AUDIX Technology Corp.
No. 53-11, Dingfu, Linkou, Dist.,
New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

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AUDIX Technology Corp.
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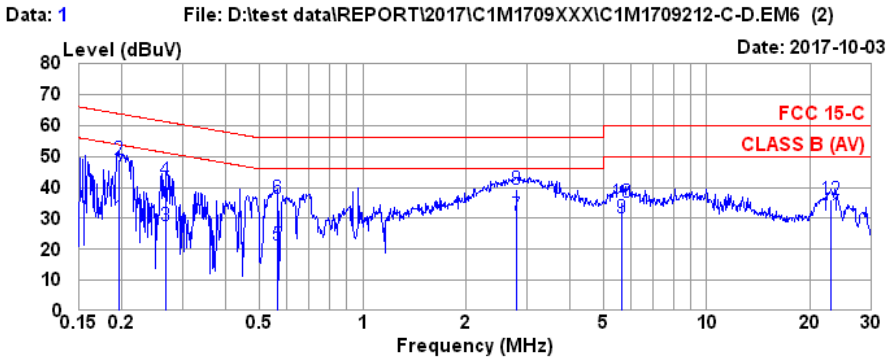
Fax: +886 2 26099303

A.1 CONDUCTED EMISSION

Test Date	2017/10/03	Temp./Hum.	26℃/54%
Test Voltage	AC 120V, 60Hz		



Site no. : No.7 Shielded Room
Data no. : 1
Condition : ESH2-Z5 366(ADAPTER)
Phase : LINE
Limit : FCC 15-C
Env. / Ins. : 26*C / 54% ESCI(1276)
Engineer : Nick Du
EUT : M-CC2BRS
Power Rating : 120Vac/60Hz
Test Mode : Operaing

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.195	0.16	0.04	9.86	20.09	30.15	53.80	23.65	Average
2	0.195	0.16	0.04	9.86	38.94	49.00	63.80	14.80	QP
3	0.269	0.17	0.04	9.86	17.41	27.48	51.16	23.68	Average
4	0.269	0.17	0.04	9.86	32.41	42.48	61.16	18.68	QP
5	0.567	0.19	0.04	9.86	11.47	21.56	46.00	24.44	Average
6	0.567	0.19	0.04	9.86	26.40	36.49	56.00	19.51	QP
7	2.809	0.29	0.14	9.87	20.91	31.21	46.00	14.79	Average
8	2.809	0.29	0.14	9.87	29.00	39.30	56.00	16.70	QP
9	5.653	0.42	0.18	9.87	19.70	30.17	50.00	19.83	Average
10	5.653	0.42	0.18	9.87	24.72	35.19	60.00	24.81	QP
11	22.896	1.18	0.32	9.96	19.72	31.18	50.00	18.82	Average
12	22.896	1.18	0.32	9.96	24.67	36.13	60.00	23.87	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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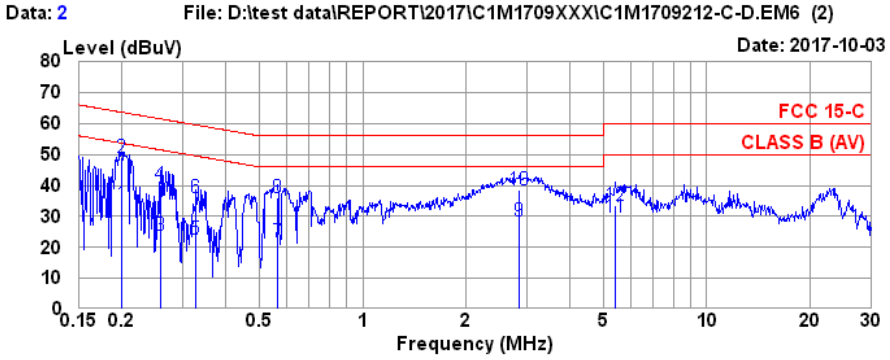
Test Date	2017/10/03	Temp./Hum.	26℃/54%
Test Voltage	AC 120V, 60Hz		



Site no. : No.7 Shielded Room
Data no. : 2
Condition : ESH2-Z5 366(ADAPTER)
Phase : NEUTRAL
Limit : FCC 15-C
Env. / Ins. : 26*C / 54% ESCI(1276)
Engineer : Nick Du
EUT : M-CC2BRS
Power Rating : 120Vac/60Hz
Test Mode : Operaing

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.199	0.17	0.04	9.86	24.00	34.07	53.67	19.60	Average
2	0.199	0.17	0.04	9.86	38.82	48.89	63.67	14.78	QP
3	0.259	0.18	0.04	9.86	13.88	23.96	51.47	27.51	Average
4	0.259	0.18	0.04	9.86	30.15	40.23	61.47	21.24	QP
5	0.329	0.18	0.04	9.86	12.40	22.48	49.49	27.01	Average
6	0.329	0.18	0.04	9.86	25.76	35.84	59.49	23.65	QP
7	0.567	0.20	0.04	9.86	11.83	21.93	46.00	24.07	Average
8	0.567	0.20	0.04	9.86	25.92	36.02	56.00	19.98	QP
9	2.854	0.29	0.14	9.87	18.35	28.65	46.00	17.35	Average
10	2.854	0.29	0.14	9.87	28.44	38.74	56.00	17.26	QP
11	5.419	0.39	0.18	9.87	19.29	29.73	50.00	20.27	Average
12	5.419	0.39	0.18	9.87	23.27	33.71	60.00	26.29	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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A.2 RADIATED EMISSION

Test Date	2017/10/03	Temp./Hum.	23℃/53%
Test Voltage	AC 120V, 60Hz		

A.2.1 Emissions within Restricted Frequency Bands

A.2.1.1 Frequency 9kHz~30MHz

The emissions (9kHz~30MHz) not reported for there is no emission be found.

A.2.1.2 Frequency Below 1 GHz

Mode	GFSK	Frequency	TX 2402MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
216.24	16.92	3.50	14.16	34.58	46.00	11.42	Peak
365.62	21.25	5.16	14.21	40.62	46.00	5.38	Peak
577.08	24.32	6.68	1.07	32.07	46.00	13.93	Peak
971.87	27.56	8.65	2.67	38.88	54.00	15.12	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
270.56	19.30	4.02	5.41	28.73	46.00	17.27	Peak
455.83	22.70	6.07	2.88	31.65	46.00	14.35	Peak
672.14	24.81	7.00	5.26	37.07	46.00	8.93	Peak
965.08	27.49	8.61	4.33	40.43	54.00	13.57	Peak

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Mode	GFSK	Frequency	TX 2441MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
144.46	17.47	2.77	6.85	27.09	43.50	16.41	Peak
332.64	20.40	4.75	11.53	36.68	46.00	9.32	Peak
527.61	23.60	6.52	2.63	32.75	46.00	13.25	Peak
954.41	27.39	8.54	2.99	38.92	46.00	7.08	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
143.49	17.55	2.76	12.57	32.88	43.50	10.62	Peak
216.24	16.92	3.50	7.70	28.12	46.00	17.88	Peak
503.36	23.20	6.43	5.64	35.27	46.00	10.73	Peak
792.42	25.86	7.57	3.36	36.79	46.00	9.21	Peak

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New Taipei City244, Taiwan
Tel: +886 2 26099301
Fax: +886 2 26099303

