



TEST REPORT

APPLICANT	:	Shenzhen Chainway Information Technology Co.,Ltd.
PRODUCT NAME	:	Mobile Data Terminal
MODEL NAME	:	C72
BRAND NAME	:	CHAINWAY
FCC ID	:	2AC6AC72
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E 47 CFR Part 27 Subpart L
TEST DATE	:	2018-01-21 to 2018-05-17
ISSUE DATE	:	2018-05-17

Tested by:

rlang

Su Hang (Test Engineer)

Approved by:

Andy ¥eh (Technical Director)

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Change History					
Issue	Date	Reason for change			
1.0	2018-05-17	First edition			



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1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Shenzhen Chainway Information Technology Co.,Ltd.		
Applicant Address: 9/F, Building 2, Daqian Industrial Park, Longchang Rd., D			
	67, Bao'an, Shenzhen		
Manufacturer:	Shenzhen Chainway Information Technology Co.,Ltd.		
Manufacturer Address:	9/F, Building 2, Daqian Industrial Park, Longchang Rd., District		
	67, Bao'an, Shenzhen		

1.2. Equipment Under Test (EUT) Description

Product Name:	Mobile Data Terminal			
Serial No:	(N/A, marked #1 by test site)			
Hardware Version:	C70SE_MB_V11			
Software Version:	C72A_MT6735_V1.1-AM_GIT938ee72_20171205			
Modulation Type:	GSM,GPRS Mode with GMSK Modulation			
	GSM 850MHz:			
	Tx: 824.20 - 848.80MHz (at intervals of 200kHz);			
	Rx: 869.20 - 893.80MHz (at intervals of 200kHz)			
	GSM 1900MHz:			
	Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz);			
	Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz)			
	WCDMA 850MHz			
Operating Frequency Range:	Tx: 826.4 - 846.6MHz (at intervals of 200kHz);			
	Rx: 871.4 - 891.6MHz (at intervals of 200kHz)			
	WCDMA 1700MHz			
	Tx: 1712.4 – 1752.6MHz (at intervals of 200kHz);			
	Rx: 2112.4 - 2152.6MHz (at intervals of 200kHz)			
	WCDMA 1900MHz			
	Tx: 1852.4 - 1907.6MHz (at intervals of 200kHz);			
	Rx: 1932.4 - 1987.6MHz (at intervals of 200kHz)			
Multi-slot Class:	GPRS: Multislot Class12; EGPRS: Multislot Class12			
Fuele size Design stars	GSM 850:248KGXW,GSM 1900:244KGXW			
Emission Designators:	EGPRS850:251KG7W, EGPRS1900:252KG7W,			



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	WCDMA 850:4M22F9W , WCDMA1700:4M24F9W				
	WCDMA1900:4M23F9W				
Antenna Type:	PIFA Antenna				
Antenna Gain:	0.49 dBi				
	Normal(NV):	3.8V			
Operating voltage:	Lowest(LV):	3.6V			
	Highest(HV):	4.35V			

- Note 1: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula F(n)=824.2+0.2*(n-128), 128<=n<=251; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 190 (836.6MHz) and 251 (848.8MHz).
- *Note 2:* The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can be represented with the formula F(n)=1850.2+0.2*(n-512), 512<=n<=810; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 512 (1850.2MHz), 661 (1880.0MHz) and 810 (1909.8MHz).
- *Note 3:* The transmitter (Tx) frequency arrangement of the WCDMA 850MHz band used by the EUT can be represented with the formula F(n)=826.4+0.2*(n-4132), 4132<=n<=4233; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4175(835MHz) and 4233 (846.6MHz).
- *Note 4:* The transmitter (Tx) frequency arrangement of the WCDMA 1900MHz band used by the EUT can be represented with the formula F(n)=1852.4+0.2*(n-9262), 9262<=n<=9538; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).
- *Note 5:* For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.





1.3. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22, Part 24 and Part 27 for the EUT FCC ID Certification:

No	Identity	Document Title	
1	47 CED Dort 2 (10 1 12 Edition)	Frequency Allocations and Radio Treaty Matters;	
1	47 CFR Part 2 (10-1-12 Edition)	General Rules and Regulations	
2	47 CFR Part 22 (10-1-12 Edition)	Public Mobile Services	
3	47 CFR Part 24 (10-1-12 Edition)	Personal Communications Services	
4	47 CFR Part 27 (10-1-12 Edition)	Miscellaneous Wireless Communications Services	

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result				
1	2.1046	Conducted RF	Jan 24, 2018	Su Hang	PASS				
	04.000(-1)	Output Power	lan 05, 0040						
2	24.232(d)	Peak - Average	Jan 25, 2018	Su Hang	PASS				
	27.50(d)	Radio	Jan 31, 2018	,					
3	2 10/0	99% Occupied	Jan 25, 2018	Su Hang	DVCC				
5	2.1049	Bandwidth	Jan 31, 2018	Surrang	PASS				
4	2.1055,22.355,	Eroquopov Stobility	Jan 25, 2018	Su Hong	PASS				
4	24.235,27.54	Frequency Stability	Jan 31, 2018	Surrang					
F	2.1051, 22.917(a),	Conducted Out of	Jan 25, 2018	Su Hong	PASS				
5	24.238(a), 27.53(h)	Band Emissions	Jan 31, 2018	Su Hang					
6	2.1051, 22.917(a),	Pond Edgo	Jan 25, 2018	Su Hong	DACC				
0	24.238(a), 27.53(h)	Ballu Euge	Jan 31, 2018	Surrang	PASS				
7	22.012(a) 24.222(a)	Transmitter Radiated	May 15&17,						
'	22.913(a), 24.232(a)	Power (EIPR/ERP)	2018	vvu znongwen	PASS				
0	2.1051, 22.917(a),	Radiated Out of	Jan 21&22,						
⁸ 24.238(a), 27.53(h)		Band Emissions	2018	wu zhongwen	PASS				
Note: The tests were performed according to the method of measurements prescribed in									
KDB	KDB971168 D01 v03 (Oct 27, 2017) and ANSI/TIA-603-E-2016.								





