



CTC20192260E02 Appendix for WCDMA BAND5-1

FCC ID: 2AC88-GLMU19A02





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AppendixA: Effective (Isotropic) Radiated Power Output Data

Test Result

WCDMA:

Band	Channel	Power(dBm)	Limit(dBm)	Verdict
Band V	4132	23.91	38.5	PASS
Band V	4182	23.98	38.5	PASS
Band V	4233	23.94	38.5	PASS

HSDPA:

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
Band V	4132	HSDPA_Sub1	22.89	38.5	PASS
Band V	4132	HSDPA_Sub2	22.43	38.5	PASS
Band V	4132	HSDPA_Sub3	22.37	38.5	PASS
Band V	4132	HSDPA_Sub4	22.37	38.5	PASS
Band V	4182	HSDPA_Sub1	22.77	38.5	PASS
Band V	4182	HSDPA_Sub2	22.32	38.5	PASS
Band V	4182	HSDPA_Sub3	22.35	38.5	PASS
Band V	4182	HSDPA_Sub4	22.37	38.5	PASS
Band V	4233	HSDPA_Sub1	22.75	38.5	PASS
Band V	4233	HSDPA_Sub2	22.29	38.5	PASS
Band V	4233	HSDPA_Sub3	22.33	38.5	PASS
Band V	4233	HSDPA_Sub4	22.33	38.5	PASS

HSUPA:

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
Band V	4132	HSUPA_Sub1	22.74	38.5	PASS
Band V	4132	HSUPA_Sub2	21.95	38.5	PASS
Band V	4132	HSUPA_Sub3	21.54	38.5	PASS
Band V	4132	HSUPA_Sub4	22.39	38.5	PASS
Band V	4132	HSUPA_Sub5	23.01	38.5	PASS
Band V	4182	HSUPA_Sub1	22.29	38.5	PASS
Band V	4182	HSUPA_Sub2	21.87	38.5	PASS
Band V	4182	HSUPA_Sub3	21.49	38.5	PASS
Band V	4182	HSUPA_Sub4	22.30	38.5	PASS
Band V	4182	HSUPA_Sub5	22.92	38.5	PASS
Band V	4233	HSUPA_Sub1	22.56	38.5	PASS

CTC Laboratories, Inc.

2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn





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Band V	4233	HSUPA_Sub2	21.71	38.5	PASS
Band V	4233	HSUPA_Sub3	21.35	38.5	PASS
Band V	4233	HSUPA_Sub4	22.11	38.5	PASS
Band V	4233	HSUPA_Sub5	22.85	38.5	PASS







AppendixB:Peak-to-Average Ratio

Test Result

WCDMA:

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band V	4132	3.28	13	PASS
Band V	4182	3.28	13	PASS
Band V	4233	3.28	13	PASS

HSDPA:

Band	Channel	SubTest	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band V	4132	HSDPA_Sub1	3.54	13	PASS
Band V	4132	HSDPA_Sub2	4.87	13	PASS
Band V	4132	HSDPA_Sub3	5.94	13	PASS
Band V	4132	HSDPA_Sub4	9.07	13	PASS
Band V	4182	HSDPA_Sub1	3.36	13	PASS
Band V	4182	HSDPA_Sub2	3.54	13	PASS
Band V	4182	HSDPA_Sub3	3.74	13	PASS
Band V	4182	HSDPA_Sub4	4.78	13	PASS
Band V	4233	HSDPA_Sub1	3.45	13	PASS
Band V	4233	HSDPA_Sub2	5.62	13	PASS
Band V	4233	HSDPA_Sub3	4.23	13	PASS
Band V	4233	HSDPA_Sub4	6.78	13	PASS

HSUPA:

Band	Channel	SubTest	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band V	4132	HSUPA_Sub1	4.84	13	PASS
Band V	4132	HSUPA_Sub2	5.22	13	PASS
Band V	4132	HSUPA_Sub3	5.54	13	PASS
Band V	4132	HSUPA_Sub4	4.84	13	PASS
Band V	4132	HSUPA_Sub5	3.59	13	PASS
Band V	4182	HSUPA_Sub1	4.75	13	PASS
Band V	4182	HSUPA_Sub2	5.13	13	PASS
Band V	4182	HSUPA_Sub3	5.57	13	PASS
Band V	4182	HSUPA_Sub4	5.22	13	PASS
Band V	4182	HSUPA_Sub5	3.59	13	PASS

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Band V	4233	HSUPA_Sub1	4.81	13	PASS
Band V	4233	HSUPA_Sub2	5.22	13	PASS
Band V	4233	HSUPA_Sub3	5.65	13	PASS
Band V	4233	HSUPA_Sub4	4.81	13	PASS
Band V	4233	HSUPA_Sub5	3.59	13	PASS