Mode	GFSK	Frequency	TX 2480MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
326.82	20.25	4.68	7.43	32.36	46.00	13.64	Peak
468.44	22.83	6.17	5.64	34.64	46.00	11.36	Peak
672.14	24.81	7.00	1.64	33.45	46.00	12.55	Peak
924.34	27.08	8.35	1.66	37.09	46.00	8.91	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
95.96	16.75	2.22	11.37	30.34	43.50	13.16	Peak
216.24	16.92	3.50	13.79	34.21	46.00	11.79	Peak
436.43	22.49	5.90	8.26	36.65	46.00	9.35	Peak
835.10	26.25	7.82	7.28	41.35	46.00	4.65	Peak

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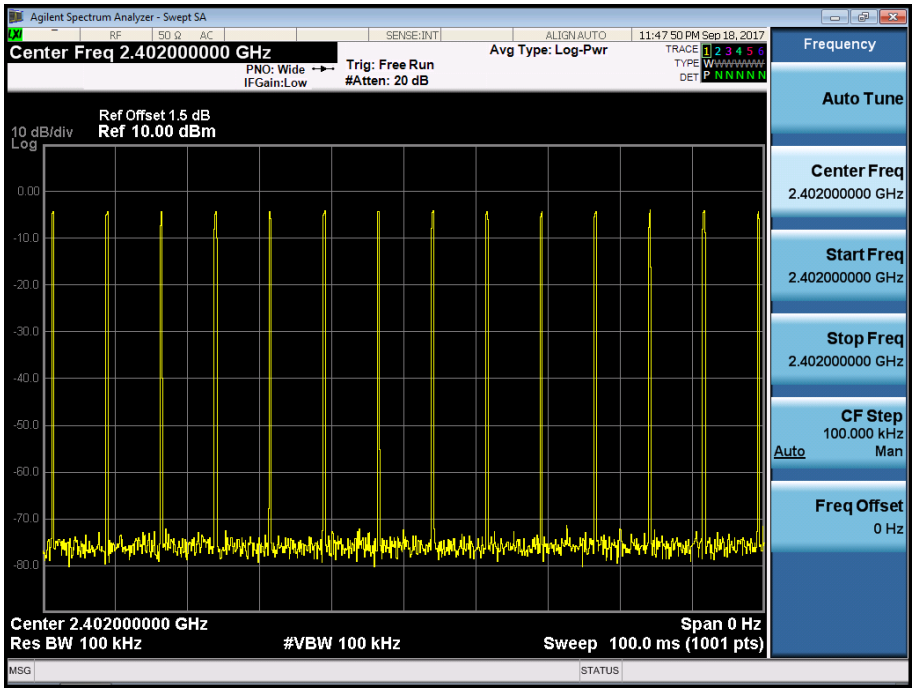
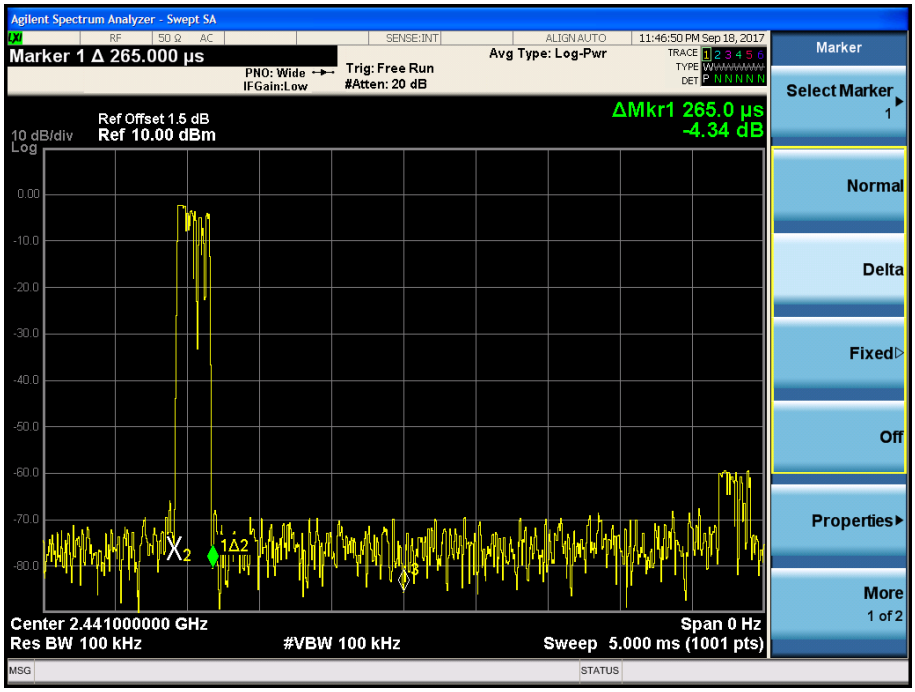
The duty cycle factor for calculate average level is -28.613dB, and average limit is 20dB below peak limit, so if peak measured level comply with average limit, the average level was deemed to comply with average limit.

Duty cycle factor = 20log(Dwell time/100ms)= -28.613dB





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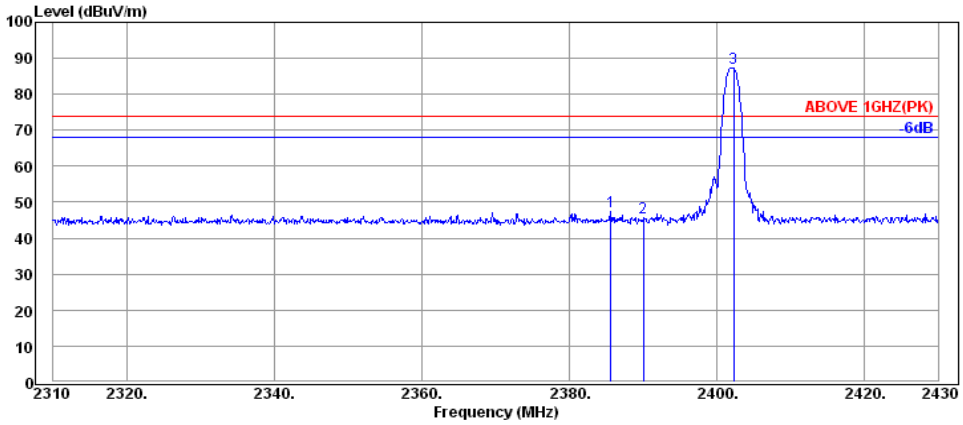
A.2.1.3 Frequency Above 1 GHz to 10th harmonics

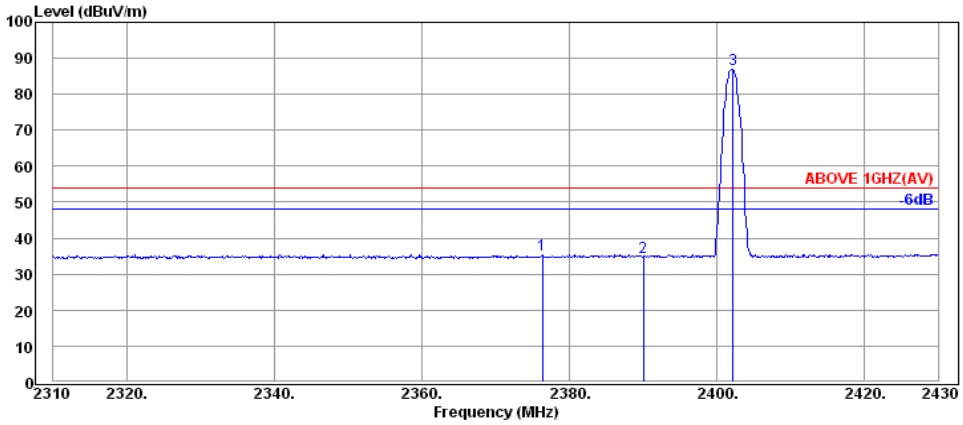
Band Edge:

Mode	GFSK	Frequency	TX 2402MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2385.60	32.16	6.57	8.75	47.48	74.00	26.52	Peak
2390.04	32.16	6.57	6.89	45.62	74.00	28.38	Peak
2402.28	32.16	6.57	48.57	87.30	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2376.36	32.13	6.55	-3.17	35.51	54.00	18.49	Average
2390.04	32.16	6.57	-3.94	34.79	54.00	19.21	Average
2402.16	32.16	6.57	48.14	86.87	---	---	Average

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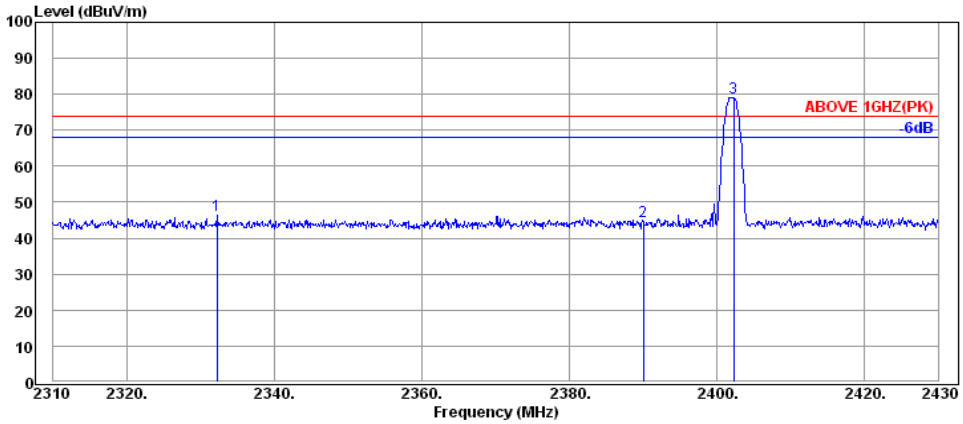
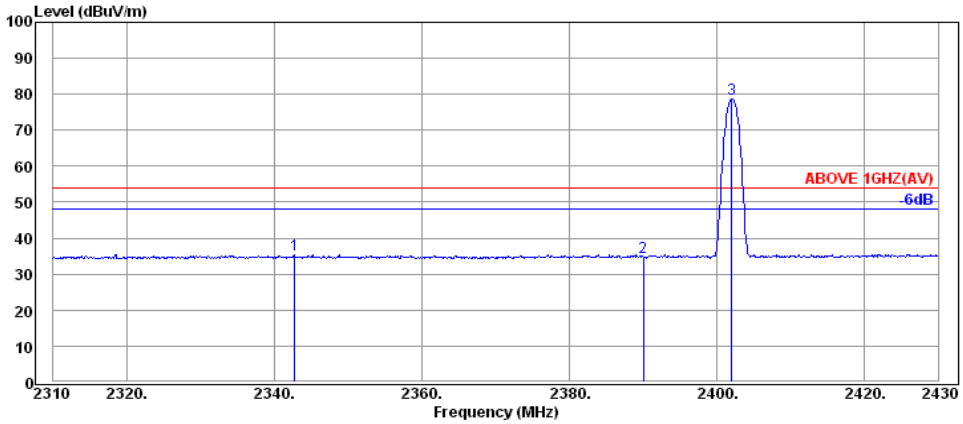
Mode	GFSK	Frequency	TX 2402MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2332.20	32.06	6.49	7.91	46.46	74.00	27.54	Peak
2390.04	32.16	6.57	6.00	44.73	74.00	29.27	Peak
2402.28	32.16	6.57	40.48	79.21	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2342.76	32.08	6.51	-3.17	35.42	54.00	18.58	Average
2390.04	32.16	6.57	-4.02	34.71	54.00	19.29	Average
2402.04	32.16	6.57	39.97	78.70	---	---	Average

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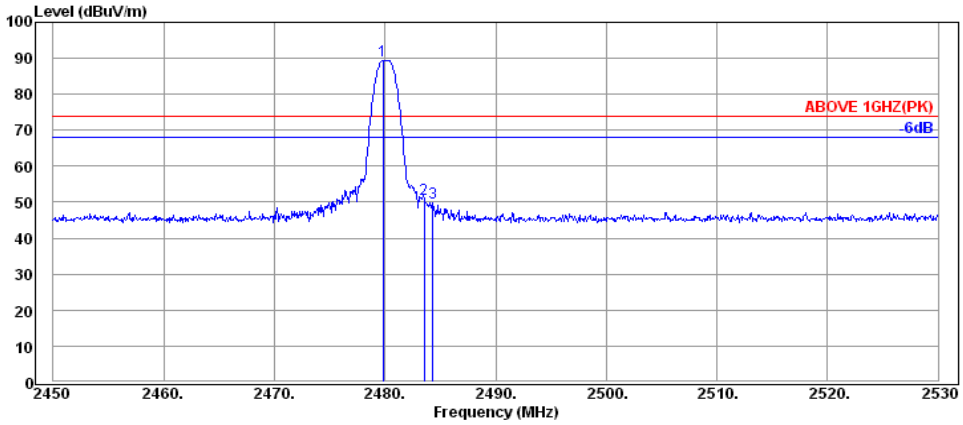
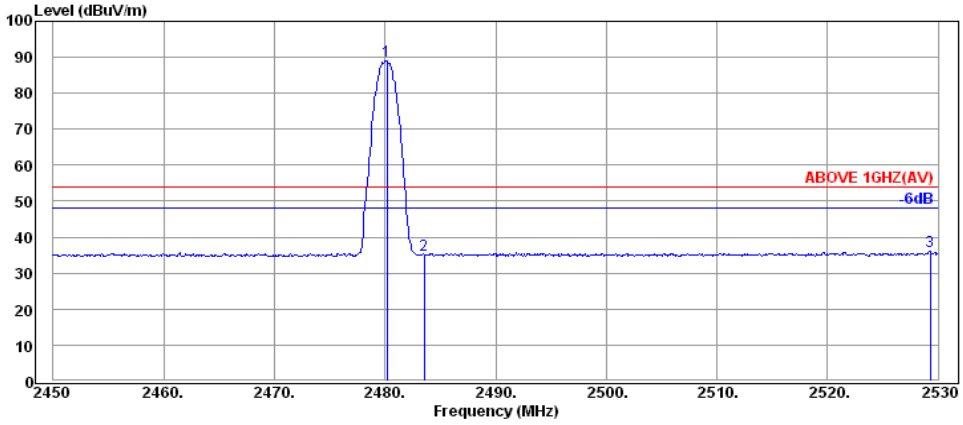
Fax: +886 2 26099303

Mode	GFSK	Frequency	TX 2480MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2479.84	32.28	6.67	50.55	89.50	---	---	Peak
2483.52	32.28	6.67	12.05	51.00	74.00	23.00	Peak
2484.32	32.28	6.67	11.00	49.95	74.00	24.05	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2480.16	32.28	6.67	50.14	89.09	---	---	Average
2483.52	32.28	6.67	-3.76	35.19	54.00	18.81	Average
2529.28	32.34	6.74	-2.92	36.16	54.00	17.84	Average

