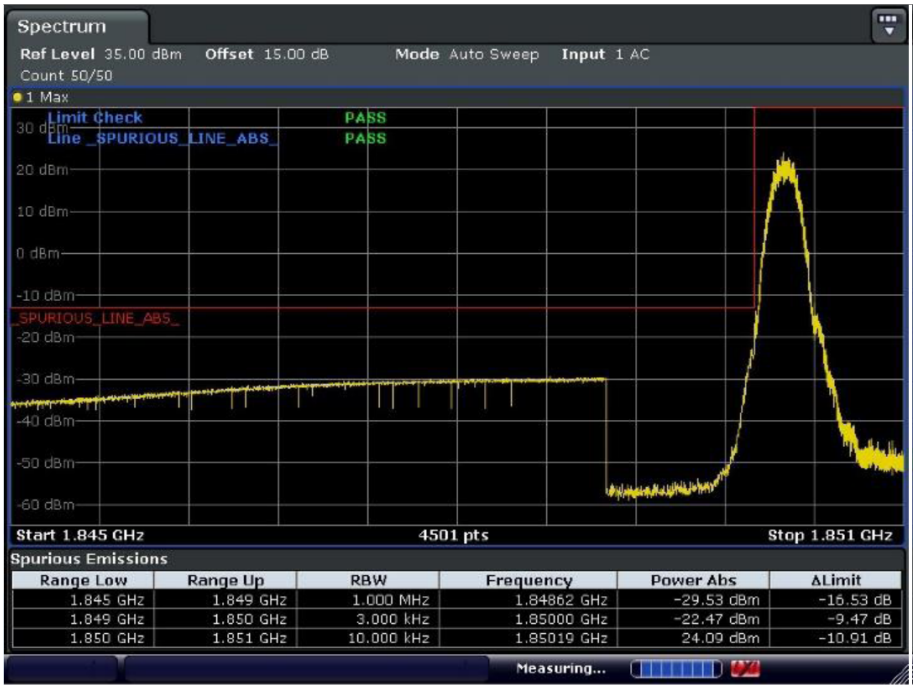
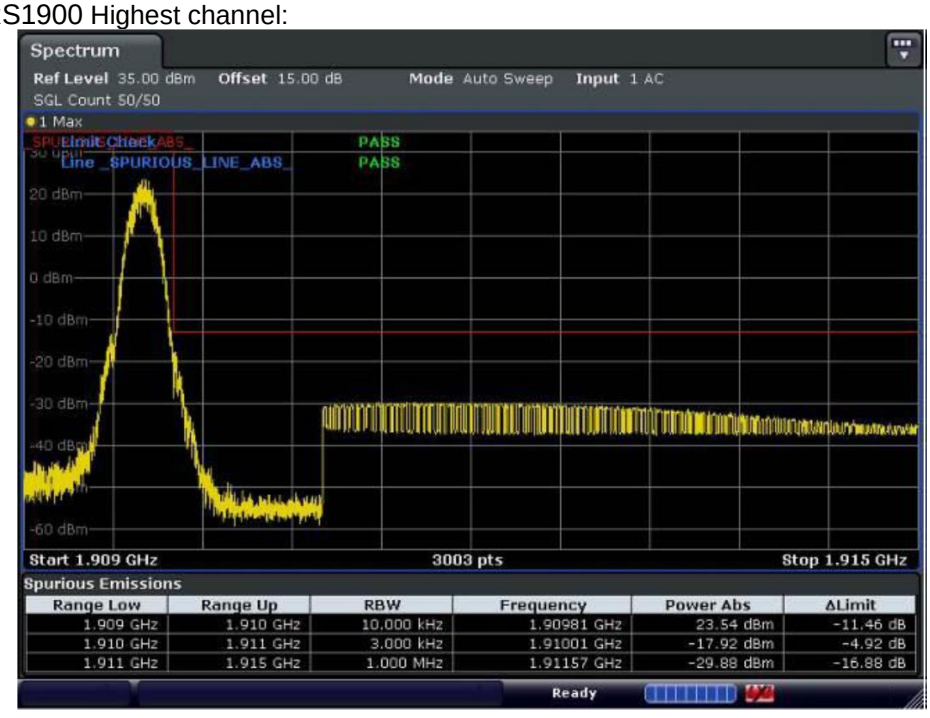
GPRS850 Lowest channel

GPRS850 Highest channel:

GPRS1900 Lowest channel



GPRS1900 Highest channel:



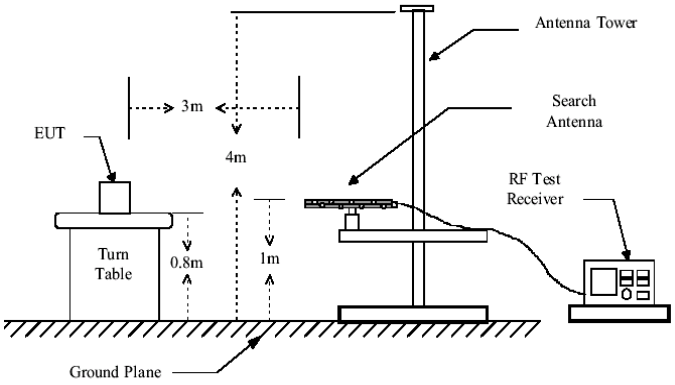
5.7. Transmitter Radiated Power (EIRP/ERP)

5.7.1. Limit

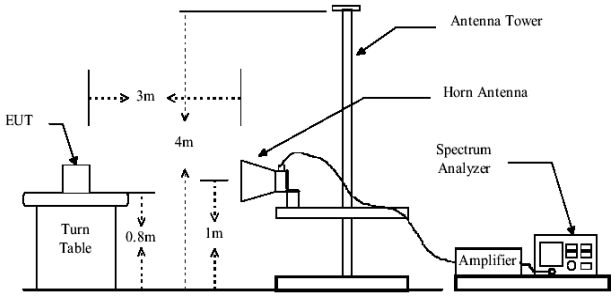
According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232, FCC section 27.50 the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

5.7.2. Test Setup

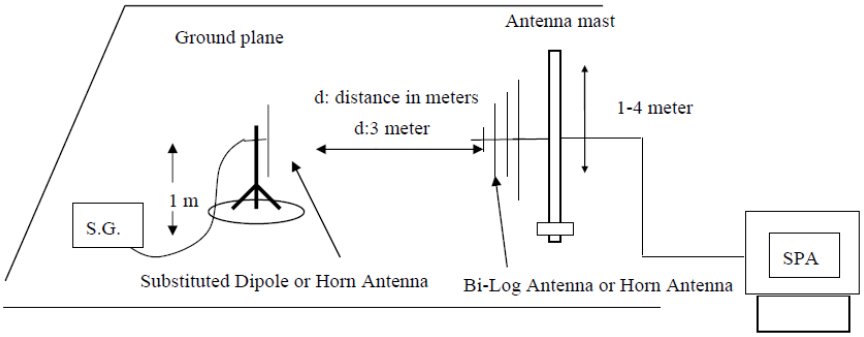
Below 1GHz



Above 1GHz



Substituted method:



5.7.3. Measurement Procedure

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. all test in Full-Anechoic Chamber.

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.

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:

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:

ERP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB) - 2.15

EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)

5.7.4. Test Result

Pass, the table and plot please see next page.

EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)	Result
GPRS850	Lowest	V	8.59	19.33	2.52	25.40	38.45	Pass
		H	8.67	19.33	2.52	25.48		
	Middle	V	8.59	19.5	2.6	25.49	38.45	Pass
		H	8.47	19.5	2.6	25.37		
	Highest	V	8.36	19.94	2.71	25.59	38.45	Pass
		H	8.69	19.94	2.71	25.92		
EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Result
GPRS1900	Lowest	V	7.68	15.68	1.65	21.71	33.00	Pass
		H	7.52	15.68	1.65	21.55		
	Middle	V	7.49	15.7	1.67	21.52	33.00	Pass
		H	7.44	15.7	1.67	21.47		
	Highest	V	7.16	15.7	1.71	21.15	33.00	Pass
		H	7.59	15.7	1.71	21.58		

5.8. Radiated Out of Band Emissions

5.8.1. Limit

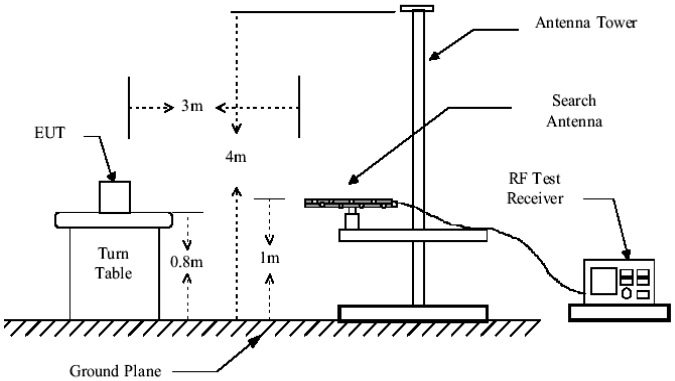
According to FCC section 22.917(a) and section 24.238(a), 27.53(g) the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power

(P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

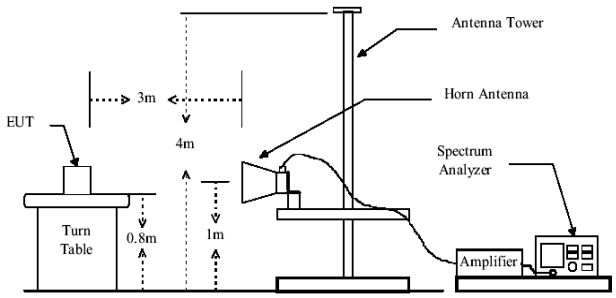
The spurious emission with frequency band 1900 according to FCC section 2.1057.