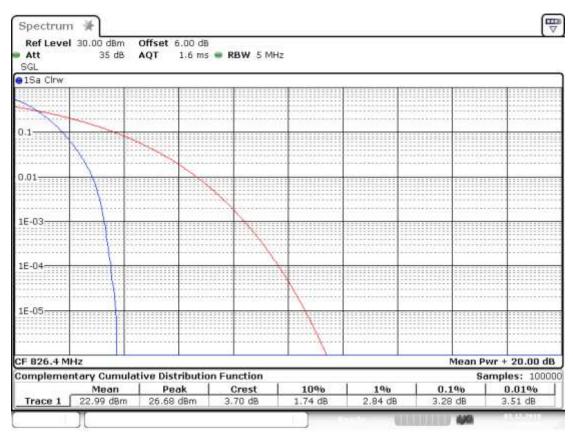




Test Graphs

WCDMA:

Test Case: (WCDMA)Peak-to-Average Ratio			
Band: V Channel: 4132 Value:CCDF:3.28			
Result: PASS Voltage: VN Temperature: TN			



Date: 3.DEC.2019 14:08:01

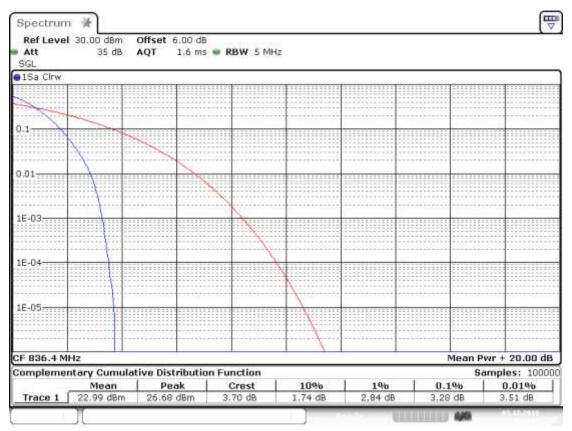
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Test Case: (WCDMA)Peak-to-Average Ratio				
Band: V Channel: 4182 Value:CCDF:3.28				
Result: PASS Voltage: VN Temperature: TN				

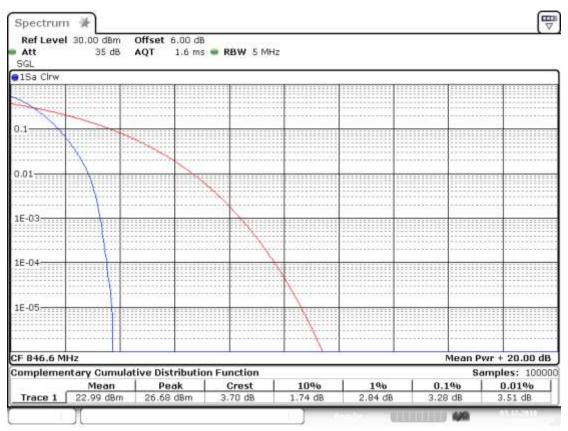


Date: 3.DEC.2019 14:08:11



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Test Case: (WCDMA)Peak-to-Average Ratio			
Band: V Channel: 4233 Value:CCDF:3.28			
Result: PASS	Voltage: VN	Temperature: TN	



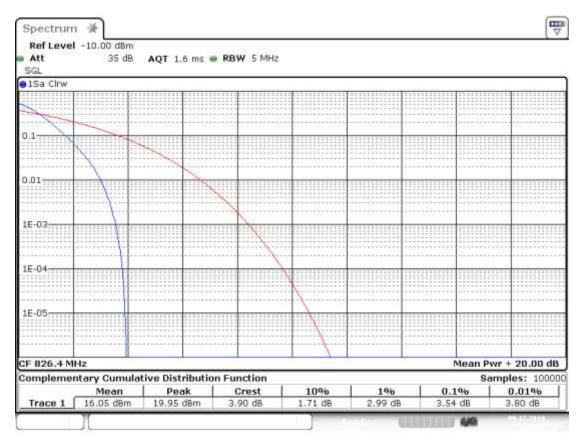
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HSDPA:

Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:Bc/Bd:2/15 CCDF:3.54		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 13:47:59

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Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:Bc/Bd:12/15 CCDF:4.87		
Result: PASS	Voltage: VN	Temperature: TN

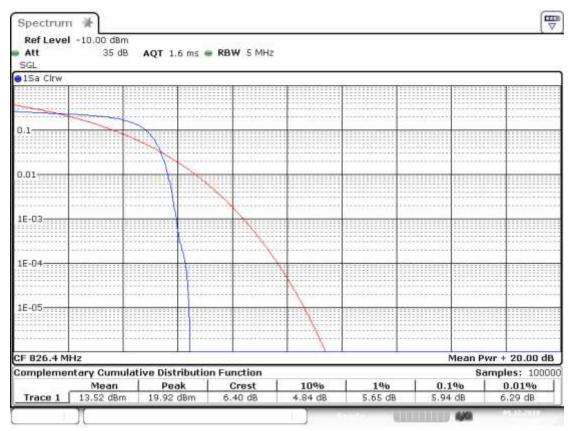


Date: 9.DEC.2019 13:48:15





Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:Bc/Bd:15/8 CCDF:5.94		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 13:48:32





Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:Bc/Bd:15/4 CCDF:9.07		
Result: PASS	Voltage: VN	Temperature: TN

