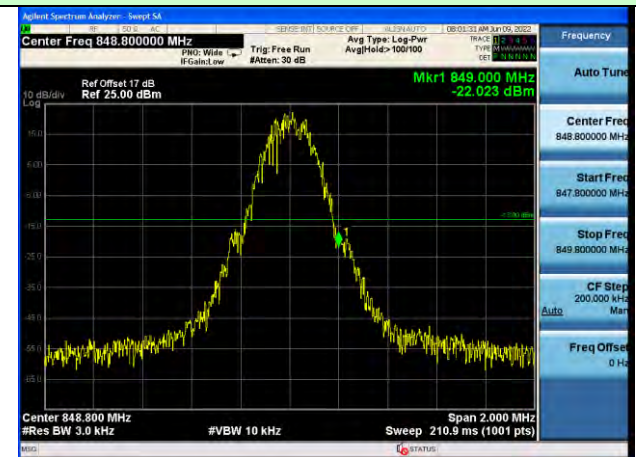
Highest channel

Band Edge:

Test Mode: GSM850 (EGPRS 1 link)

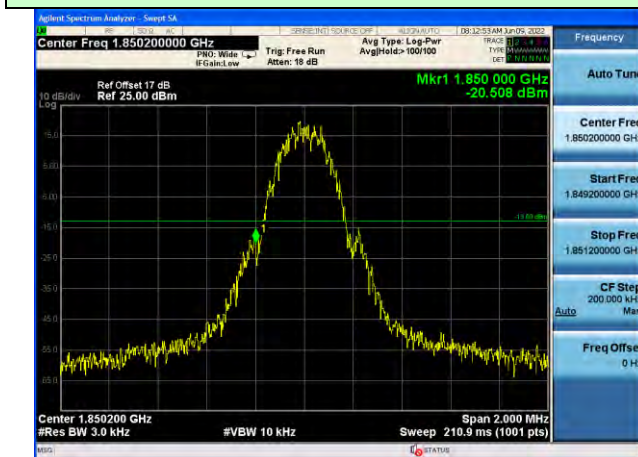


Lowest channel

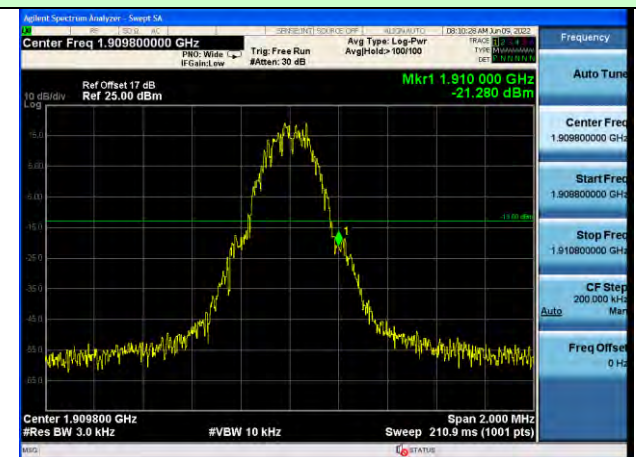


Highest channel

Test Mode: PCS1900 (EGPRS 1 link)

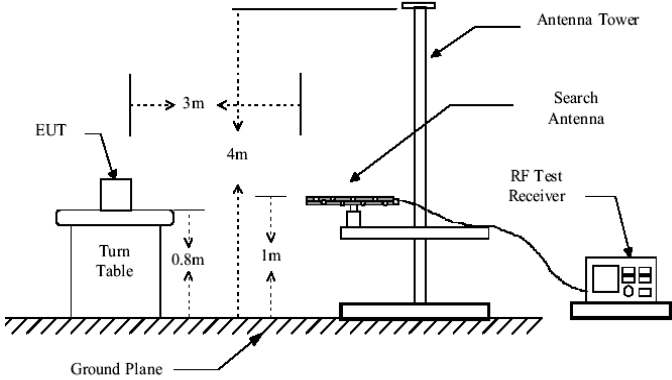
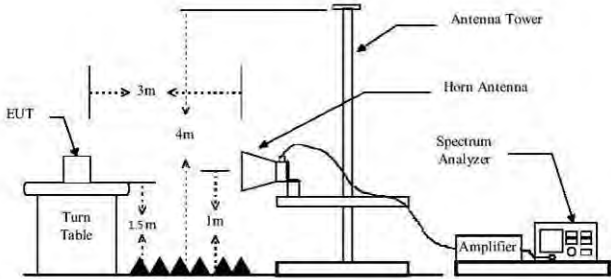
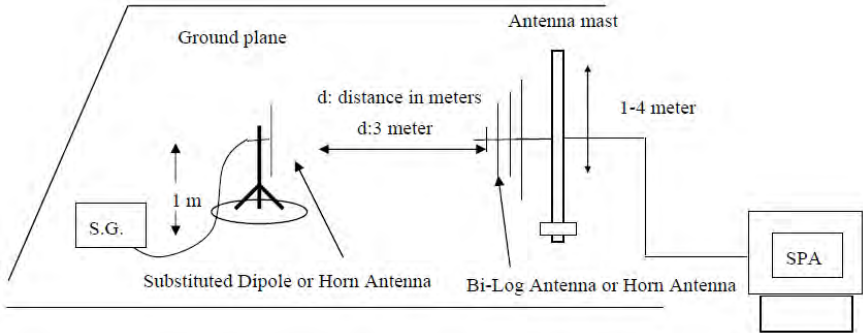