1.4. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106



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2. 47 CFR Part 2, Part 22H & 24E Requirements

2.1. Conducted RF Output Power

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

2.1.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.





2.1.3. Test Results

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.

GSM Test Verdict:

Bond	Channel	Frequency	Measured Output Power	Limit	Vardiat	
Danu	Channel	(MHz)	dBm	dBm	verdict	
COM	128	824.2	32.09		PASS	
	190	836.6 32.12		35	PASS	
000101HZ	251	848.8	32.15		PASS	
COM	512	1850.2	27.52		PASS	
	661	1880.0	27.91	32	PASS	
190010172	810	1909.8	28.41		PASS	
CDDC	128	824.2	32.15		PASS	
	190	836.6	32.19	35	PASS	
000101HZ	251	848.8	3.8 32.22		PASS	
CDDS	512	1850.2	27.34		PASS	
GPRS 1900MHz	661	1880.0 27.71		32	PASS	
	810	1909.8	28.49		PASS	
ECODE	128	824.2	27.06		PASS	
	190	836.6	27.14	35	PASS	
000101HZ	251	848.8	26.99		PASS	
FORDS	512	1850.2	26.06		PASS	
	661	1880.0	26.02	32	PASS	
190010172	810	810 1909.8 26.16			PASS	
Note 1: For the GPRS and EGPRS model, all the slots were tested and just the worst data was recorded in this report.						





WCDMA Test Verdict:

	band	WCDMA 850		WCDMA 1700			WCDMA 1900			
Item	ARFCN	4132	4175	4233	1312	1412	1513	9262	9400	9538
	subtest		dBm		dBm			dBm		
5.2(WCDMA)	non	22.21	21.98	22.10	21.54	21.54	21.56	20.93	20.99	21.27
	1	21.10	20.98	21.19	20.63	20.66	20.63	20.09	20.13	20.5
	2	21.16	21.02	21.18	20.64	20.7	20.67	20.03	20.12	20.51
HODFA	3	20.69	20.56	20.7	20.21	20.23	20.21	19.59	19.70	20.08
	4	20.66	20.56	20.67	20.18	20.22	20.21	19.56	19.64	20.07
	1	19.21	19.03	19.18	18.73	18.7	18.71	18.07	18.19	18.45
	2	19.15	19.05	19.14	18.67	18.7	18.73	17.98	18.08	18.47
HSUPA	3	20.14	20.05	20.18	19.68	19.69	19.72	19.02	19.07	19.43
	4	18.68	18.49	18.66	18.12	18.14	18.15	17.6	17.68	17.89
	5	21.19	21.01	21.12	20.65	20.65	20.63	19.98	20.02	20.39
HSPA+	1	21.77	21.66	21.70	21.48	21.64	21.65	22.10	22.36	22.60



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2.2. Peak to Average Radio

2.2.1. Requirement

According to FCC 24.232(d) the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

2.2.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

2.2.3. Test procedure

1 .For GSM/EGPRS operating mode:

- a. Set RBW=1MHz, VBW=3MHz, peak detector in spectrum analyzer.
- b. Set EUT in maximum output power, and triggered the bust signal.
- c. Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average radio.
- 2. For UMTS operating mode:
- a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
- b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.





2.2.4. Test Result

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

A. Test Verdict:

Pond	Channel	Frequency	Peak to Average radio		Limit	Vordict	
Danu	Channel	(MHz)	dB	Refer to Plot	dB	verdict	
CSM	512	1850.2	0.03			PASS	
	661	1880.0	0.05	Plot A1 to A3	13	PASS	
190010172	810	1909.8	0.02			PASS	
ECDDS	512	1850.2	0.01		13	PASS	
1900MHz	661	1880.0	0.01	Plot B1 to B3		PASS	
	810	1909.8	0.02			PASS	
WCDMA 1900MHz	9262	1852.4	2.53		13	PASS	
	9400	1880.0	2.52	Plot C1 to C3		PASS	
	9538	1907.6	2.44			PASS	
WCDMA 1700MHz	1312	1712.4	2.52			PASS	
	1412	1732.4	2.56	Plot D1 to D3	13	PASS	
	1513	1752.6	2.33			PASS	





B. Test Plots:

Agilent Spectrum Analyzer - Swept SA - 5 . VO RF 05:39:20 PM Jan 23, 2018 VT TRACE 2 2 3 4 5 6 0 TYPE WWWWW DET P N N N N SENSE:INT ALIGN AUTO/NO Avg Type: Log-Pwr Avg|Hold:>100/100 Peak Search Marker 1 694.400 µs Trig: Free Run Atten: 30 dB PNO: Fast IFGain:Low Next Peak Mkr1 694.4 µs 27.487 dBm Ref Offset 17.5 dB Ref 35.00 dBm ID (di V Next Pk Right Next Pk Left Marker Delta Mkr-CF Mkr→Ref Lv More 1 of 2 Center 1.850200000 GHz Res BW 1.0 MHz Span 0 Hz Sweep 1.067 ms (1001 pts) #VBW 3.0 MHz 📕 Agilent Spectrum Analyzer - Swept SA a 💉 ALIGN AUTO/NO RF 05:37:17 PM Jan 23, 2018 Avg Type: RMS TRACE 2 2 3 4 5 Avg[Hold:>100/100 DET A HINNIN Peak Search Marker 1 790.400 µs Trig: Free Run Atten: 30 dB PNO: Fast IFGain:Low Next Peak Mkr1 790.4 µs 27.460 dBm Ref Offset 17.5 dB Ref 35.00 dBm **♦**¹ Next Pk Right Next Pk Left Marker Delta Mkr-CF Mkr→Ref Lvl More Center 1.850200000 GHz Res BW 1.0 MHz 1 of 2 Span 0 Hz Sweep 1.067 ms (1001 pts) #VBW 3.0 MHz* MSG

