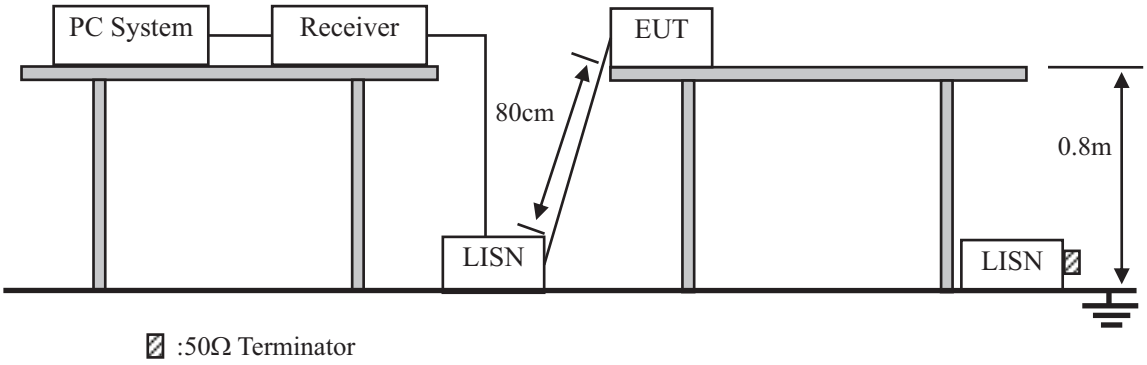
6. Power Line Conducted Emissions

6.1. Block Diagram of Test Setup



6.2. Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

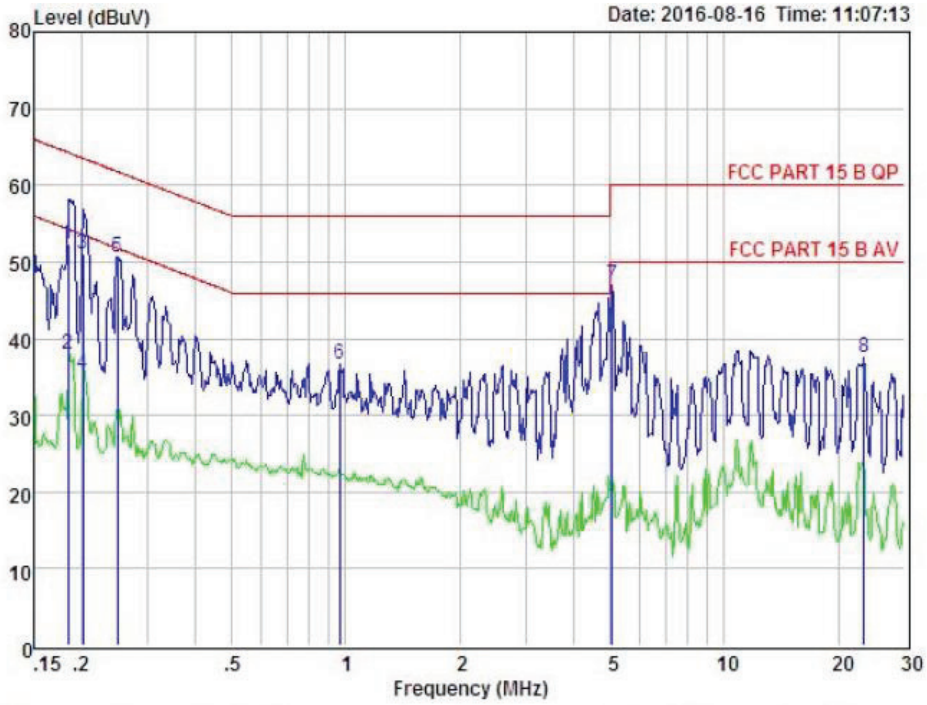
Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

6.3. Test Procedure

(1) The EUT was placed on a non-metallic table, 80cm above the ground plane.
(2) Setup the EUT and simulator as shown in 10.1
(3) The EUT Power connected to the power mains through a power adapter and a line impedance stabilization network (L.I.S.N1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N1), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4 2014 and ANSI C64.10:2013 on conducted Emission test.
(4) The bandwidth of test receiver is set at 10KHz.
(5) The frequency range from 150 KHz to 30MHz is checked.

