

Appendix C: Test Results of 2.4GHz SRD

APPENDIX C: TEST RESULTS OF 2.4GHZ SRD	1
APPENDIX C.1: TEST RESULTS OF 6DB BANDWIDTH.....	2
<i>Test Result.....</i>	<i>2</i>
<i>Test Graphs.....</i>	<i>3</i>
APPENDIX C.2: TEST RESULTS OF 99% BANDWIDTH	5
<i>Test Result.....</i>	<i>5</i>
<i>Test Graphs.....</i>	<i>6</i>
APPENDIX C.3: TEST RESULTS OF CONDUCTED POWER SPECTRAL DENSITY	7
<i>Test Result.....</i>	<i>7</i>
<i>Test Graphs.....</i>	<i>8</i>
APPENDIX C.4: TEST RESULTS OF BAND EDGE MEASUREMENTS.....	10
<i>Test Result.....</i>	<i>10</i>
<i>Test Graphs.....</i>	<i>11</i>
APPENDIX C.5: TEST RESULTS OF CONDUCTED SPURIOUS EMISSION	12
<i>Test Result.....</i>	<i>12</i>
<i>Test Graphs.....</i>	<i>13</i>
APPENDIX C.6: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS.....	17
30MHz - 1GHz	17
1GHz - 18GHz	20
Co-location.....	31
APPENDIX C.7: TEST RESULTS OF RADIATED EMISSIONS IN RESTRICTED BANDS	35

Appendix C.1: Test Results of 6dB Bandwidth

Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
SRD	Ant1	2400.8	0.516	2400.444	2400.960	0.5	PASS
		2440	0.508	2439.652	2440.160	0.5	PASS
		2480	0.512	2479.648	2480.160	0.5	PASS

Test Graphs

SRD_Ant1_2400.8



SRD_Ant1_2440



SRD_Ant1_2480



Appendix C.2: Test Results of 99% Bandwidth

Test Result

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
SRD	Ant1	2400.8	0.52128	2400.4437	2400.9649	---	---
		2440	0.51885	2439.6468	2440.1656	---	---
		2480	0.51724	2479.6419	2480.1591	---	---

Test Graphs

SRD_Ant1_2400.8



SRD_Ant1_2440



SRD_Ant1_2480



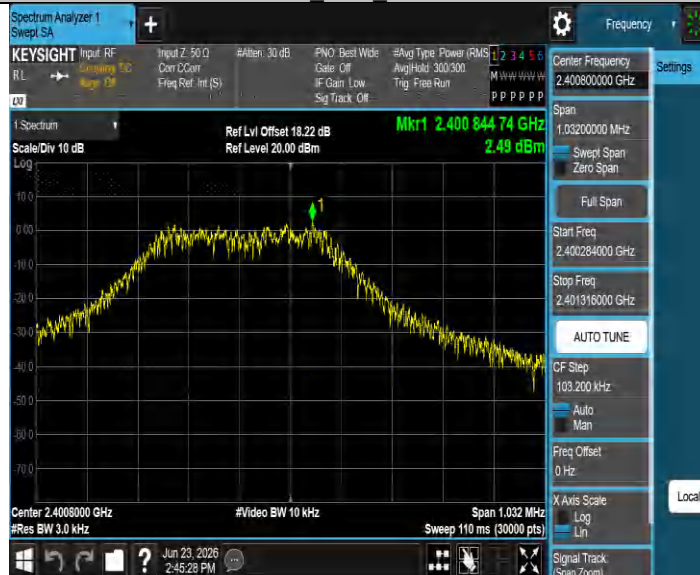
Appendix C.3: Test Results of Conducted Power Spectral Density

Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
SRD	Ant1	2400.8	2.49	≤8.00	PASS
		2440	2.39	≤8.00	PASS
		2480	2.67	≤8.00	PASS

Test Graphs

SRD_Ant1_2400.8



SRD_Ant1_2440



SRD_Ant1_2480



Appendix C.4: Test Results of Band Edge Measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
SRD	Ant1	Low	2400.8	14.81	-19.74	≤ -5.19	PASS
		High	2480	15.33	-41.48	≤ -4.67	PASS