(Plot A1, GSM 1900 MHz, Channel = 512)





			analar mart	A ALTON AUTO INO DE		- 1 d 💌
Marker '	1 776.533 μs	PNO: Fast) Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>100/100	105:40:44 PM Jan 23, 2018 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	Peak Search
10 dB/div	Ref Offset 17.5 dB Ref 35.00 dBm	IFGain:Low	Atten of up		Mkr1 776.5 µs 27.862 dBm	Next Peak
25.0				∮ ¹		Next Pk Right
15.0						Next Pk Left
-5.00						
-16.0						Marker Delta
-25.0						Mkr→CF
-45.0						Mkr→RefLvi
-55.0						More 1 of 2
Center 1 Res BW	.880000000 GHz 1.0 MHz	#VBW	3.0 MHz	Sweep 1.0 STATUS	Span 0 Hz 067 ms (1001 pts)	
Agilent Spe	ectrum Analyzer - Swept SA					
Marker 1	RF 50 Ω DC 1 598.400 µs	PNO: Fast 😱	SENSECINT	Augn Auto/No RF Avg Type: RMS Avg Hold:>100/100	05:40:59 PM Jan 23, 2018 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET A N N N N N	Peak Search
10 dB/div	Ref Offset 17.5 dB Ref 35.00 dBm	IFGain:Low	Atten: 30 db		Mkr1 598.4 µs 27.816 dBm	NextPeak
25.0			^1			
15.0						Next Pk Right
5.00						Next Pk Right Next Pk Left
5.00						Next Pk Right Next Pk Left Marker Delta
-5.00 -5.00 -16.0						Next Pk Right Next Pk Left Marker Delta
5.00 -5.00 -15.0 -25.0 -35.0						Next Pk Right Next Pk Left Marker Delta Mkr→CF
5.00 -5.00 -16.0 -25.0 -35.0 -45.0						Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl
5.00 -5.00 -25.0 -25.0 -45.0 -55.0 	88000000 GHz				Span 0 Hz	Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More 1 of 2
5.00 -5.00 -25.0 -45.0 -55.0 Center 1. Res BW	.880000000 GHz 1.0 MHz	#VBW	3.0 MHz*	Sweep 1.0	Span 0 Hz 167 ms (1001 pts)	Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More 1 of 2

(Plot A2, GSM 1900 MHz, Channel = 661)

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	PE ISOO DC		CENCE-INT	ALTON AUTO/NO PE	05-42-02 PM lan 22 2018	
Aarker 1	1.04000 ms	PNO: Fast	Trig: Free Run Atten: 30 dB	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	Peak Search
0 dB/div	Ref Offset 17.5 dB Ref 35.00 dBm	IF Gam. LOW		N	/kr1 1.040 ms 28.503 dBm	NextPeak
25.0					\$ 1	Next Pk Righ
15.0						Next Pk Let
5.00						NEXT FR LE
15.0						Marker Delt
25.0						Mkr→C
35.0						
15.0						Mkr→RefLv
Contor 1	000800000 CH-				Spap 0 Hz	Mor 1 of
Res BW 1	1.0 MHz	#VBW	3.0 MHz	Sweep 1.0	67 ms (1001 pts)	-
Agilent Spe	ctrum Analyzer - Swept SA					
0						_ @ <u>×</u>
larker 1	RF 50 Ω DC 318.933 μs	PNO: Fast	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO/NO RF Avg Type: RMS Avg Hold:>100/100	05:41:44 PM Jan 23, 2018 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET A N N N N N	Peak Search
larker 1 0 dB/div	RF 50 Ω DC 318.933 μs Ref Offset 17.5 dB Ref 35.00 dBm	PNO: Fast 😱 IFGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO/NO RF Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23, 2018 TRACE 2 3 4 5 6 TYPE M DET ANNNNN Mkr1 318.9 µs 28.481 dBm	Peak Search Next Pea
Narker 1 0 dB/div	RF 0ffset 17.5 dB Ref 0ffset 17.5 dB	PNO: Fast 🖵	SENSE:INT Trig: Free Run Atten: 30 dB	Auton Auto/No RF Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23, 2018 TRACE 2 3 4 5 6 TYPE MUNUM OET ANNNNN Mkr1 318.9 µs 28.481 dBm	Peak Search Next Pea Next Pk Right
arker 1	RF 50.9 DC 318.933 μs 3 Ref Offset 17.5 dB 4 Ref 35.00 dBm 3	PNO: Fast CP IFGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23, 2018 TRACE 1 2 3 4 5 6 TYPE MONITORING OFT ANNINN Mkr1 318.9 µs 28.481 dBm	Peak Search Next Peal
arker 1	RF 0ffset 17.5 dB Ref 0ffset 17.5 dB Ref 35.00 dBm	PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23,2018 TRACE [] 2:34 5 0 TYPE MWWWW OCT ANNUN N Mkr1 318.9 µs 28.481 dBm	Peak Search Next Peak Next Pk Right
0 dB/div 0 dB/d	R€ 50.9 DC 318.933 µs Ref Offset 17.5 dB Ref 35.00 dBm	PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	Auton Auto/No RF Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23, 2018 TRACE 1 2 3 4 5 6 TYPE M MININ DET ANNINN Mkr1 318.9 µs 28.481 dBm	Peak Search Next Peal Next Pk Righ Next Pk Lef
0 dB/div 9 25.0 5.00 5.00	Ref Offset 17.5 dB Ref 35.00 dBm	PNO: Fast PIGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23, 2018 TRACE 1 2 3 4 5 0 TYPE M 4444444 OCT A NUMN N 8444 28.481 dBm	Peak Search Next Pea Next Pk Righ Next Pk Let Marker Dett
0 dB/div 0 g 25.0 15.0 5.00 16.0 25.0 35.0	Ref Offset 17.5 dB Ref 35.00 dBm	PNO: Fast IFGain:Low	SENSE:INT	Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23,2018 TRACE 2:34 5 0 TYPE MWWWW OCT AVNINN N Mkr1 318.9 µs 28.481 dBm	Peak Search Next Pea Next Pk Right Next Pk Lei Marker Deit
0 dB/div 15.00 16.0 0 dB/div 25.00 45.0	R€ 50.9 DC 318.933 µs	PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	Avg Type: RMS Avg Hold:>100/100	0541:44 PMJan 23, 2018 TRACE 1 2 3 4 5 6 TYPE M MININ BET ANNINN Mkr1 318.9 µs 28.481 dBm	Peak Search Next Peal Next Pk Righ Next Pk Lef Marker Delt Mkr→Cl
arker 1	Ref 50.9 DC 318.933 µs 318.933 µs Ref Offset 17.5 dB Ref 35.00 dBm 35.00 dBm	PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23, 2018 TRACE 1 2 3 4 5 0 TYPE M 4444444 0 T A NUNN N Mkr1 318.9 µs 28.481 dBm	Peak Search Next Peal Next Pk Righ Next Pk Lef Marker Deft Mkr->Ref Lv Morr
Aarker 1	Ref Offset 17.5 dB Ref 35.00 dBm	PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 30 dB	Augn Auto/No RF Avg Type: RMS Avg Hold:>100/100	05:41:44 PMJan 23, 2018 TRACE 2 3 4 5 0 TYPE MINIMUM Mkr1 318.9 µs 28.481 dBm 	Peak Search Next Peal Next Pk Righ Next Pk Lef Marker Delta Mkr→Cf Mkr→Ref Lv Morr

