



Spot Check Evaluation

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REVISION HISTORY

VERSION	DESCRIPTION	ISSUED DATE
Rev. 01	Initial issue of report	Sep. 19, 2017



1. Introduction Section

The original model (FCC ID: QISLYA-LX9) and the variant model (FCC ID: QISLYA-L0C) has identical PCB layout, antenna, for GSM/WCDMA/LTE/Bluetooth/Wi-Fi. Based on their similarity, the FCC Part 22, 27, Part 90s, (equipment class: PCE) and FCC Part 15E (equipment class: NII) test data issued test data of QISLYA-L0C references the test data of QISLYA-LX9

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID (FCC ID: QISLYA-L0C).



2. Difference Section

The original model (FCC ID: QISLYA-LX9) and the variant model (FCC ID: QISLYA-L0C) has identical PCB layout, antenna, for GSM/WCDMA/LTE/Bluetooth/Wi-Fi. The details of similarity and difference can be found in the Operating Description.

Cellular transmitter RF components are different in QISLYA-L0C, to support capability for different cellular bands.

The product specification is outlined in the following table:

FCC ID		QISLYA-LX9	QISLYA-L0C
Wireless Tech	Mode	Frequency (MHz)	
GSM	GSM	850/1900	850/1900
UMTS	AMR/RCM12.2Kbps HSDPA/HSUPA/HSPA+ /DC-HSDPA	B5/B2/B4	B5/B2/B4
LTE (FDD)	QPSK 16QAM 64QAM	B2/4/5/7/12/17/38/40/41(2 545~2655MHz, support AXGP)	B2/4/5/7/12/17/38/40/4 1(2545~2655MHz, support AXGP)/B66
Wi-Fi	11b/11g/11n(HT20)/11n(HT40)	2412-2472	
	11a/11n(HT20)/11n(HT40)	5180-5240	
	/11ac(VHT20)/11ac(VHT40)	5260-5320	
	/11ac(VHT80)/11ac(VHT160)	5500-5720 5745-5825	
Bluetooth	EDR/LE	2402-2480 MHz	



3. Spot Check Verification Data Section

Summary of the spot check:

Test Item	Mode	QISLYA-LX988880204 Worst Result	QISLYA-L0C Worst Result	Difference (dB)
Peak Radiated Spurious Emission (Band Edge) (dBuV/m)	11ac VHT160, 5.5GHz	60.91	51.92	8.99
	Test date	2018/08/16~2018/08/28	2018/09/01	
Average Radiated Spurious Emission (Band Edge) (dBuV/m)	11ac VHT160, 5.5GHz	52.00	45.21	6.79
	Test date	2018/08/16~2018/08/28	2018/09/01	
Peak Radiated Spurious Emission (Harmonic) (dBuV/m)	11ac VHT160, 5.5GHz	47.50	47.03	0.47
	Test date	2018/08/16~2018/08/28	2018/09/01	
	Up Antenna			
	LTE B7 CA (FDD-QPSK)	-53.30	-53.59	0.29
	Down Antenna			
	LTE B38 CA (TDD-QPSK)	-53.38	-53.95	0.57
	LTE B41 CA (TDD-QPSK)	-53.17	-53.83	0.66
	Test date	2018/08/14~2018/09/08	2018/08/29~2018/09/02	

Conclusion:

Radiated spurious emission test against the variant model for non-cellular part based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

The unwanted, harmonics, radiated spurious emission is reported peak measurement only due to spurious lower than 20dB than the limit, 74dBuV/m, without further reporting the average measurement



4. Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	Reference FCC ID	Type Grant/Permissive Change	Reference Report Title	Reference Application	Reference Report Sections
15E	NII	Wi-Fi	5470-5725	QISLYA-LX9	Original Grant	FCC RF Test Report	QISLYA-L0C	Part 15E (FR880204A)
	NII	DFS	5470-5725	QISLYA-LX9	Original Grant	FCC RF Test Report	QISLYA-L0C	Part 15E (FZ880204)