6.4. Test Result

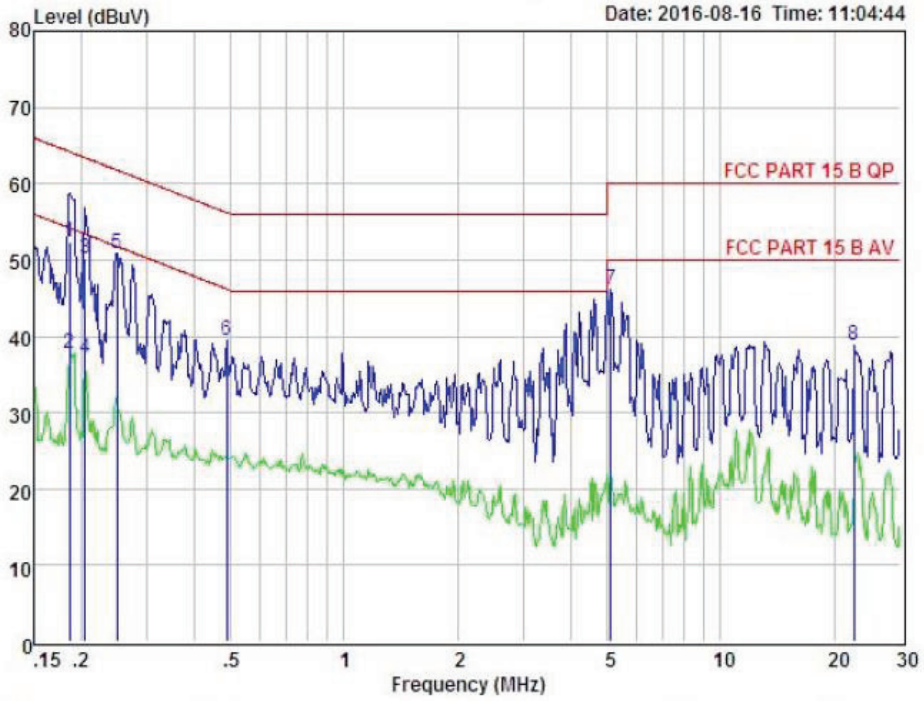
PASS. (See below detailed test data)



Condition : FCC PART 15 B QP POL: LINE Temp: 25℃ Hum: 51 %
EUT :
Model No : Poolmateplus
Test Mode :
Power : AC 120V/60Hz
Test Engineer : Peter
Remark :

Item	Freq MHz	Read Level dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.184	42.61	0.03	-9.52	0.10	52.26	64.28	-12.02	QP
2	0.184	28.41	0.03	-9.52	0.10	38.06	54.28	-16.22	Average
3	0.202	41.30	0.03	-9.52	0.10	50.95	63.54	-12.59	QP
4	0.202	25.80	0.03	-9.52	0.10	35.45	53.54	-18.09	Average
5	0.249	40.94	0.03	-9.52	0.10	50.59	61.78	-11.19	Peak
6	0.963	26.86	0.04	-9.63	0.10	36.63	56.00	-19.37	Peak
7	5.058	36.92	0.10	-9.93	0.12	47.07	60.00	-12.93	Peak
8	23.387	26.94	0.43	-9.82	0.44	37.63	60.00	-22.37	Peak

Remark: Level = Read Level + LISN Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15 B QP POL: NEUTRAL Temp: 25℃ Hum: 51 %
EUT :
Model No : Poolmateplus
Test Mode :
Power : AC 120V/60Hz
Test Engineer : Peter
Remark :