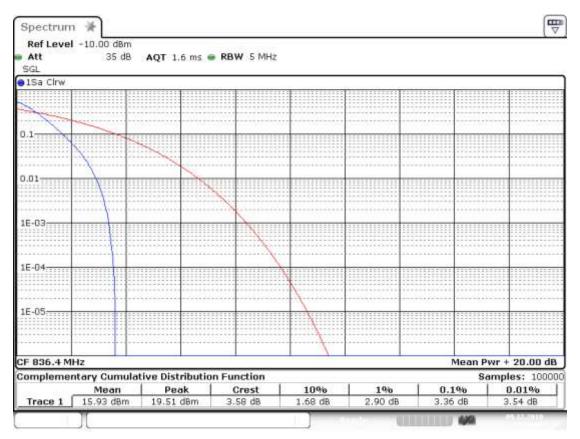


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Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4182 Value:Bc/Bd:2/15 CCDF:3.36		
Result: PASS	Voltage: VN	Temperature: TN

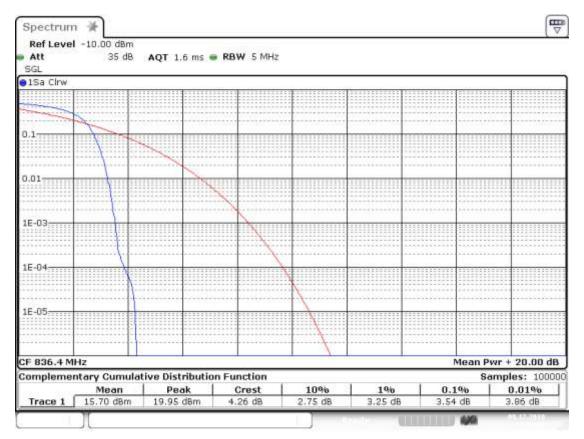


Date: 9.DEC.2019 13:49:06





Test Case: HSDPA Peak-to-Average RatioBand: VChannel: 4182Value:Bc/Bd:12/15 CCDF:3.54Result: PASSVoltage: VNTemperature: TN

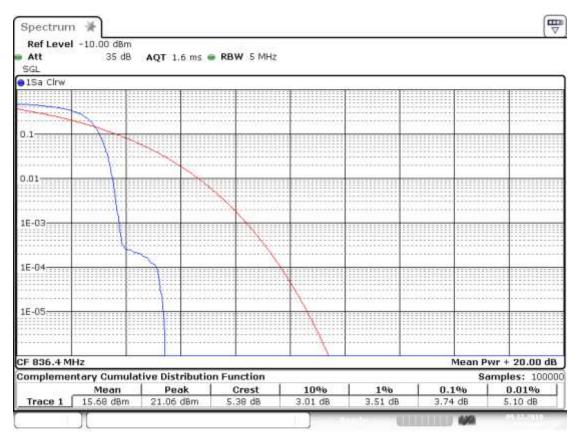


Date: 9.DEC.2019 13:49:23





Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4182 Value:Bc/Bd:15/8 CCDF:3.74		
Result: PASS	Voltage: VN	Temperature: TN

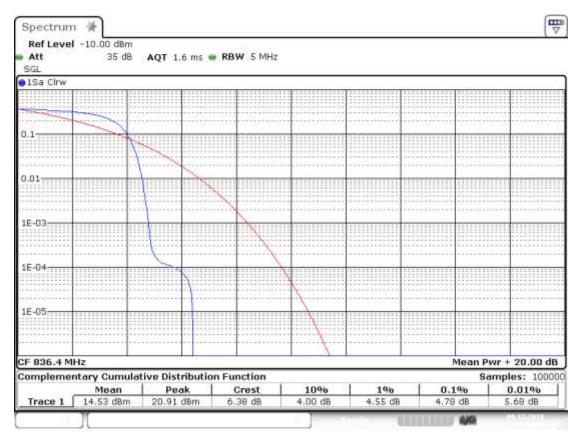


Date: 9.DEC.2019 13:49:39





Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4182 Value:Bc/Bd:15/4 CCDF:4.78		
Result: PASS	Voltage: VN	Temperature: TN



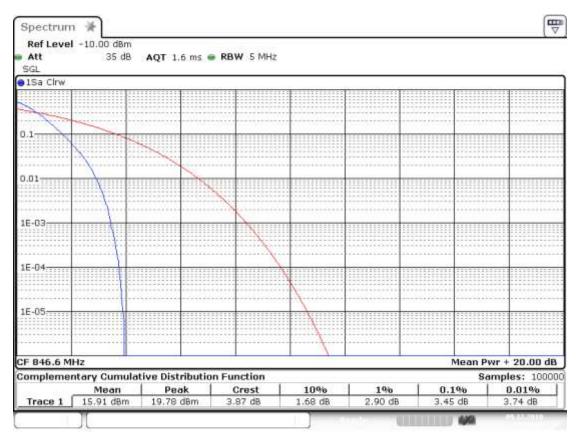
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Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4233 Value:Bc/Bd:2/15 CCDF:3.45		
Result: PASS	Voltage: VN	Temperature: TN