Lowest channel



Highest channel

4.8 ERP, EIRP Measurement

Test Requirement:	FCC part22.913(a) and FCC part24.232(b)
Test Method:	FCC part2.1046
Limit:	GSM850: 7W PCS1900: 2W
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

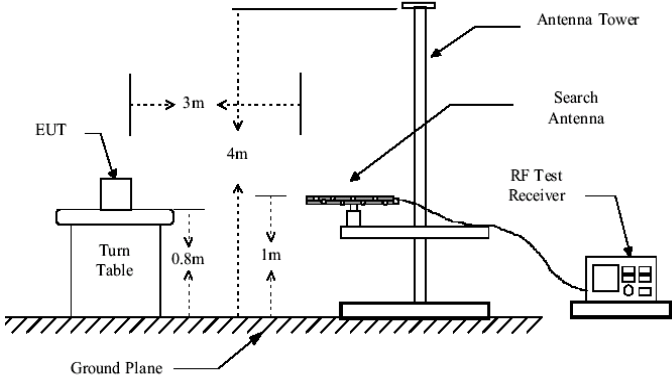
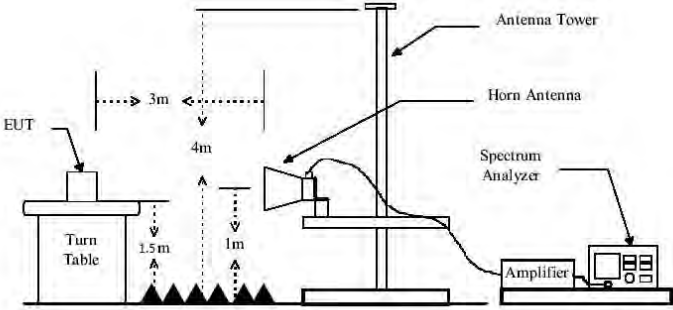
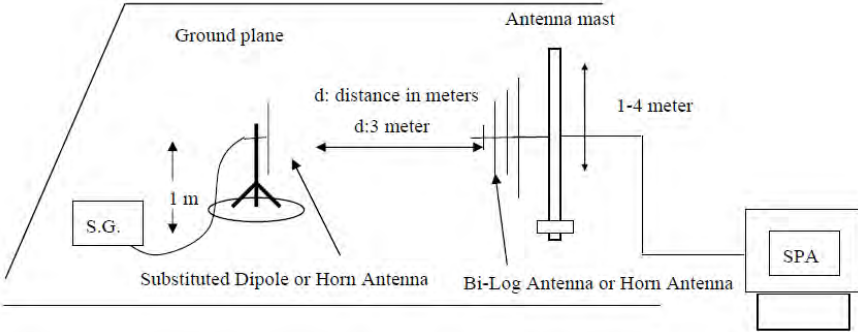
Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated. 3. ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows: $\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$ 4. EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows: $\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data

EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
GSM850 (EGPRS 1 link)	Lowest	H	V	26.56	38.45	Pass
			H	31.50		
		E1	V	28.10		
			H	31.12		
		E2	V	26.49		
			H	27.76		
	Middle	H	V	26.21	38.45	Pass
			H	30.83		
		E1	V	25.28		
			H	29.76		
		E2	V	24.76		
			H	28.43		
	Highest	H	V	27.21	38.45	Pass
			H	30.54		
		E1	V	28.01		
			H	28.91		
		E2	V	25.30		
			H	28.33		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP (dBm)	Limit (dBm)	Result
PCS1900 (EGPRS 1 link)	Lowest	H	V	26.07	33.01	Pass
			H	28.52		
		E1	V	26.96		
			H	28.49		
		E2	V	26.52		
			H	28.01		
	Middle	H	V	26.68	33.01	Pass
			H	28.40		
		E1	V	26.48		
			H	28.18		
		E2	V	26.42		
			H	28.93		
	Highest	H	V	26.20	33.01	Pass
			H	29.28		
		E1	V	27.37		
			H	29.24		
		E2	V	26.88		
			H	28.31		

4.9 Field strength of spurious radiation measurement

Test Requirement:	FCC part22.917(a) and FCC part24.238(a)
Test Method:	FCC part2.1053
Limit:	-13dBm
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data

Test mode:	GSM850		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1648.40	Vertical	-37.17	-13.00	Pass
2472.60	V	-39.41		
3296.80	V	-37.77		
4121.00	V	-42.84		
4945.20	V	---		
1648.40	Horizontal	-38.87	-13.00	Pass
2472.60	H	-42.85		
3296.80	H	-44.79		
4121.00	H	-46.37		
4945.20	H	---		
Test mode:	GSM850		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.20	Vertical	-37.29	-13.00	Pass
2509.80	V	-39.26		
3346.40	V	-37.93		
4183.00	V	-43.72		
5019.60	V	---		
1673.20	Horizontal	-38.92	-13.00	Pass
2509.80	H	-42.38		
3346.40	H	-44.39		
4183.00	H	-45.50		
5019.60	H	---		
Test mode:	GSM850		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1697.60	Vertical	-36.85	-13.00	Pass
2546.40	V	-39.74		
3395.20	V	-38.35		
4244.00	V	-43.23		
5092.80	V	---		
1697.60	Horizontal	-38.78	-13.00	Pass
2546.40	H	-42.56		
3395.20	H	-45.14		
4244.00	H	-45.87		
5092.80	H	---		