Item	Freq MHz	Read Level dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.186	42.61	0.03	-9.52	0.10	52.26	64.20	-11.94	QP
2	0.186	28.20	0.03	-9.52	0.10	37.85	54.20	-16.35	Average
3	0.205	40.61	0.03	-9.52	0.10	50.26	63.40	-13.14	QP
4	0.205	27.50	0.03	-9.52	0.10	37.15	53.40	-16.25	Average
5	0.249	41.23	0.03	-9.52	0.10	50.88	61.78	-10.90	Peak
6	0.489	29.81	0.03	-9.58	0.10	39.52	56.19	-16.67	Peak
7	5.112	36.01	0.10	-9.93	0.12	46.16	60.00	-13.84	Peak
8	22.655	28.18	0.41	-9.81	0.42	38.82	60.00	-21.18	Peak

Remark: Level = Read Level + LISN Factor - Preamp Factor + Cable Loss

7. Antenna Requirements

7.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203 & RSS-210, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.209, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

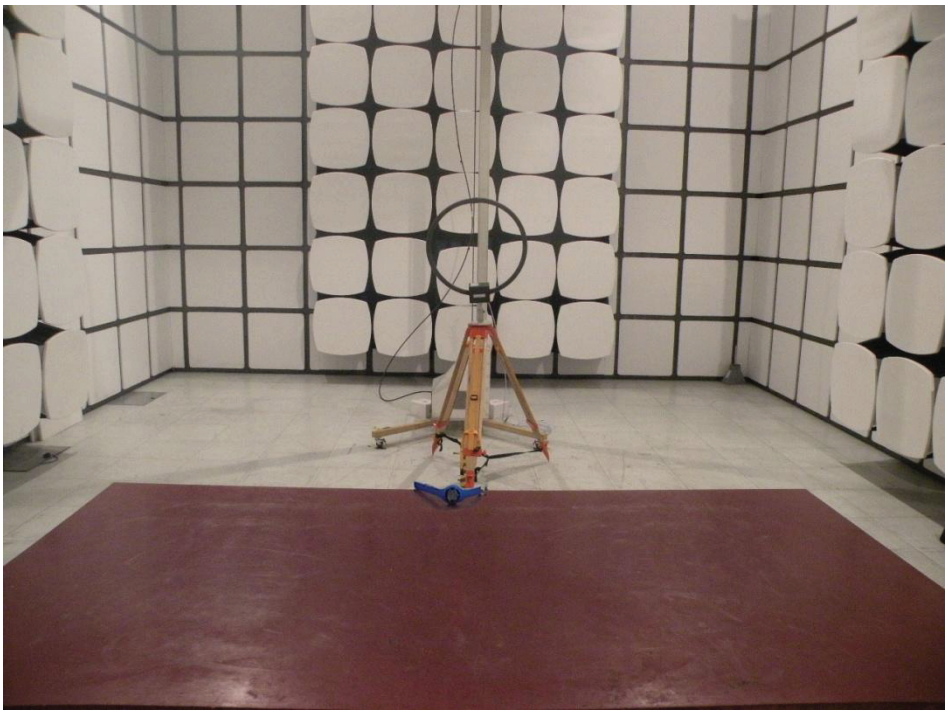
7.2. Result

The antennas used for this product are integral Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.