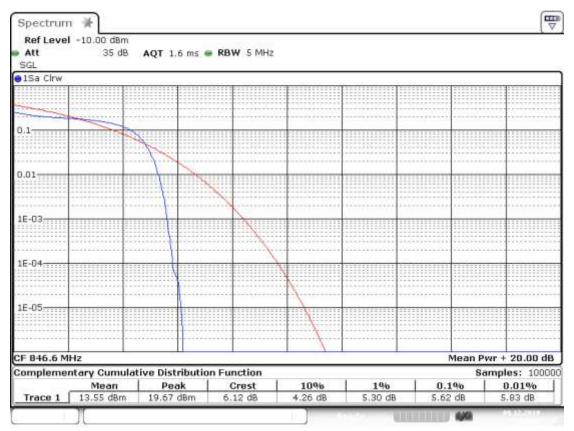


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Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4233 Value:Bc/Bd:12/15 CCDF:5.62		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 13:50:30





Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4233 Value:Bc/Bd:15/8 CCDF:4.23		
Result: PASS	Voltage: VN	Temperature: TN

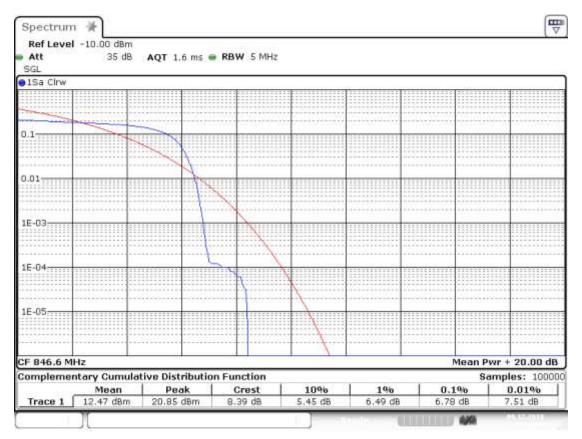


Date: 9.DEC.2019 13:50:46





Test Case: HSDPA Peak-to-Average Ratio		
Band: V Channel: 4233 Value:Bc/Bd:15/4 CCDF:6.78		
Result: PASS	Voltage: VN	Temperature: TN



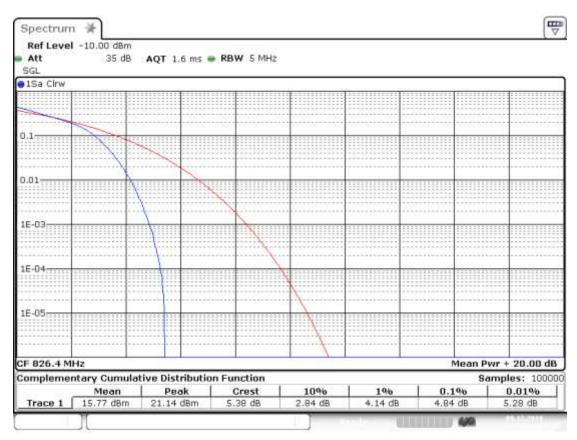
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HSUPA:

Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:SubTest1: CCDF:4.84		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 14:48:23

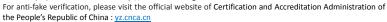




Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:SubTest2: CCDF:5.22		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 14:49:21







Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:SubTest3: CCDF:5.54		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 14:50:20





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:SubTest4: CCDF:4.84		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 14:52:00

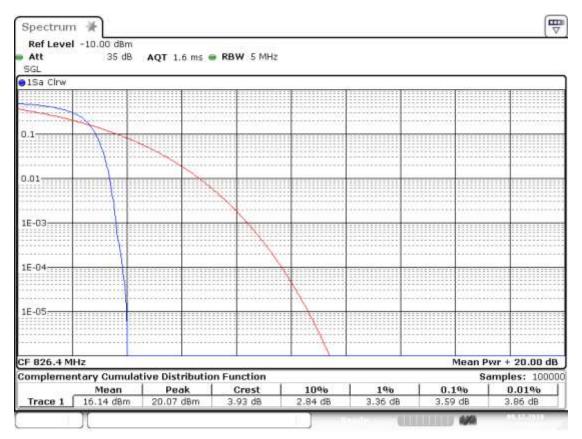
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Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4132 Value:SubTest5: CCDF:3.59		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 14:52:22





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4182 Value:SubTest1: CCDF:4.75		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 15:01:27





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4182 Value:SubTest2: CCDF:5.13		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 15:02:25





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4182 Value:SubTest3: CCDF:5.57		
Result: PASS	Voltage: VN	Temperature: TN

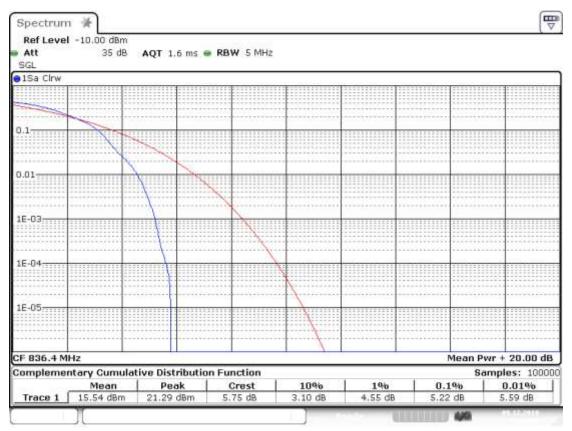


Date: 9.DEC.2019 15:03:24





Test Case: HSUPA Peak-to-Average Ratio Band: V Channel: 4182 Value:SubTest4: CCDF:5.22 **Result: PASS** Voltage: VN Temperature: TN