Test Graphs

SRD Ant1 Low 2400.8



SRD Ant1 High 2480



Appendix C.5: Test Results of Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
SRD	Ant1	2400.8	Reference	14.60	14.60	---	PASS
			30~1000	14.60	-52.49	≤-5.4	PASS
			1000~26500	14.60	-43.78	≤-5.4	PASS
		2440	Reference	14.87	14.87	---	PASS
			30~1000	14.87	-52.01	≤-5.13	PASS
			1000~26500	14.87	-48.86	≤-5.13	PASS
		2480	Reference	15.30	15.30	---	PASS
			30~1000	15.30	-52.2	≤-4.7	PASS
			1000~26500	15.30	-50.25	≤-4.7	PASS

Test Graphs

SRD Ant1 2400.8 0~Reference

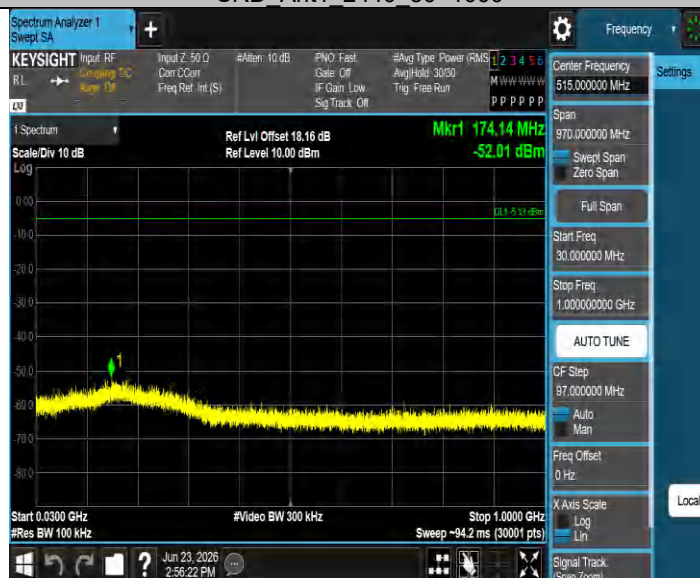




SRD Ant1 2440 0~Reference



SRD Ant1 2440 30~1000



SRD Ant1 2440 1000~26500



SRD Ant1_2480_0~Reference



SRD Ant1_2480_30~1000



SRD Ant1_2480_1000~26500



Appendix C.6: Test Results of Radiated Spurious Emissions

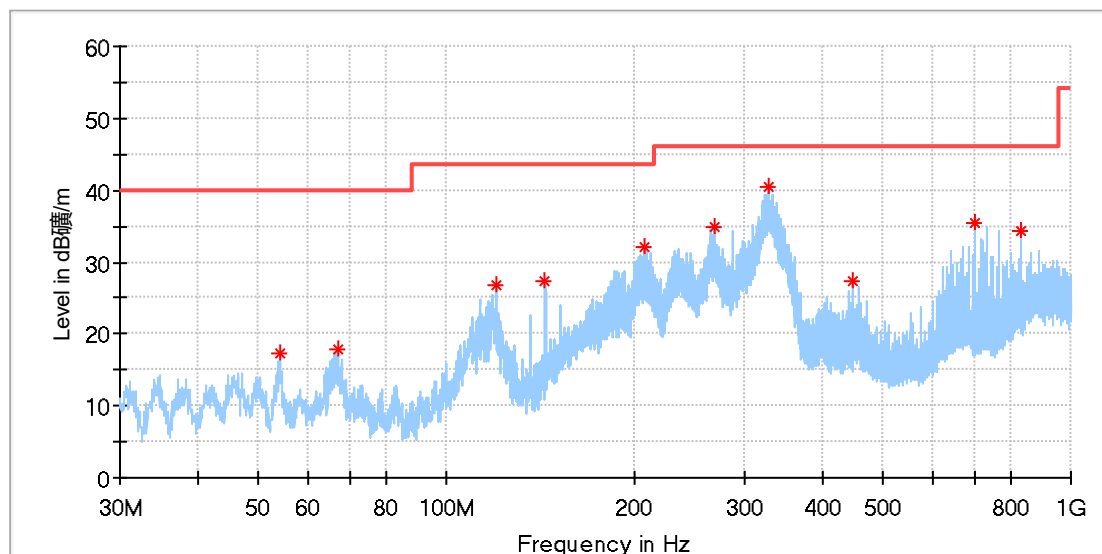
Note:

- 1) This testing was carried out on different modulations, but only the worst case was presented in this report.
- 2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30MHz - 1GHz

EUT Information

EUT Name: Humanoid Robot
Model: H2 EDU
Test Mode: 2.4G SRD_Mid channel
Order No/Sample No: A004293048-004
Test Voltage: Battery
Remark: Temp 23.8°C Humi:57%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

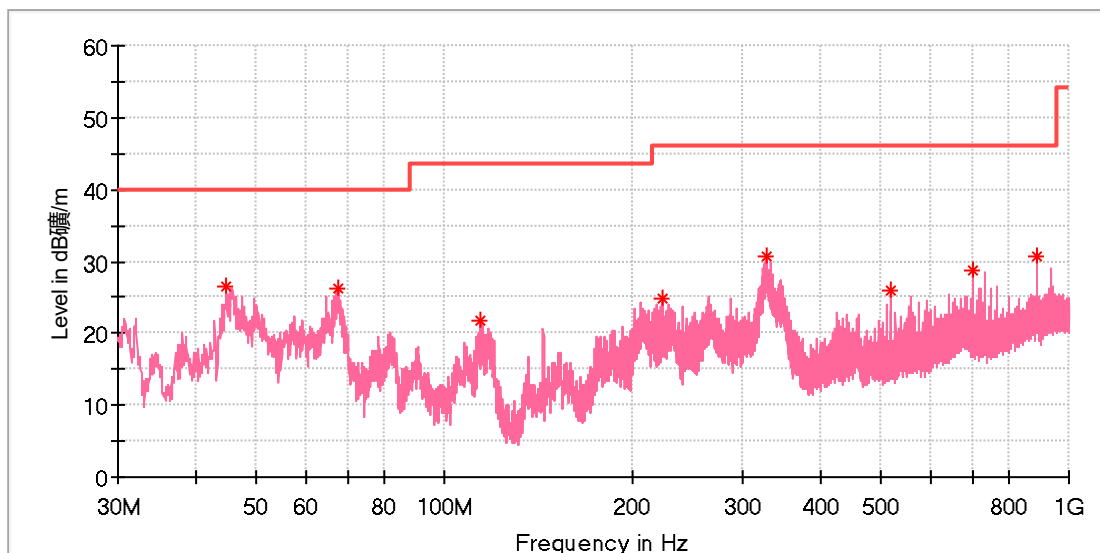
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
54.142222	17.40	40.00	22.60	100.0	H	112.0	-18.5
67.021667	17.78	40.00	22.22	100.0	H	207.0	-20.9
119.994444	26.67	43.50	16.83	100.0	H	262.0	-20.9
143.975000	27.47	43.50	16.03	100.0	H	144.0	-22.4
207.240556	32.19	43.50	11.31	100.0	H	112.0	-18.9
269.374444	34.94	46.00	11.06	100.0	H	61.0	-17.0
328.544444	40.49	46.00	5.51	100.0	H	307.0	-15.4
447.692778	27.47	46.00	18.53	100.0	H	87.0	-12.8
703.988333	35.54	46.00	10.46	100.0	H	262.0	-7.9
832.028333	34.25	46.00	11.75	100.0	H	315.0	-5.6

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

EUT Information

EUT Name: Humanoid Robot
Model: H2 EDU
Test Mode: 2.4G SRD_Mid channel
Order No/Sample No: A004293048-004
Test Voltage: Battery
Remark: Temp 23.8°C Humi:57%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
44.657778	26.59	40.00	13.41	100.0	V	55.0	-19.0
67.668333	26.20	40.00	13.80	100.0	V	328.0	-21.2
114.443889	21.79	43.50	21.71	100.0	V	90.0	-19.8
223.191667	24.73	46.00	21.27	100.0	V	0.0	-18.5
327.790000	30.77	46.00	15.23	100.0	V	0.0	-15.4
520.011667	25.86	46.00	20.14	100.0	V	267.0	-11.5
703.988333	28.82	46.00	17.18	100.0	V	318.0	-7.9
890.982778	30.71	46.00	15.29	100.0	V	257.0	-4.9

