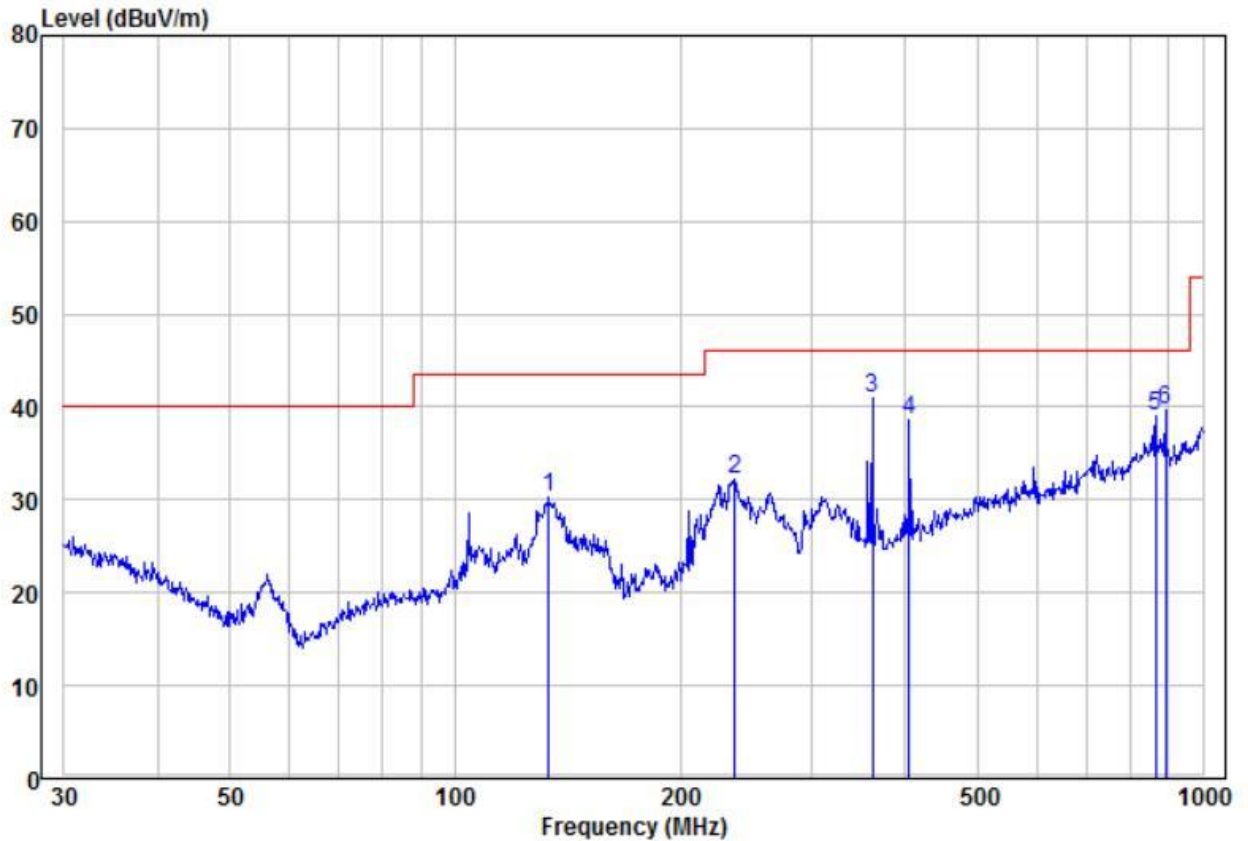


Horizontal



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	APos	TPos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB			cm	deg
1	133.62	20.31	10.08	30.39	43.50	-13.11	Peak	HORIZONTAL	100	96
2	236.64	20.32	11.96	32.28	46.00	-13.72	Peak	HORIZONTAL	100	134
3 pp	361.71	24.79	16.20	40.99	46.00	-5.01	Peak	HORIZONTAL	100	175
4	404.67	22.24	16.35	38.59	46.00	-7.41	Peak	HORIZONTAL	100	212
5	866.09	13.05	25.94	38.99	46.00	-7.01	Peak	HORIZONTAL	100	220
6	890.73	13.81	25.92	39.73	46.00	-6.27	Peak	HORIZONTAL	100	312

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Factor= Antenna Factor + Cable Factor – Preamplifier Factor,

Level = Read Level + Factor,

Over Limit=Level-Limit Line.

5.8.2 Transmitter emission above 1GHz

Test mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.89	-4.26	48.63	74	-25.37	peak	H	1.5	59
4824.000	36.23	-4.26	31.97	54	-22.03	AVG	H	1.5	23
7236.000	50.39	1.18	51.57	74	-22.43	peak	H	1.5	199
7236.000	37.44	1.18	38.62	54	-15.38	AVG	H	1.5	69
4824.000	55.89	-4.26	51.63	74	-22.37	peak	V	1.5	265
4824.000	38.13	-4.26	33.87	54	-20.13	AVG	V	1.5	25
7236.000	50.81	1.18	51.99	74	-22.01	peak	V	1.5	123
7236.000	36.96	1.18	38.14	54	-15.86	AVG	V	1.5	235

Test mode:		802.11b(1Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	51.56	-4.12	47.44	74	-26.56	peak	H	1.5	200
4874.000	37.43	-4.12	33.31	54	-20.69	AVG	H	1.5	183
7311.000	48.65	1.46	50.11	74	-23.89	peak	H	1.5	282
7311.000	36.01	1.46	37.47	54	-16.53	AVG	H	1.5	56
4874.000	53.43	-4.12	49.31	74	-24.69	peak	V	1.5	104
4874.000	37.81	-4.12	33.69	54	-20.31	AVG	V	1.5	145
7311.000	49.48	1.46	50.94	74	-23.06	peak	V	1.5	281
7311.000	35.91	1.46	37.37	54	-16.63	AVG	V	1.5	36