5.8.2. Test Setup

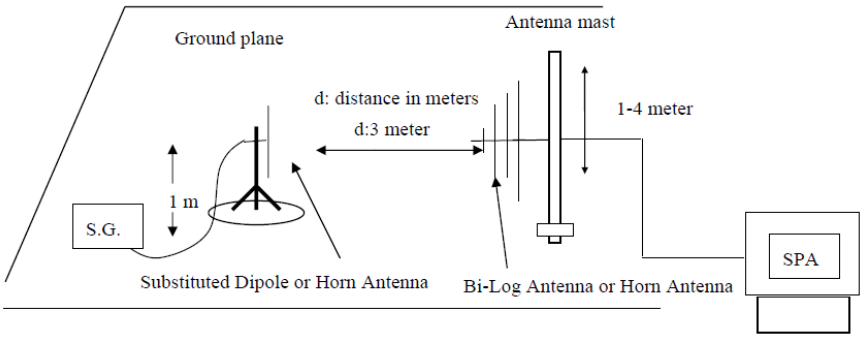
Below 1GHz



Above 1GHz



Substituted method:



5.8.3. Measurement Procedure

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. 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. all test in Full-Anechoic Chamber.

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.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

EIRP (Level)= S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)

Note: Measurement Uncertainty: ±3.6 dB.