Remark :

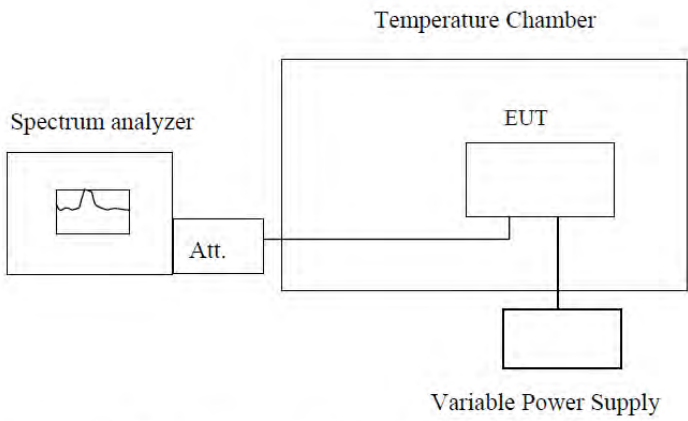
1. The emission behaviour belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

Test mode:	PCS1900		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3700.40	Vertical	-37.17	-13.00	Pass
5550.60	V	-39.53		
7400.80	V	-38.08		
9251.00	V	-42.93		
11101.20	V	---		
3700.40	Horizontal	-39.02	-13.00	Pass
5550.60	H	-42.95		
7400.80	H	-44.79		
9251.00	H	-46.06		
11101.20	H	---		
Test mode:	PCS1900		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-37.08	-13.00	Pass
5640.00	V	-39.82		
7520.00	V	-38.10		
9400.00	V	-43.62		
11280.00	V	---		
3760.00	Horizontal	-39.32	-13.00	Pass
5640.00	H	-42.46		
7520.00	H	-44.84		
9400.00	H	-46.43		
11280.00	H	---		
Test mode:	PCS1900		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3819.60	Vertical	-37.13	-13.00	Pass
5729.40	V	-39.90		
7639.20	V	-38.01		
9549.00	V	-43.17		
11458.80	V	---		
3819.60	Horizontal	-39.42	-13.00	Pass
5729.40	H	-42.09		
7639.20	H	-44.95		
9549.00	H	-45.68		
11458.80	H	---		

Remark:

1. The emission behaviour belongs to narrowband spurious emission.
2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

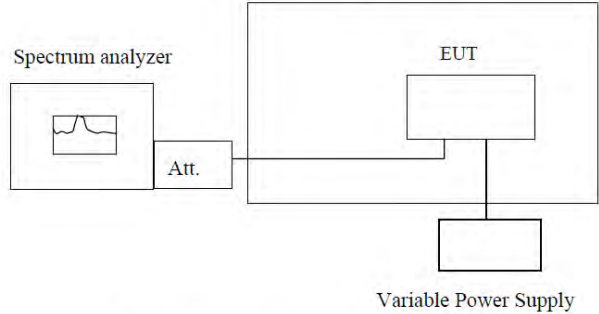
4.10 Frequency stability V.S. Temperature measurement

Test Requirement:	FCC Part2.1055(a)(1)(b)
Test Method:	FCC Part2.1055(a)(1)(b)
Limit:	2.5ppm
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –20°C . After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data

Reference Frequency: GSM850 (EGPRS 1 link) Middle channel=190 channel=836.6MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error			Result
		Hz	ppm		
3.7	-30	55	0.0658	2.5	Pass
	-20	23	0.0275		
	-10	67	0.0797		
	0	31	0.0377		
	10	33	0.0392		
	20	25	0.0295		
	30	33	0.0398		
	40	34	0.0408		
	50	33	0.0392		
Reference Frequency: PCS1900 (EGPRS 1 link) Middle channel=661 channel=1880MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error			Result
		Hz	ppm		
3.7	-30	55	0.0295	2.5	Pass
	-20	23	0.0122		
	-10	66	0.0351		
	0	31	0.0166		
	10	32	0.0168		
	20	21	0.0112		
	30	32	0.0170		
	40	30	0.0158		
	50	32	0.0172		

4.11 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part2.1055(d)(1)(2)
Test Method:	FCC Part2.1055(d)(1)(2)
Limit:	2.5ppm
Test setup:	Temperature Chamber  Variable Power Supply Note : Measurement setup for testing on Antenna connector
Test procedure:	1. Set chamber temperature to 25°C . Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data

Reference Frequency: GSM850 (EGPRS 1 link) Middle channel=190 channel=836.6MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.33	58	0.0693	2.5	Pass
	3.70	23	0.0275		
	4.07	70	0.0835		
Reference Frequency: PCS1900 (EGPRS 1 link) Middle channel=661 channel=1880MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	3.33	59	0.0314	2.5	Pass
	3.70	23	0.0122		
	4.07	70	0.0374		