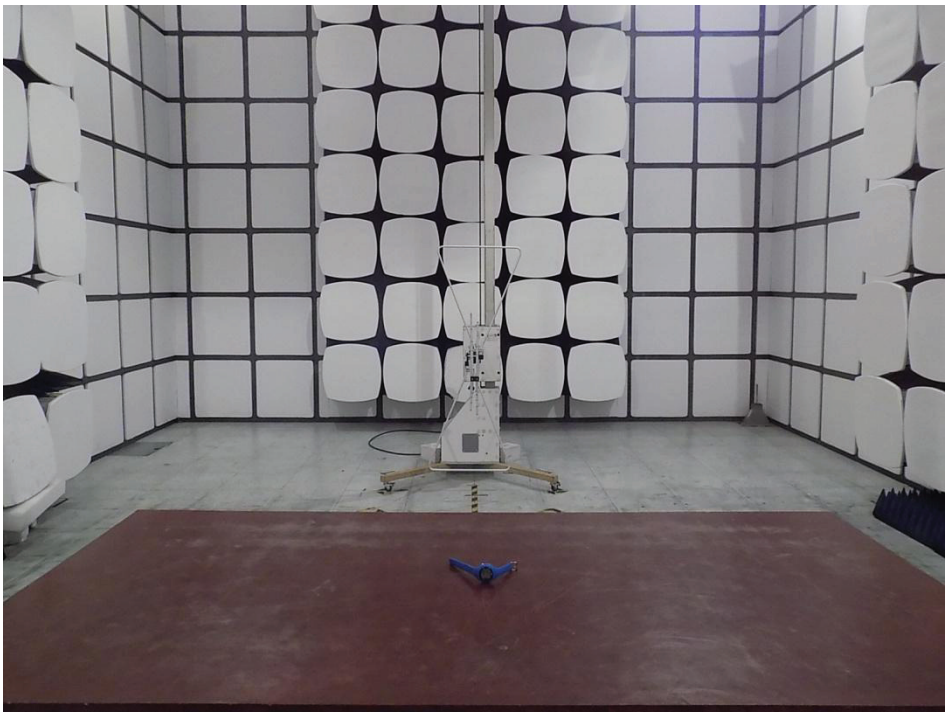
8. Test setup photo

Photographs-Radiated Emission Test Setup in Chamber