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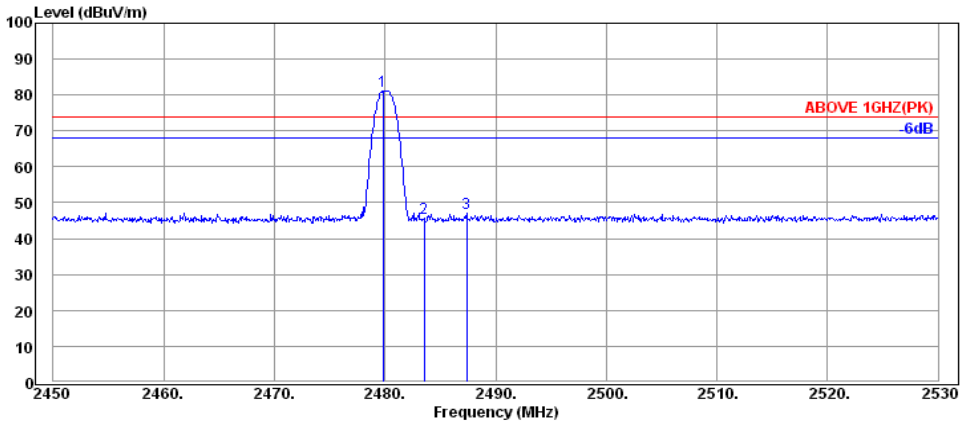
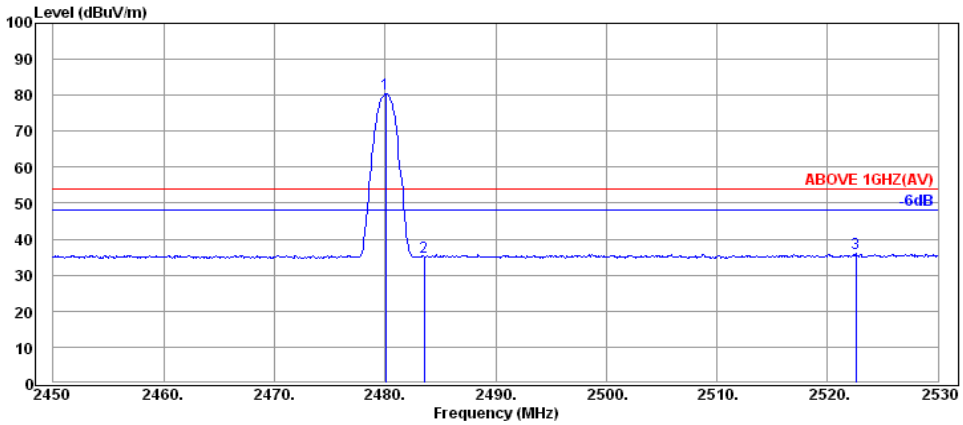
Fax: +886 2 26099303

Mode	GFSK	Frequency	TX 2480MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2479.84	32.28	6.67	42.31	81.26	---	---	Peak
2483.52	32.28	6.67	6.70	45.65	74.00	28.35	Peak
2487.36	32.28	6.67	8.28	47.23	74.00	26.77	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2480.08	32.28	6.67	41.43	80.38	54.00	---	Average
2483.52	32.28	6.67	-3.80	35.15	54.00	18.85	Average
2522.56	32.34	6.74	-3.14	35.94	54.00	18.06	Average

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A.2.2 Emissions outside the frequency band:

The emissions (up to 25GHz) not reported for there is no emission be found.

Mode	GFSK	Frequency	TX 2402MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4805.00	34.22	9.54	-1.11	42.65	54.00	11.35	Peak
7205.00	35.80	11.80	-1.43	46.17	54.00	7.83	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4805.00	34.22	9.54	-0.60	43.16	54.00	10.84	Peak
7205.00	35.80	11.80	-0.68	46.92	54.00	7.08	Peak

Mode	GFSK	Frequency	TX 2441MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.00	34.25	9.56	0.08	43.89	54.00	10.11	Peak
7325.00	35.80	11.92	-1.45	46.27	54.00	7.73	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.00	34.25	9.56	-0.60	43.21	54.00	10.79	Peak
7325.00	35.80	11.92	-0.36	47.36	54.00	6.64	Peak

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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	9.60	-1.20	42.69	54.00	11.31	Peak
7440.00	35.80	12.04	-0.68	47.16	54.00	6.84	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	9.60	-0.96	42.93	54.00	11.07	Peak
7440.00	35.80	12.04	0.20	48.04	54.00	5.96	Peak

A.2.3 Emissions in Non-restricted Frequency Bands:

All emission levels below the 15.209 general radiated emissions limits is not required.

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A.3 20dB BANDWIDTH

Test Date	2017/09/18	Temp./Hum.	23.1℃/53.2%
Test Voltage	AC 120V, 60Hz		

A.3.1 6dB Bandwidth Result

Mode	Centre Frequency (MHz)	20dB Bandwidth (MHz)	2/3 (20dB Bandwidth)
GFSK	2402	0.9560	0.6373
	2441	0.9624	0.6416
	2480	0.9532	0.6355

Remark: The maximum two-thirds of the 20dB bandwidth is the limit for carrier frequency separation presented.

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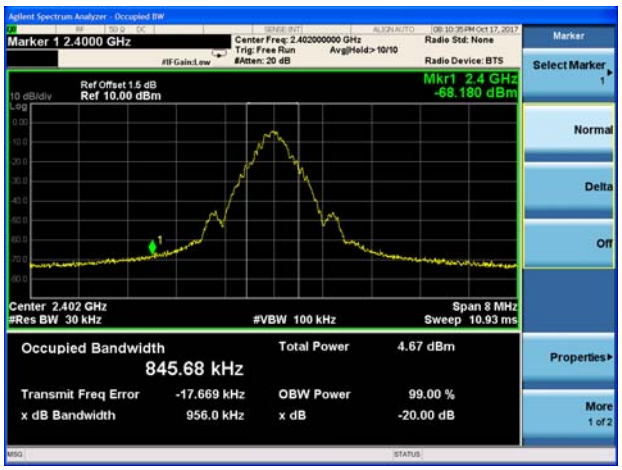
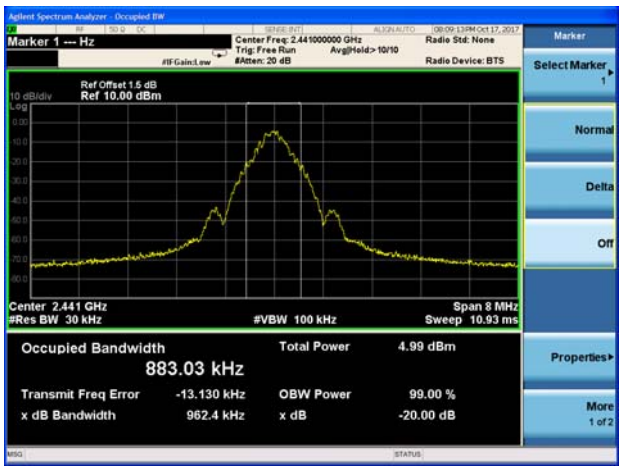
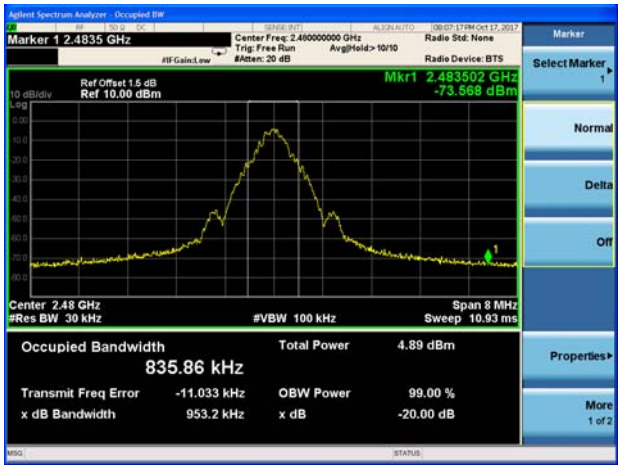
A.3.2 Measurement Plots