Test mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol. H/V	Antenna Height (m)	Table Angle (Degree)
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)				
4924.000	51.38	-4.03	47.35	74	-26.65	peak	H	1.5	341
4924.000	38.59	-4.03	34.56	54	-19.44	AVG	H	1.5	64
7386.000	50.96	1.66	52.62	74	-21.38	peak	H	1.5	343
7386.000	36.01	1.66	37.67	54	-16.33	AVG	H	1.5	39
4924.000	54.09	-4.03	50.06	74	-23.94	peak	V	1.5	64
4924.000	37.88	-4.03	33.85	54	-20.15	AVG	V	1.5	153
7386.000	49.56	1.66	51.22	74	-22.78	peak	V	1.5	245
7386.000	36.08	1.66	37.74	54	-16.26	AVG	V	1.5	141

Remark:

- 1) The 1Mbps of rate of 802.11b is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
 Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.38	-4.26	48.12	74	-25.88	peak	H	1.5	54
4824.000	37.97	-4.26	33.71	54	-20.29	AVG	H	1.5	120
7236.000	51.97	1.18	53.15	74	-20.85	peak	H	1.5	226
7236.000	38.32	1.18	39.50	54	-14.50	AVG	H	1.5	108
4824.000	54.24	-4.26	49.98	74	-24.02	peak	V	1.5	10
4824.000	38.04	-4.26	33.78	54	-20.22	AVG	V	1.5	191
7236.000	50.36	1.18	51.54	74	-22.46	peak	V	1.5	82
7236.000	36.47	1.18	37.65	54	-16.35	AVG	V	1.5	187

Test mode:		802.11g(6Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	53.18	-4.12	49.06	74	-24.94	peak	H	1.5	50
4874.000	36.11	-4.12	31.99	54	-22.01	AVG	H	1.5	335
7311.000	48.30	1.46	49.76	74	-24.24	peak	H	1.5	86
7311.000	35.53	1.46	36.99	54	-17.01	AVG	H	1.5	295
4874.000	52.41	-4.12	48.29	74	-25.71	peak	V	1.5	85
4874.000	36.44	-4.12	32.32	54	-21.68	AVG	V	1.5	61
7311.000	49.87	1.46	51.33	74	-22.67	peak	V	1.5	229
7311.000	35.37	1.46	36.83	54	-17.17	AVG	V	1.5	185

Test mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	52.21	-4.03	48.18	74	-25.82	peak	H	1.5	142
4924.000	37.27	-4.03	33.24	54	-20.76	AVG	H	1.5	134
7386.000	49.31	1.66	50.97	74	-23.03	peak	H	1.5	83
7386.000	36.18	1.66	37.84	54	-16.16	AVG	H	1.5	171
4924.000	53.53	-4.03	49.50	74	-24.50	peak	V	1.5	97
4924.000	37.23	-4.03	33.20	54	-20.80	AVG	V	1.5	227
7386.000	51.15	1.66	52.81	74	-21.19	peak	V	1.5	67
7386.000	37.97	1.66	39.63	54	-14.37	AVG	V	1.5	213

Remark:

- 1) The 6Mbps of rate of 802.11g is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz,The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test mode:		802.11n20(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4824.000	52.25	-4.26	47.99	74	-26.01	peak	H	1.5	307
4824.000	37.22	-4.26	32.96	54	-21.04	AVG	H	1.5	127
7236.000	50.43	1.18	51.61	74	-22.39	peak	H	1.5	183
7236.000	37.84	1.18	39.02	54	-14.98	AVG	H	1.5	207
4824.000	55.54	-4.26	51.28	74	-22.72	peak	V	1.5	56
4824.000	39.97	-4.26	35.71	54	-18.29	AVG	V	1.5	300
7236.000	50.79	1.18	51.97	74	-22.03	peak	V	1.5	228
7236.000	36.72	1.18	37.90	54	-16.10	AVG	V	1.5	121

Test mode:		802.11n20(6.5Mbps)		Test channel:		Middle			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4874.000	53.14	-4.12	49.02	74	-24.98	peak	H	1.5	199
4874.000	37.45	-4.12	33.33	54	-20.67	AVG	H	1.5	226
7311.000	48.27	1.46	49.73	74	-24.27	peak	H	1.5	137
7311.000	36.48	1.46	37.94	54	-16.06	AVG	H	1.5	34
4874.000	53.80	-4.12	49.68	74	-24.32	peak	V	1.5	282
4874.000	37.94	-4.12	33.82	54	-20.18	AVG	V	1.5	231
7311.000	48.78	1.46	50.24	74	-23.76	peak	V	1.5	105
7311.000	35.65	1.46	37.11	54	-16.89	AVG	V	1.5	47

Test mode:		802.11n20(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detect or Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
4924.000	52.74	-4.03	48.71	74	-25.29	peak	H	1.5	217
4924.000	37.75	-4.03	33.72	54	-20.28	AVG	H	1.5	326
7386.000	49.82	1.66	51.48	74	-22.52	peak	H	1.5	355
7386.000	36.20	1.66	37.86	54	-16.14	AVG	H	1.5	312
4924.000	53.66	-4.03	49.63	74	-24.37	peak	V	1.5	59
4924.000	38.94	-4.03	34.91	54	-19.09	AVG	V	1.5	191
7386.000	51.03	1.66	52.69	74	-21.31	peak	V	1.5	284
7386.000	37.64	1.66	39.30	54	-14.70	AVG	V	1.5	82

Remark:

- 1) The MCS0 of rate of 802.11n20 is the worst case.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
 Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

5.9 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10 2013		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			