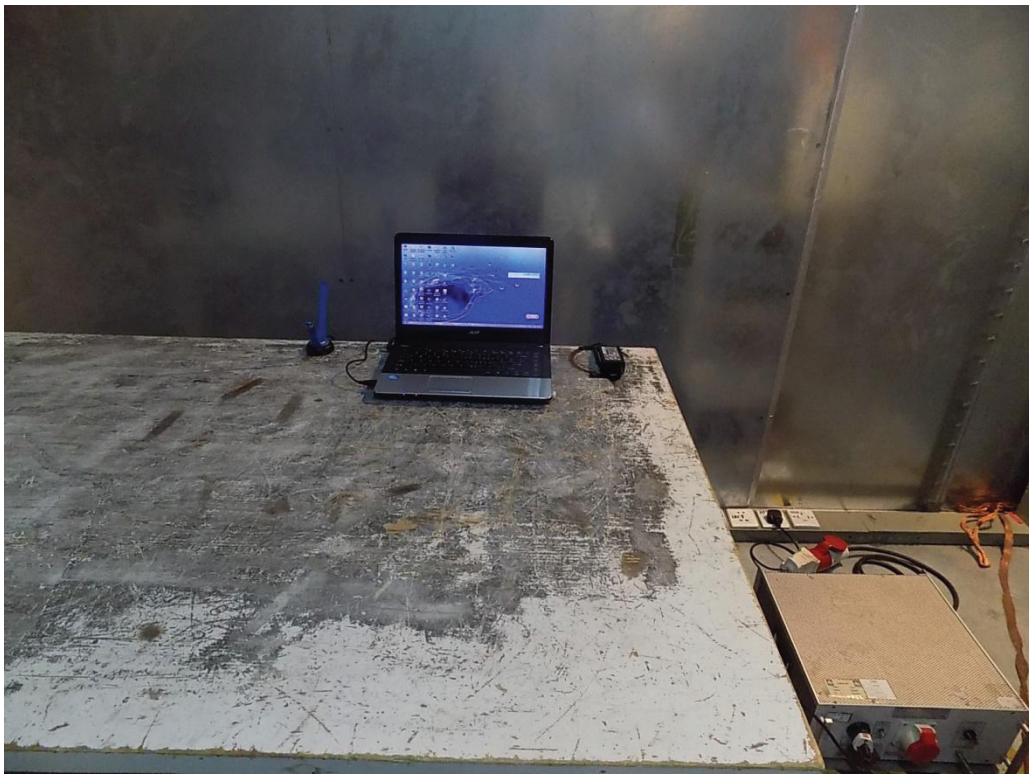
Below 30M



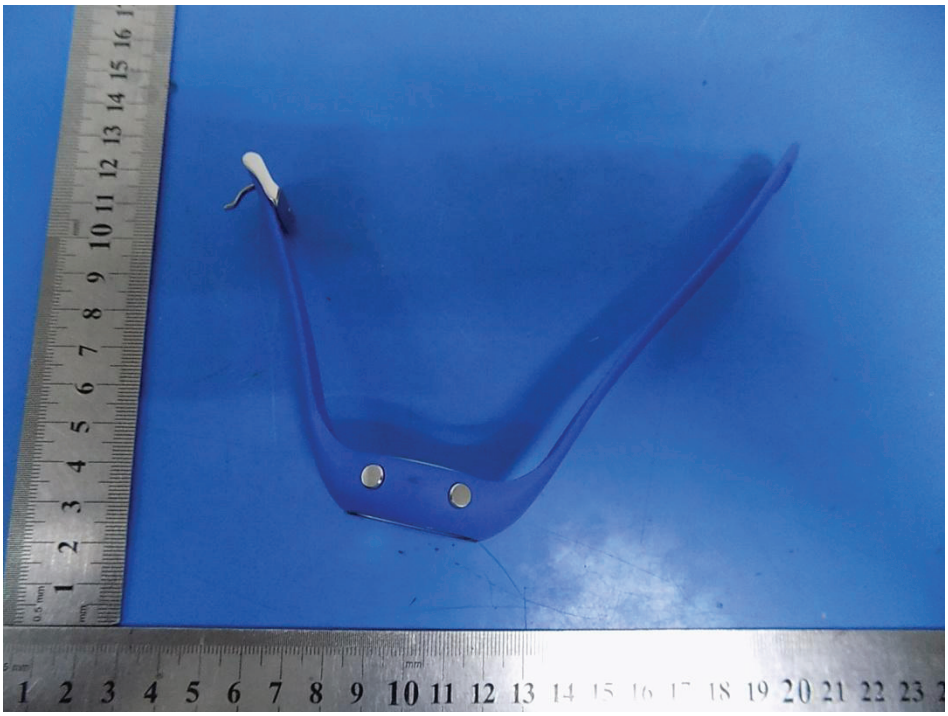
30M-1G