Rule Part	Equipment Class	Wireless Technology	Band	Reference FCC ID	Type Grant/Permissive Change	Reference Report Title	Reference Application	Reference Report Sections
Part 22.27	PCE	LTE	LTE B7CA/26/38CA/41CA	QISLYA-LX9	Original Grant	FCC RF Test Report	QISLYA-L0C	Part 22.27 (FG880204A, FG880204C)



Appendix A. Spot Check Test Result

1.1 Radiated Spurious Emission

5.5GHz WLAN

Mode	Ch	Freq. (MHz)	Peak /Avg.	FCC ID QISLYA-LX9						FCC ID QISLYA-L0C					
				Band edge			Harmonic			Band edge			Harmonic		
				Frequency	Level	Limit	Frequency	Level	Limit	Frequency	Level	Limit	Frequency	Level	Limit
				(MHz)	(dBuV/m)	(dBuV/m)	(MHz)	(dBuV/m)	(dBuV/m)	(MHz)	(dBuV/m)	(dBuV/m)	(MHz)	(dBuV/m)	(dBuV/m)
802.11ac-VHT160	CH 114	5570	P	5441.44	60.91	74	16710	56.11	74	5748.2	51.92	74	16710	54.78	74
802.11ac-VHT160	CH 114	5570	A	5436.16	52	54	16710	47.5	54	5749.6	45.21	54	16710	47.03	54

WWAN

Mode	Band	Ch	FCC ID QISLYA-LX9			FCC ID QISLYA-L0C		
			Harmonic			Harmonic		
			Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)
Part 90s	26	Middle	3267	-64.63	-13	2457.75	-60.58	-13
Part 27	7 CA	Middle	10135	-53.57	-25	10131	-53.59	-25
Part 22	26	Middle	3299	-65.48	-13	3319	-65.76	-13
Part 27	38 CA	Low	7785	-53.38	-25	10340.00	-53.96	-25
Part 27	41 CA	Low	7669	-54.11	-25	10225	-53.83	-25


Band 3 - 5470~5725MHz
WIFI 802.11ac VHT160 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT160 CH 114 5570MHz		5382.4	50.38	-23.62	74	37.56	34.18	33.1	11.74	114	39	P	H
		5447.44	43.7	-10.3	54	30.7	34.26	33.1	11.84	114	39	A	H
		5570	84.59	-	-	71.25	34.41	33.1	12.03	114	39	P	H
		5570	79.08	-	-	65.74	34.41	33.1	12.03	114	39	A	H
		5726.5	51.9	-22.1	74	38.03	34.46	33.1	12.51	114	39	P	H
		5733.15	44.84	-9.16	54	30.97	34.46	33.1	12.51	114	39	A	H
		5461.12	51.36	-22.64	74	38.36	34.26	33.1	11.84	180	10	P	V
		5391.76	44.33	-9.67	54	31.47	34.18	33.1	11.78	180	10	A	V
		5570	89.79	-	-	76.45	34.41	33.1	12.03	180	10	P	V
		5570	83.52	-	-	70.18	34.41	33.1	12.03	180	10	A	V
		5748.2	51.92	-22.08	74	37.92	34.45	33.1	12.65	180	10	P	V
		5749.6	45.21	-8.79	54	31.21	34.45	33.1	12.65	180	10	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11ac VHT160 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT160 CH 114 5570MHz		11140	49.78	-24.22	74	53.4	37.48	55.9	14.8	170	200	P	H
		11140	41.46	-12.54	54	45.08	37.48	55.9	14.8	170	200	A	H
		16710	54.78	-19.22	74	49.65	43.82	56.16	17.47	156	350	P	H
		16710	47.03	-6.97	54	41.9	43.82	56.16	17.47	156	350	A	H
		11140	50.39	-23.61	74	54.01	37.48	55.9	14.8	170	200	P	V
		11140	41.55	-12.45	54	45.17	37.48	55.9	14.8	170	200	A	V
		16710	53.95	-20.05	74	48.82	43.82	56.16	17.47	156	350	P	V
		16710	46.71	-7.29	54	41.58	43.82	56.16	17.47	156	350	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical

A calculation example for radiated spurious emission is shown as below:

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

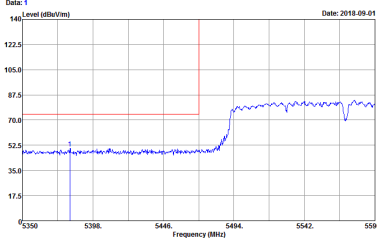
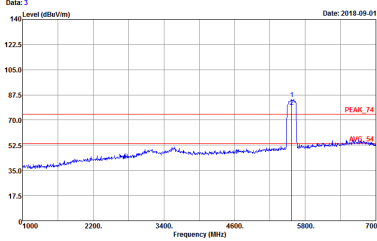
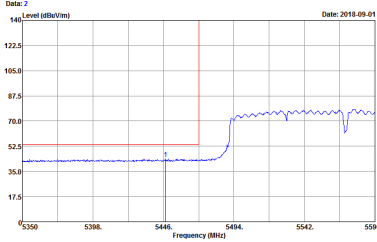
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



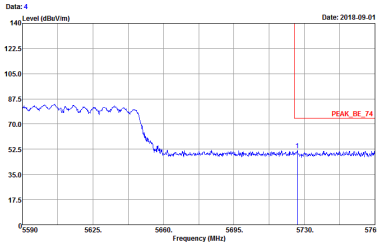
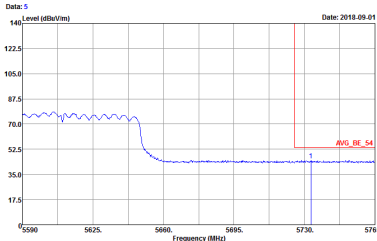
Band 3 - 5470~5725MHz

WIFI 802.11ac VHT160 (Band Edge @ 3m)

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT160 CH114 5570 - L	
1+2	Horizontal	Fundamental
Peak	Site : 03CH01-SZ Condition : PEAK_BE_74 3m HF_ ANT(1117), 115436 HORIZONTAL Project : B81704 Mode : Mode 31 MEI : 061430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0 	Site : 03CH01-SZ Condition : PEAK_74 3m HF_ ANT(1117), 115436 HORIZONTAL Project : B81704 Mode : Mode 31 MEI : 061430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0 
Avg.	Site : 03CH01-SZ Condition : AVG_BE_54 3m HF_ ANT(1117), 115436 HORIZONTAL Project : B81704 Mode : Mode 31 MEI : 061430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0 	Left blank



FCC Test Report

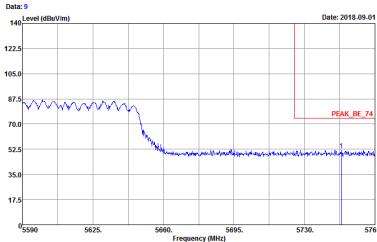
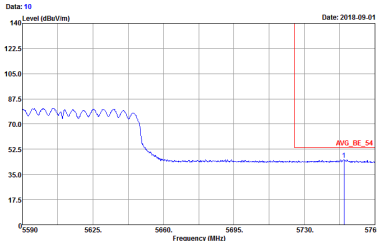
WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH102 5510MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH01-S2 Condition : PEAK_BE_74 3m HF_ANT(117)_119436 HORIZONTAL REW: 1000 000kHz VIEW: 3000 000kHz Project : B81704 Mode : Mode 31 MEI : B61430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0	Left blank
Avg.	 Site : 03CH01-S2 Condition : AVG_BE_54 3m HF_ANT(117)_119436 HORIZONTAL REW: 1000 000kHz VIEW: 10 000kHz Project : B81704 Mode : Mode 31 MEI : B61430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0	Left blank