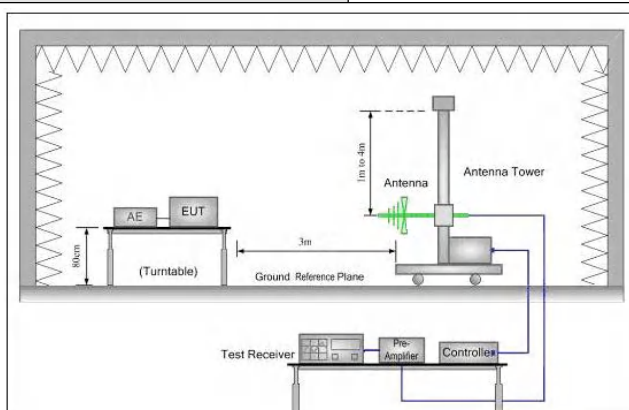


Figure 1. 30MHz to 1GHz

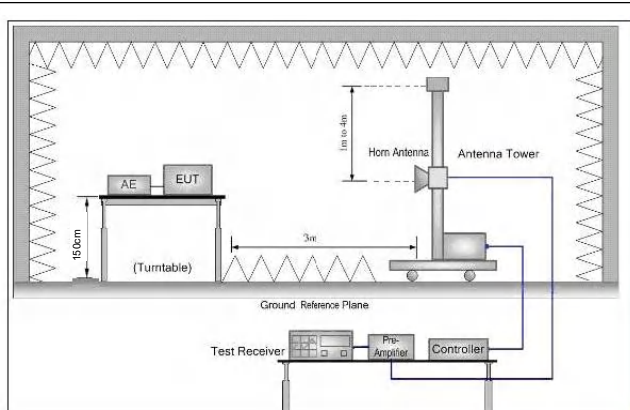


Figure 2. Above 1 GHz

Test Procedure:

- 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
 - 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- Note: For the radiated emission test above 1GHz:
- Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
 - The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the

	measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case . i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Transmitting mode.
Final Test Mode:	Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20). Only the worst case is recorded in the report.
Test Results:	Pass

Test data:

Worse case mode:		802.11b(1Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2390.000	58.54	-9.2	49.34	74	-24.66	peak	H	1.5	157
2390.000	44.97	-9.2	35.77	54	-18.23	AVG	H	1.5	213
2400.000	59.26	-9.39	49.87	74	-24.13	peak	H	1.5	305
2400.000	46.73	-9.39	37.34	54	-16.66	AVG	H	1.5	3
2390.000	58.56	-9.2	49.36	74	-24.64	peak	V	1.5	92
2390.000	44.67	-9.2	35.47	54	-18.53	AVG	V	1.5	172
2400.000	59.97	-9.39	50.58	74	-23.42	peak	V	1.5	203
2400.000	46.82	-9.39	37.43	54	-16.57	AVG	V	1.5	357

Worse case mode:		802.11b(1Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector Type	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)		H/V	(m)	(Degree)
2483.500	57.68	-9.29	48.39	74	-25.61	peak	H	1.5	133
2483.500	43.84	-9.29	34.55	54	-19.45	AVG	H	1.5	328
2483.500	57.72	-9.29	48.43	74	-25.57	peak	V	1.5	92
2483.500	45.48	-9.29	36.19	54	-17.81	AVG	V	1.5	194

Worse case mode:		802.11g(6Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.60	-9.2	49.40	74	-24.60	peak	H	1.5	174
2390.000	44.08	-9.2	34.88	54	-19.12	AVG	H	1.5	11
2400.000	59.67	-9.39	50.28	74	-23.72	peak	H	1.5	198
2400.000	46.16	-9.39	36.77	54	-17.23	AVG	H	1.5	296
2390.000	58.94	-9.2	49.74	74	-24.26	peak	V	1.5	107
2390.000	44.83	-9.2	35.63	54	-18.37	AVG	V	1.5	31
2400.000	59.61	-9.39	50.22	74	-23.78	peak	V	1.5	224
2400.000	46.00	-9.39	36.61	54	-17.39	AVG	V	1.5	328

Worse case mode:		802.11g(6Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.74	-9.29	48.45	74	-25.55	peak	H	1.5	351
2483.500	44.04	-9.29	34.75	54	-19.25	AVG	H	1.5	256
2483.500	57.78	-9.29	48.49	74	-25.51	peak	V	1.5	216
2483.500	45.87	-9.29	36.58	54	-17.42	AVG	V	1.5	41

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Lowest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2390.000	58.54	-9.2	49.34	74	-24.66	peak	H	1.5	355
2390.000	44.42	-9.2	35.22	54	-18.78	AVG	H	1.5	99
2400.000	59.87	-9.39	50.48	74	-23.52	peak	H	1.5	325
2400.000	46.26	-9.39	36.87	54	-17.13	AVG	H	1.5	214
2390.000	58.82	-9.2	49.62	74	-24.38	peak	V	1.5	188
2390.000	44.09	-9.2	34.89	54	-19.11	AVG	V	1.5	250
2400.000	59.51	-9.39	50.12	74	-23.88	peak	V	1.5	278
2400.000	46.55	-9.39	37.16	54	-16.84	AVG	V	1.5	213

Worse case mode:		802.11n(HT20)(6.5Mbps)		Test channel:		Highest			
Frequency	Meter Reading	Factor	Emission Level	Limits	Over	Detector	Ant. Pol.	Antenna Height	Table Angle
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	H/V	(m)	(Degree)
2483.500	57.91	-9.29	48.62	74	-25.38	peak	H	1.5	291
2483.500	44.19	-9.29	34.90	54	-19.10	AVG	H	1.5	125
2483.500	57.75	-9.29	48.46	74	-25.54	peak	V	1.5	59
2483.500	46.00	-9.29	36.71	54	-17.29	AVG	V	1.5	35

Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

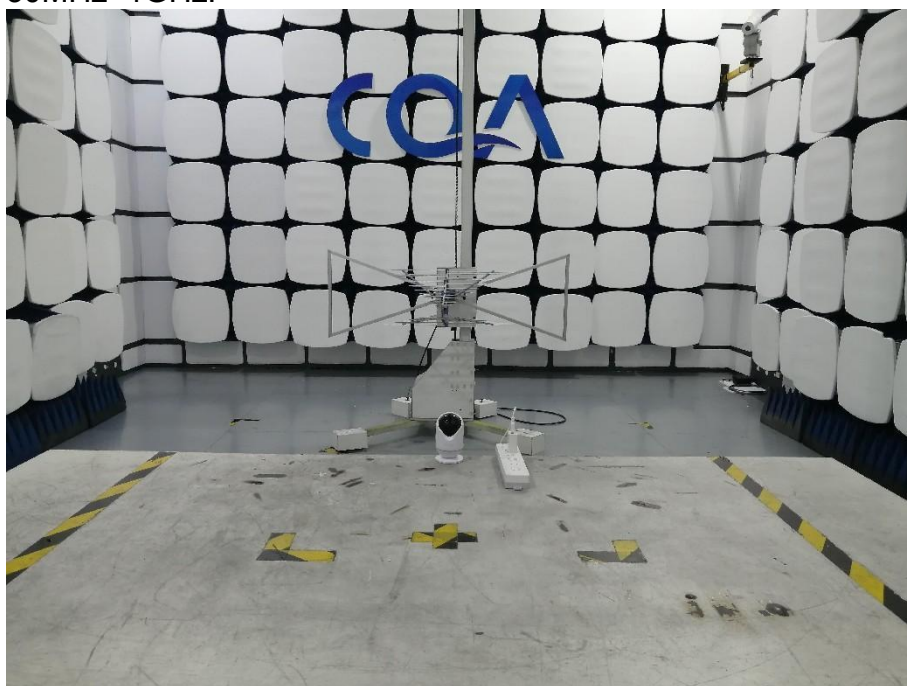
6 Photographs - EUT Test Setup

6.1 Radiated Spurious Emission

9kHz~30MHz:



30MHz~1GHz:



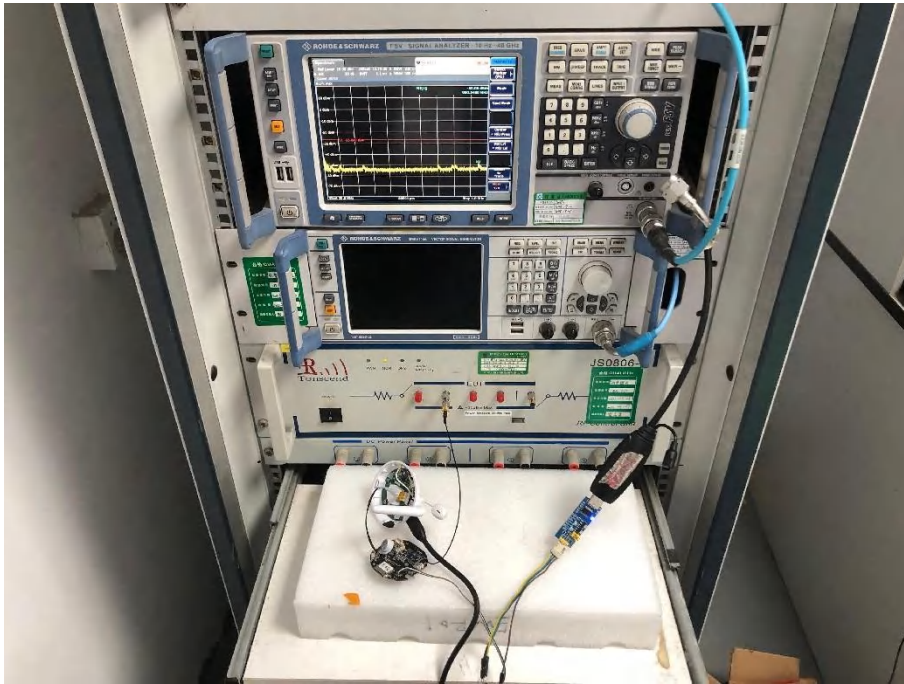
Above 1GHz:



6.2 Conducted Emission



6.3 RF Conducted measurement



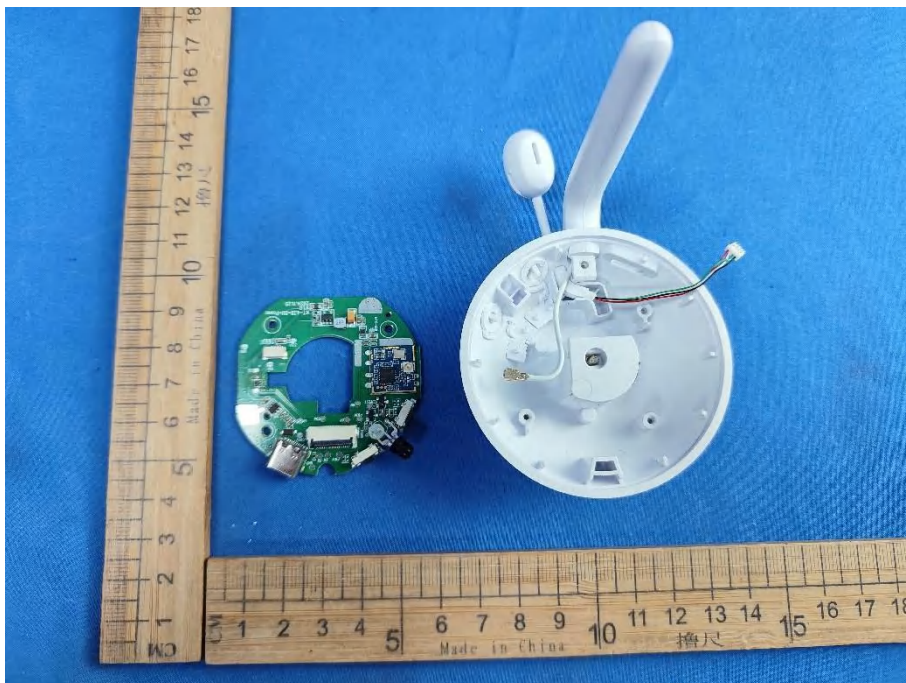
7 Photographs - EUT Constructional Details