5 Test Setup Photo

Radiated Emission

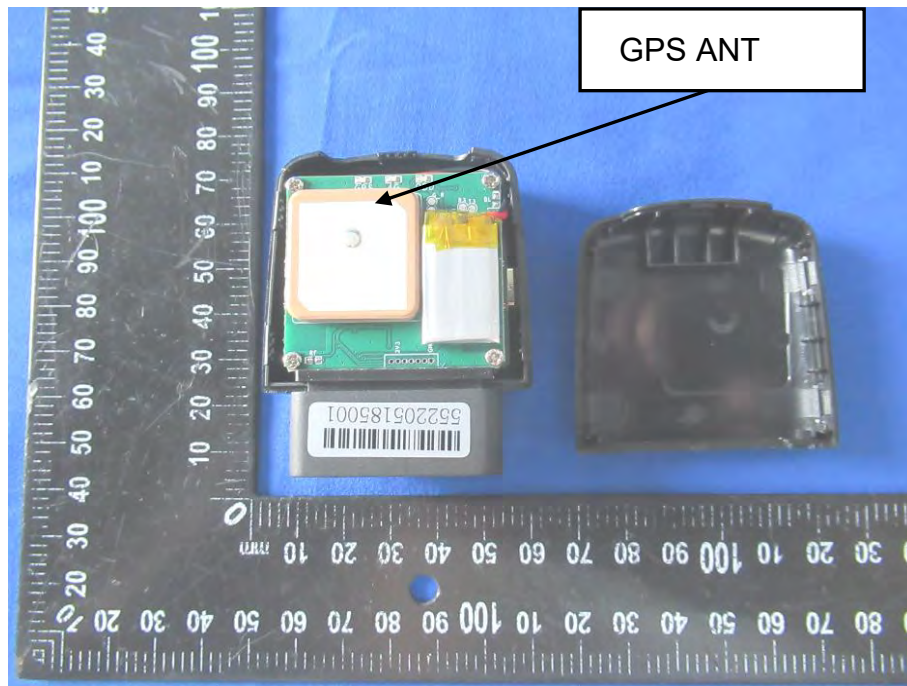


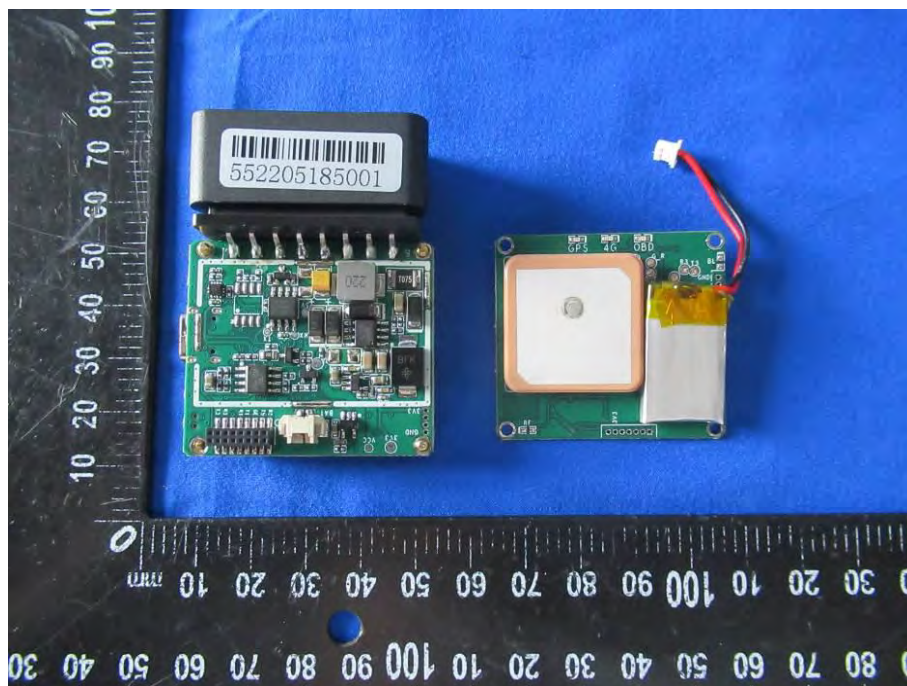
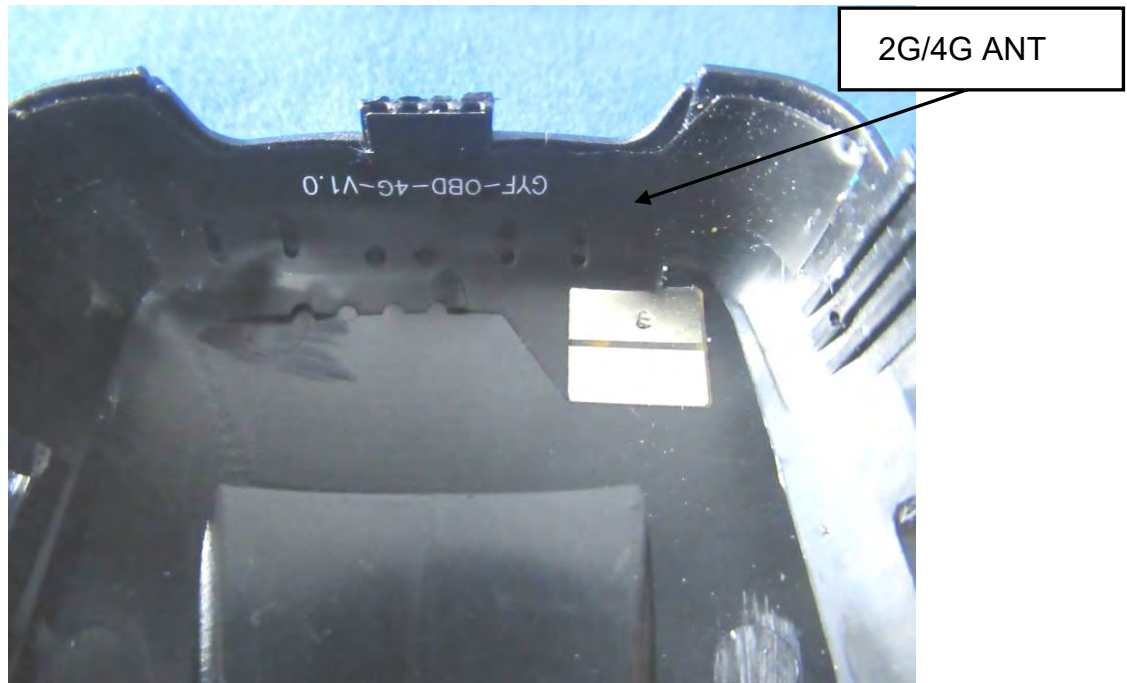
6 Photos Of The EUT

