

# APPENDIX REPORT

Project No.	SHT2109071201EW	Radio Specification	WCDMA
Test sample No.	YPHT21090712003	Model No.	A4100
Start test date	2021/10/18	Finish date	2021/10/19
Temperature	25.7°C	Humidity	33%
Test Engineer	Jiongsheng.Feng	Auditor	Xiaodong Zhu

Appendix clause	Test item	Result
A	Conducted Output Power	PASS
B	Peak-to-Average Ratio	PASS
C	26 dB Bandwidth and Occupied Bandwidth	PASS
D	Band edge	PASS
E	Conducted Spurious Emission	PASS
F	Frequency Stability	PASS
G	ERP and EIRP	PASS

## 8.1 Appendix A: Conducted Output Power

### Test Result

Band	Channel	Power(dBm)	Limit(dBm)	Verdict
Band II	9262	23.98	33	PASS
Band II	9400	24.01	33	PASS
Band II	9538	24.12	33	PASS
Band IV	1312	23.38	30	PASS
Band IV	1413	22.52	30	PASS
Band IV	1513	24.01	30	PASS
Band V	4132	22.93	38.5	PASS
Band V	4182	22.89	38.5	PASS
Band V	4233	22.76	38.5	PASS

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
Band II	9262	HSDPA_Sub1	23.01	33	PASS
Band II	9262	HSDPA_Sub2	22.65	33	PASS
Band II	9262	HSDPA_Sub3	22.64	33	PASS
Band II	9262	HSDPA_Sub4	22.63	33	PASS
Band II	9400	HSDPA_Sub1	23.27	33	PASS
Band II	9400	HSDPA_Sub2	22.89	33	PASS
Band II	9400	HSDPA_Sub3	22.86	33	PASS
Band II	9400	HSDPA_Sub4	22.86	33	PASS
Band II	9538	HSDPA_Sub1	23.31	33	PASS
Band II	9538	HSDPA_Sub2	22.81	33	PASS
Band II	9538	HSDPA_Sub3	22.89	33	PASS
Band II	9538	HSDPA_Sub4	22.88	33	PASS
Band IV	1312	HSDPA_Sub1	22.50	30	PASS
Band IV	1312	HSDPA_Sub2	22.00	30	PASS
Band IV	1312	HSDPA_Sub3	21.99	30	PASS
Band IV	1312	HSDPA_Sub4	21.97	30	PASS
Band IV	1413	HSDPA_Sub1	21.61	30	PASS
Band IV	1413	HSDPA_Sub2	21.17	30	PASS
Band IV	1413	HSDPA_Sub3	21.17	30	PASS
Band IV	1413	HSDPA_Sub4	21.16	30	PASS
Band IV	1513	HSDPA_Sub1	23.08	30	PASS
Band IV	1513	HSDPA_Sub2	22.61	30	PASS
Band IV	1513	HSDPA_Sub3	22.60	30	PASS
Band IV	1513	HSDPA_Sub4	22.60	30	PASS
Band V	4132	HSDPA_Sub1	21.80	38.5	PASS
Band V	4132	HSDPA_Sub2	21.29	38.5	PASS
Band V	4132	HSDPA_Sub3	21.27	38.5	PASS

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Band V	4132	HSDPA_Sub4	21.33	38.5	PASS
Band V	4182	HSDPA_Sub1	21.83	38.5	PASS
Band V	4182	HSDPA_Sub2	21.27	38.5	PASS
Band V	4182	HSDPA_Sub3	21.42	38.5	PASS
Band V	4182	HSDPA_Sub4	21.48	38.5	PASS
Band V	4233	HSDPA_Sub1	21.78	38.5	PASS
Band V	4233	HSDPA_Sub2	21.40	38.5	PASS
Band V	4233	HSDPA_Sub3	21.40	38.5	PASS
Band V	4233	HSDPA_Sub4	21.38	38.5	PASS

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
Band II	9262	HSUPA_Sub1	22.98	33	PASS
Band II	9262	HSUPA_Sub2	22.09	33	PASS
Band II	9262	HSUPA_Sub3	21.21	33	PASS
Band II	9262	HSUPA_Sub4	21.96	33	PASS
Band II	9262	HSUPA_Sub5	22.78	33	PASS
Band II	9400	HSUPA_Sub1	23.10	33	PASS
Band II	9400	HSUPA_Sub2	22.27	33	PASS
Band II	9400	HSUPA_Sub3	21.44	33	PASS
Band II	9400	HSUPA_Sub4	22.17	33	PASS
Band II	9400	HSUPA_Sub5	22.95	33	PASS
Band II	9538	HSUPA_Sub1	22.54	33	PASS
Band II	9538	HSUPA_Sub2	22.01	33	PASS
Band II	9538	HSUPA_Sub3	21.95	33	PASS
Band II	9538	HSUPA_Sub4	22.43	33	PASS
Band II	9538	HSUPA_Sub5	23.01	33	PASS
Band IV	1312	HSUPA_Sub1	22.35	30	PASS
Band IV	1312	HSUPA_Sub2	21.26	30	PASS
Band IV	1312	HSUPA_Sub3	20.86	30	PASS
Band IV	1312	HSUPA_Sub4	21.58	30	PASS
Band IV	1312	HSUPA_Sub5	22.38	30	PASS
Band IV	1413	HSUPA_Sub1	21.18	30	PASS
Band IV	1413	HSUPA_Sub2	20.75	30	PASS
Band IV	1413	HSUPA_Sub3	19.85	30	PASS
Band IV	1413	HSUPA_Sub4	20.75	30	PASS
Band IV	1413	HSUPA_Sub5	21.66	30	PASS
Band IV	1513	HSUPA_Sub1	22.60	30	PASS
Band IV	1513	HSUPA_Sub2	21.58	30	PASS
Band IV	1513	HSUPA_Sub3	21.59	30	PASS
Band IV	1513	HSUPA_Sub4	22.02	30	PASS
Band IV	1513	HSUPA_Sub5	23.09	30	PASS
Band V	4132	HSUPA_Sub1	21.27	38.5	PASS
Band V	4132	HSUPA_Sub2	20.65	38.5	PASS
Band V	4132	HSUPA_Sub3	20.56	38.5	PASS
Band V	4132	HSUPA_Sub4	21.10	38.5	PASS
Band V	4132	HSUPA_Sub5	21.53	38.5	PASS
Band V	4182	HSUPA_Sub1	21.53	38.5	PASS
Band V	4182	HSUPA_Sub2	20.75	38.5	PASS
Band V	4182	HSUPA_Sub3	19.76	38.5	PASS
Band V	4182	HSUPA_Sub4	20.74	38.5	PASS
Band V	4182	HSUPA_Sub5	21.66	38.5	PASS
Band V	4233	HSUPA_Sub1	21.39	38.5	PASS