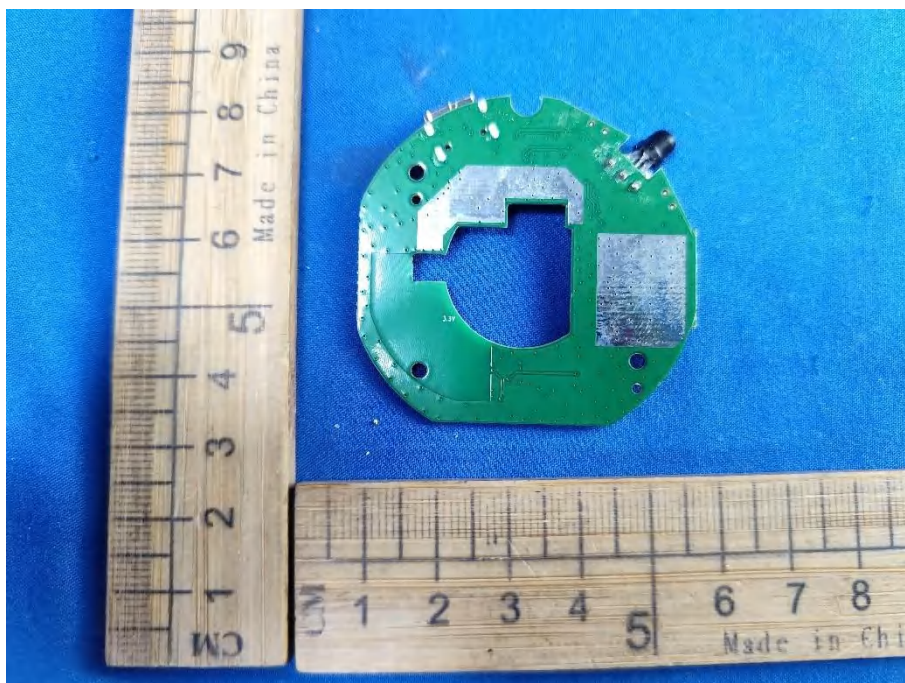
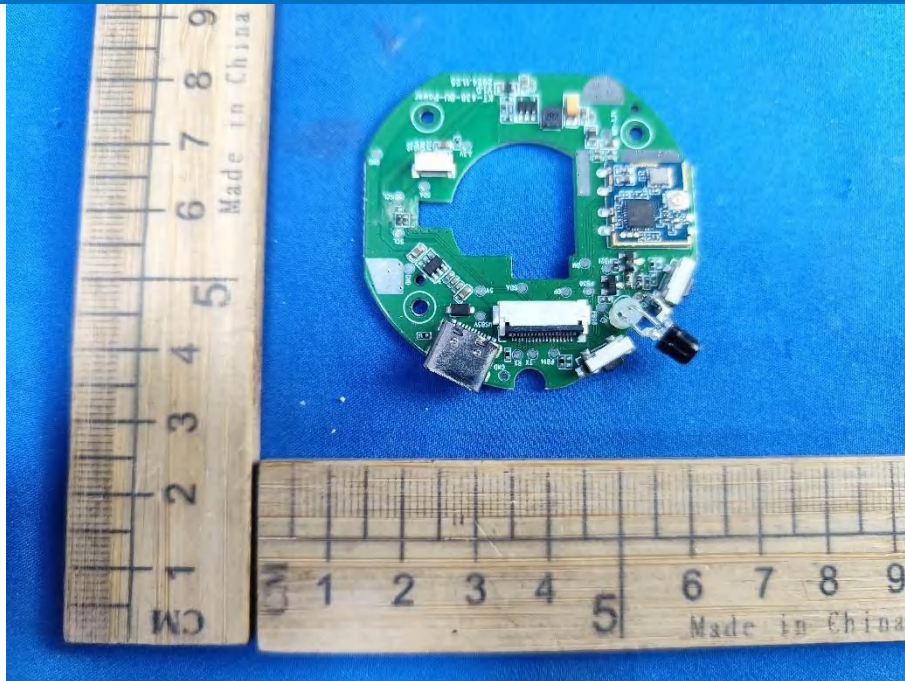


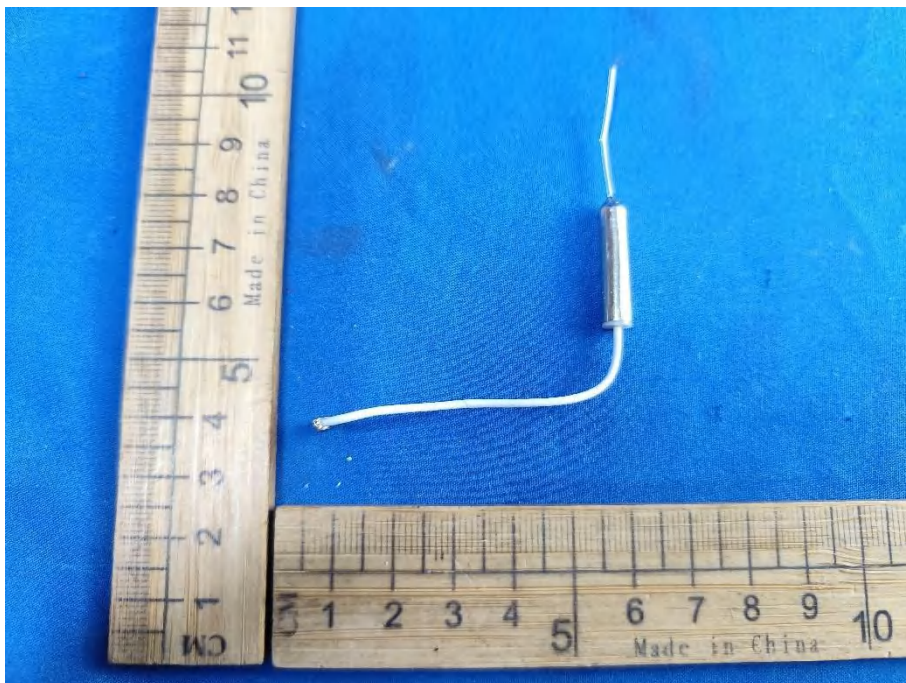
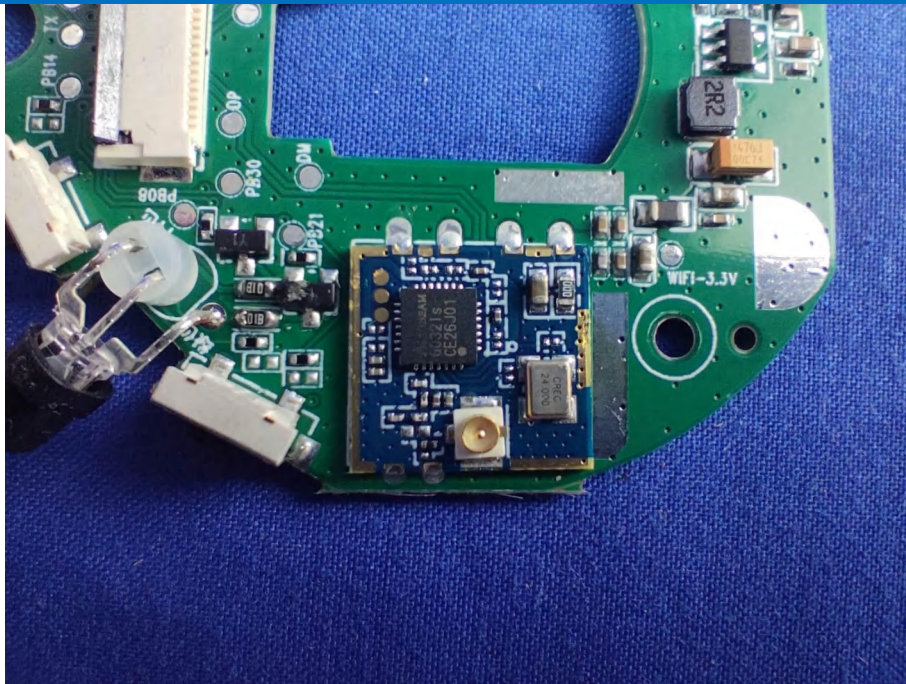


