

n41(50M)_DFT-s-OFDM_BPSK_Edge_1RB_ Left Low CH



n41(50M)_DFT-s-OFDM_BPSK_Outer_Full_ Low_CH

Key	light Spectrum	n Analyzer - Spuriou	is Emissions							-
BW	1.5000	MHz	DC	-	Center Fre	q: 22.005000 Run	ALIGN OFF	Hold: 100/100	Radio Std: Ne	AM Mar 01, 2 one
AS	5		IF	Gain:Low	#Atten: 24	dB			Radio Device	BTS
0.48	(Alia	Ref Offset 17	.6 dB							
sa r	1 GI V	1101.001								
2.0										
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3.0 P										
	2 201 /								Ctop	2 506 0
aan	2.551	3112							otop.	2.330 G
pur	Range	Start Freq	Stop Freq	RBW	Frequency	Ampli	lude	∆ Limit		
	2	2.4900 GHz	2.4950 GHz	1.000 MHz	2.494550000	GHz -28.39	dBm	-15.39 dB		
	3	2.4950 GHz	2.4960 GHz	510.0 kHz	2.495866667	GHz -20.15	dBm	-7.150 dB		
	4	2.4960 GHz	2.5960 GHz	1.000 MHz	2.535333333	GHz 3.764 c	18m	-26.24 dB		

n41(50M)_DFT-s-OFDM_BPSK_Edge_1RB_ Right_High_CH



REPORT No.: SZ21120450W12

n41(50M)_DFT-s-OFDM_QPSK_Edge_1RB_ Left Low CH



n41(50M)_DFT-s-OFDM_QPSK_Outer_Full_ Low_CH



n41(50M)_DFT-s-OFDM_QPSK_Edge_1RB_ Right_High_CH



Tel: 86-755-36698555

Http://www.morlab.cn



Shenzhen Morlab Communication Technology Co., Ltd. FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China Fax: 86-755-36698525

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n41(60M)_DFT-s-OFDM_BPSK_Edge_1RB_ Left_Low_CH

Keysig	ght Spectrum	Analyzer - Spurio	us Emissions		enverand		11.077	11-80-20-44	March 2022	_	00
VBW	91.000	kHz	DC	Cente	r Freq: 22.0050	00000 GHz	R	adio Std:	None None	Ra	nge Table
PASS			IFGain:Lo	w #Atte	Free Run n: 24 dB	Avg Hold: 10	1/100 F	adio Dev	ice: BTS		Rang
10 dB/	div	Ref Offset 17 Ref 30.00	1.6 dB dBm							<u>On</u>	o
20.0 10.0 0.00										2.49	Start Fre 5000000 GH
-10.0 -20.0 -30.0										2.49	Stop Fre 6000000 GH
-40.0					- I have		l	********		Auto	Res BV 30.000 kH <u>Ma</u>
Start	2.391 0	GHz						Stop 2	.596 GHz		Video BV
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitud	e	∆ Limit		Auto	Ma
1	2	2.4900 GHz	2.4950 GHz	1.000 MHz	2.494891667	GHz -41.54 dBi	m -	28.54 dB			
2	3	2.4950 GHz	2.4960 GHz	30.00 kHz	2.495961667	GHz -31 27 dB	m -	18.27 dB		F	ilter Type
3	4	2.4960 GHz	2.5960 GHz	1.000 MHz	2.49/10005/	GHZ 18.74 CHN) -	11.26 dB			Flattop
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MSG	_			_			STATUS				

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Low_CH weighting the spectrum of the spectrum n41(50M)_DFT-s-OFDM_QPSK_Outer_Full_ High CH

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MORLAB Shenzhen Morlab Co FL1-3, Building A, Fe

Shenzhen Morlab Communication Technology Co., Ltd. FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China