(Plot A3, GSM 1900MHz, Channel = 810)





1 11	RE 50.0	AC		SEA	ISE:INT		ALIGNALITO	02-49-40 D	4 May 14, 2019	
Marker 1	1 960.000 µs	PNO	D: Fast 🕟	Trig: Free	Run	Avg Type Avg Hold:	: Log-Pwr >100/100	TRAC TYP	E 123456	Peak Search
10 dB/div	Ref Offset 17.5 Ref 40.00 dl	iFGa 5 dB Bm	ain:Low	Atten: 34	dB			Mkr1 9 28.24	60.0 μs 42 dBm	Next Peak
30.0			~~~~~		v-1				¢1	Next Pk Right
20.0										Next Pk Left
0.00										Marker Delta
-10.0										Min. 05
-30.0										Mkr→CF
-40.0										Mkr→RefLvl
Center 1	.850200000 GI	Hz		0.0.00			0	S	pan 0 Hz	More 1 of 2
MSG			#VDVV	3.0 MHZ			Sweep T	.000 ms (roor pts)	
Agilent Spect										
	trum Analyzer - Swep	ot SA								
<mark>w</mark> Marker ′	rum Analyzer - Swep RF 50 Ω 1 416.000 μs	DE SA AC PNC	D: Fast 🔾	SEN Trig: Free	ISE:INT	Avg Type Avg Hold:	ALIGN AUTO 2: RMS > 100/100	02:49:20 PN TRAC TYP	4 May 14, 2018 E 1 2 3 4 5 6 E M M M M M	Peak Search
Marker 1 Marker 1 10 dB/div	rum Analyzer - Swep RF 50 Ω 1 416.000 μs Ref Offset 17.5 Ref 40.00 dl	AC AC IFGa 5 dB Bm	D: Fast 🖵 ain:Low	SEN Trig: Free Atten: 34	ISE:INT Run dB	Avg Type Avg Hold	ALIGNAUTO 2: RMS > 100/100	02:49:20 PM TRAC TYP DE Mkr1 4 28.23	^{1 May 14, 2018} ^E 1 2 3 4 5 6 ^E Μ W W W W T A N N N N N 16.0 μs 36 dBm	Peak Search Next Peak
Marker 1 10 dB/div	run Analyzer - Swe PF 50 Ω 1 416.000 µs Ref Offset 17.5 Ref 40.00 dl	AC PNC FFGa 6 dB Bm	D: Fast 🖵	SEN Trig: Free Atten: 34	ISE:INT Run dB	Avg Type Avg Hold:	ALIGNAUTO 2: RMS > 100/100	02:49:20 PM TRAC TYP DE Mkr1 4 28.23	Мау 14, 2018 Е 12 3 4 5 6 е Милики 16.0 µs 36 dBm	Peak Search Next Peak Next Pk Right
Marker / 10 dB/div 20.0	RF 50 Ω 1 416.000 μs 50 Ω Ref Offset 17.5 Ref 40.00 dl	AC PNO FGa 6 dB Bm	D: Fast 😱	SEN Trig: Free Atten: 34	ISE:INT Run dB	Avg Type Avg Hold:	ALIGNAUTO :: RMS > 100/100	02:49:20 PM TRAC TYF DE Mkr1 4 28.2	May 14, 2018 E 1 23 4 5 6 Museum T A NNNNN 16.0 μs 36 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
Marker *	RF 50 Ω 1 416.000 μs 50 Ω Ref Offset 17.5 Ref 40.00 dl	AC PROFIE	D: Fast	Trig: Free Atten: 34	se:INT dB	Avg Type Avg Hold	ALIGNAUTO	02:49:20 PM TRAC TVF DE Mkr1 4 28.23	Мау 14, 2018 = 1 2 3 4 5 6 = M	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Marker / 10 dB/div 20.0 10.0 -10.0	Ref Offset 17.5 Ref 0ffset 17.5 Ref 40.00 dl	AC PROFIE	D: Fast	Trig: Free Atten: 34	ISE:INT Run dB	Avg Type Avg Hold	ALIGNAUTO	02:49:20 PM TRAC TYP DE Mkr1 4 28.23	Мау 14, 2018 E 1 2 3 4 5 6 E M	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Marker / 10 dB/div 20.0 10.0 -10.0 -20.0	RF 50 @ 1 416.000 µs SRef Ref Offset 17.5 Ref Ref 40.00 dl SRef	AC PNC IFGa 5 dB BM	D: Fast	Trig: Free Atten: 34	ise:INT dB	Avg Type Avg Hold	ALIGN AUTO 2: RMS >100/100	02:49:20 PM TRAF TRAF DE Mkr1 4 28.23	May 14, 2018 Φ 23 4 5 6 Φ 2	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Marker / 10 dB/div 30.0 20.0 10.0 -20.0 -10.0 -30.0 -40.0	Ref Offset 17.5 Ref Offset 17.5 Ref 40.00 dl	AC PROFIE	D: Fast	Trig: Free Atten: 34	ISE:INT Run dB	Avg Type Avg Hold	ALIGNAUTO	02:49:20 PM TRAC TVF DE Mkr1 4 28.23	Мау 14, 2018 Е 12 3 4 5 6 Мау 14, 2018 16.0 µs 36 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Marker / 10 dB/div 30.0 20.0 10.0 -10.0 -20.0 -30.0 -40.0 -50.0	RF 50 Ω 1 416.000 μs 50 Ω Ref Offset 17.5 Ref 40.00 dl	AC PROFIEE	D: Fast	SEN Trig: Free Atten: 34	ISE:INT Run dB	Avg Type Avg Hold	ALIGNAUTO	02:49:20 PM TRAC TYP DE Mkr1 4 28.23	Мау 14, 2018 1 2 3 4 5 6 т А NNNNN 16.0 µs 36 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl

(Plot B1, EGPRS 1900 MHz, Channel = 512)





Agilent Spec	trum Analyzer - Swept S	A	CENCE-INIT	ALIGNALITO	02/50/22 DM May 14, 2019	
Marker '	1 41.0000 µs	PNO East	Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE MWWWWW	Peak Search
		IFGain:Low	Atten: 34 dB			Next Peak
10 dB/div	Ref Offset 17.5 dl Ref 40.00 dBn	B n			27.802 dBm	
Log						
30.0	,1					Next Pk Right
20.0						Next Did off
10.0						Next PK Lett
0.00						
0.00						Marker Delta
-10.0						
-20.0						
						Mkr→CF
-30.0						
-40.0						Mkr→RefLvl
-50.0						More
Center 1	88000000 GHz				Snan () Hz	1 of 2
Res BW	1.0 MHz	#VBW	3.0 MHz	Sweep 1	.000 ms (1001 pts)	
MSG				STATUS		
				01A100		
Agilent Spec	t <mark>rum Analyzer - Swept S</mark> RF 50 Ω AG	A C	SENSE:INT	ALIGN AUTO	02:49:45 PM May 14, 2018	De als Os arrais
Agilent Spec Marker	trum Analyzer - Swept S RF 50 Ω AC 1 870.000 μs	A C PNO: Fast 😱	SENSE:INT Trig: Free Run	ALIGNAUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 TRACE 1 2 3 4 5 6 TYPE M	Peak Search
Agilent Spec W Marker	trum Analyzer - Swept S RF 50 ຊ A(1 870.000 µs	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 TRACE 1 2 3 4 5 6 TYPE MUMAN DET A NNNN N	Peak Search Next Peak
Agilent Spec M Marker	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 12 2 4 5 G TYPE 14 A 5 G OFT A NN NN N OFT A NN NN NN Mkr1 870.0 µs 27.799 dBm	Peak Search Next Peak
Agilent Spec IX Marker 10 dB/div	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B A	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 TRACE 2 3 4 5 6 TYPE MUNAWAY DET NNNNN Mkr1 870.0 µs 27.799 dBm	Peak Search Next Peak
Agilent Spec XI Marker 10 dB/div Log 30.0	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT	ALIONAUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 TRACE 2, 3, 4, 5, 6 OFF ANNINAN OFF ANNINAN Mkr1 870.0 µs 27.799 dBm	Peak Search Next Peak Next Pk Right
Agilent Spec X ² Marker ¹ 10 dB/div Log 30.0 20 0	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B N	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 12 8 4 5 G TYPE M MAWNIN DET & NIN NIN Mkr1 870.0 µs 27.799 dBm	Peak Search Next Peak Next Pk Right
Agilent Spec X ² Marker 10 dB/div Log 20.0	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B N	SENSE:INT	ALIGNAUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 ТКАСЕ 2 3 4 5 5 ТҮРЕ МИНИЧИНИИ ОСТ И И И И И И И И И ОСТ И И И И И И И И ОСТ И И И И И И ОСТ И И И И И И ОСТ И И И И И И И И И ОСТ И И И И И И И И ОСТ И И И И И И И И И ОСТ И И И И И И И И ОСТ И И И И И И И И И И ОСТ И И И И И И И И И И ОСТ И И И И И И И И И И ОСТ И И И И И И И И И И ОСТ И И И И И И И И И И И И И ОСТ И И И И И И И И И И И И И И ОСТ И И И И И И И И И И И И И И И И ОСТ И И И И И И И И И И И И И И И И И И И	Peak Search Next Peak Next Pk Right Next Pk Left
Agilent Spec 2 Marker 1 10 dB/div 20 0 10 0	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT	ALIONAUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 TRACE 2 3 4 5 5 OFF A NUMBER OFF A NUMBER 27.799 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
Agilent Spec 2 Marker 10 dB/div 20 0 10 0 0.00	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT	ALIONAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 2 3 4 5 15 TYPE M WWWWWW OFF A N N N N N Mkr1 870.0 µs 27.799 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
Agilent Spec	trum Analyzer - Swept S	PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 12 23 4 9 G TVPE 12 23 4 9 G VPE ANN NINN Mkr1 870.0 µs 27.799 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Agilent Spec D Marker 10 dB/div 30 0 20 0 10 0 .000	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT	ALIONAUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 TRACE 2 3 4 5 5 OFF A NUMBER 27.799 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Agilent Spec 2 Marker 1 10 dB/div 20.0 20.0 10.0 -10.0 -20.0	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT	ALIONAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 2 3 4 5 5 TYPE MWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Agilent Spec	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 12 3 4 5 G TYPE 12 3 4 5 G CONTRACT 12 70 9 0 0 µS 27.799 0 0 µS 27.799 0 0 µS 27.799 0 0 µS	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Agilent Spec	trum Analyzer - Swept S	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 12 23 4 9°G TYPE 12 23 4 9°G TYPE 27.799 dBm 1	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Agilent Spec D Marker 10 dB/div 30 0 20 0 10 0 -20 0 -20 0 -20 0 -20 0 -20 0	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT	ALION AUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 TRACE 2 3 4 5 5 TYPE MANANANA OF A N N N N N Mkr1 870.0 µs 27.799 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Agilent Spec 2 Marker 10 dB/div 20 0 20 0 10 0 -10 0 -20 0 -30 0 -40 0 -50 0	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 12 3 4 5 G TYPE 10 3 4 5 G OFF A NUMBUN Mkr1 870.0 µs 27.799 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Agilent Spec	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B n	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 12 3 4 5 G TYPE 12 3 4	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl
Agilent Spec D Marker 10 dB/div 30 0 20.0 10.0 -0.00 -10.0 -20.0 -30.0 -40.0 Center 1	trum Analyzer - Swept S	A PNO: Fast IFGain:Low B N	SENSE:INT Trig: Free Run Atten: 34 dB	ALIONAUTO Avg Type: RMS Avg Hold>100/100	02:49:45 PM May 14, 2018 TRACE 12.34 9°G TYPE 12.34 9°G TYPE 1 Mkr1 870.0 µs 27.799 dBm 1 1 1 <td>Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More 1 of 2</td>	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More 1 of 2
Agilent Spec Marker 1 10 dB/div 20 0 20 0 10 0 .000 .10 0 .20 0	trum Analyzer - Swept S Ref Offset 17.5 dl Ref 40.00 dBn 	A PNO: Fast IFGain:Low B n 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	SENSE:INT	ALIONAUTO Avg Type: RMS Avg Hold:>100/100	02:49:45 PM May 14, 2018 TRACE 1 3 4 5 15 TYPE MWWWWWW OFT A N N N N N Mkr1 870.0 µs 27.799 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl More 1 of 2

(Plot B2, EGPRS 1900 MHz, Channel = 661)