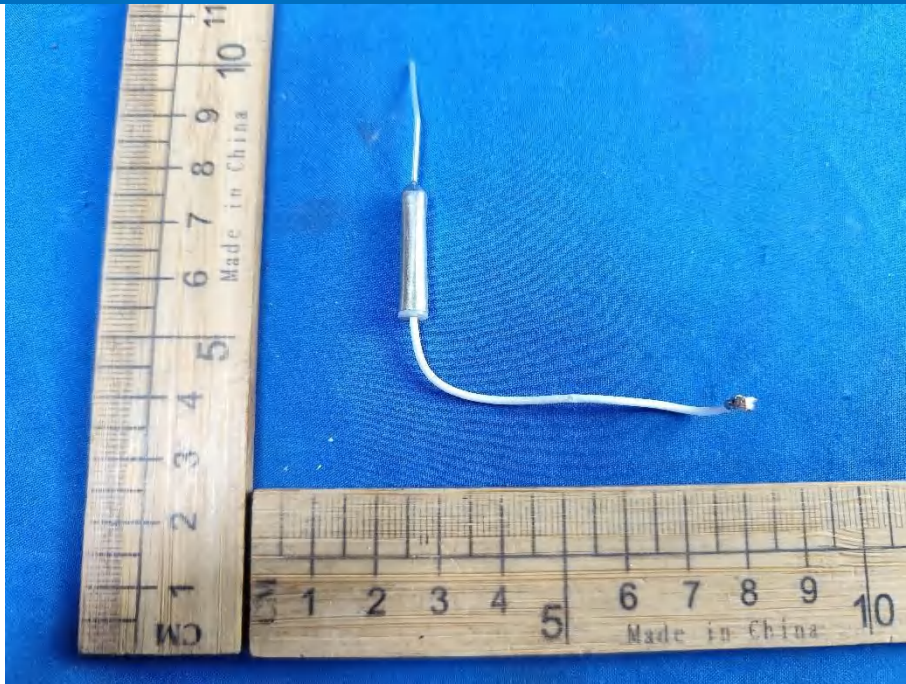


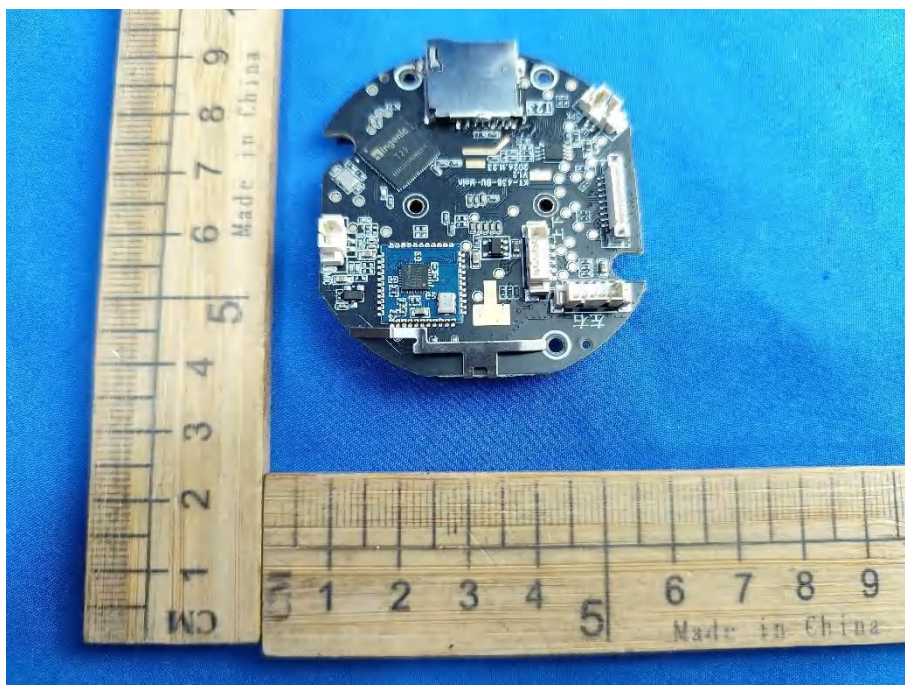
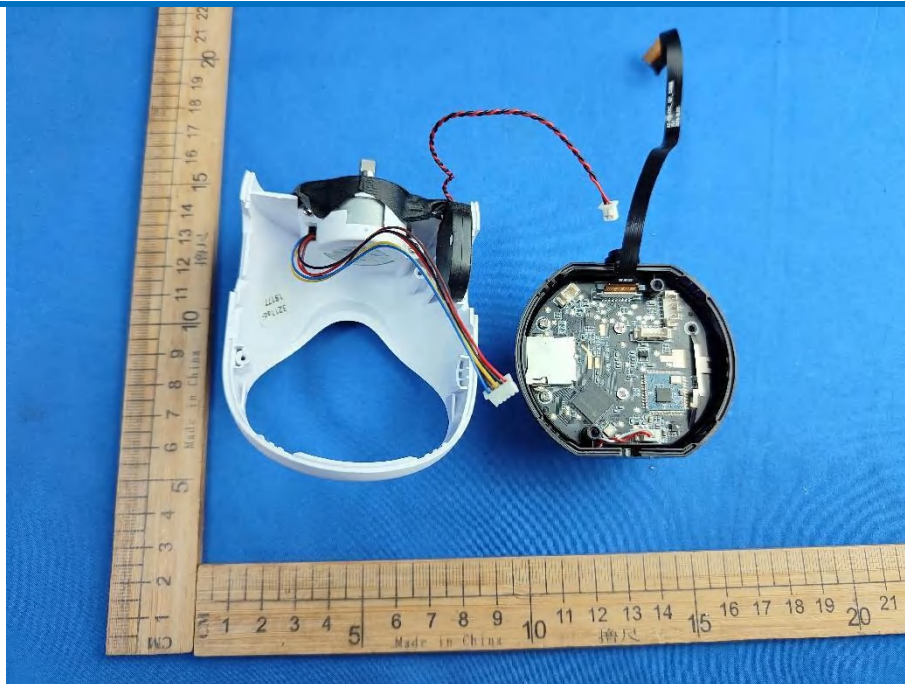