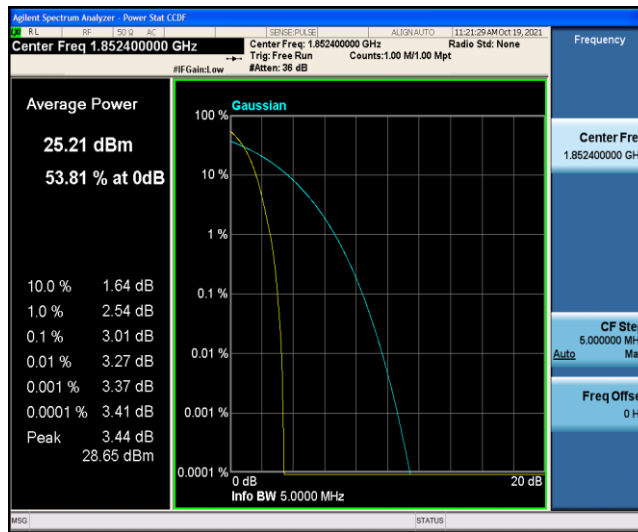
Band V	4233	HSUPA_Sub2	20.64	38.5	PASS
Band V	4233	HSUPA_Sub3	19.66	38.5	PASS
Band V	4233	HSUPA_Sub4	20.56	38.5	PASS
Band V	4233	HSUPA_Sub5	21.56	38.5	PASS

## 8.2 Appendix B: Peak-to-Average Ratio

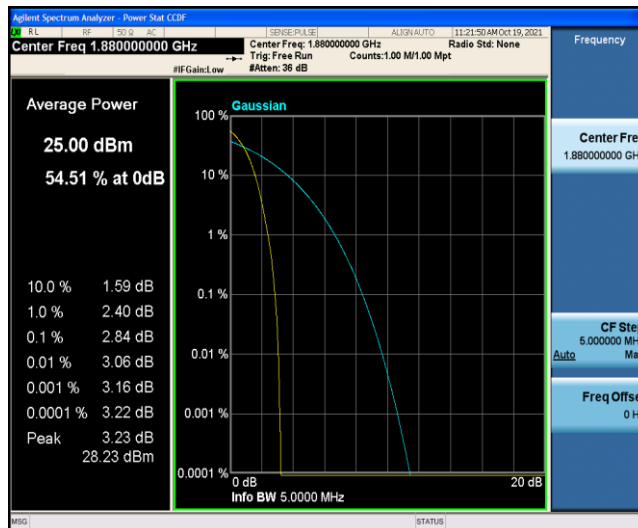
### Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band II	9262	3.01	13	PASS
Band II	9400	2.84	13	PASS
Band II	9538	2.71	13	PASS
Band IV	1312	2.87	13	PASS
Band IV	1413	3.04	13	PASS
Band IV	1513	2.86	13	PASS
Band V	4132	2.92	13	PASS
Band V	4182	2.94	13	PASS
Band V	4233	2.92	13	PASS