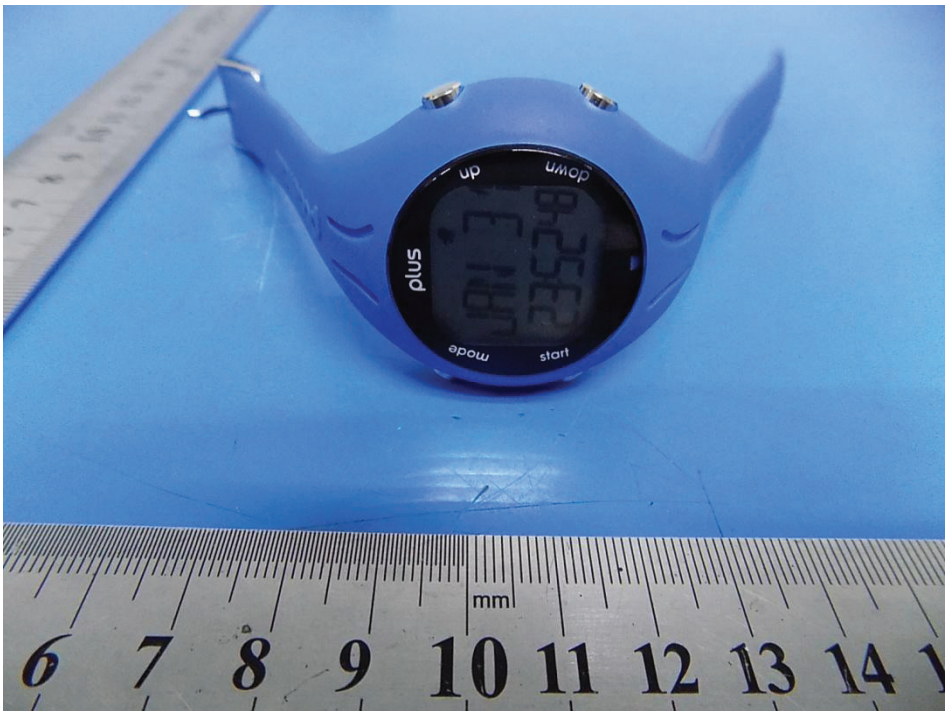


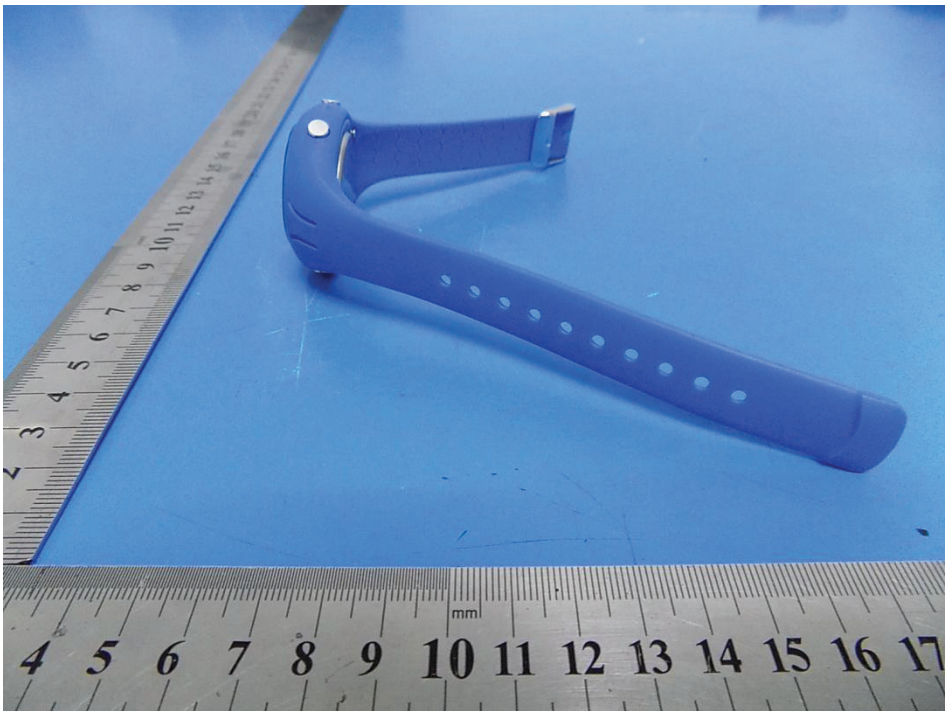
Photographs-Conducted Emission Test Setup