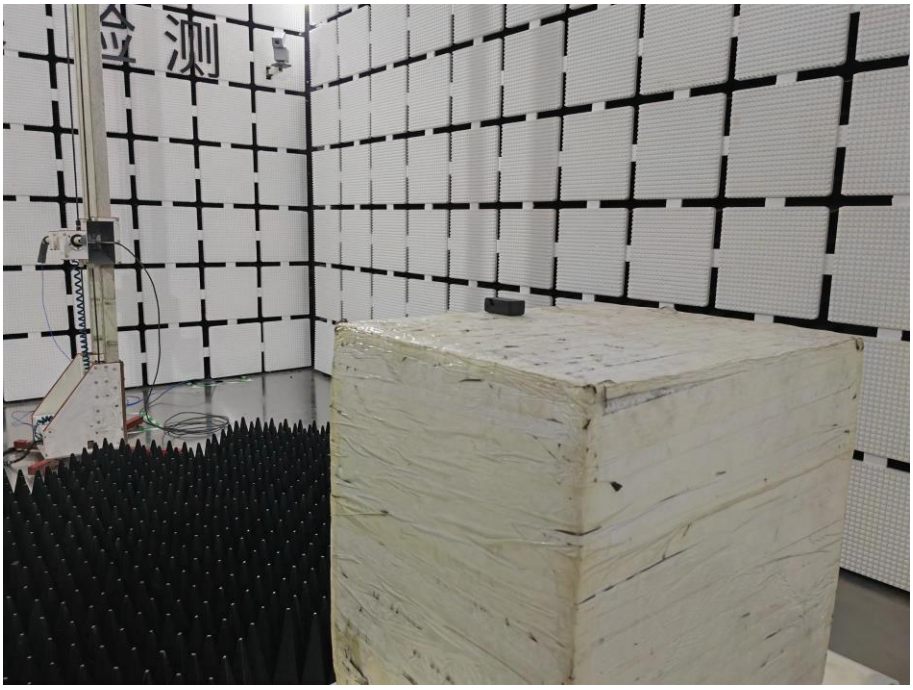
5.8.4. Test Result

Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
GSM850 Lowest (GPRS)	87.21	Vertical	-74.37	3.35	0.38	-71.40	-13	PASS
	1648.40	Vertical	-45.52	7.76	3.75	-41.51		
	2472.60	Vertical	-46.61	9.84	4.94	-41.71		
	3296.80	Vertical	-39.16	10.21	5.32	-34.27		
	4121.00	Vertical	-42.49	11.36	6.02	-37.15		
	4945.20	Vertical	-44.00	14.52	6.68	-36.16		
GSM850 Middle (GPRS)	88.39	Vertical	-74.37	3.35	0.38	-71.40	-13	PASS
	1673.20	Vertical	-46.82	7.77	3.76	-42.81		
	2509.80	Vertical	-46.42	9.82	4.95	-41.55		
	3346.40	Vertical	-42.11	10.27	5.36	-37.20		
	4183.00	Vertical	-41.53	11.43	6.05	-36.15		
	5019.60	Vertical	-45.42	14.58	6.68	-37.52		
GSM850 Highest (GPRS)	88.24	Vertical	-74.33	3.35	0.38	-71.36	-13	PASS
	1697.60	Vertical	-46.42	7.83	3.58	-42.17		
	2546.40	Vertical	-40.97	9.92	5.07	-36.12		
	3395.20	Vertical	-37.22	10.32	5.56	-32.46		
	4244.00	Vertical	-43.84	11.39	6.18	-38.63		
	5092.80	Vertical	-46.23	14.58	6.76	-38.41		

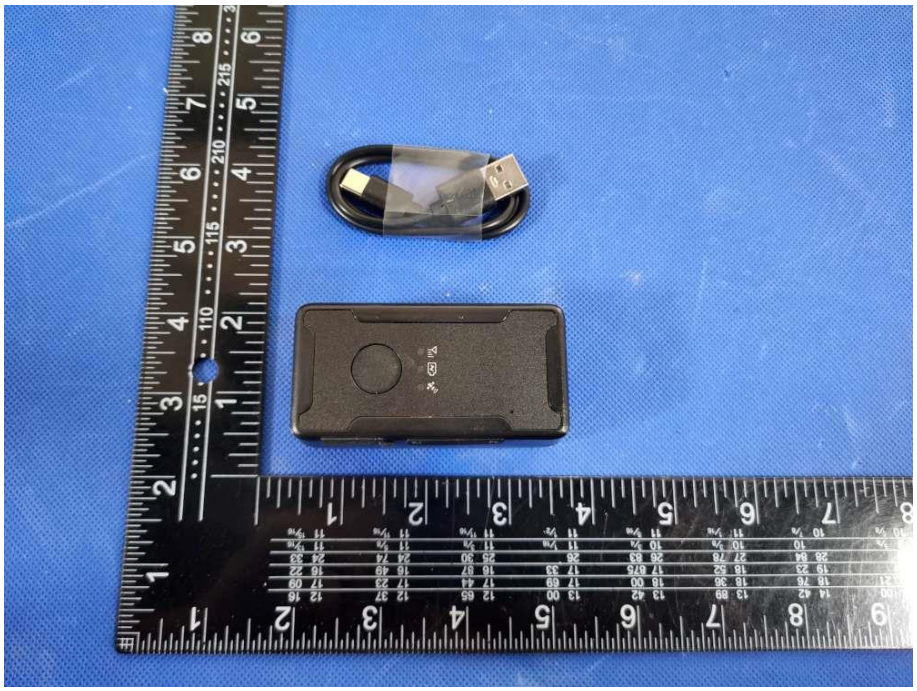
Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
GSM1900 Lowest (GPRS)	87.21	Vertical	-73.95	3.35	0.38	-70.98	-13	PASS
	3700.40	Vertical	-45.26	10.34	5.45	-40.37		
	5550.60	Vertical	-46.35	14.87	7.37	-38.85		
	7400.80	Vertical	-38.94	16.12	8.24	-31.06		
	9251.00	Vertical	-42.25	16.78	9.02	-34.49		
	11101.20	Vertical	-43.75	17.54	10.56	-36.77		
GSM1900 Middle (GPRS)	88.39	Vertical	-73.95	3.35	0.38	-70.98	-13	PASS
	3760.00	Vertical	-46.55	10.65	5.49	-41.39		
	5640.00	Vertical	-46.16	14.95	7.53	-38.74		
	7520.00	Vertical	-41.87	16.35	8.45	-33.97		
	9400.00	Vertical	-41.29	16.89	9.35	-33.75		
	11280.00	Vertical	-45.16	17.73	10.65	-38.08		
GSM1900 Highest (GPRS)	88.24	Vertical	-73.91	3.35	0.38	-70.94	-13	PASS
	3819.60	Vertical	-46.16	10.67	5.76	-41.25		
	5729.40	Vertical	-40.73	14.98	7.69	-33.44		
	7639.20	Vertical	-37.00	16.67	8.66	-28.99		
	9549.00	Vertical	-43.59	16.94	9.45	-36.10		
	11458.80	Vertical	-45.97	17.89	10.44	-38.52		