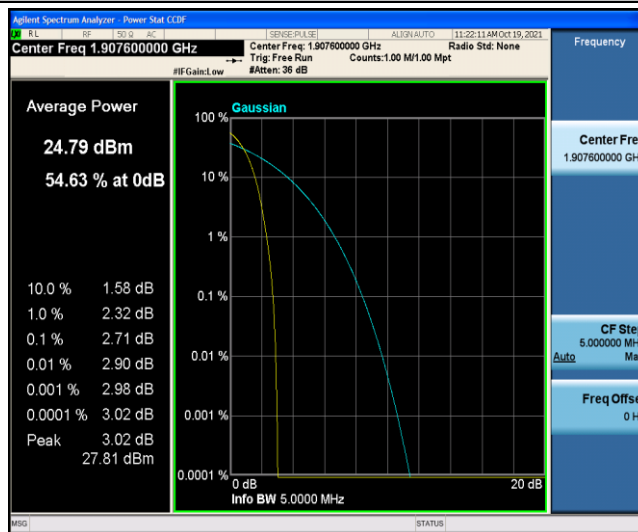
Test Graphs



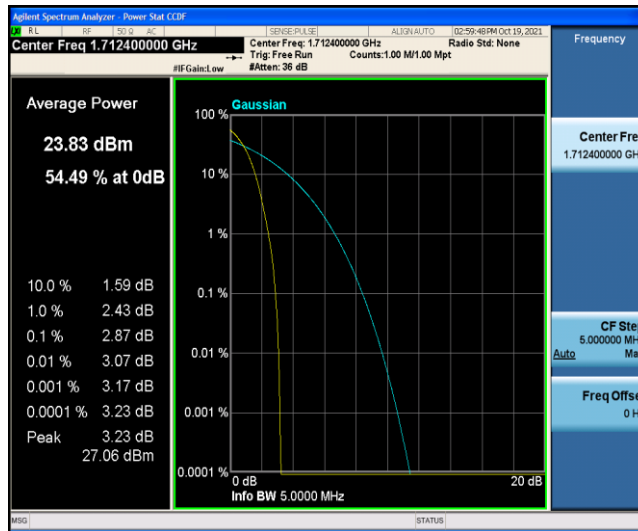
Band II\_9262



Band II\_9400



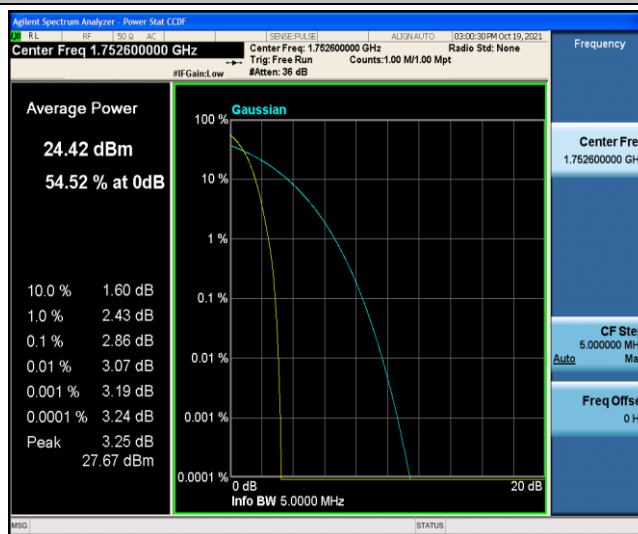
Band II\_9538



Band IV\_1312

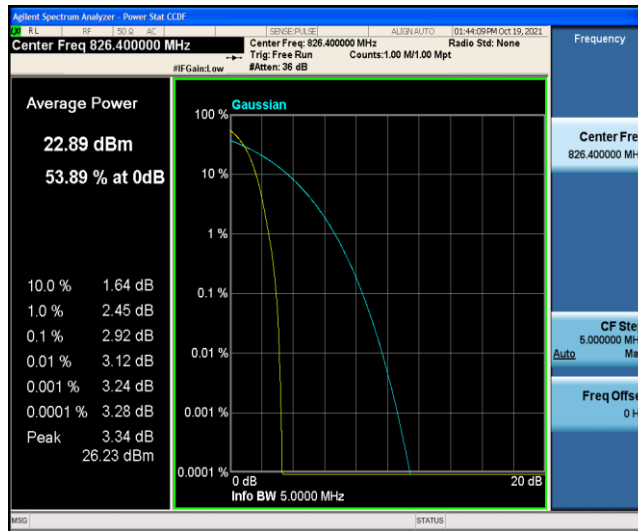


Band IV\_1413

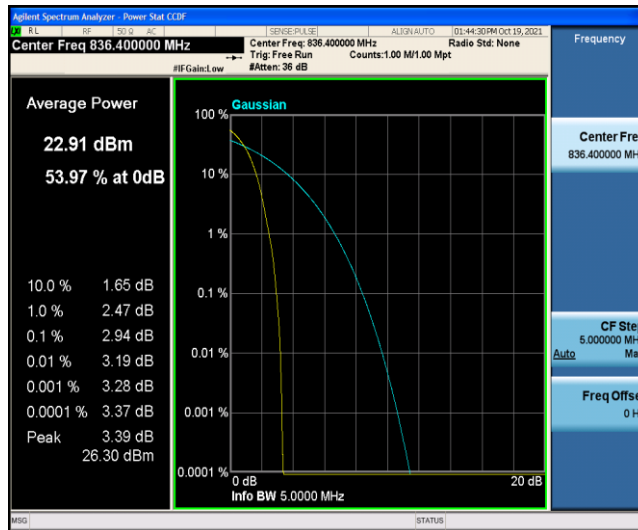


Band IV\_1513

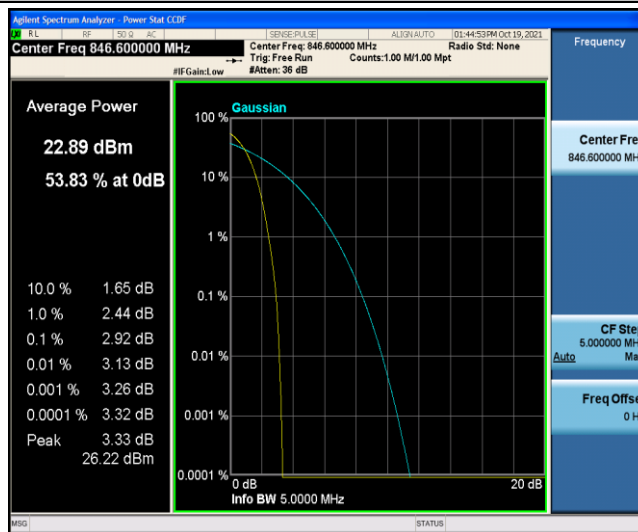




Band V\_4132



Band V\_4182



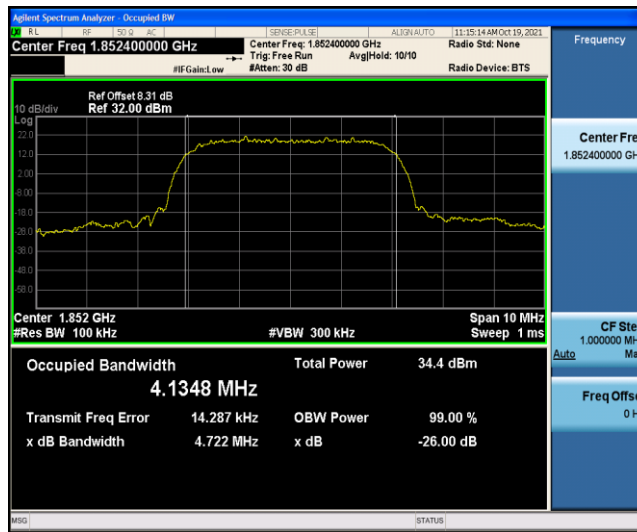
Band V\_4233

### 8.3 Appendix C: 26dB Bandwidth and Occupied Bandwidth

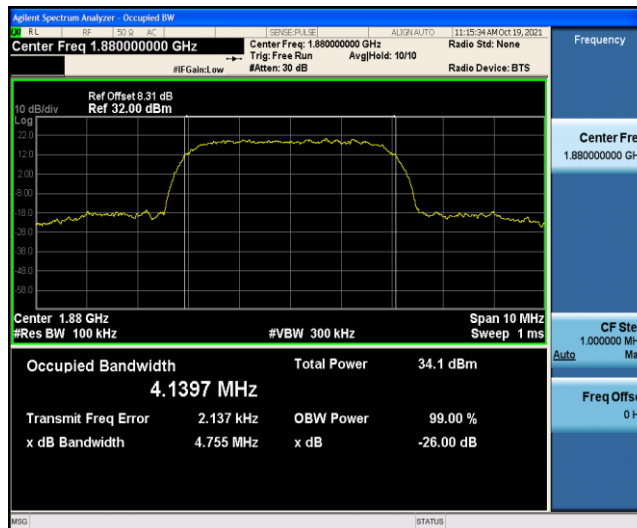
#### Test Result

Band	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band II	9262	4134.8	4722	---	PASS
Band II	9400	4139.7	4755	---	PASS
Band II	9538	4130.4	4738	---	PASS
Band IV	1312	4142.6	4739	---	PASS
Band IV	1413	4135.5	4728	---	PASS
Band IV	1513	4138.1	4728	---	PASS
Band V	4132	4168.7	4758	---	PASS
Band V	4182	4152.7	4740	---	PASS
Band V	4233	4157.9	4733	---	PASS