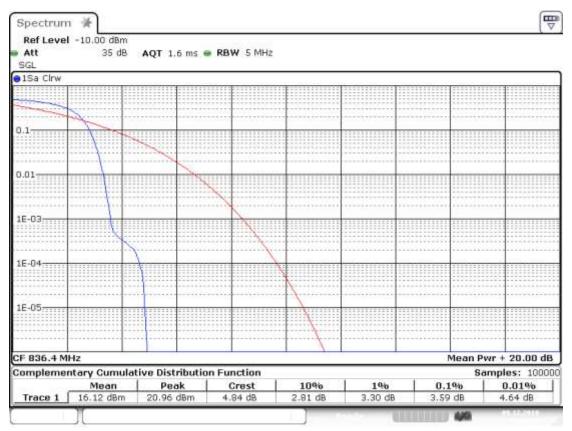


Date: 9.DEC.2019 15:05:00





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4182 Value:SubTest5: CCDF:3.59		
Result: PASS	Voltage: VN	Temperature: TN

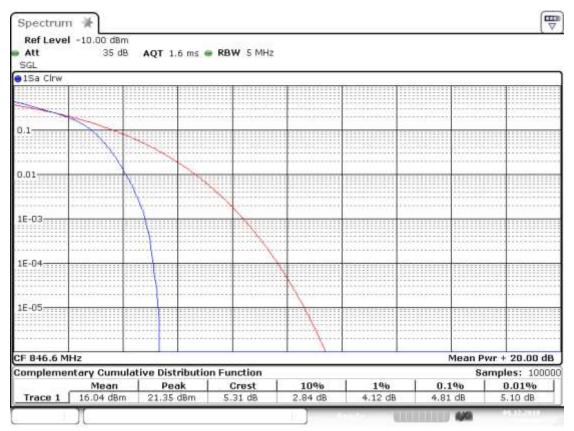


Date: 9.DEC.2019 15:05:22





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4233 Value:SubTest1: CCDF:4.81		
Result: PASS	Voltage: VN	Temperature: TN

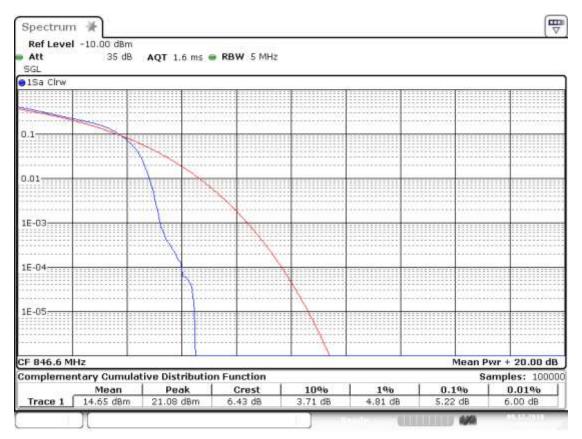


Date: 9.DEC.2019 15:06:26





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4233 Value:SubTest2: CCDF:5.22		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 15:07:24





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4233 Value:SubTest3: CCDF:5.65		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 15:08:24





Test Case: HSUPA Peak-to-Average Ratio		
Band: V Channel: 4233 Value:SubTest4: CCDF:4.81		
Result: PASS	Voltage: VN	Temperature: TN



Date: 9.DEC.2019 15:10:03





Test Case: HSUPA Peak-to-Average Ratio

Band: V Channel: 4233 Value:SubTest5: CCDF:3.59

Result: PASS Voltage: VN Temperature: TN



Date: 9.DEC.2019 15:10:25



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AppendixC:26dB Bandwidth andOccupied Bandwidth

Test Result

WCDMA:

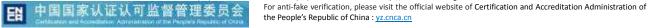
Band	Channel	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band V	4132	4124.5	4725		PASS
Band V	4182	4110.0	4710		PASS
Band V	4233	4110.0	4725		PASS

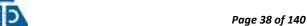
HSDPA:

Band	Channel	SubTest	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band V	4132	HSDPA_Sub1	4124.5	4710		PASS
Band V	4132	HSDPA_Sub2	4124.5	4739		PASS
Band V	4132	HSDPA_Sub3	4110.0	4739		PASS
Band V	4132	HSDPA_Sub4	4124.5	4754		PASS
Band V	4182	HSDPA_Sub1	4110.0	4725		PASS
Band V	4182	HSDPA_Sub2	4110.0	4725		PASS
Band V	4182	HSDPA_Sub3	4124.5	4739		PASS
Band V	4182	HSDPA_Sub4	4110.0	4739		PASS
Band V	4233	HSDPA_Sub1	4095.5	4710		PASS
Band V	4233	HSDPA_Sub2	4110.0	4725		PASS
Band V	4233	HSDPA_Sub3	4124.5	4739		PASS
Band V	4233	HSDPA_Sub4	4095.5	4739		PASS

HSUPA:

Band	Channel	SubTest	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Limit(kHz)	Verdict
Band V	4132	HSUPA_Sub1	4138.9	4725		PASS
Band V	4132	HSUPA_Sub2	4138.9	4768		PASS
Band V	4132	HSUPA_Sub3	4138.9	4739		PASS
Band V	4132	HSUPA_Sub4	4138.9	4739		PASS
Band V	4132	HSUPA_Sub5	4138.9	4739		PASS
Band V	4182	HSUPA_Sub1	4110.0	4725		PASS
Band V	4182	HSUPA_Sub2	4124.5	4696		PASS
Band V	4182	HSUPA_Sub3	4110.0	4739		PASS
Band V	4182	HSUPA_Sub4	4110.0	4725		PASS
Band V	4182	HSUPA_Sub5	4110.0	4754		PASS
Band V	4233	HSUPA_Sub1	4110.0	4739		PASS





Band V 4233 4725 PASS HSUPA_Sub2 4110.0 ---Band V 4233 4124.5 PASS HSUPA_Sub3 4725 ---Band V 4233 HSUPA_Sub4 4110.0 4725 **PASS** Band V 4233 HSUPA_Sub5 4725 **PASS** 4110.0

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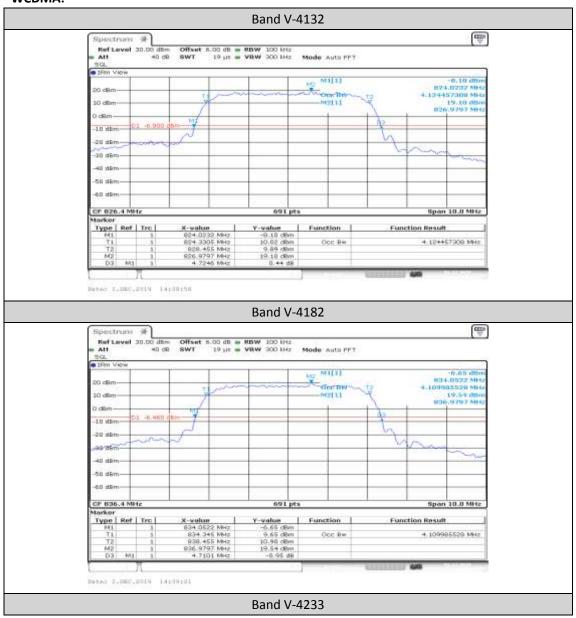


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Test Graphs

WCDMA:





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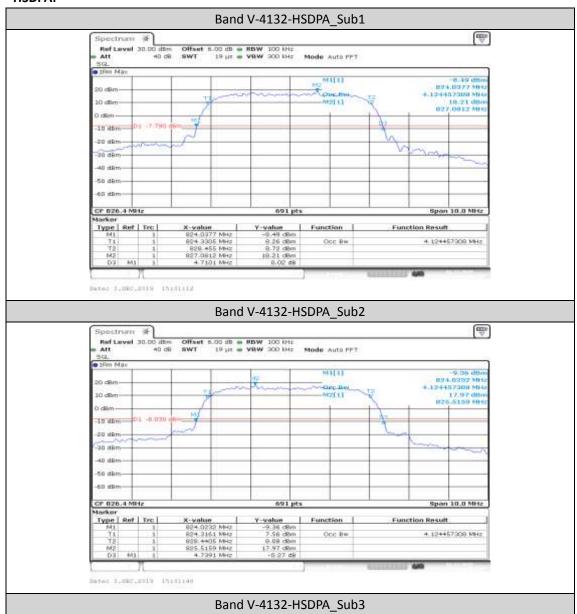


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HSDPA:





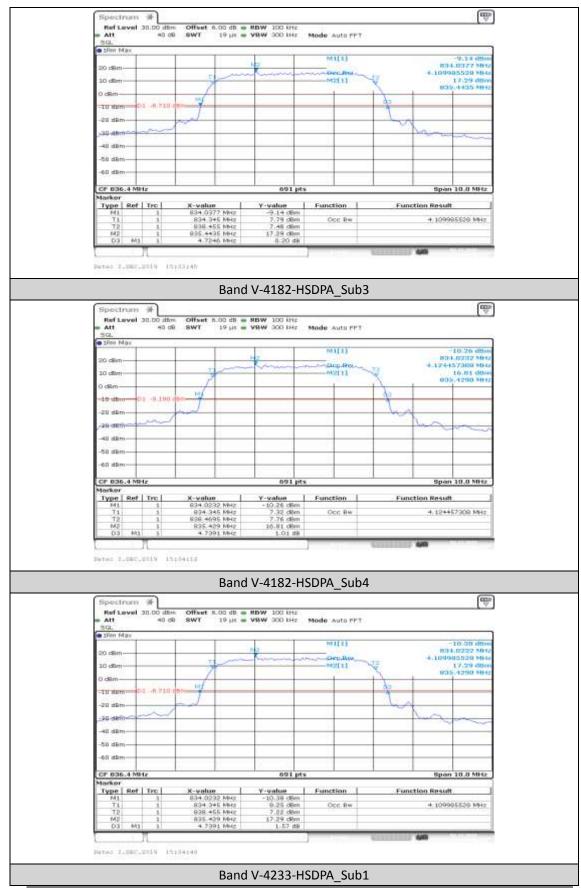
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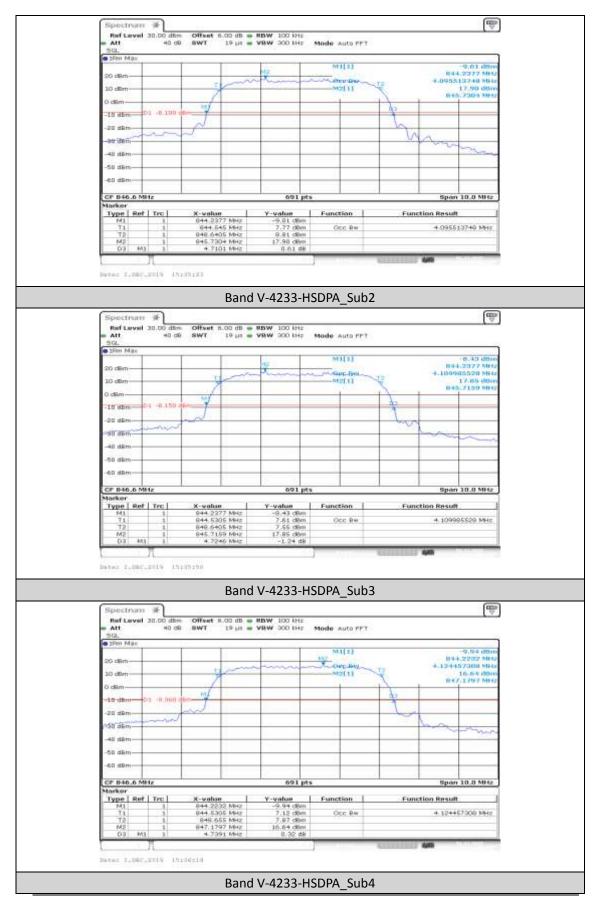












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HSUPA:



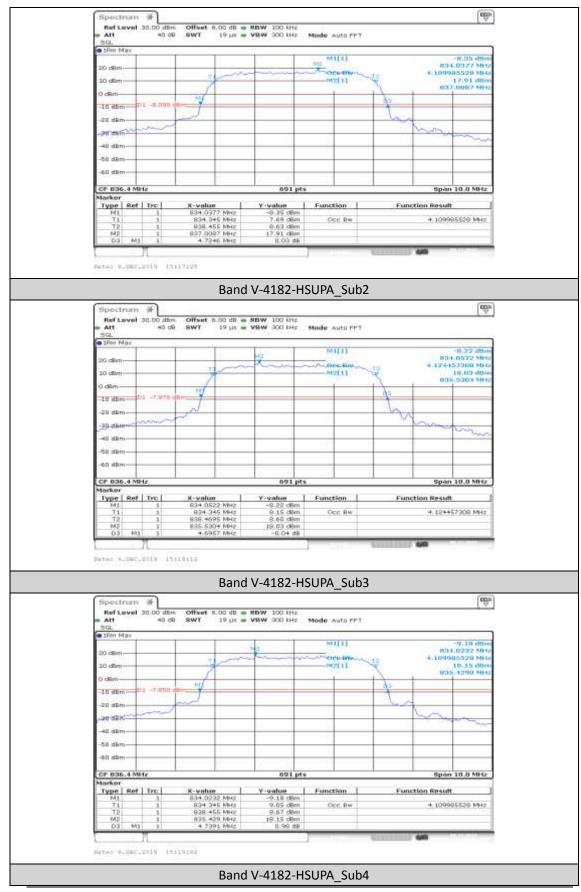




























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AppendixD:Band Edge

Test Result

WCDMA:

Band	Channel	Value(dBm)	Limit(dBm)	Verdict
Band V	4132	-15.75	-13	PASS
Band V	4233	-18.02	-13	PASS

HSDPA:

Band	Channel	SubTest	Value(dBm)	Limit(dBm)	Verdict
Band V	4132	HSDPA_Sub0	-17.82	-13	PASS
Band V	4132	HSDPA_Sub1	-15.67	-13	PASS
Band V	4132	HSDPA_Sub2	-15.65	-13	PASS
Band V	4132	HSDPA_Sub3	-16.31	-13	PASS
Band V	4233	HSDPA_Sub0	-20.15	-13	PASS
Band V	4233	HSDPA_Sub1	-17.76	-13	PASS
Band V	4233	HSDPA_Sub2	-17.52	-13	PASS
Band V	4233	HSDPA_Sub3	-17.57	-13	PASS

HSUPA:

Band	Channel	SubTest	Value(dBm)	Limit(dBm)	Verdict
Band V	4132	HSUPA_Sub1	-14.95	-13	PASS
Band V	4132	HSUPA_Sub2	-17.86	-13	PASS
Band V	4132	HSUPA_Sub3	-14.35	-13	PASS
Band V	4132	HSUPA_Sub4	-17.02	-13	PASS
Band V	4132	HSUPA_Sub5	-14.86	-13	PASS
Band V	4233	HSUPA_Sub1	-21.07	-13	PASS
Band V	4233	HSUPA_Sub2	-20.21	-13	PASS
Band V	4233	HSUPA_Sub3	-19.10	-13	PASS
Band V	4233	HSUPA_Sub4	-20.92	-13	PASS
Band V	4233	HSUPA_Sub5	-20.92	-13	PASS