Mode: GFSK	
	
	

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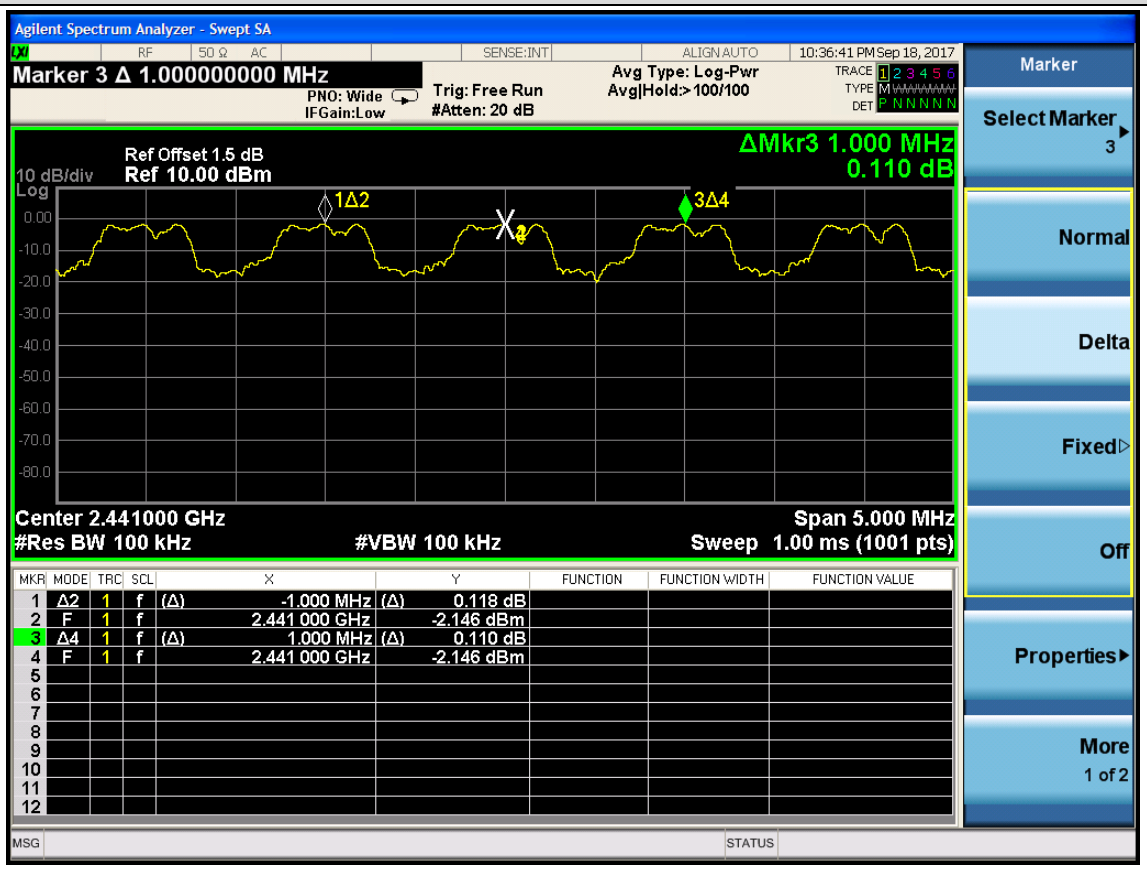
Fax: +886 2 26099303

A.4 CARRIER FREQUENCY SEPARATION

Test Date	2017/09/18	Temp./Hum.	22.1℃/51.3%
Cable Loss	1.5dB	Test Voltage	AC 120V, 60Hz

GFSK



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A.5 TIME OF OCCUPANCY

Test Date	2017/09/18	Temp./Hum.	22℃/52.2%
Cable Loss	1.5dB	Test Voltage	AC 120V, 60Hz

A.5.1 Time of Occupancy

Mode	Centre Frequency (MHz)	Mode	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
GFSK	2441	DH1	0.252	81.844	<400
		DH3	0.255	47.248	
		DH5	0.290	51.571	

Observation Period: 79 channels/5 seconds *0.4 seconds = 6.32 seconds

Test Mode: GFSK

Centre Frequency: 2441MHz

DH1: For each second of 46 channel appearance, the longest time of occupancy for each of 6.32 seconds is:

50 channels*6.32 seconds* **0.259** ms= **81.844** ms

DH3: For each second of 23 channel appearance, the longest time of occupancy for each of 6.32 seconds is:

28 channels*6.32 seconds* **0.267** ms= **47.248** ms

DH5: For each second of 16 channel appearance, the longest time of occupancy for each of 6.32 seconds is:

24 channels*6.32 seconds* **0.340** ms= **51.571** ms

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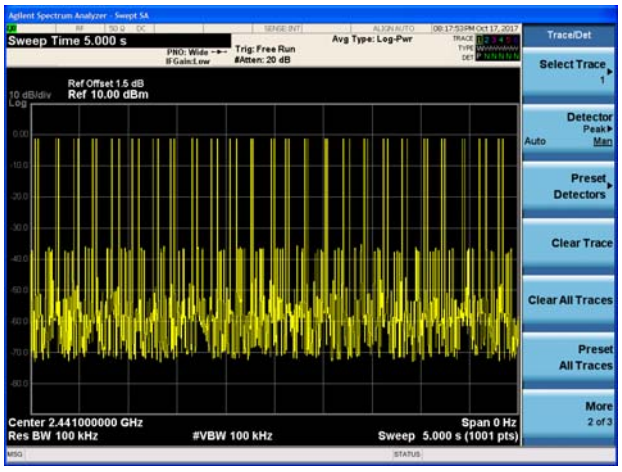
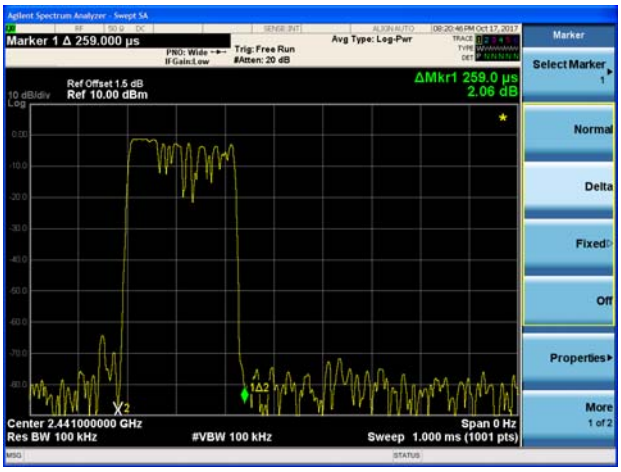
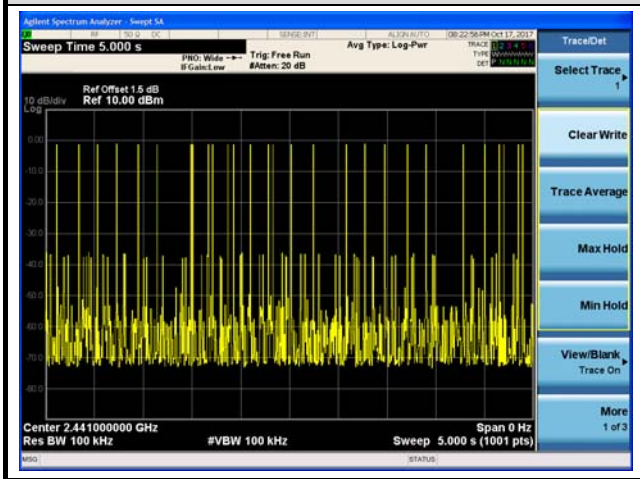
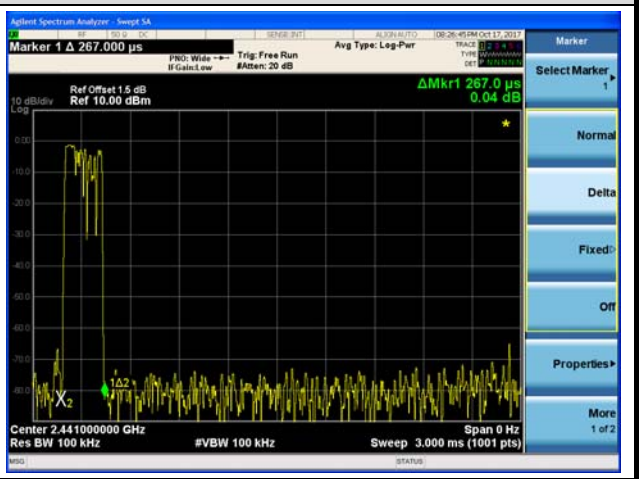
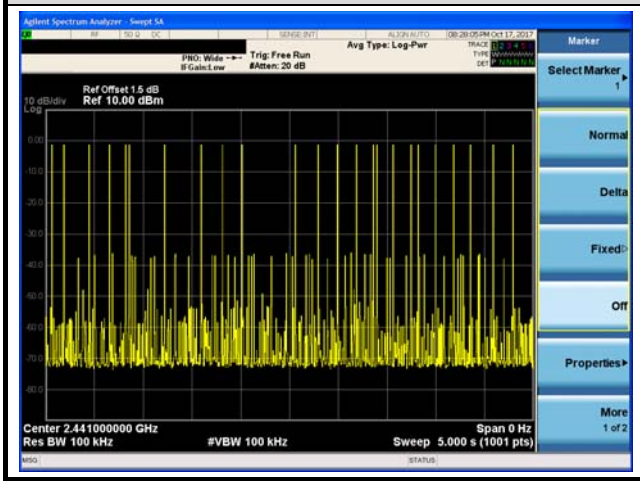
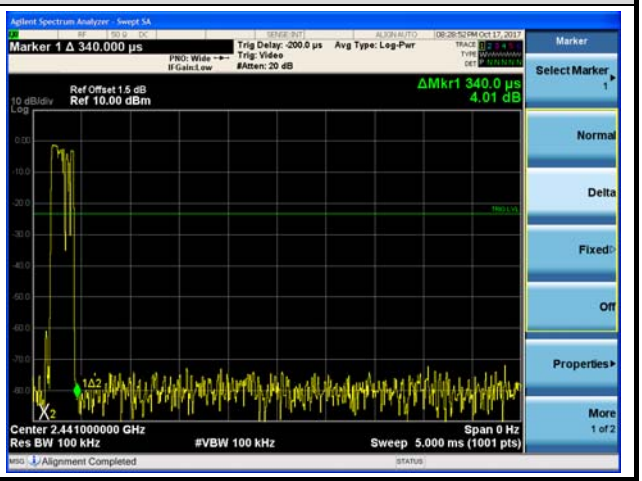
- Measurement Plots

Mode: GFSK	
Centre Frequency: 2441MHz	
DH1	
	
DH3	
	
DH5	
	

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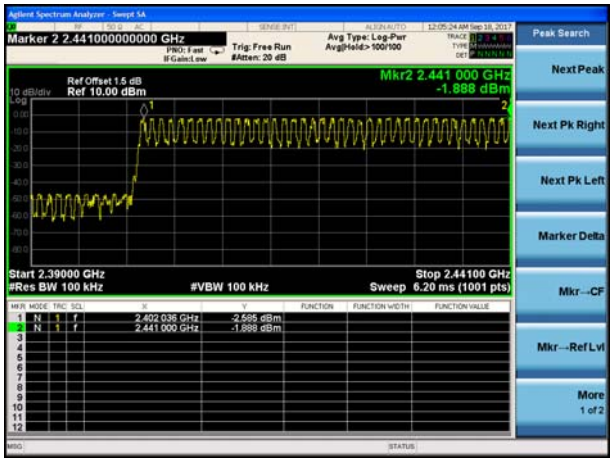
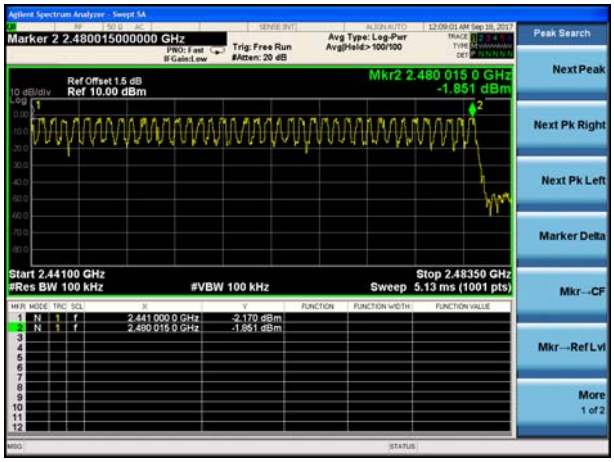
A.6 NUMBER OF HOPPING CHANNELS

Test Date	2017/09/18	Temp./Hum.	22.3℃/51.1%
Cable Loss	1.5dB	Test Voltage	AC 120V, 60Hz

Mode: GFSK	
	
The number hopping channel is 79.	

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A.7 MAXIMUM PEAK OUTPUT POWER

Test Date	2017/09/13	Temp./Hum.	23.1℃/53.2%
Cable Loss	1.5dB	Test Voltage	AC 120V, 60Hz

A.7.1 Maximum Peak Output Power

Modulation	Centre Frequency (MHz)	Maximum Peak Output Power		Limit
		dBm	W	
GFSK	2402	-1.864	0.000651	21dBm (0.125W)
	2441	-1.758	0.000667	
	2480	-1.885	0.000648	

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A.7.2 Measurement Plots

Mode: GFSK	
	
	