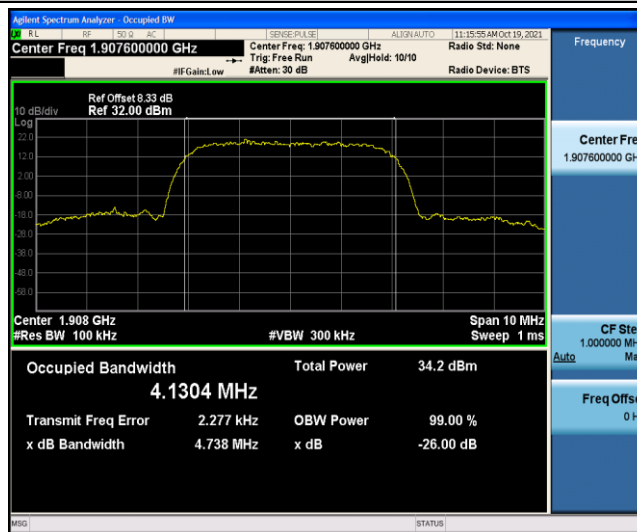
Test Graphs



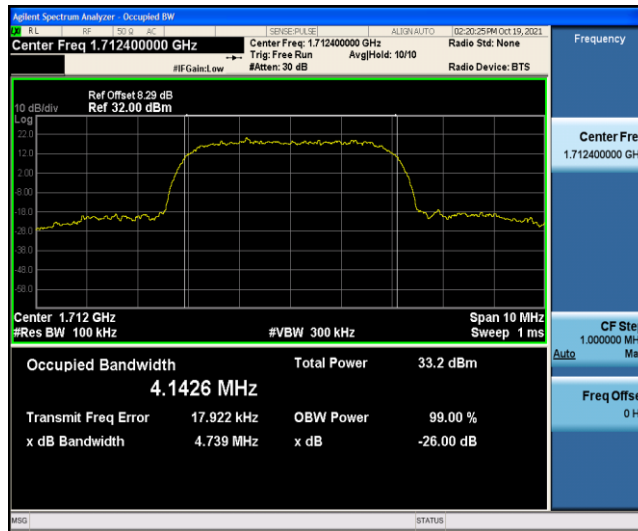
Band II\_9262



Band II\_9400



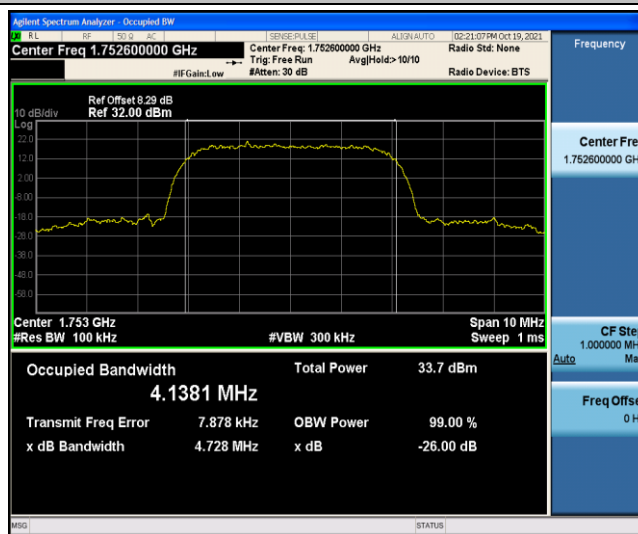
Band II\_9538



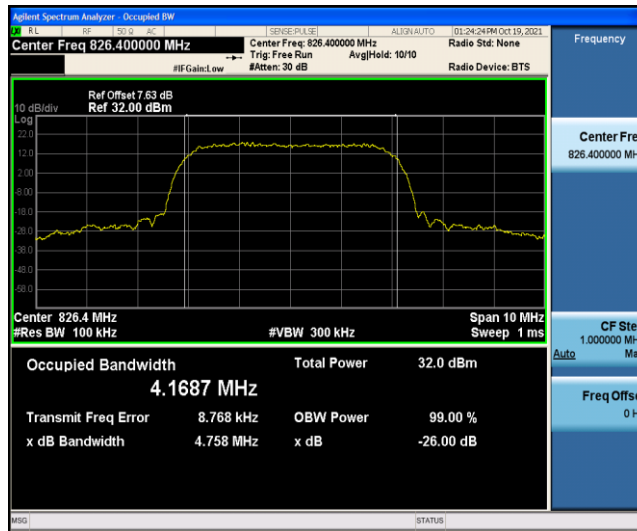
Band IV\_1312



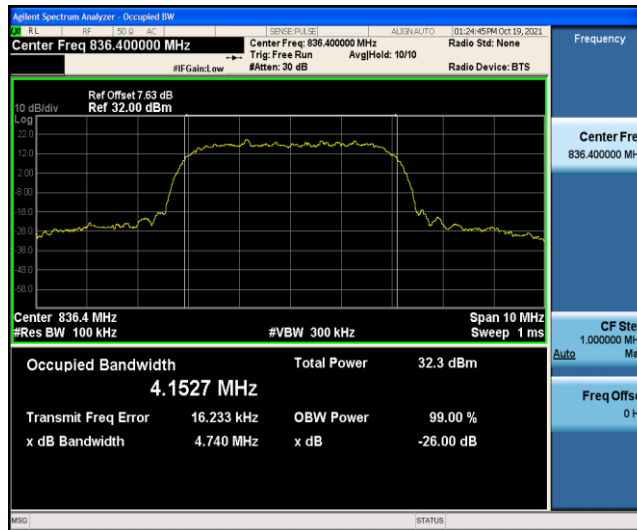
Band IV\_1413



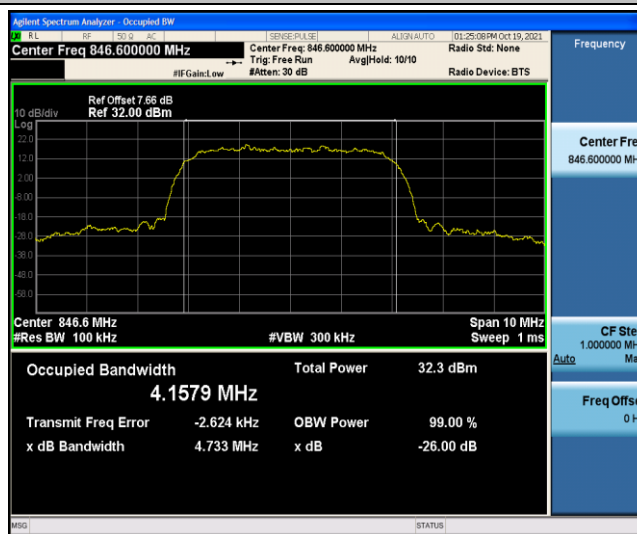
Band IV\_1513



Band V\_4132



Band V\_4182



Band V\_4233

#### 8.4 Appendix D: Band Edge

##### Test Result

Band	Channel	Value(dBm)	Limit(dBm)	Verdict
Band II	9262	-19.09	-13	PASS
Band II	9538	-17.70	-13	PASS
Band IV	1312	-19.60	-13	PASS
Band IV	1513	-18.67	-13	PASS
Band V	4132	-19.80	-13	PASS
Band V	4233	-20.91	-13	PASS