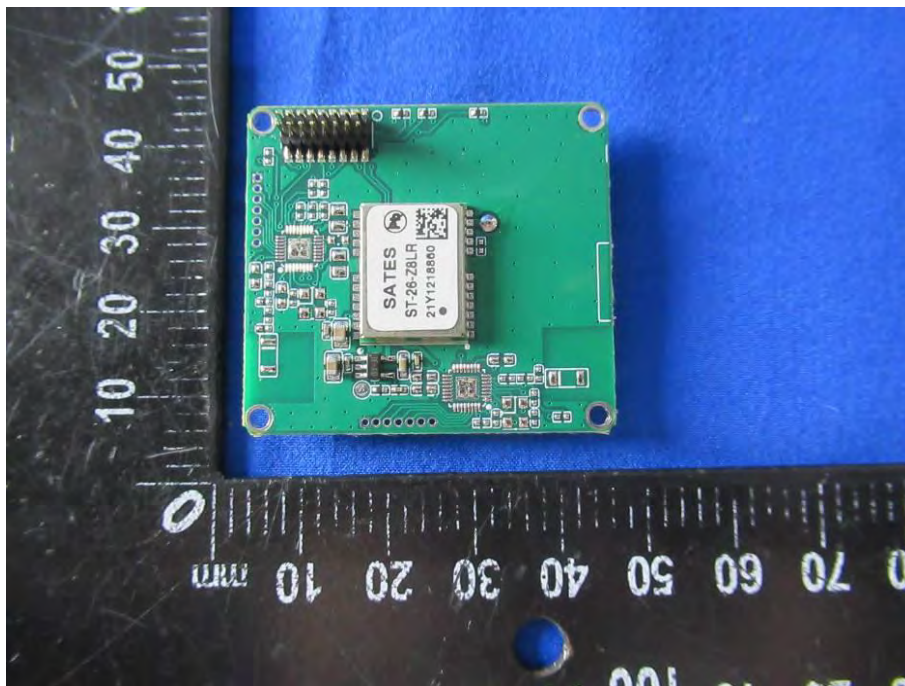
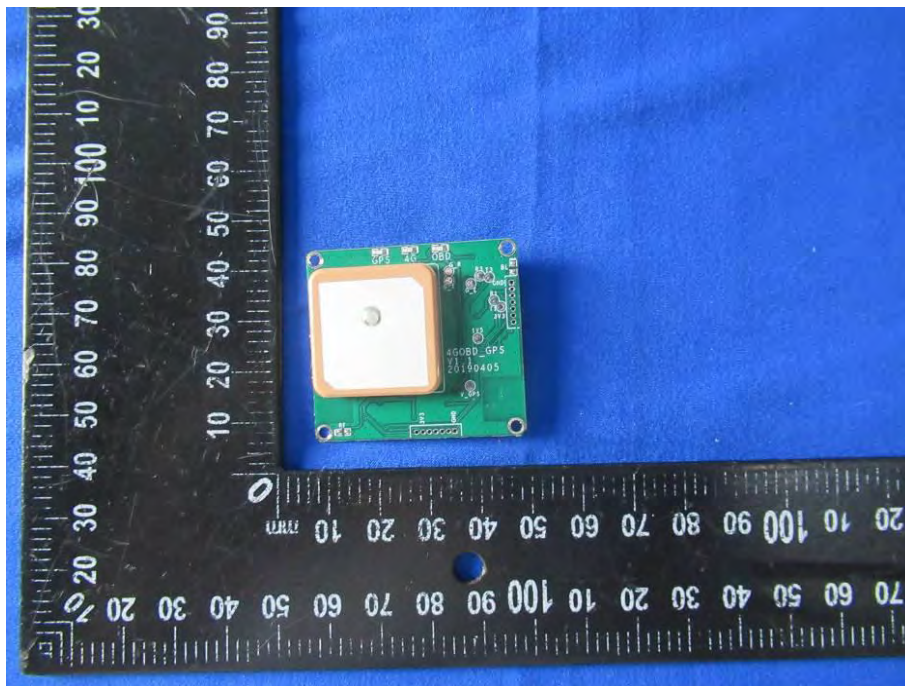