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	

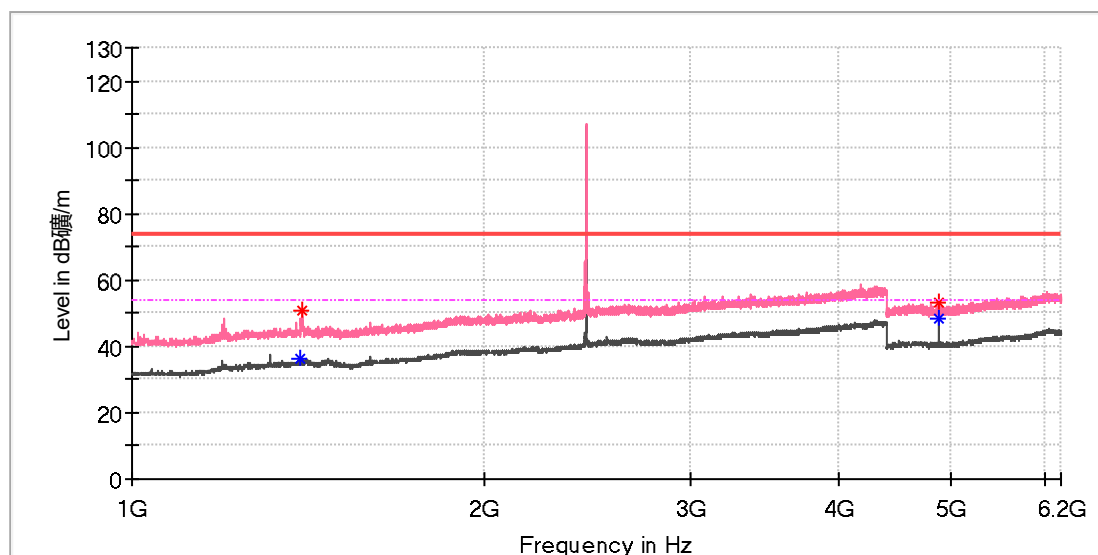
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

EUT Information

EUT Name:	Humanoid Robot
Model:	H2 EDU
Test Mode:	2.4G SRD_Mid channel
Order No/Sample No:	A004293048-004
Test Voltage:	Battery
Remark:	Temp 23.8°C Humi:57%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

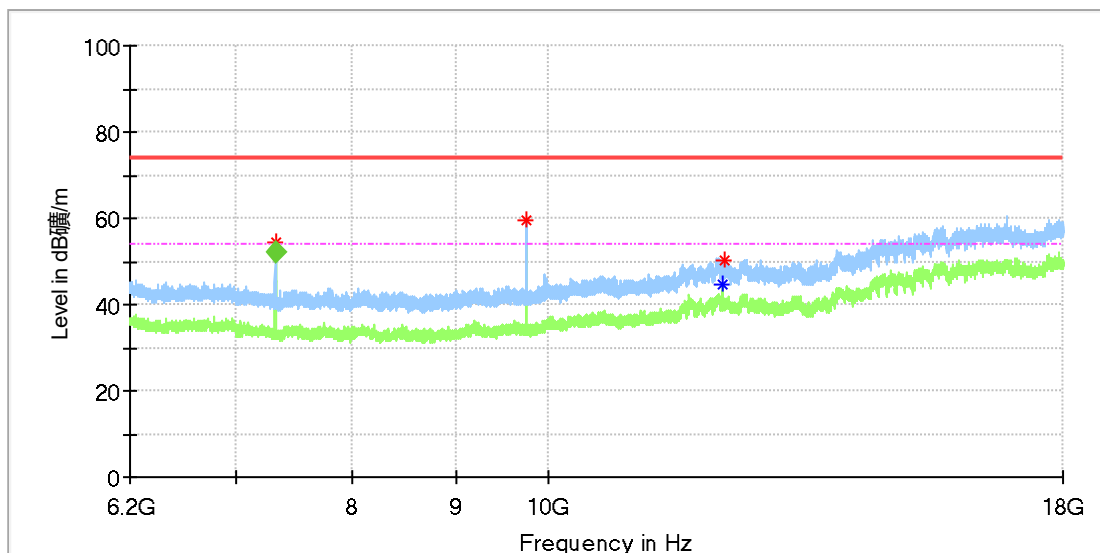
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1393.500000	---	36.51	54.00	17.49	150.0	V	255.0	3.0
1396.500000	50.64	---	74.00	23.36	150.0	V	249.0	3.0
4880.000000	53.45	---	74.00	20.55	150.0	V	157.0	13.3
4880.000000	---	48.26	54.00	5.74	150.0	V	157.0	13.3

Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

EUT Information

EUT Name: Humanoid Robot
Model: H2 EDU
Test Mode: 2.4G SRD_Low channel
Order No/Sample No: A004293048-004
Test Voltage: Battery
Remark: Temp 23.8°C Humi:57%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7320.016667	54.30	---	68.20	13.90	150.0	H	238.0	8.2
9758.683333	59.73	---	68.20	8.47	150.0	H	0.0	10.4
12200.300000	---	44.54	54.00	9.46	150.0	H	14.0	15.7
12227.341667	50.44	---	74.00	23.56	150.0	H	229.0	15.9

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7320.844167	---	51.87	54.00	2.13	150.0	H	238.0	8.2

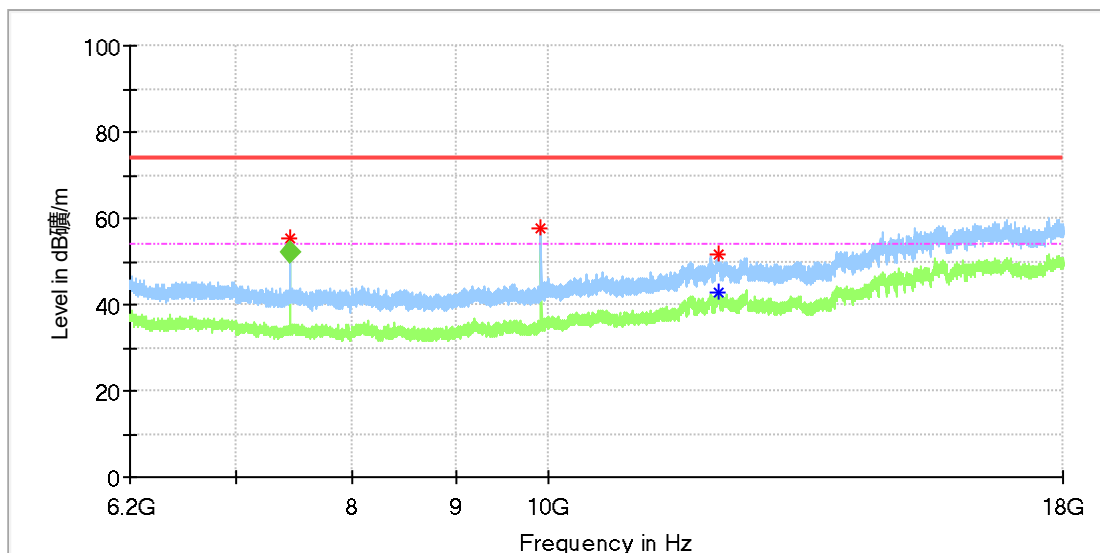
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	59.5	59.5	60.0	-0.5	100	h	135	0.0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
100.0	100.0	100.0	100.0	100.0	100.0		100.0	100.0

EUT Information

EUT Name: Humanoid Robot
Model: H2 EDU
Test Mode: 2.4G SRD_High channel
Order No/Sample No: A004293048-004
Test Voltage: Battery
Remark: Temp 23.8°C Humi:57%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