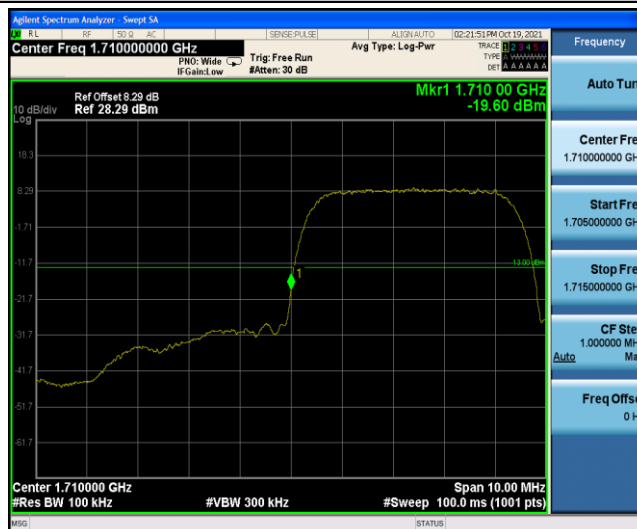
Test Graphs



Band II\_9262



Band II\_9538



Band IV\_1312



Band IV\_1513



Band V\_4132



Band V\_4233

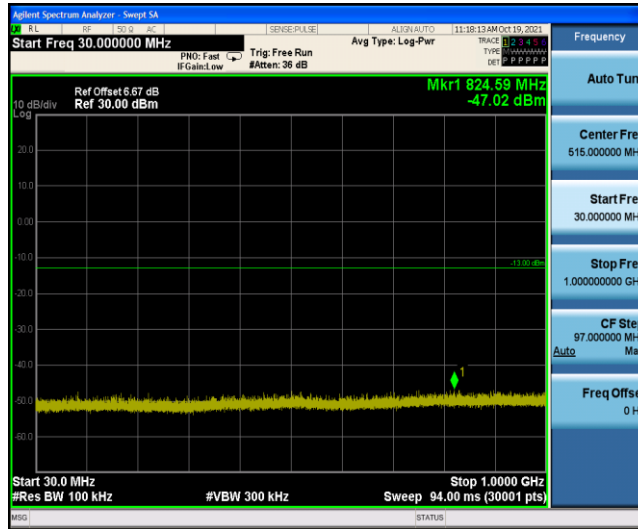


**8.5 Appendix E: Conducted Spurious Emission**

## Test Result

Band	Channel	Frequency Rang(Mhz)	Value(dBm)	Limit(dBm)	Verdict
Band II	9262	30~1000	-47.02	-13	PASS
Band II	9262	1000~20000	-25.58	-13	PASS
Band II	9400	30~1000	-46.98	-13	PASS
Band II	9400	1000~20000	-26.31	-13	PASS
Band II	9538	30~1000	-46.58	-13	PASS
Band II	9538	1000~20000	-25.58	-13	PASS
Band IV	1312	30~1000	-46.87	-13	PASS
Band IV	1312	1000~20000	-26.04	-13	PASS
Band IV	1413	30~1000	-46.54	-13	PASS
Band IV	1413	1000~20000	-26.49	-13	PASS
Band IV	1513	30~1000	-46.84	-13	PASS
Band IV	1513	1000~20000	-25.76	-13	PASS
Band V	4132	30~1000	-46.96	-13	PASS
Band V	4132	1000~10000	-32.53	-13	PASS
Band V	4182	30~1000	-46.84	-13	PASS
Band V	4182	1000~10000	-32.28	-13	PASS
Band V	4233	30~1000	-46.18	-13	PASS
Band V	4233	1000~10000	-32.31	-13	PASS