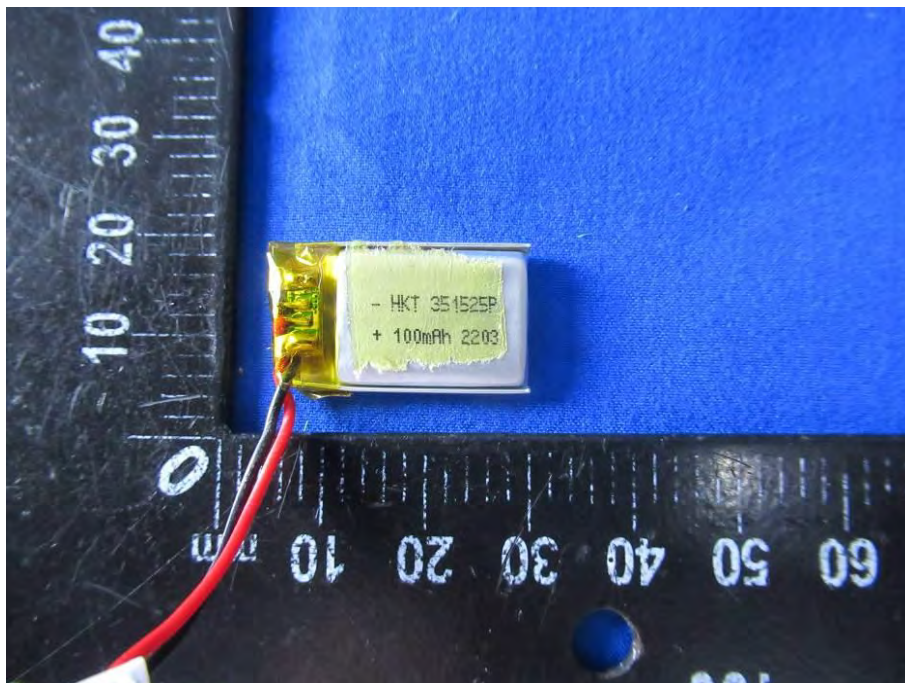
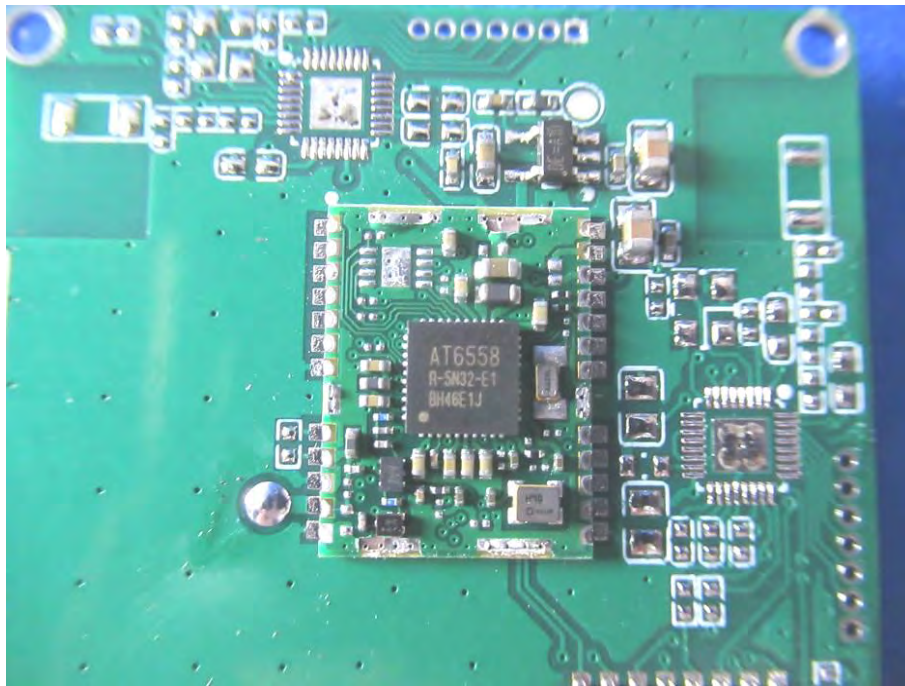