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	RE 50.0 AC	A	SENSE:INT	ALIGNAUTO	02:51:19 PM May 14, 2018	
Marker '	1 395.000 µs	PNO: Fast	Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 123456 TYPE M	Peak Search
10 dB/div	Ref Offset 17.5 dE Ref 40.00 dBm	IFGain:Low	Atten: 34 dB		Mkr1 395.0 µs 27.497 dBm	Next Peak
30.0			1			Next Pk Right
20.0						Next Pk Left
0.00						Marker Delta
-10.0						Mkr→CF
-30.0						
-40.0						Mkr→RefLvl
Center 1 Res BW	.909800000 GHz 1.0 MHz	#VBW	3.0 MHz	Sweep 1	Span 0 Hz .000 ms (1001 pts)	More 1 of 2
MSG						
				STATUS		
Agilent Spec	<mark>trum Analyzer - Swept S/</mark> RF 50 Ω AC	A	SENSE:INT	ALIGNAUTO	02:51:46 PM May 14, 2018	
Agilent Spect (X) Marker (trum Analyzer - Swept S/ RF 50Ω AC 1 843.000 μs	A PNO: Fast 😱	SENSE:INT	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:51:46 PM May 14, 2018 TRACE 1 2 3 4 5 6 TYPE MUMANANA DET A N N N N	Peak Search
Agilent Speci	rrum Analyzer - Swept S/ RF 50 Q AC 1 843.000 µs Ref Offset 17.5 dE Ref 40.00 dBm	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:51:46 PM May 14, 2018 TRACE 23 4 5 6 TYPE MANAGE DEF ANNINN Mkr1 843.0 µs 27.475 dBm	Peak Search Next Peak
Agilent Speci X Marker / 10 dB/div Log	trum Analyzer - Swept S/ RP 50 Ω Ac 1 843.000 μs Ref Offset 17.5 dE Ref 40.00 dBm	A PNO: Fast IFGain:Low	SENSE:INT	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:51:46 PM May 14, 2018 TRACE 23 4 5 6 TYPE MANAGE DEF ANNNNN Mkr1 843.0 µs 27.475 dBm	Peak Search Next Peak Next Pk Right
Agilent Speci X Marker 7 10 dB/div 30.0	trum Analyzer - Swept S/ RF 50 Ω AC 1 843.000 μs Ref Offset 17.5 dE Ref 40.00 dBm	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGN AUTO Avg Type: RMS Avg Hold>100/100	02:51:46 PM May 14, 2019 TRACE 12:3 4 5 6 TYPE MANAWAY OFF MANNAWA OFF MANNAWA Mkr1 843.0 µs 27.475 dBm	Peak Search Next Peak Next Pk Right Next Pk Left
Agilent Spect	trum Analyzer - Swept S/ RF 50 Ω AC 1 843.000 μs Ref Offset 17.5 dB Ref 40.00 dBm	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold>100/100	02:51:46 PM May 14, 2018 TRACE 12:3 4 5 6 TYPE MANNAWA DET MINNAM Mkr1 843.0 µs 27.475 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Agilent Spect X Marker X 30.0 20.0 10.0 -10.0	trum Analyzer - Swept S/ RF 50 Ω AC 1 843.000 μs Ref Offset 17.5 dB Ref 40.00 dBm	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold:>100/100	02:51:46 PM May 14, 2019 TRACE [2 3 4 5 6 TYPE MANAGEMENT OFT ANNIN Mkr1 843.0 µs 27.475 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta
Agilent Spect X Marker X 30.0 20.0 10.0 -10.0 -20.0	trum Analyzer - Swept S/ RP 50 9 AC 1 843.000 µs Ref Offset 17.5 dE Ref 40.00 dBm	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold>100/100	02:51:46 PM May 14, 2019 TRACE 12:3 4 5 6 TYPE MANAGEMENT OFF ANNUNN Mkr1 843.0 µs 27.475 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Agilent Spect X Marker / 30.0 20.0 10.0 -10.0 -20.0 -30.0 -40.0	trum Analyzer - Swept S/ RF 50 9 AC 1 843.000 µs Ref Offset 17.5 dE Ref 40.00 dBm	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold>100/100	02:51:46 PM May 14, 2018 TRACE 12:3 4 5 6 TYPE MANNAWA OFF MANNAWA Mkr1 843.0 µs 27.475 dBm	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF
Agilent Spect X Marker / 10 dB/div 30.0 20.0 10.0 -10.0 -10.0 -30.0 -40.0	trum Analyzer - Swept S/ RF 50 Ω AC 1 843.000 μs Ref Offset 17.5 dB Ref 40.00 dBm	A PNO: Fast IFGain:Low	SENSE:INT Trig: Free Run Atten: 34 dB	ALIGNAUTO Avg Type: RMS Avg Hold>100/100	02:51:46 PM May 14, 2019 TRACE 12:3:4 5 G TYPE MAXIMUM OFF MINININ Mkr1 843.0 µs 27.475 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	Peak Search Next Peak Next Pk Right Next Pk Left Marker Delta Mkr→CF Mkr→Ref Lvl

(Plot B3, EGPRS 1900MHz, Channel = 810)









(Plot C1, WCDMA 1900MHz, Channel = 9262)



(Plot C2, WCDMA 1900MHz, Channel = 9400)

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Fax: 86-755-36698525 E-mail: service@morlab.cn





(Plot C3, WCDMA 1900MHz, Channel = 9538)



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(Plot D1, WCDMA 1700MHz, Channel = 1312)



(Plot D2, WCDMA 1700MHz, Channel = 1412)

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 Tel:
 86-755-36698555
 Fax:
 86-7

 Http://www.morlab.cn
 E-mail:
 se

Fax: 86-755-36698525 E-mail: service@morlab.cn







(Plot D3, WCDMA 1700MHz, Channel = 1513)



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2.3. 99% Occupied Bandwidth

2.3.1. Requirement

According to FCC section 2.1049 and FCC § 22.917 & 24.238, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

2.3.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.





2.3.3. Test Result

The lowest, middle and highest channels are selected to perform testing to record the 99% occupied bandwidth.

GSM Test Verdict:

Bond	Channel	Frequency	26dB bandwidth	99% Occupied	Refer to
Danu	Channel	(MHz)	(kHz)	Bandwidth (kHz)	Plot
COM	128	824.2	311.3	245.04	Diet
	190	836.6	319.7	247.65	
ODUNITZ	251	848.8	321.5	247.43	AT IU AS
CSM	512	1850.2	319.2	243.43	Diot
	661	1880.0	324.2	244.11	P1 to P2
190010102	810	1909.8	313.9	242.97	
CDDC	128	824.2	321.6	244.02	Diet
GPRS	190	836.6	316.0	244.06	
ODUNITZ	251	848.8	313.1	242.77	011005
CDDS	512	1850.2	318.0	243.89	Diot
	661	1880.0	317.8	243.49	
190010172	810	1909.8	320.5	243.52	011003
	128	824.2	315.8	251.27	Diet
	190	836.6	315.9	248.58	FIUL E1 to E2
ODUNITZ	251	848.8	311.1	246.58	ET 10 E3
ECDDS	512	1850.2	317.2	250.14	Diot
1000MU-	661	1880.0	314.8	247.66	FIUL E1 to E2
	810	1909.8	312.4	252.06	111013





Test Plots:

Agilent Spectrum Analyzer - Occupied BW SENSE:INT ALIGN AUTO/NO RF Center Freq: 824.200000 MHz Trig: Free Run Avg|Hold:>10/10 #Atten: 40 dB 04:57:07 PM Jan 23, 2018 Radio Std: None Frequency Center Freq 824.200000 MHz Radio Device: BTS #IFGain:Low Ref 35.00 dBm 0 dB/div Center Freq 824.200000 MHz n. m. Span 2 MHz Sweep 19.13 ms Center 824.2 MHz #Res BW 10 kHz CF Step 200.000 kHz #VBW 30 kHz Auto Mar **Total Power** 39.5 dBm **Occupied Bandwidth** 245.04 kHz **Freq Offset** 0 Hz **Transmit Freq Error** -100 Hz **OBW Power** 99.00 % x dB Bandwidth 311.3 kHz -26.00 dB x dB STATUS MSG