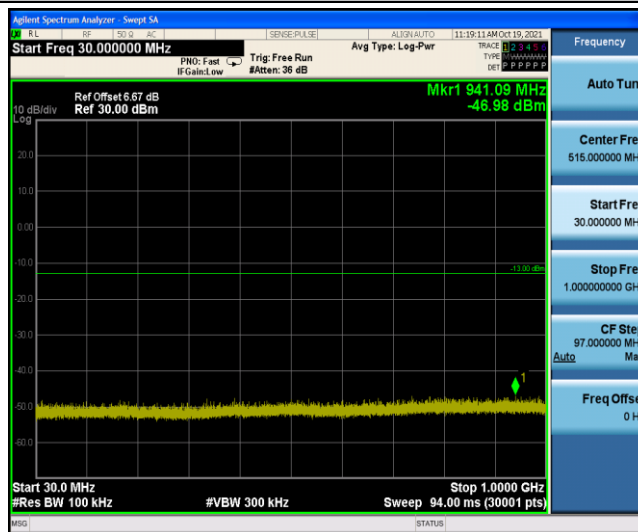
Test Graphs



Band II\_9262



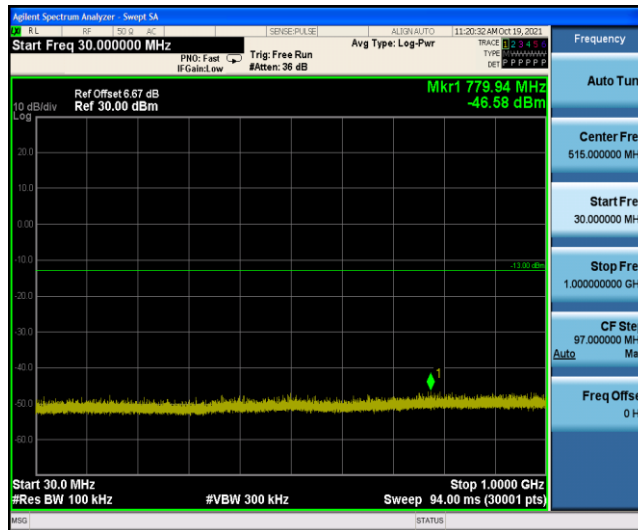
Band II\_9262



Band II\_9400



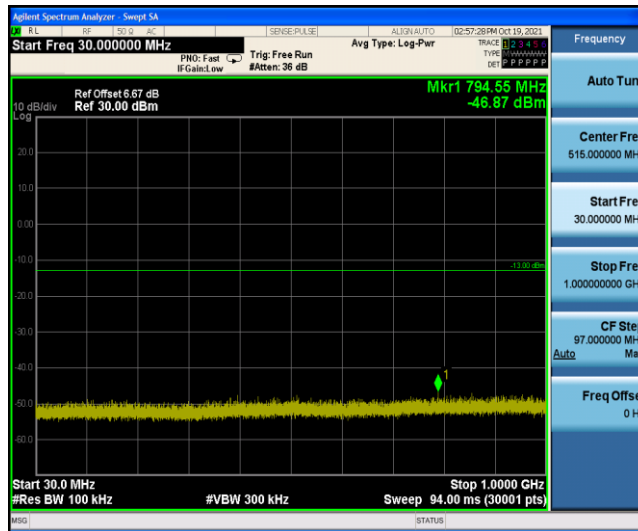
Band II\_9400



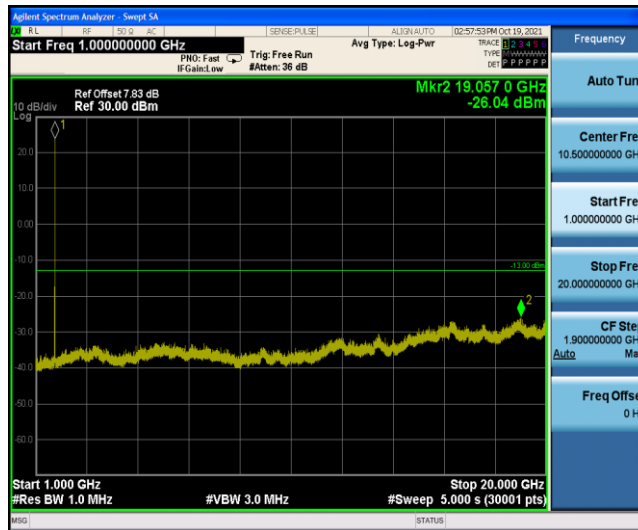
Band II\_9538



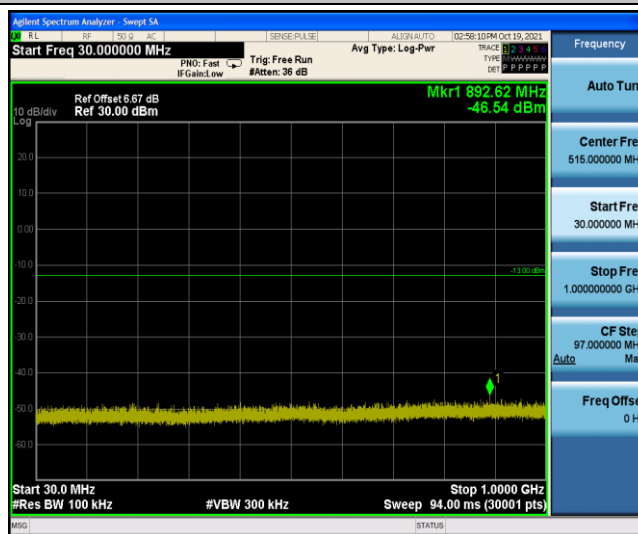
Band II\_9538



Band IV\_1312



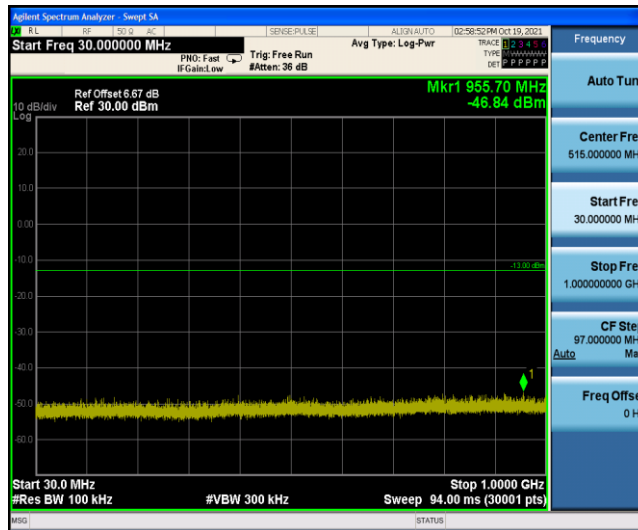
Band IV\_1312



Band IV\_1413



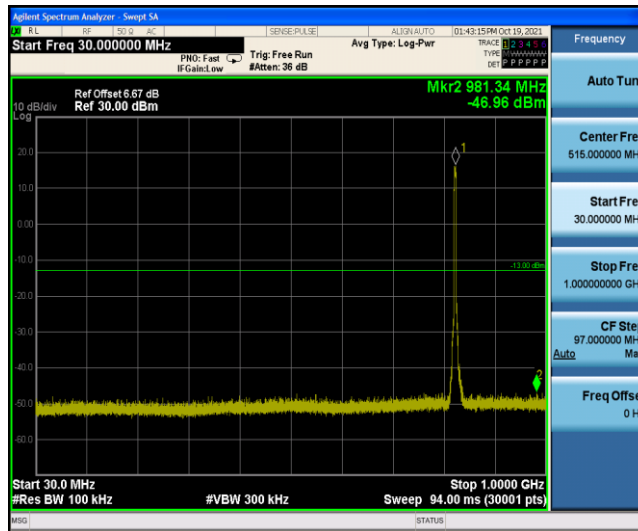
Band IV\_1413



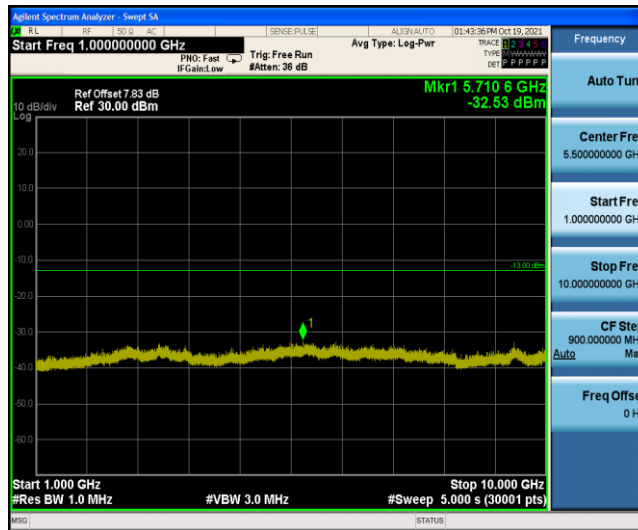
Band IV\_1513



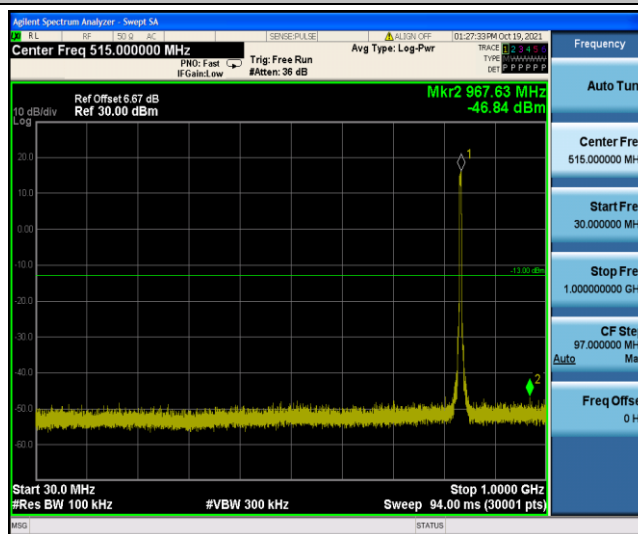
Band IV\_1513



Band V\_4132



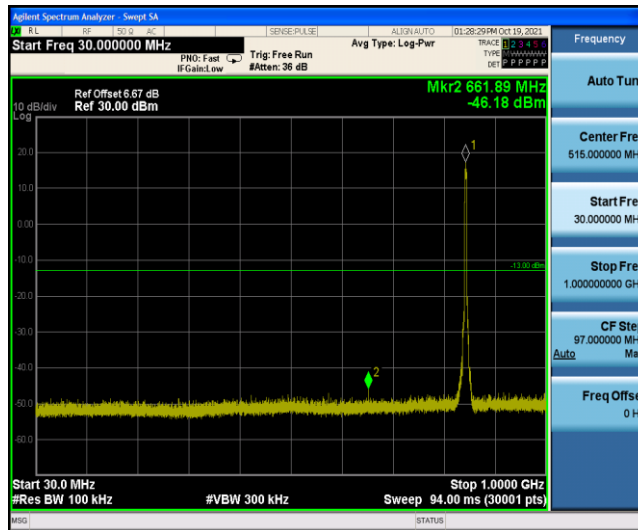
Band V\_4132



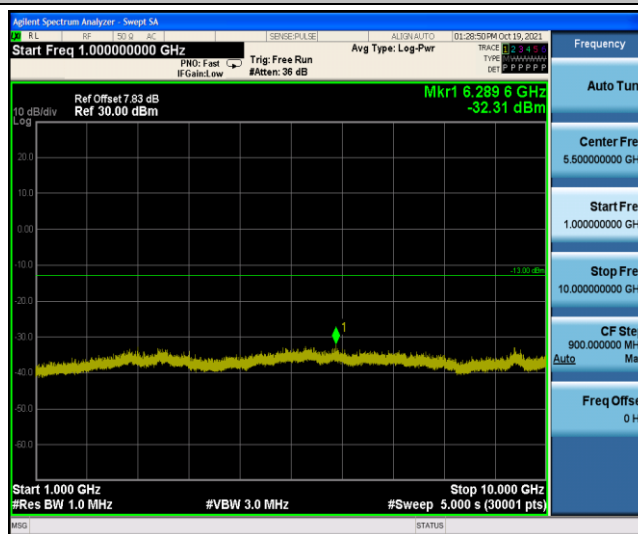
Band V\_4182



Band V\_4182



Band V\_4233



Band V\_4233

**8.6 Appendix F: Frequency Stability**

## Test Result

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VL	TN	5.71	0.003082	2.5	PASS
Band II	9262	VN	TN	5.93	0.003201	2.5	PASS
Band II	9262	VH	TN	6.24	0.003369	2.5	PASS
Band II	9400	VL	TN	0.19	0.000101	2.5	PASS