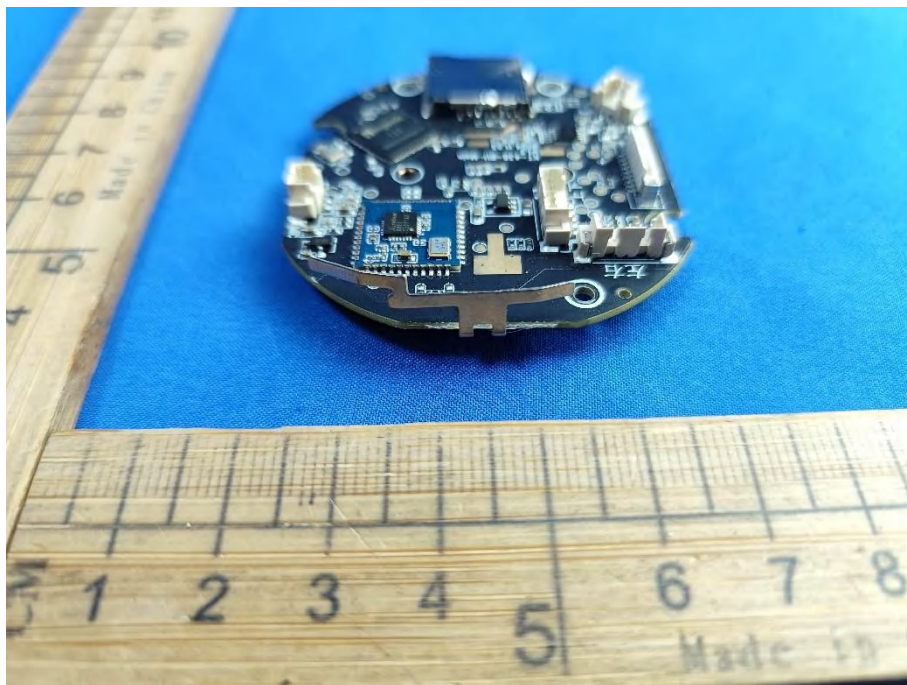
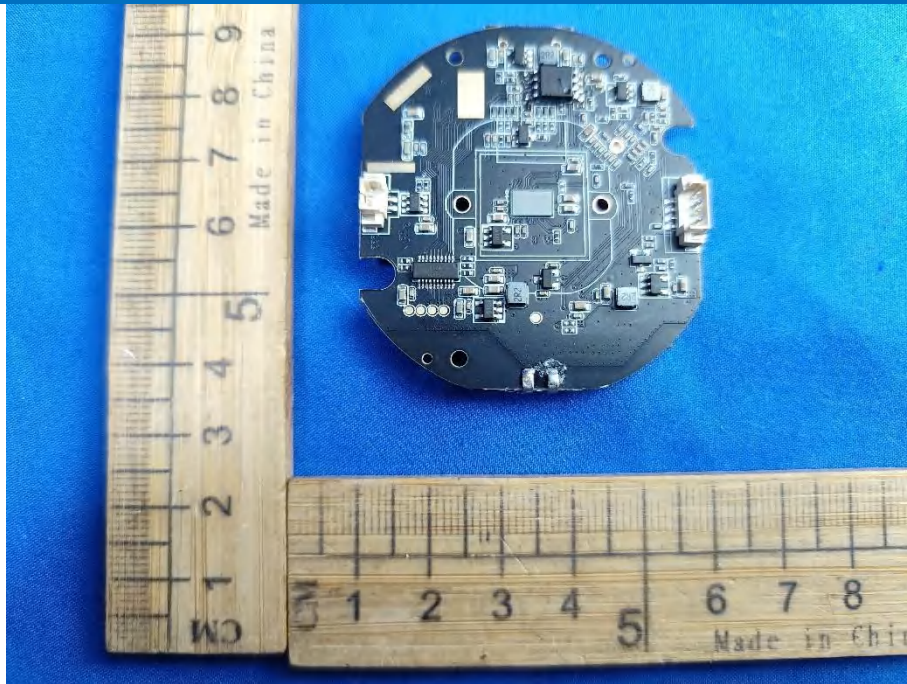