(Plot A1, GSM 850MHz, Channel = 128)



(Plot A2, GSM 850MHz, Channel = 190)



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E-mail: service@morlab.cn











(Plot B1, GSM1900MHz, Channel = 512)

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(Plot B3, GSM 1900MHz, Channel = 810)



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(Plot C1, GPRS 850MHz, Channel = 128)



(Plot C2, GPRS 850MHz, Channel = 190)

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(Plot C3, GPRS 850MHz, Channel = 25°	(Plot C3,	GPRS 850MHz,	Channel $= 251$
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(Plot D1, GPRS1900MHz, Channel = 512)

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(Plot D3, GPRS 1900MHz, Channel = 810)



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(Plot E2, EGPRS 850MHz, Channel = 190)



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(Plot F1, EGPRS1900MHz, Channel = 512)



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(Plot F3, EGPRS 1900MHz, Channel = 810)

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WCDMA Test Verdict:

Bond	Channel	Frequency	26dB bandwidth	99% Occupied	Refer to
Danu	Channel	(MHz)	(MHz)	Bandwidth (MHz)	Plot
	4132	826.4	4.830	4.2020	Diot
	4175	835.0	4.841	4.2156	C1 to C2
	4233	846.6	4.849	4.2089	611065
	1312	1712.4	4.892	4.2239	Diet
	1412	1732.4	4.892	4.2237	
	1513	1752.6	4.910	4.2268	
	9262	1852.4	4.868	4.2227	Diot
	9400	1880.0	4.891	4.2310	FIUL
	9538	1907.6	4.878	4.2184	11 10 13
Церра	4132	826.4	4.831	4.2019	Diot
	4175	835.0	4.861	4.2147	
	4233	846.6	4.816	4.2129	JT 10 JS
Церра	1312	1712.4	4.893	4.2311	Diot
	1412	1732.4	4.873	4.2235	FIUL K1 to K3
	1513	1752.6	4.903	4.2274	KT IO KS
	9262	1852.4	4.888	4.2226	Diot
	9400	1880.0	4.890	4.2222	
190010112	9538	1907.6	4.876	4.2224	
	4132	826.4	4.826	4.1975	Diot
	4175	835.0	4.855	4.2097	M1 to M3
03010112	4233	846.6	4.864	4.1938	
	1312	1712.4	4.880	4.2400	Diot
	1412	1732.4	4.870	4.2195	FIUL N1 to N2
	1513	1752.6	4.905	4.2366	
	9262	1852.4	4.874	4.2247	Diet
	9400	1880.0	4.862	4.2084	
	9538	1907.6	4.873	4.2231	011003





Dand	Channel	Frequency	26dB bandwidth	99% Occupied	Refer to
Danu	Channel	(MHz)	(MHz)	Bandwidth (MHz)	Plot
	4132	826.4	4.834	4.2008	Diet
	4175	835.0	4.850	4.2138	PIUL D1 to D2
00010112	4233	846.6	4.858	4.2084	F110F3
	1312	1712.4	4.904	4.2271	Diet
	1412	1732.4	4.886	4.2288	PIOI
	1513	1752.6	4.913	4.2273	
	9262	1852.4	4.873	4.2149	Diet
	9400	1880.0	4.867	4.2150	
	9538	1907.6	4.873	4.2140	

Test Plots:



(Plot G1, WCDMA 850MHz, Channel = 4132)







(Plot G2, WCDMA 850 MHz, Channel = 4175)



(Plot G3, WCDMA 850MHz, Channel = 4233)







(Plot H1, WCDMA 1700MHz, Channel = 1312)



(Plot H2, WCDMA 1700 MHz, Channel = 1412)







(Plot H3, WCDMA1700MHz, Channel = 1513)



(Plot I1, WCDMA 1900MHz, Channel = 9262)











(Plot I3, WCDMA1900MHz, Channel = 9538)



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(Plot J1, HSDPA 850MHz, Channel = 4132)



(Plot J2, HSDPA 850 MHz, Channel = 4175)



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(Plot J3, HSDPA 850MHz, Channel = 4233)



(Plot K1, HSDPA 1700MHz, Channel = 1312)



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(Plot K2, HSDPA 1700 MHz, Channel = 1412)



(Plot K3, HSDPA 1700MHz, Channel = 1513)



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(Plot L1, HSDPA 1900MHz, Channel = 9262)



(Plot L2, HSDPA 1900 MHz, Channel = 9400)







(Plot L3, HSDPA 1900MHz, Channel = 9538)



(Plot M1, HSUPA 850MHz, Channel = 4132)







(Plot M2, HSUPA 850 MHz, Channel = 4175)



(Plot M3, HSUPA 850MHz, Channel = 4233)



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(Plot N1, HSUPA 1700MHz, Channel =1312)



(Plot N2, HSUPA 1700 MHz, Channel = 1412)







(Plot N3, HSUPA 1700MHz, Channel = 1513)



(Plot O1, HSUPA 1900MHz, Channel = 9262)







(Plot O2, HSUPA 1900 MHz, Channel = 9400)



(Plot O3, HSUPA 1900MHz, Channel = 9538)











(Plot P2, HSPA+850 MHz, Channel = 4175)



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(Plot P3, HSPA+ 850MHz, Channel = 4233)



(Plot Q1, HSPA+ 1700MHz, Channel =1312)