Band II	9400	VN	TN	-2.22	-0.001181	2.5	PASS
Band II	9400	VH	TN	-0.87	-0.000463	2.5	PASS
Band II	9538	VL	TN	-5.45	-0.002857	2.5	PASS
Band II	9538	VN	TN	-4.97	-0.002605	2.5	PASS
Band II	9538	VH	TN	-6.22	-0.003261	2.5	PASS
Band IV	1312	VL	TN	22.17	0.012947	2.5	PASS
Band IV	1312	VN	TN	21.32	0.012450	2.5	PASS
Band IV	1312	VH	TN	21.89	0.012783	2.5	PASS
Band IV	1413	VL	TN	0.99	0.000571	2.5	PASS
Band IV	1413	VN	TN	0.80	0.000462	2.5	PASS
Band IV	1413	VH	TN	-0.26	-0.000150	2.5	PASS
Band IV	1513	VL	TN	-19.49	-0.011121	2.5	PASS
Band IV	1513	VN	TN	-19.88	-0.011343	2.5	PASS
Band IV	1513	VH	TN	-18.25	-0.010413	2.5	PASS
Band V	4132	VL	TN	-16.76	-0.020281	2.5	PASS
Band V	4132	VN	TN	-11.71	-0.014170	2.5	PASS
Band V	4132	VH	TN	-15.69	-0.018986	2.5	PASS
Band V	4182	VL	TN	-10.44	-0.012482	2.5	PASS
Band V	4182	VN	TN	-10.64	-0.012721	2.5	PASS
Band V	4182	VH	TN	-12.70	-0.015184	2.5	PASS
Band V	4233	VL	TN	-13.20	-0.015592	2.5	PASS
Band V	4233	VN	TN	-10.15	-0.011989	2.5	PASS
Band V	4233	VH	TN	-7.57	-0.008942	2.5	PASS