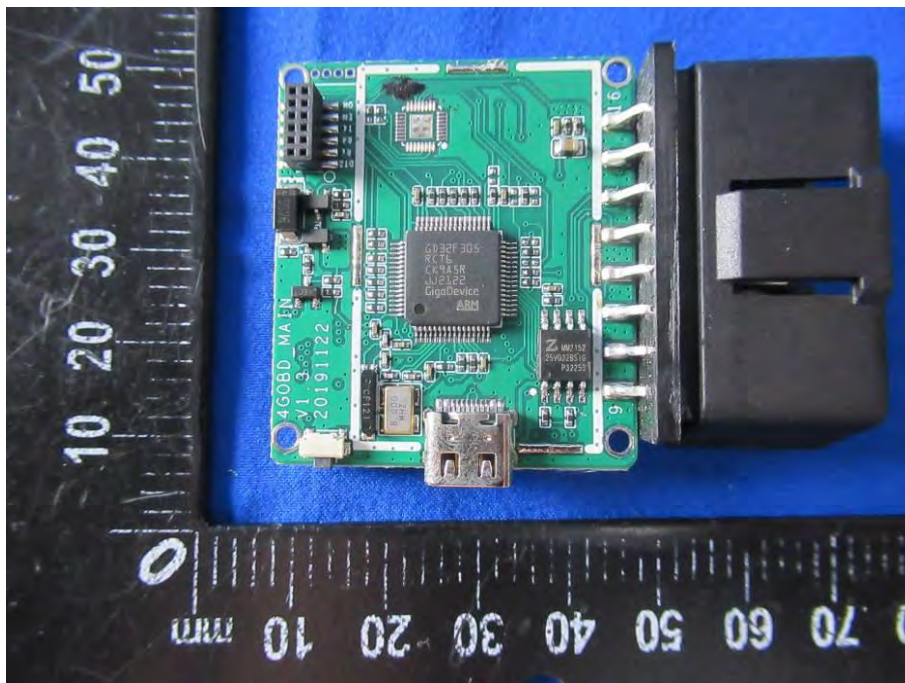
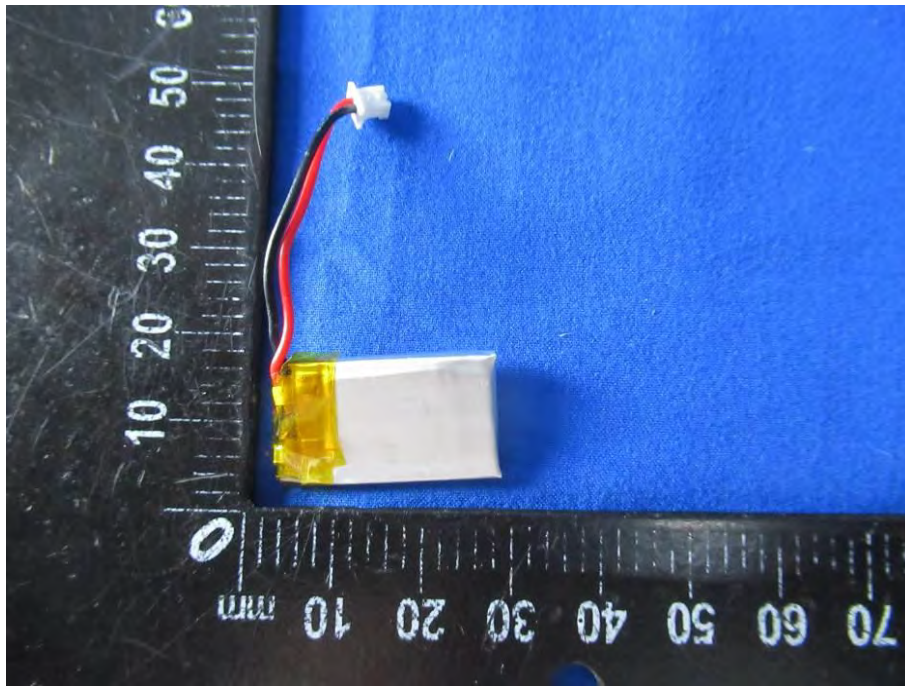