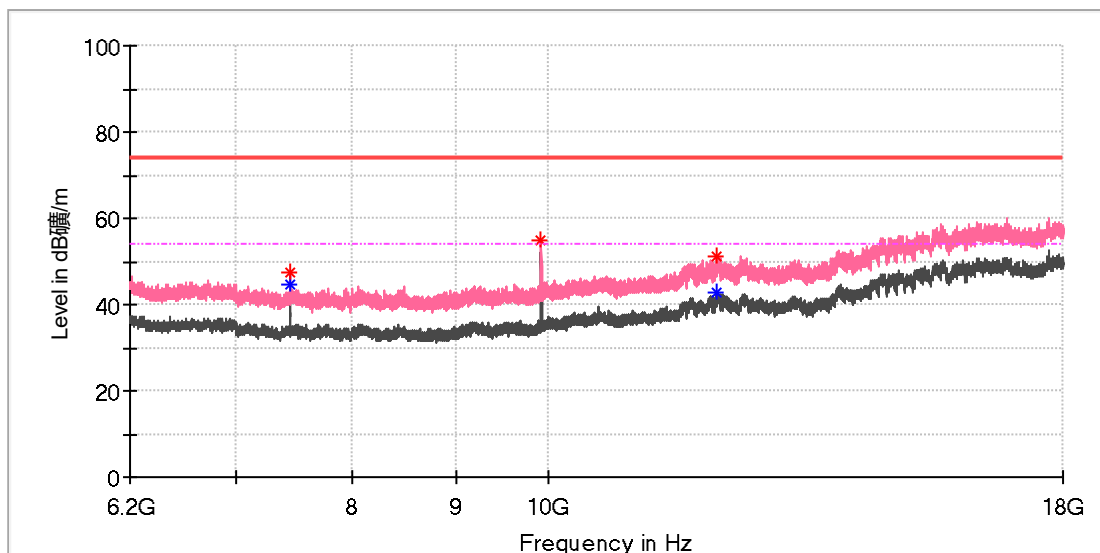
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.983333	55.53	---	74.00	18.47	150.0	H	8.0	8.4
9919.458333	57.46	---	68.20	10.74	150.0	H	17.0	10.8
12159.000000	51.74	---	74.00	22.26	150.0	H	280.0	16.3
12159.000000	---	43.02	54.00	10.98	150.0	H	280.0	16.3

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7438.588333	---	51.97	54.00	2.03	150.0	H	8.0	8.4

EUT Information

EUT Name: Humanoid Robot
Model: H2 EDU
Test Mode: 2.4G SRD_High channel
Order No/Sample No: A004293048-004
Test Voltage: Battery
Remark: Temp 23.8°C Humi:57%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	47.58	---	74.00	26.42	150.0	V	205.0	8.4
7439.491667	---	44.64	54.00	9.36	150.0	V	205.0	8.4
9919.950000	54.70	---	68.20	13.50	150.0	V	281.0	10.8
12124.091667	51.34	---	74.00	22.66	150.0	V	352.0	16.1
12131.466667	---	42.60	54.00	11.40	150.0	V	196.0	16.2

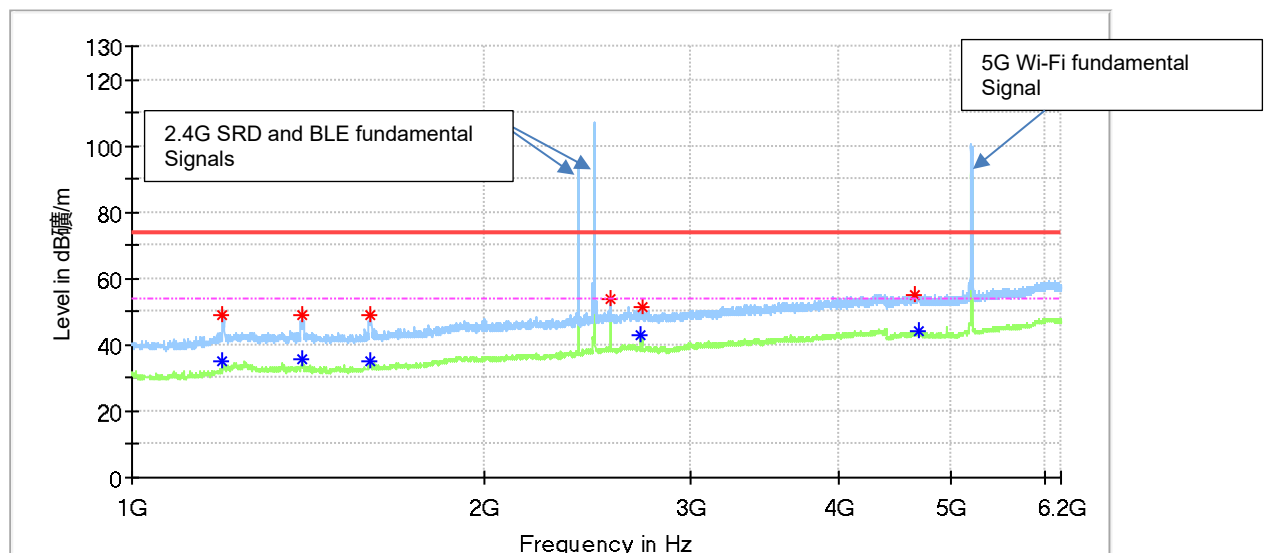
Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