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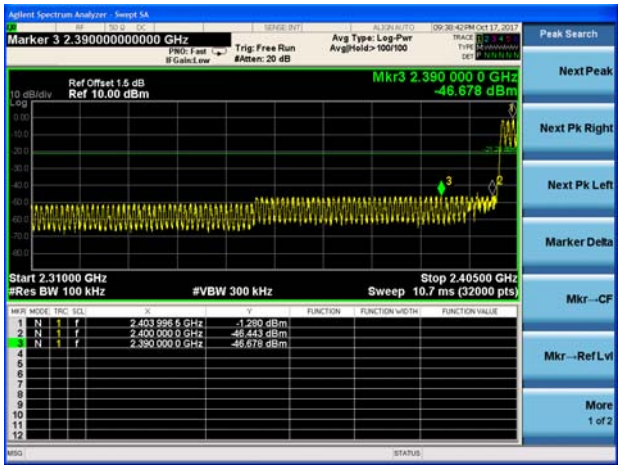
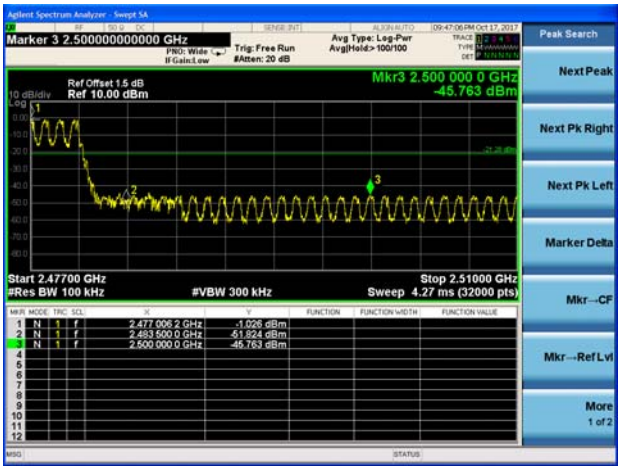
Fax: +886 2 26099303

A.8 EMISSION LIMITATIONS MEASUREMENT

Test Date	2017/09/18	Temp./Hum.	22.3℃/51.1%
Cable Loss	1.5dB	Test Voltage	AC 120V, 60Hz

A.8.1 Band Edge

Mode: GFSK	
Hopping Mode	
	

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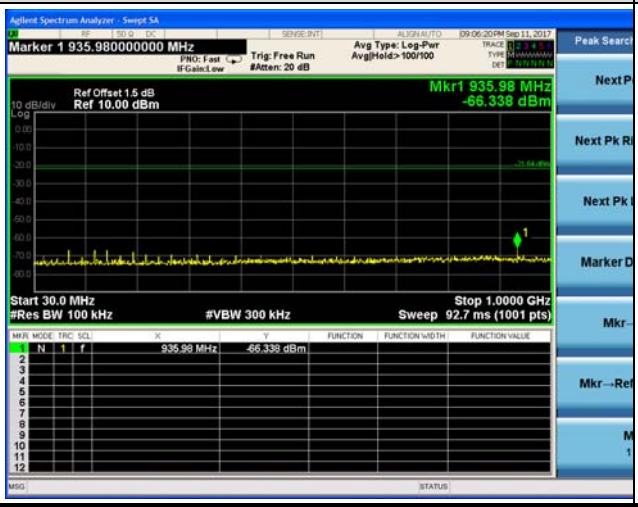
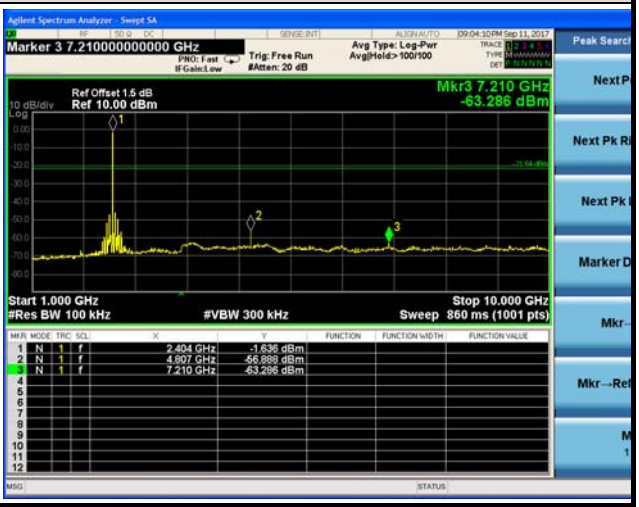
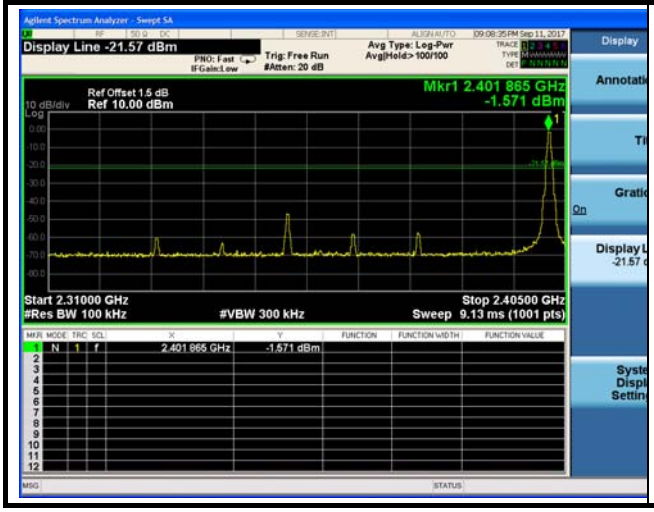
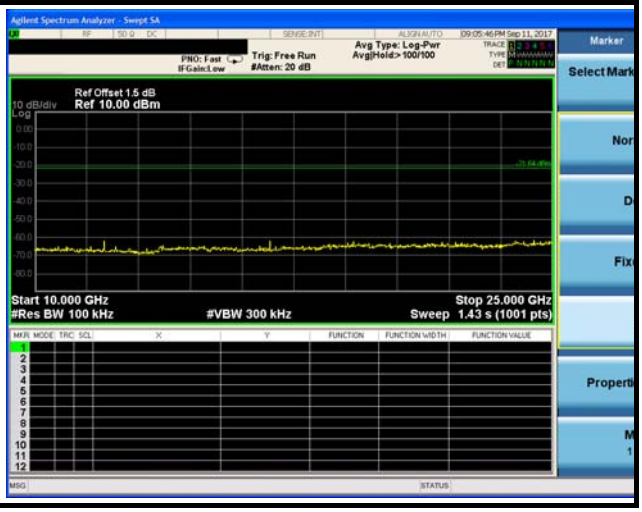
A.8.2 Spurious Emission

Test Date	2017/09/11	Temp./Hum.	24℃/56%
Mode	GFSK	Frequency	2402MHz
Cable Loss	1.5dB	Test Voltage	AC 120V, 60Hz

30MHz – 1GHz	1GHz – 10GHz
	
2.3GHz – 2.4GHz	**10GHz – 25GHz**
	

Note: All results have been included cable loss.