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH102 5510MHz - L	
1+2	Vertical	Fundamental
Peak	Data: 6 Site : 03CH01-SZ Condition : PEAK_BE_74 3m HF_ANT(1117)_119436 VERTICAL Project : 881704 Mode : Mode 31 IMEI : 861430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0	Data: 8 Site : 03CH01-SZ Condition : PEAK_74 3m HF_ANT(1117)_119436 VERTICAL Project : 881704 Mode : Mode 31 IMEI : 861430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0
Avg.	Data: 7 Site : 03CH01-SZ Condition : AVG_BE_54 3m HF_ANT(1117)_119436 VERTICAL Project : 881704 Mode : Mode 31 IMEI : 861430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0	Left blank



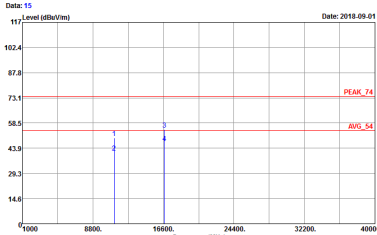
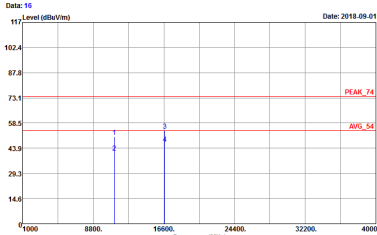
FCC Test Report

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11ac VHT40 CH102 5510MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : 03CH01-S2 Condition : PEAK_BE_74 3m HF_ANT(117)_119436 VERTICAL Project : 881704 Mode : Mode 31 MEI : 861430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0	Left blank
Avg.	 Site : 03CH01-S2 Condition : AVG_BE_54 3m HF_ANT(117)_119436 VERTICAL Project : 881704 Mode : Mode 31 MEI : 861430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0	Left blank



Band 3 - 5470~5725MHz

WIFI 802.11ac VHT160 (Harmonic @ 3m)

WIFI	Band 3 5470~5725MHz Harmonic @ 3m	
ANT	802.11ac VHT160 CH114 5570	
1+2	Horizontal	Vertical
Peak Avg.	Site : 03CH01-S2 Condition : PEAK_74 3m HF_ANT(117)_119436 HORIZONTAL Project : 881704 Mode : Mode 31 IMEI : 861430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0 	Site : 03CH01-S2 Condition : PEAK_74 3m HF_ANT(117)_119436 VERTICAL Project : 881704 Mode : Mode 31 IMEI : 861430040000710 Plane : Y with Accessory (adapter+usb cable) Data Rate : MSC0 



<Up Antenna>

LTE Band 7 CA

LTE Band 7 / 15+20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	5037.10	-59.23	-25	-34.23	-81.62	-66.99	4.94	12.70	H
	7555.65	-54.12	-25	-29.12	-81.02	-58.63	6.79	11.30	H
	10074.20	-54.41	-25	-29.41	-83.59	-58.65	7.86	12.10	H
									H
	5037.10	-60.05	-25	-35.05	-81.83	-67.81	4.94	12.70	V
	7555.65	-54.74	-25	-29.74	-81.62	-59.25	6.79	11.30	V
	10074.20	-56.12	-25	-31.12	-83.28	-60.36	7.86	12.10	V
									V
Middle	5066	-59.05	-25	-34.05	-81.44	-66.81	4.94	12.70	H
	7598	-54.72	-25	-29.72	-81.62	-59.23	6.79	11.30	H
	10131	-53.59	-25	-28.59	-82.77	-57.83	7.86	12.10	H
									H
	5066	-59.33	-25	-34.33	-81.11	-67.09	4.94	12.70	V
	7598	-54.51	-25	-29.51	-81.39	-59.02	6.79	11.30	V
	10131	-55.73	-25	-30.73	-82.89	-59.97	7.86	12.10	V
									V
Highest	5107	-58.81	-25	-33.81	-81.20	-66.57	4.94	12.70	H
	7661	-54.44	-25	-29.44	-81.34	-58.95	6.79	11.30	H
	10215	-54.22	-25	-29.22	-83.40	-58.46	7.86	12.10	H
									H
	5107	-59.28	-25	-34.28	-81.06	-67.04	4.94	12.70	V
	7661	-54.41	-25	-29.41	-81.29	-58.92	6.79	11.30	V
	10215	-55.95	-25	-30.95	-83.11	-60.19	7.86	12.10	V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