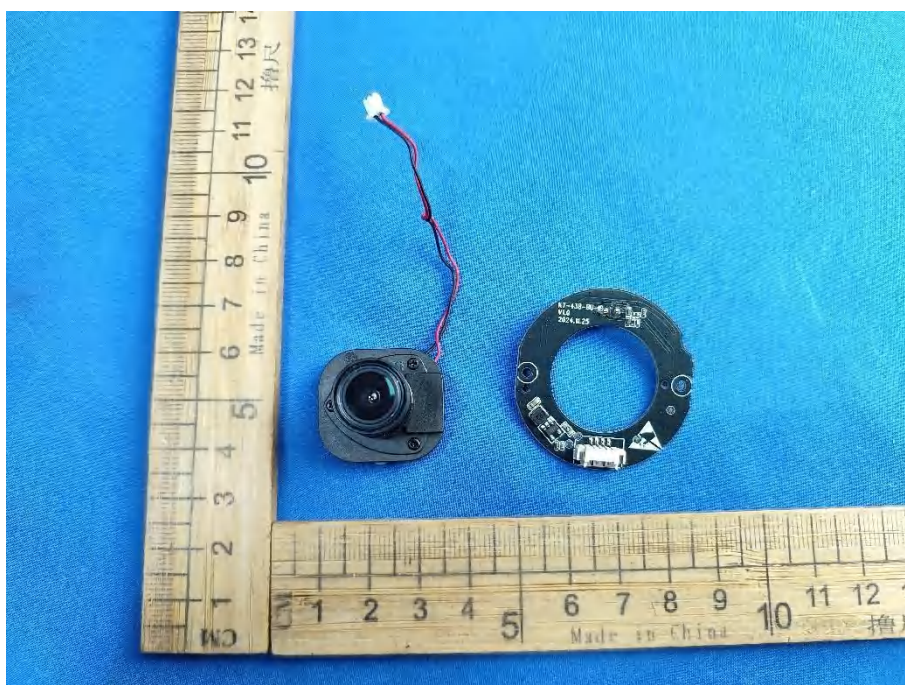
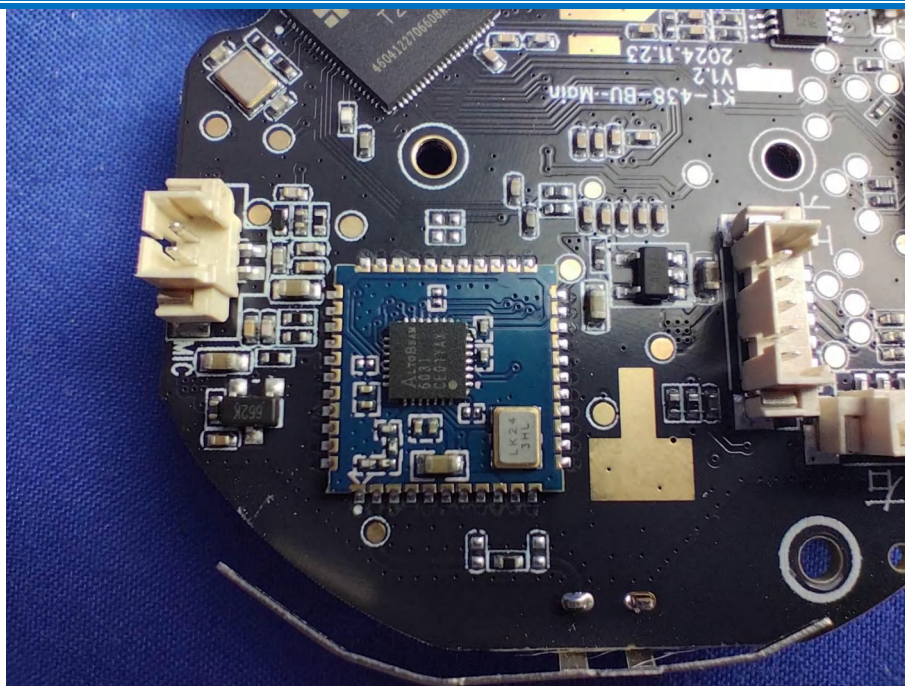


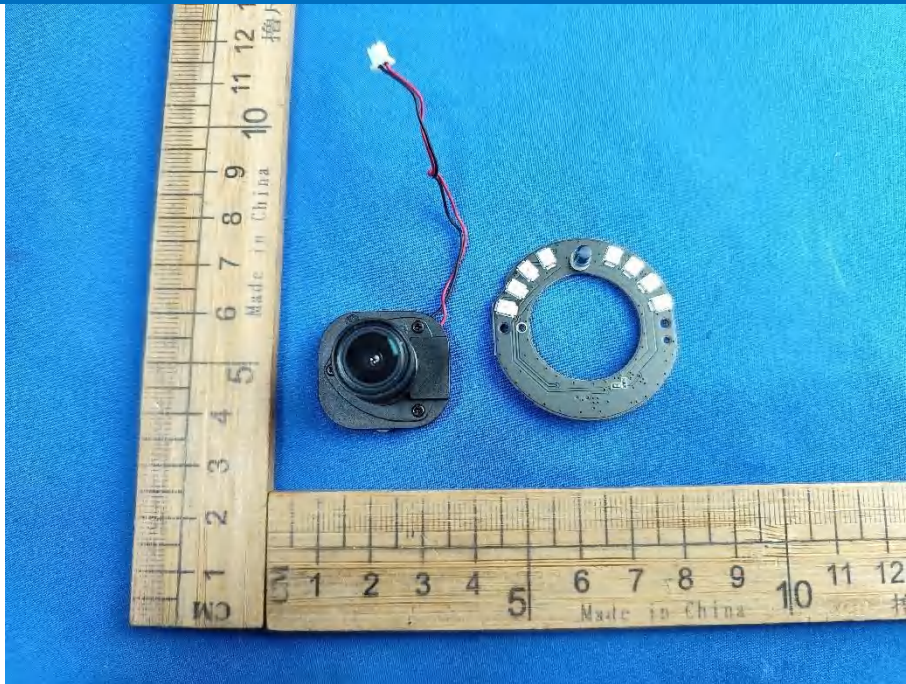












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