Note: The highest waveform in the figure is Fundamental.

EUT Information

EUT Name: Humanoid Robot
Model: H2 EDU
Test Mode: 2.4G SRD+BLE +Wi-Fi 5G
Order No/Sample No: A004293048-004
Test Voltage: Battery
Remark: Temp 23.8°C Humi:57%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1195.000000	---	35.09	54.00	18.91	150.0	H	258.0	1.7
1195.000000	48.78	---	74.00	25.22	150.0	H	258.0	1.7
1395.000000	---	35.60	54.00	18.40	150.0	H	286.0	3.0
1395.000000	49.07	---	74.00	24.93	150.0	H	286.0	3.0
1598.500000	---	34.98	54.00	19.02	150.0	H	301.0	3.8
1599.500000	48.79	---	74.00	25.21	150.0	H	304.0	3.8
2558.500000	54.07	---	68.20	14.13	150.0	H	293.0	9.5
2714.000000	---	42.74	54.00	11.26	150.0	H	202.0	9.9
2722.000000	51.13	---	74.00	22.87	150.0	H	202.0	9.9
4657.000000	54.76	---	74.00	19.24	150.0	H	287.0	13.5
4692.000000	---	43.87	54.00	10.13	150.0	H	247.0	13.5

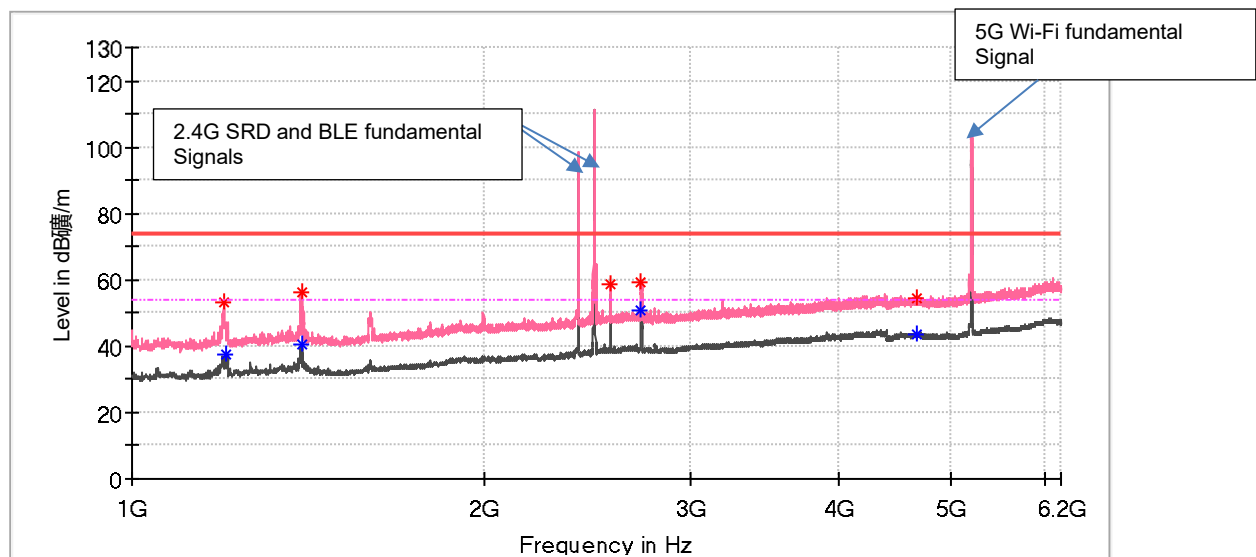
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---	---	---	---