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Test Graphs

WCDMA:

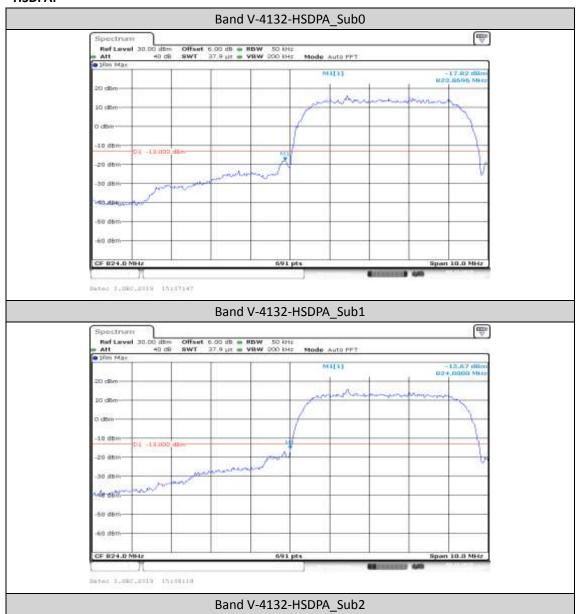


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HSDPA:





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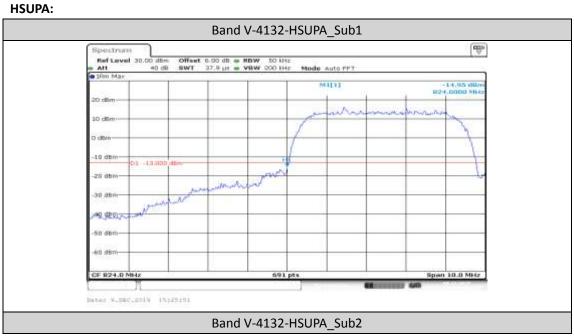
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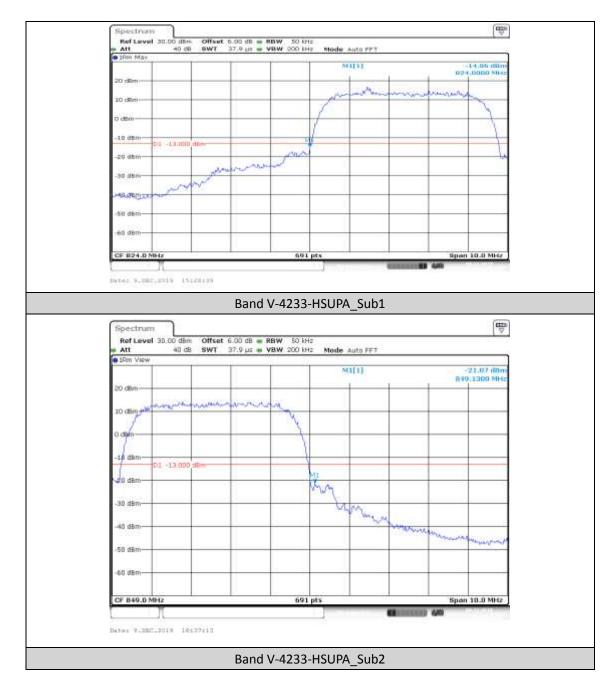




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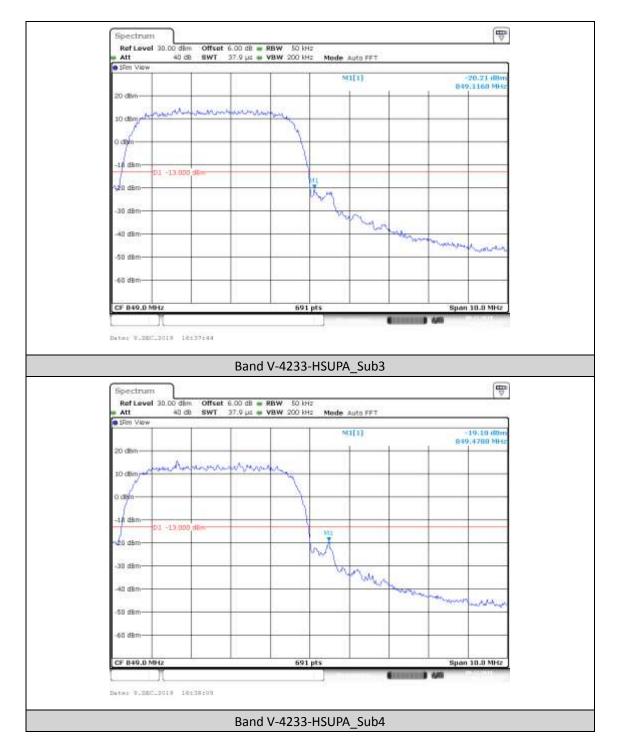






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