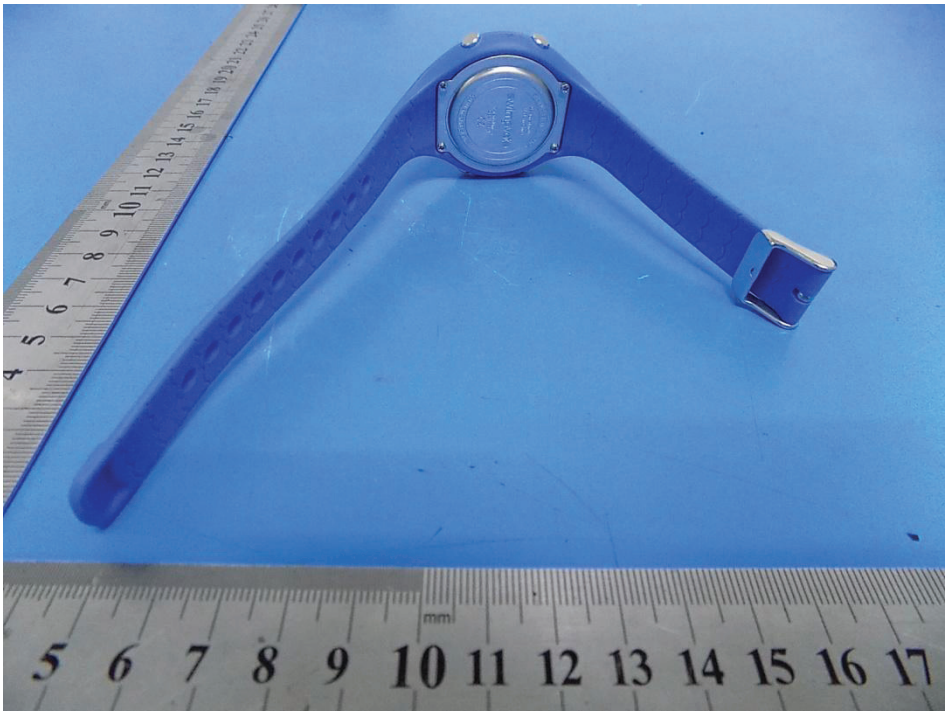


9. Photos of EUT






mm
4 5 6 7 8 9 10 11 12 13 14 15 16 17


mm
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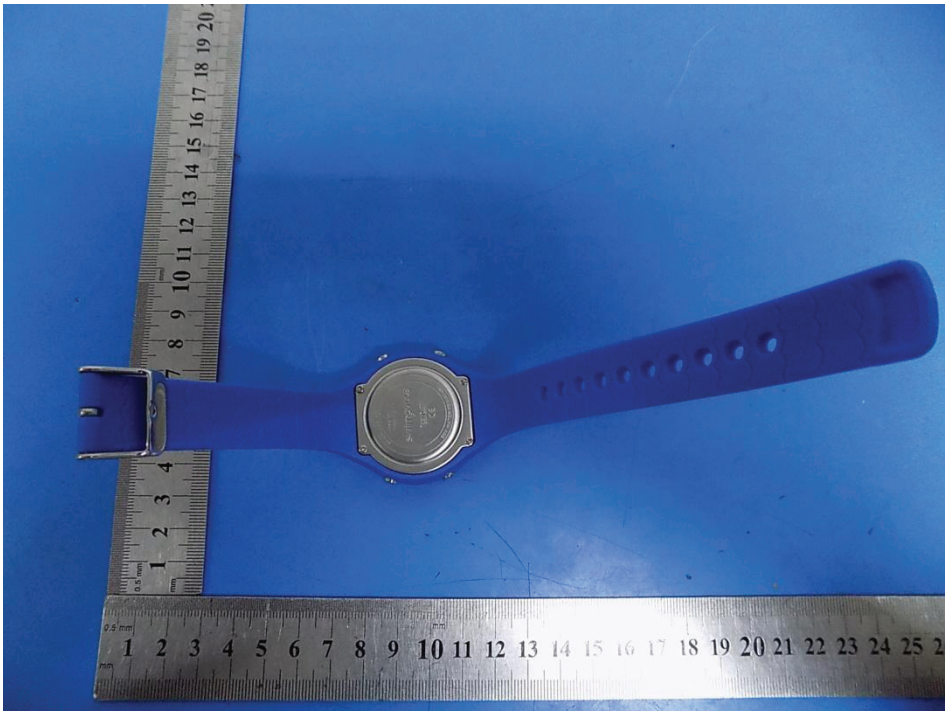