Temperature							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VN	-30	5.65	0.003050	2.5	PASS
Band II	9262	VN	-20	5.21	0.002813	2.5	PASS
Band II	9262	VN	-10	6.75	0.003644	2.5	PASS
Band II	9262	VN	0	5.03	0.002715	2.5	PASS
Band II	9262	VN	10	5.84	0.003153	2.5	PASS
Band II	9262	VN	20	6.37	0.003439	2.5	PASS
Band II	9262	VN	30	5.29	0.002856	2.5	PASS
Band II	9262	VN	40	5.97	0.003223	2.5	PASS
Band II	9262	VN	50	5.88	0.003174	2.5	PASS
Band II	9400	VN	-30	-0.93	-0.000495	2.5	PASS
Band II	9400	VN	-20	-2.37	-0.001261	2.5	PASS
Band II	9400	VN	-10	-0.20	-0.000106	2.5	PASS
Band II	9400	VN	0	-0.78	-0.000415	2.5	PASS
Band II	9400	VN	10	-3.13	-0.001665	2.5	PASS
Band II	9400	VN	20	-1.67	-0.000888	2.5	PASS
Band II	9400	VN	30	-3.05	-0.001622	2.5	PASS
Band II	9400	VN	40	-1.47	-0.000782	2.5	PASS
Band II	9400	VN	50	-0.68	-0.000362	2.5	PASS
Band II	9538	VN	-30	-5.21	-0.002731	2.5	PASS
Band II	9538	VN	-20	-4.69	-0.002459	2.5	PASS
Band II	9538	VN	-10	-4.99	-0.002616	2.5	PASS
Band II	9538	VN	0	-6.42	-0.003365	2.5	PASS
Band II	9538	VN	10	-3.62	-0.001898	2.5	PASS
Band II	9538	VN	20	-4.91	-0.002574	2.5	PASS
Band II	9538	VN	30	-5.97	-0.003130	2.5	PASS
Band II	9538	VN	40	-4.09	-0.002144	2.5	PASS
Band II	9538	VN	50	-6.27	-0.003287	2.5	PASS
Band IV	1312	VN	-30	21.39	0.012491	2.5	PASS
Band IV	1312	VN	-20	23.15	0.013519	2.5	PASS
Band IV	1312	VN	-10	22.89	0.013367	2.5	PASS
Band IV	1312	VN	0	22.45	0.013110	2.5	PASS
Band IV	1312	VN	10	22.60	0.013198	2.5	PASS
Band IV	1312	VN	20	22.36	0.013058	2.5	PASS
Band IV	1312	VN	30	22.76	0.013291	2.5	PASS
Band IV	1312	VN	40	21.42	0.012509	2.5	PASS
Band IV	1312	VN	50	23.38	0.013653	2.5	PASS
Band IV	1413	VN	-30	0.35	0.000202	2.5	PASS
Band IV	1413	VN	-20	0.17	0.000098	2.5	PASS
Band IV	1413	VN	-10	-0.72	-0.000416	2.5	PASS
Band IV	1413	VN	0	0.26	0.000150	2.5	PASS
Band IV	1413	VN	10	-0.01	-0.000006	2.5	PASS
Band IV	1413	VN	20	-0.49	-0.000283	2.5	PASS
Band IV	1413	VN	30	-0.19	-0.000110	2.5	PASS
Band IV	1413	VN	40	-0.46	-0.000265	2.5	PASS
Band IV	1413	VN	50	0.34	0.000196	2.5	PASS
Band IV	1513	VN	-30	-19.82	-0.011309	2.5	PASS

Band IV	1513	VN	-20	-17.91	-0.010219	2.5	PASS
Band IV	1513	VN	-10	-20.00	-0.011412	2.5	PASS
Band IV	1513	VN	0	-18.23	-0.010402	2.5	PASS
Band IV	1513	VN	10	-19.18	-0.010944	2.5	PASS
Band IV	1513	VN	20	-20.16	-0.011503	2.5	PASS
Band IV	1513	VN	30	-22.17	-0.012650	2.5	PASS
Band IV	1513	VN	40	-18.67	-0.010653	2.5	PASS
Band IV	1513	VN	50	-19.43	-0.011086	2.5	PASS
Band V	4132	VN	-30	-12.41	-0.015017	2.5	PASS
Band V	4132	VN	-20	-11.14	-0.013480	2.5	PASS
Band V	4132	VN	-10	-8.50	-0.010286	2.5	PASS
Band V	4132	VN	0	-15.66	-0.018950	2.5	PASS
Band V	4132	VN	10	-10.46	-0.012657	2.5	PASS
Band V	4132	VN	20	-14.49	-0.017534	2.5	PASS
Band V	4132	VN	30	-9.86	-0.011931	2.5	PASS
Band V	4132	VN	40	-11.77	-0.014242	2.5	PASS
Band V	4132	VN	50	-10.61	-0.012839	2.5	PASS
Band V	4182	VN	-30	-15.66	-0.018723	2.5	PASS
Band V	4182	VN	-20	-15.66	-0.018723	2.5	PASS
Band V	4182	VN	-10	-13.49	-0.016129	2.5	PASS
Band V	4182	VN	0	-10.31	-0.012327	2.5	PASS
Band V	4182	VN	10	-14.87	-0.017779	2.5	PASS
Band V	4182	VN	20	-10.79	-0.012901	2.5	PASS
Band V	4182	VN	30	-12.77	-0.015268	2.5	PASS
Band V	4182	VN	40	-12.17	-0.014550	2.5	PASS
Band V	4182	VN	50	-13.34	-0.015949	2.5	PASS
Band V	4233	VN	-30	-13.29	-0.015698	2.5	PASS
Band V	4233	VN	-20	-14.15	-0.016714	2.5	PASS
Band V	4233	VN	-10	-16.51	-0.019502	2.5	PASS
Band V	4233	VN	0	-8.69	-0.010265	2.5	PASS
Band V	4233	VN	10	-5.59	-0.006603	2.5	PASS
Band V	4233	VN	20	-11.91	-0.014068	2.5	PASS
Band V	4233	VN	30	-8.80	-0.010395	2.5	PASS
Band V	4233	VN	40	-11.69	-0.013808	2.5	PASS
Band V	4233	VN	50	-14.17	-0.016738	2.5	PASS

## 8.7 Appendix G: ERP and EIRP

### Test Result

FCC

Band	Mode	Conducted Power (dBm)	Antenna Gain (dBi)	ERP		Limit (W)	Verdict
				(dBm)	(W)		
Band II	WCMDA	24.12	-0.64	23.48	0.2228	2	PASS
	HSDPA	23.31	-0.64	22.67	0.1849	2	PASS
	HSUPA	23.10	-0.64	22.46	0.1762	2	PASS
Band IV	WCMDA	24.01	-1.93	22.08	0.1614	1	PASS
	HSDPA	23.08	-1.93	21.15	0.1303	1	PASS
	HSUPA	23.09	-1.93	21.16	0.1306	1	PASS

Band	Mode	Conducted Power (dBm)	Antenna Gain (dBi)	ERP		Limit (W)	Verdict
				(dBm)	(W)		
Band V	WCMDA	22.93	-12.14	10.79	0.0120	7	PASS
	HSDPA	21.83	-12.14	9.69	0.0093	7	PASS
	HSUPA	21.66	-12.14	9.52	0.0090	7	PASS

-----End of the Report -----