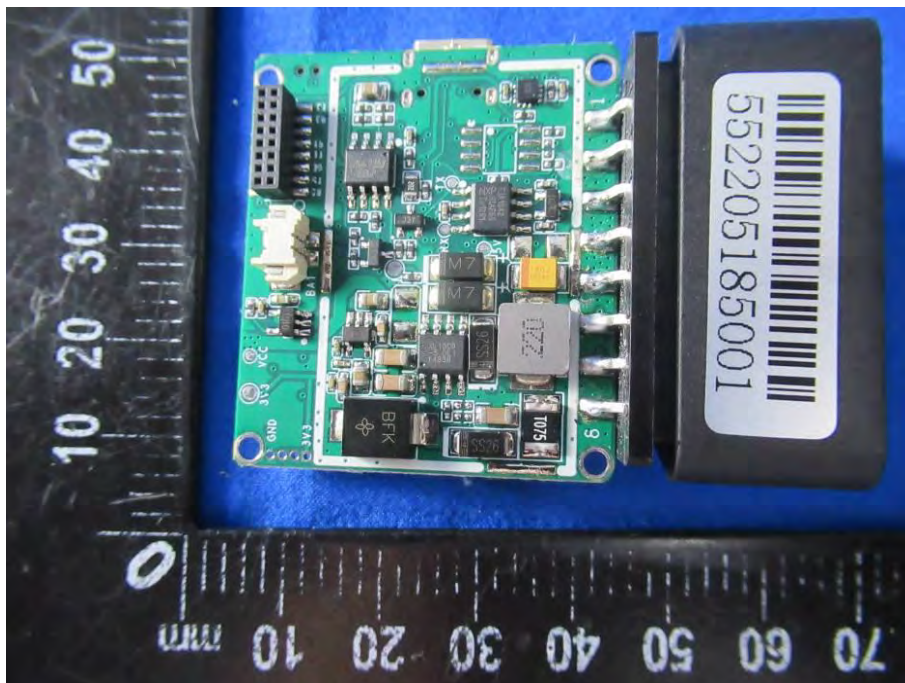


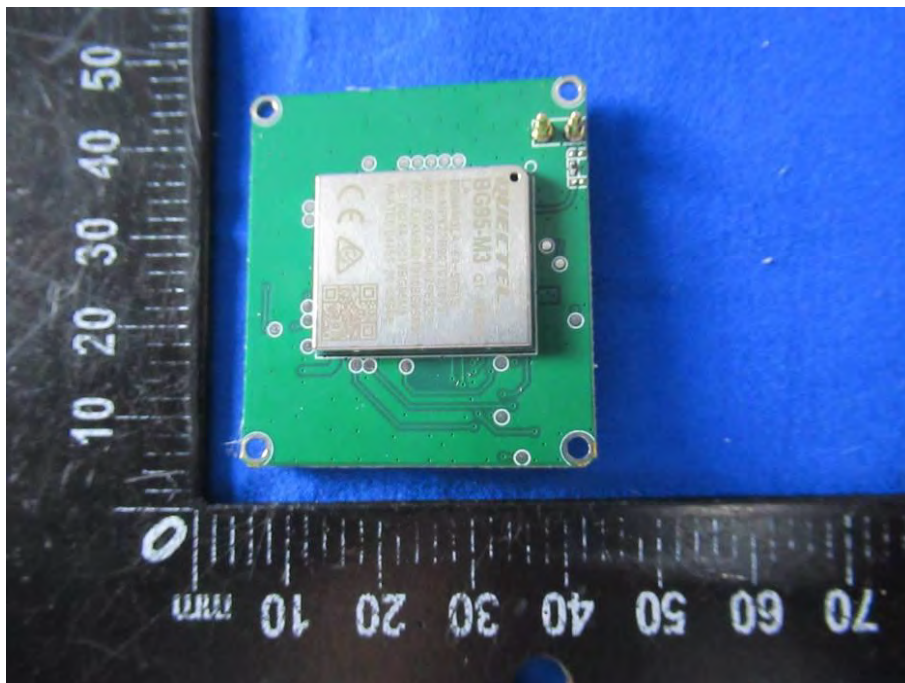
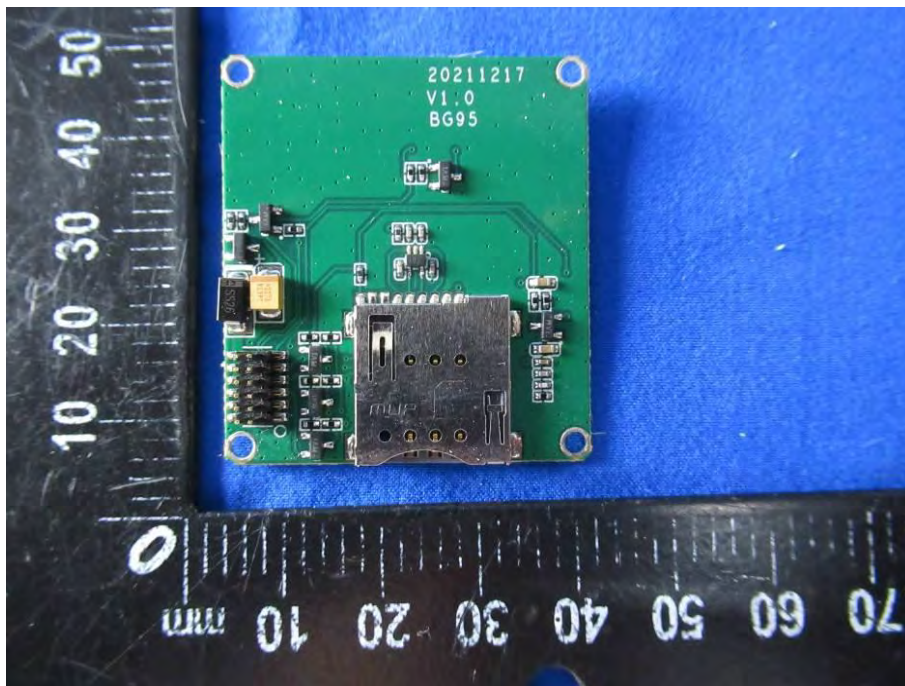


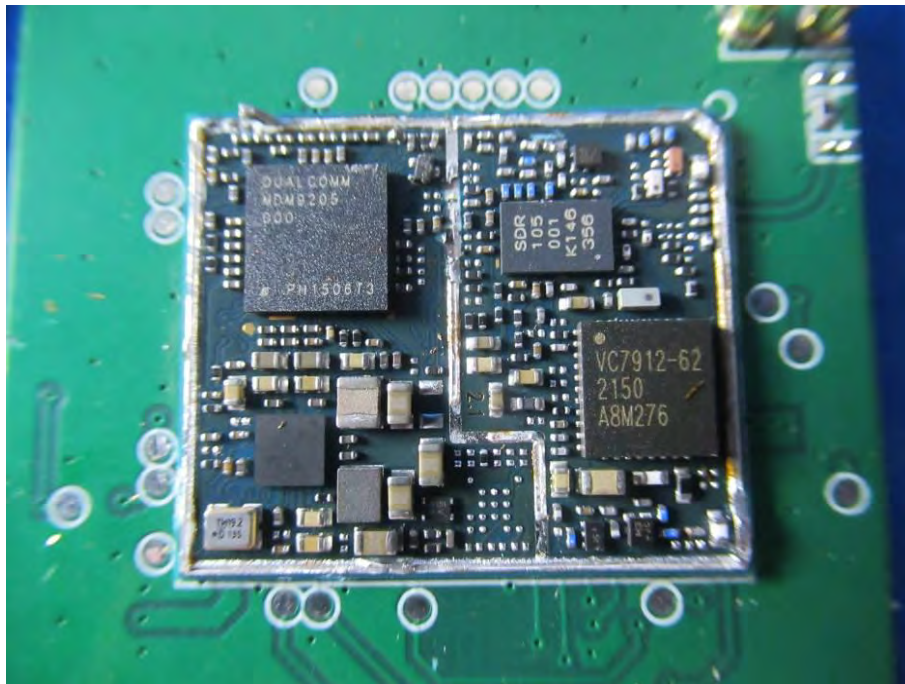












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