<Down Antenna>

LTE Band 41 CA

LTE Band 41 / 10+15MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	5113	-58.87	-25	-33.87	-81.26	-66.60	4.91	12.64	H
	7669	-54.30	-25	-29.30	-81.20	-58.87	6.67	11.24	H
	10225	-53.83	-25	-28.83	-83.01	-58.09	7.81	12.07	H
									H
	5113	-60.00	-25	-35.00	-81.78	-67.73	4.91	12.64	V
	7669	-54.24	-25	-29.24	-81.12	-58.81	6.67	11.24	V
	10225	-56.18	-25	-31.18	-83.34	-60.44	7.81	12.07	V
									V
Middle	5190	-59.24	-25	-34.24	-81.63	-67.00	4.94	12.70	H
	7785	-54.54	-25	-29.54	-81.44	-59.05	6.79	11.30	H
	10380	-53.91	-25	-28.91	-83.09	-58.15	7.86	12.10	H
									H
	5190	-59.32	-25	-34.32	-81.1	-67.08	4.94	12.70	V
	7785	-54.47	-25	-29.47	-81.35	-58.98	6.79	11.30	V
	10380	-55.64	-25	-30.64	-82.8	-59.88	7.86	12.10	V
									V
Highest	5283	-59.68	-25	-34.68	-82.07	-67.45	4.96	12.73	H
	7925	-54.47	-25	-29.47	-81.37	-59.08	6.81	11.42	H
	10566	-54.03	-25	-29.03	-83.21	-58.26	7.92	12.15	H
									H
	5283	-60.24	-25	-35.24	-82.02	-68.01	4.96	12.73	V
	7925	-54.38	-25	-29.38	-81.26	-58.99	6.81	11.42	V
	10566	-56.02	-25	-31.02	-83.18	-60.25	7.92	12.15	V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

**LTE Band 38 CA**

LTE Band 38 / 15+15MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	5170.00	-59.30	-25	-34.30	-81.69	-67.06	4.94	12.70	H
	7755.00	-54.85	-25	-29.85	-81.75	-59.36	6.79	11.30	H
	10340.00	-53.96	-25	-28.96	-83.14	-58.20	7.86	12.10	H
									H
	5170.00	-59.73	-25	-34.73	-81.51	-67.49	4.94	12.70	V
	7755.00	-54.81	-25	-29.81	-81.69	-59.32	6.79	11.30	V
	10340.00	-56.07	-25	-31.07	-83.23	-60.31	7.86	12.10	V
									V
Middle	5190	-59.32	-25	-34.32	-81.71	-67.08	4.94	12.70	H
	7785	-54.91	-25	-29.91	-81.81	-59.42	6.79	11.30	H
	10380	-53.95	-25	-28.95	-83.13	-58.19	7.86	12.10	H
									H
	5190	-59.89	-25	-34.89	-81.67	-67.65	4.94	12.70	V
	7785	-54.45	-25	-29.45	-81.33	-58.96	6.79	11.30	V
	10380	-56.19	-25	-31.19	-83.35	-60.43	7.86	12.10	V
									V
Highest	5210	-60.08	-25	-35.08	-81.86	-67.84	4.94	12.70	H
	7815	-55.03	-25	-30.03	-81.93	-59.54	6.79	11.30	H
	10420	-54.25	-25	-29.25	-83.43	-58.49	7.86	12.10	H
									H
	5210	-60.36	-25	-35.36	-82.14	-68.12	4.94	12.70	V
	7815	-55.12	-25	-30.12	-82	-59.63	6.79	11.30	V
	10420	-56.75	-25	-31.75	-83.91	-60.99	7.86	12.10	V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

End of this report