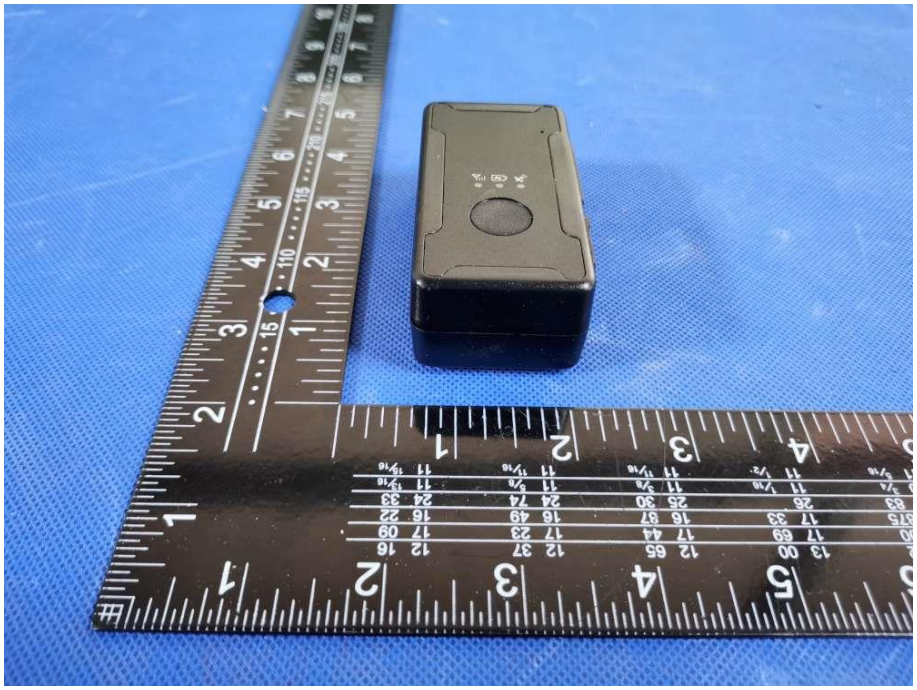
6. PHOTOGRAPHS OF TEST SET-UP

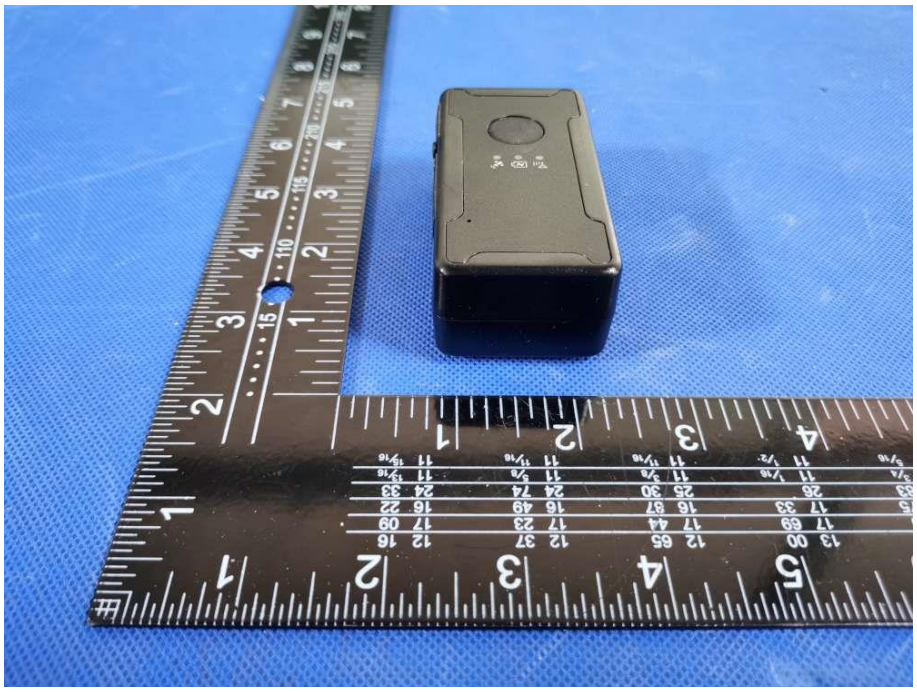
Radiated Measurement Photos