EUT Information

EUT Name: Humanoid Robot

Model:	H2 EDU
Test Mode:	2.4G SRD+BT+WIFI 5G+Sub-1G
Order No/Sample No:	A004293048-004
Test Voltage:	Battery
Remark:	Temp 23.8°C Humi:57%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB/m)
1199.500000	52.96	---	74.00	21.04	150.0	V	276.0	1.8
1201.500000	---	37.49	54.00	16.51	150.0	V	276.0	1.8
1394.500000	56.06	---	74.00	17.94	150.0	V	273.0	3.0
1396.500000	---	40.69	54.00	13.31	150.0	V	267.0	3.0
2558.000000	58.80	---	68.20	9.40	150.0	V	85.0	9.5
2715.500000	59.01	---	74.00	14.99	150.0	V	91.0	9.9
2716.000000	---	50.58	54.00	3.42	150.0	V	91.0	9.9
4663.500000	---	43.71	54.00	10.29	150.0	V	24.0	13.5
4675.000000	54.44	---	74.00	19.56	150.0	V	147.0	13.5

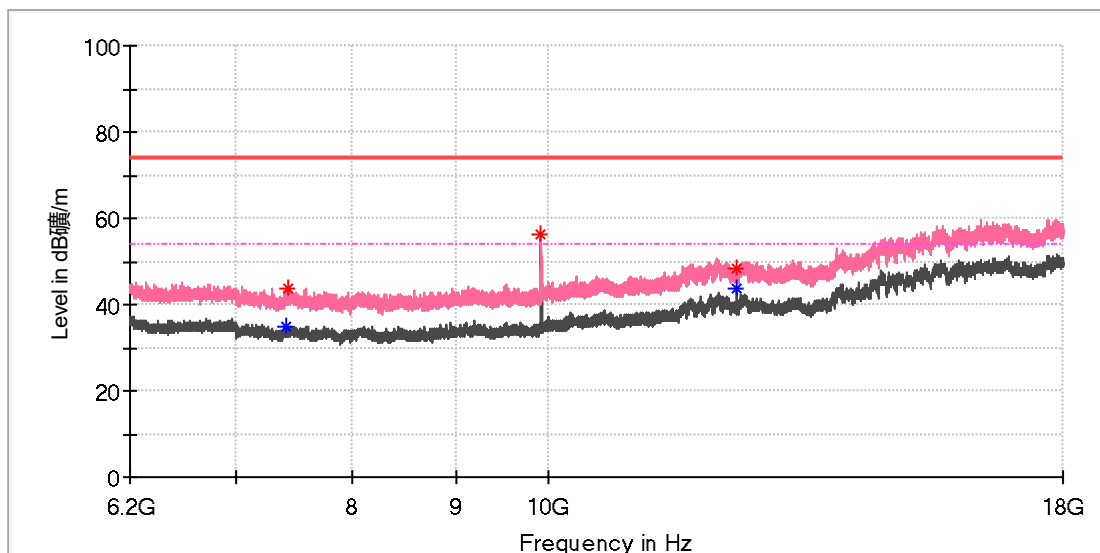
Final Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
----	----	----	----	----	----		----	----

EUT Information

EUT Name: Humanoid Robot
Model: H2 EDU
Test Mode: 2.4G SRD+BLE +Wi-Fi 5G
Order No/Sample No: A004293048-004
Test Voltage: Battery
Remark: Temp 23.8°C Humi:57%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7409.500000	---	35.04	54.00	18.96	150.0	V	100.0	8.3
7424.741667	43.84	---	74.00	30.16	150.0	V	135.0	8.4
9919.458333	56.26	---	68.20	11.94	150.0	V	30.0	10.8
12399.916667	48.26	---	74.00	25.74	150.0	V	242.0	15.4
12399.916667	---	43.51	54.00	10.49	150.0	V	242.0	15.4

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
---	---	---	---	---	---		---	---

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.5	122.5	122.5	0	100	0	0	0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	118.0	116.0	118.0	0.0	10.0	0	0	0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
93.7	122.0	118.0	120.0	2.0	30.0	V	135	0.0

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
100.0	100.0	100.0	100.0	100.0	100.0		100.0	100.0