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New Taipei City244, Taiwan
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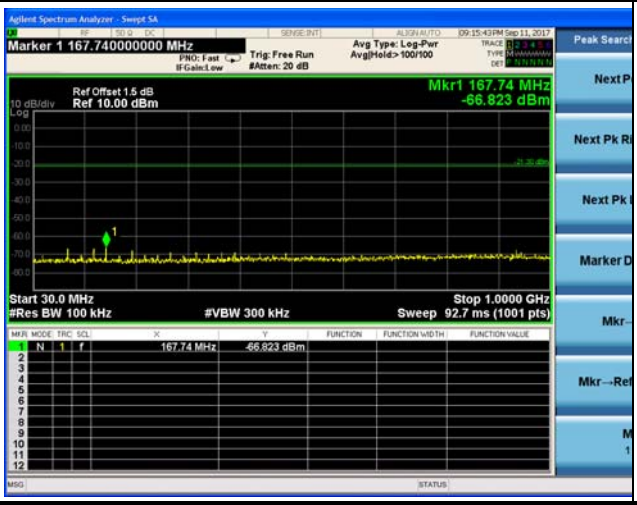
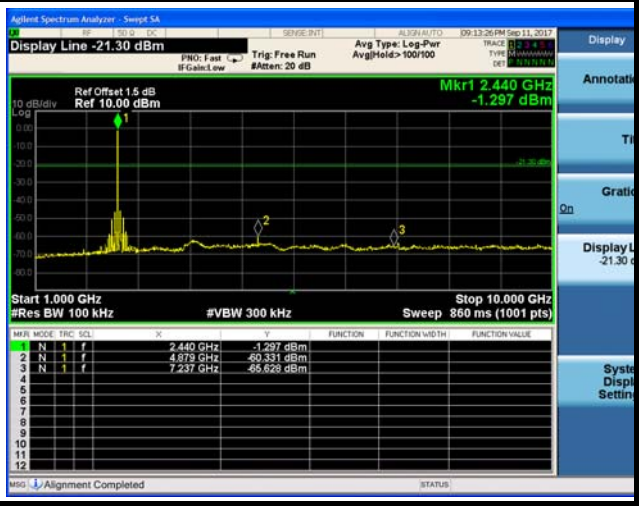
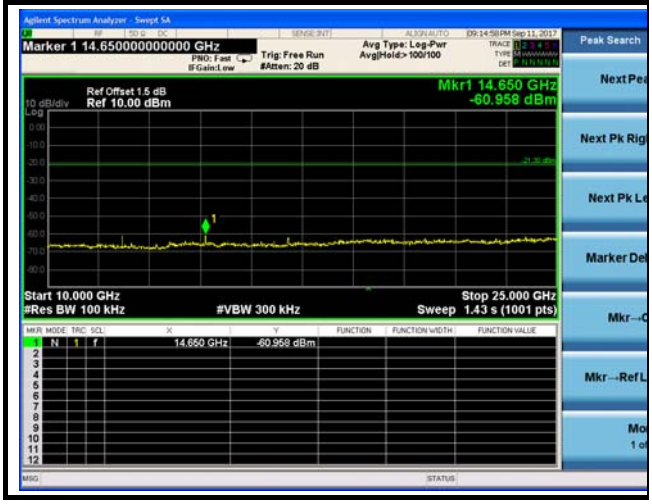
Fax: +886 2 26099303

Test Date	2017/09/11	Temp./Hum.	24℃/56%
Mode	GFSK	Frequency	2441MHz
Cable Loss	1.5dB	Test Voltage	AC 120V, 60Hz

30MHz – 1GHz	1GHz – 10GHz
	
10GHz – 25GHz	
	

Note: All results have been included cable loss.

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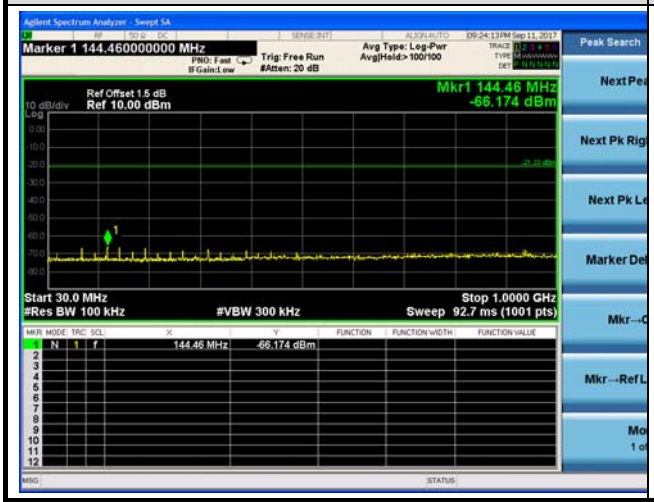
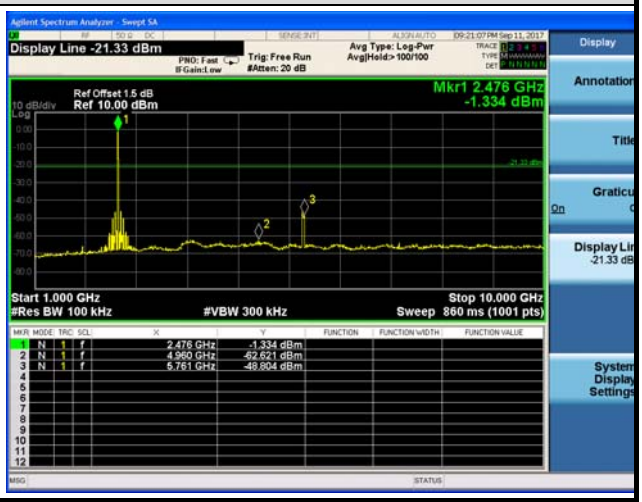
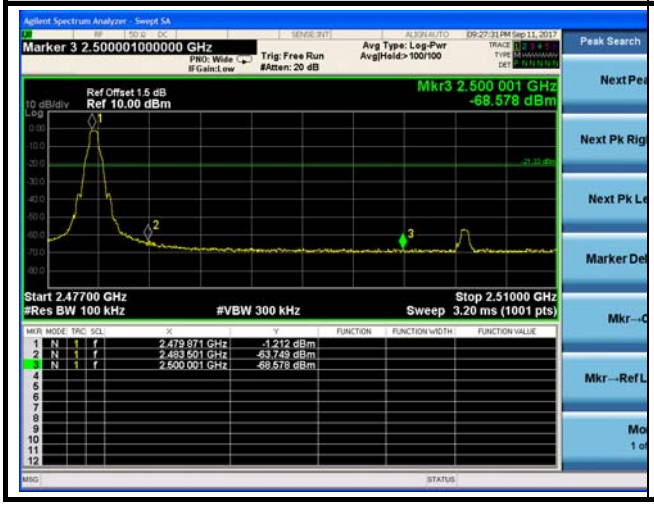
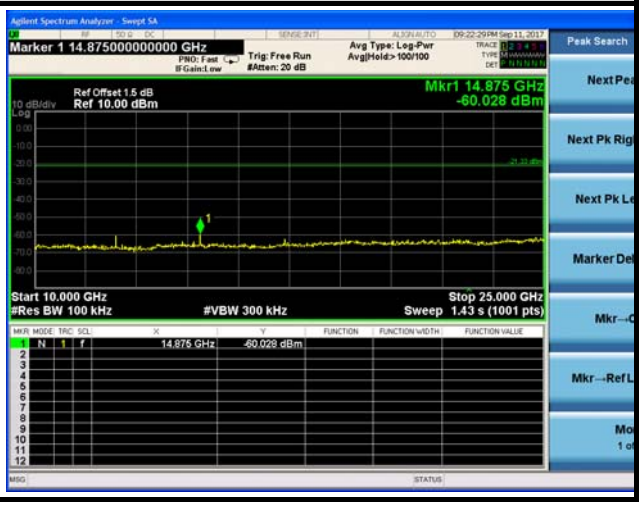
Test Date	2017/09/11	Temp./Hum.	24℃/56%
Mode	GFSK	Frequency	2480MHz
Cable Loss	1.5dB	Test Voltage	AC 120V, 60Hz

30MHz – 1GHz	1GHz – 10GHz
	
2.4GHz – 2.5GHz	**10GHz – 25GHz**
	

Note: All results have been included cable loss.