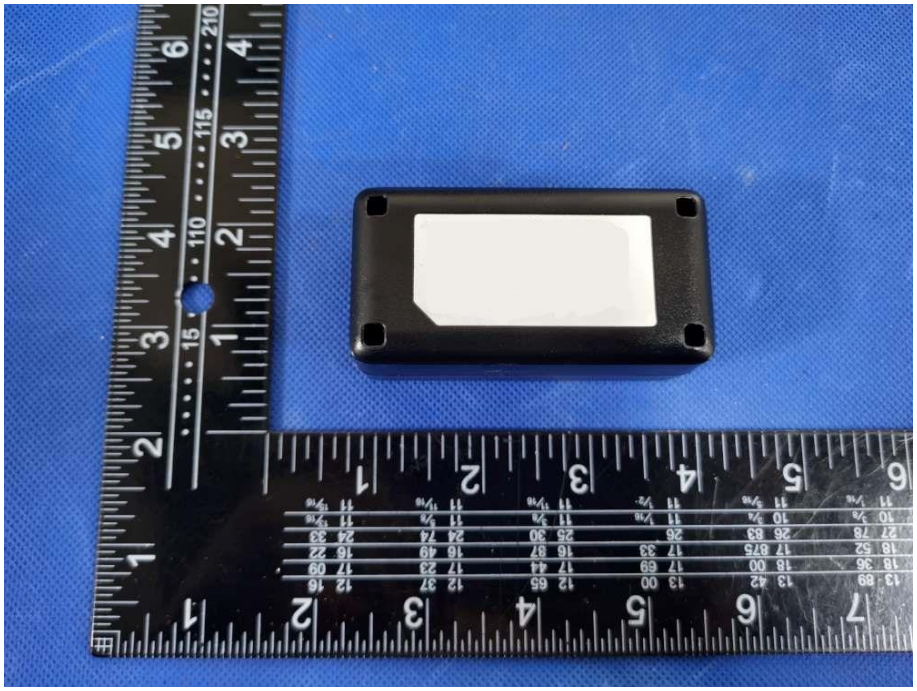


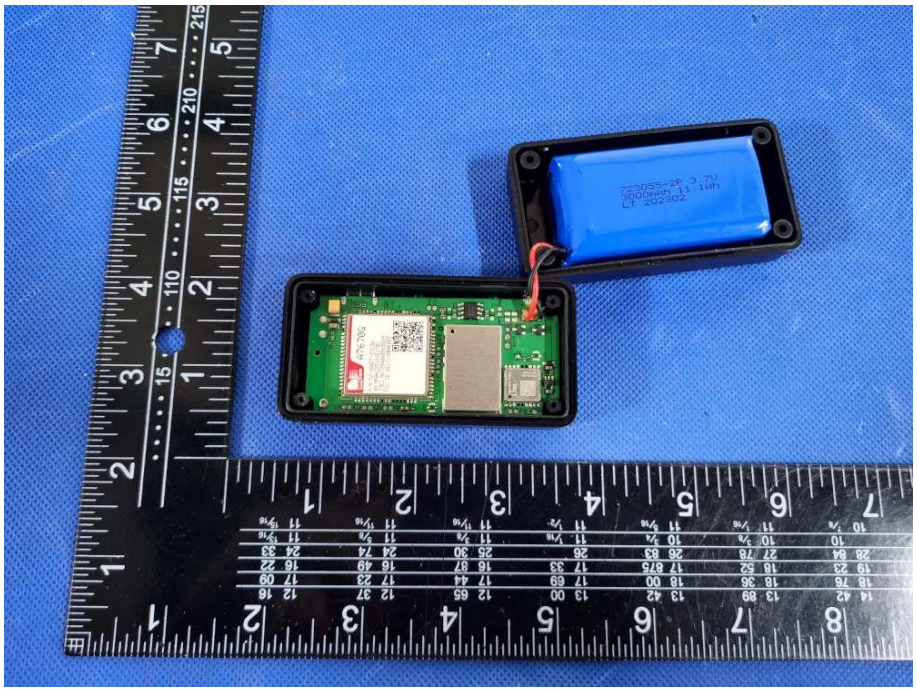
7. PHOTOGRAPHS OF THE EUT