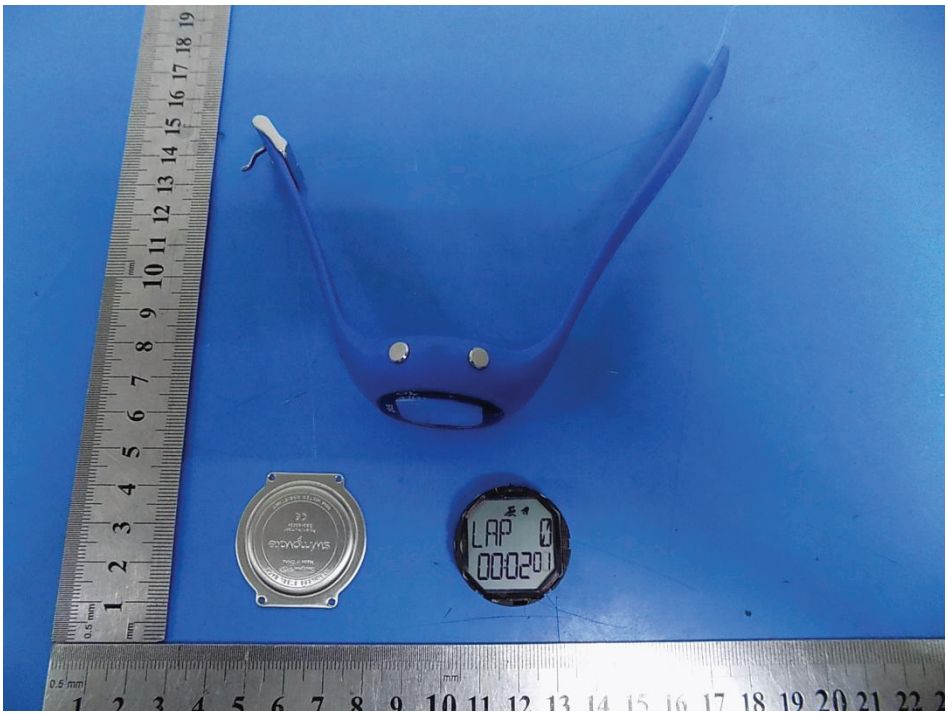
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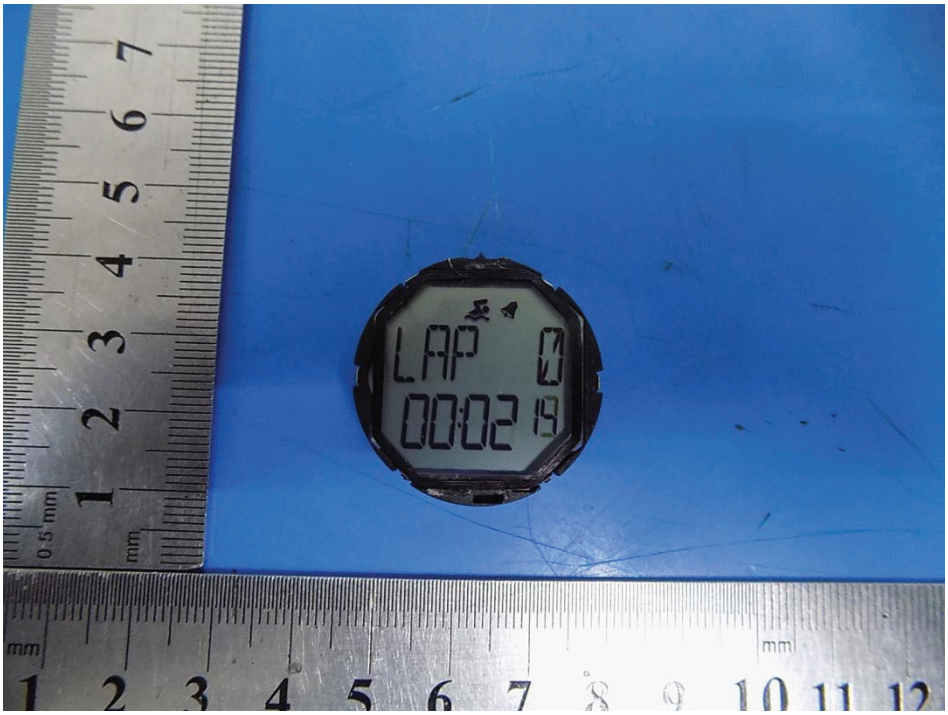
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