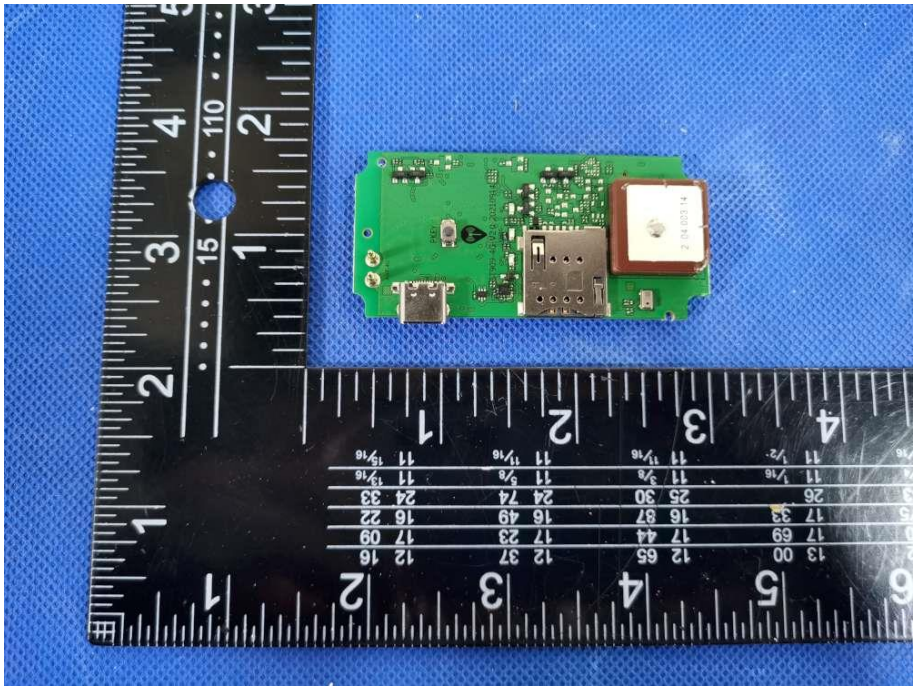


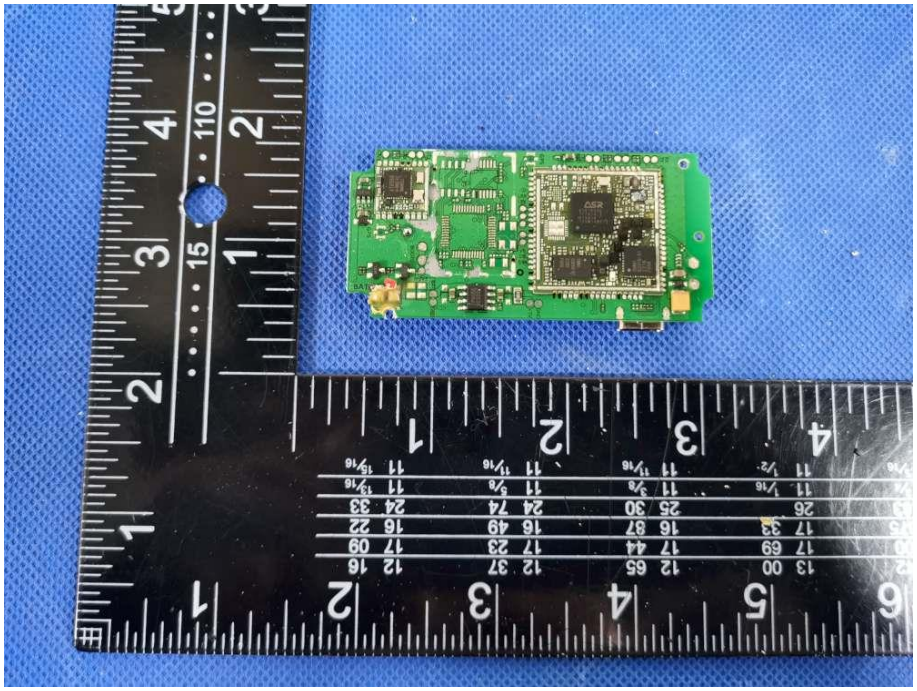


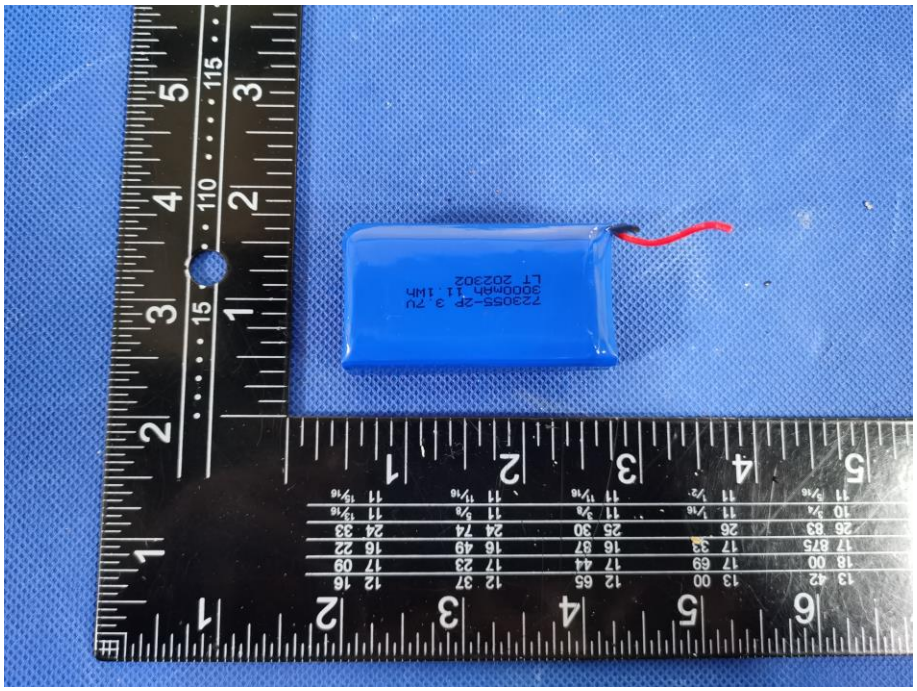


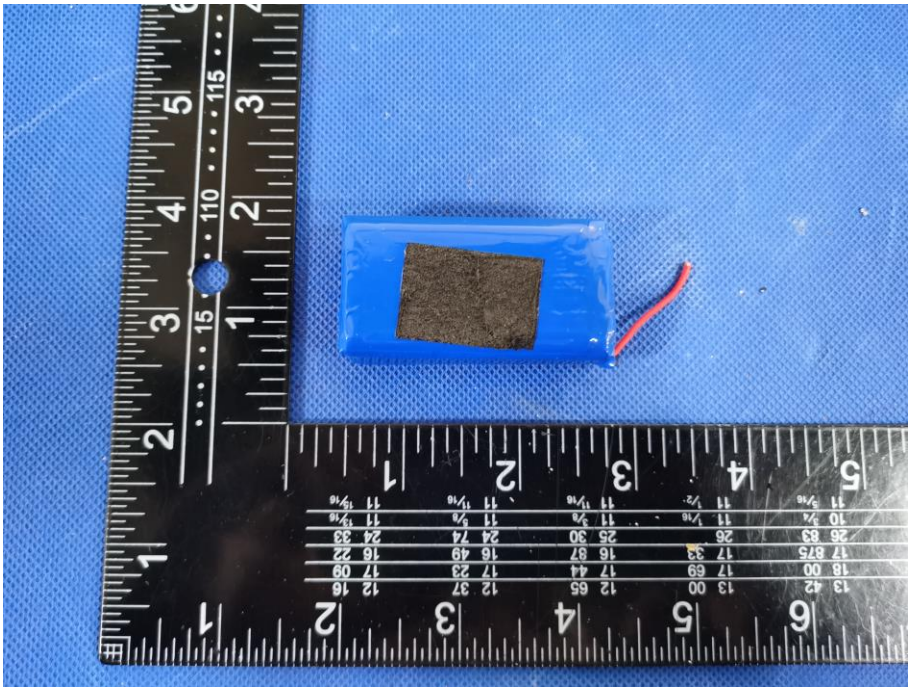


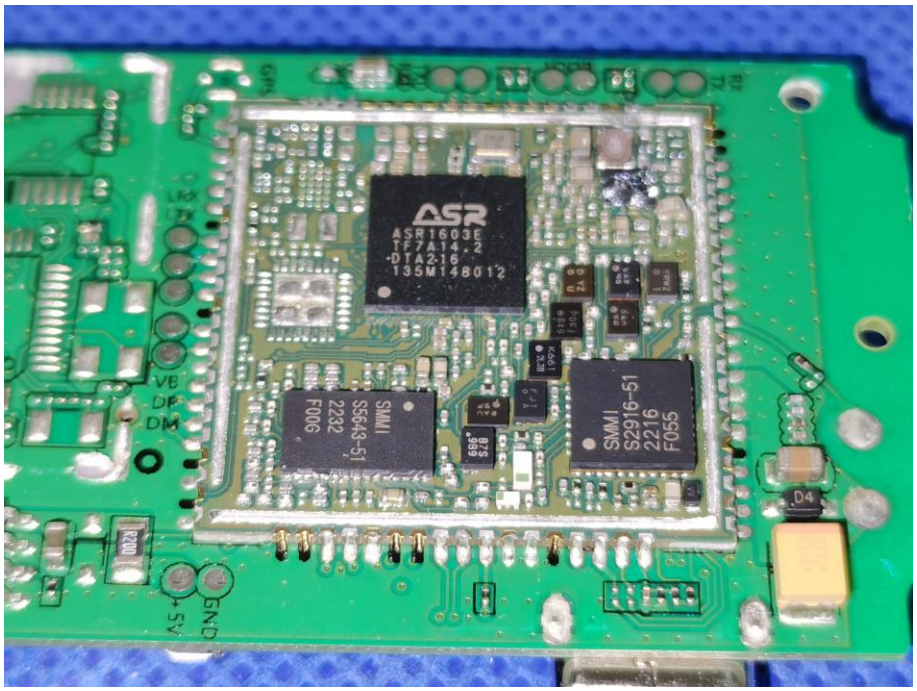












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