n41(60M)_DFT-s-OFDM_BPSK_Edge_1RB_ Right_High_CH



n41(60M)_DFT-s-OFDM_BPSK_Outer_Full_ High_CH



n41(80M)_DFT-s-OFDM_BPSK_Edge_1RB_ Left_Low_CH



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MORLAB

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Low_CCH

n41(80M)_DFT-s-OFDM_BPSK_Edge_1RB_ Right_High_CH

	ctrum Analyzer - Spurios	as Emissions			A ALTON OCK		10-21-59 AM Mar 01 - 20
es BW [.] ASS	1.0000 MHz	IF	Gain:Low	Center Freq: 22 Trig: Free Run #Atten: 24 dB	.005000000 GHz Avgit	Hold: 100/100	Radio Device: BTS
0 dB/div	Ref Offset 17 Ref 30.00 d	.83 dB 1Bm					
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0.0							
tart 2.59	GHz						Stop 2.795 GF
	ge Start Freg	Stop Freg	RBW	Frequency	Amplitude	∆ Limit	
pur Ran							
pur Ran 1	2.5900 GHz	2.6900 GHz	1.000 MHz	2.688333333 GHz	17.49 dBm	-12.51 dB	
pur Ran 1 2	2.5900 GHz 2.6900 GHz	2.6900 GHz 2.6910 GHz	1.000 MHz 30.00 kHz	2.688333333 GHz 2.690098333 GHz	17.49 dBm -39.57 dBm	-12.51 dB -29.57 dB	
pur Ran 2 3	2.5900 GHz 2.6900 GHz 2.6910 GHz	2.6900 GHz 2.6910 GHz 2.6950 GHz	1.000 MHz 30.00 kHz 1.000 MHz	2.688333333 GHz 2.690096333 GHz 2.691133333 GHz	17.49 dBm -39.57 dBm -41.84 dBm	-12.51 dB -29.57 dB -31.84 dB	

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Left_Low_CH



n41(100M)_DFT-s-OFDM_BPSK_Outer_Full_



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n41(100M)_DFT-s-OFDM_BPSK_Outer_Full_ High_CH

100	000 MHz	DC	-	SENSE:INT Center Freq: 1 Trig: Free Rui	ALIGN OFF 22.005000000 GHz h Avg/	Hold: 100/100	10:31:30 AM Nar 01, 2 Radio Std: None
		IF	Gain:Low	#Atten: 24 dB			Radio Device: BTS
dB/div g	Ref Offset 1 Ref 30.00	7.83 dB dBm					
0 0 1							
rant	and warden and	and have not the	e.Me.oMe.ow	edula freeh fr			
0							
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0				. Tayl	MANNA	~~~~~~	
0							
art 2.5	9 GHz						Stop 2.795 G
our Ra	nge Start Freg	Stop Freg	RBW	Frequency	Amplitude	∆ Limit	
1	2.5900 GHz	2.6900 GHz	1.000 MHz	2.599166667 GH	z 12.35 dBm	-17.65 dB	
2	2.6900 GHz	2.6910 GHz	1.000 MHz	2.690260000 GH	z -33.83 dBm	-23.83 dB	
3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.694533333 GH	z -34.38 dBm	-24.38 dB	
	2.6950 GHz	2.7100 GHz	1.000 MHz	2.695375000 GH	z -34.84 dBm	-21.84 dB	
	2 7100 CHz	2.7950 GHz	1.000 MHz	2.712266667 GH	z -41.02 dBm	-16.02 dB	

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2.6. Radiated Spurious Emissions

2.6.1. Requirement

According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

According to FCC section 27.53(m)(4) for n41,The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 55 + 10 log(P) dB. This calculated to be -25dBm.

2.6.2. Test Description



(For the test frequency from 30MHz to 1GHz)







(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360° to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

Note: When doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.6.3. Test procedure

KDB 971168 D01v03 Section 5.8 and ANSI/TIA-603-E-2016.





2.6.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. Test Antenna height is varied from 1m to 4m above the ground, and the Turn Table is actuated to turn from 0° to 360°, both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The substitution corrections are obtained as described below:

 $A_{\text{SUBST}} = P_{\text{SUBST}_{\text{TX}}} - P_{\text{SUBST}_{\text{RX}}} - L_{\text{SUBST}_{\text{CABLES}}} + G_{\text{SUBST}_{\text{TX}}_{\text{ANT}}}$

 $A_{TOT} = L_{CABLES} + A_{SUBST}$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

 $L_{\text{SUBST}_{CABLES}}$ is cable losses including TX cable,

G_{SUBST TX ANT} is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of A_{TOT} .

Note1: The power of the EUT transmitting frequency should be ignored.

Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note3: All bandwidth and modulation were considered and evaluated respectively by performing full test for each band, only the worst cases (Max Bandwidth and QPSK mode) were recorded in this test report.





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Test Graph



😂 Final Test

Suspected List												
NO	Freq.	Level	Limit	Margin	Factor	Path	Air	Ant.				
NO.	[MHz]	[dBm]	[dBm]	[dB]	[dB]	[dB]	[dB]	Pol.				
1	2002.0020	-45.42	-25.00	20.42	6.73	-35.2	41.9	Horiz				
2	3620.6210	-47.54	-25.00	22.54	2.90	-36.3	39.2	Horiz				
3	6274.2740	-42.74	-25.00	17.74	6.57	-35.4	42.0	Horiz				
4	9907.4070	-41.94	-25.00	16.94	14.25	-34.0	48.3	Horiz				
5	11990.991	-40.42	-25.00	15.42	16.81	-32.4	49.3	Horiz				
6	16491.992	-37.1	-25.00	12.10	23.52	-27.9	51.4	Horiz				

DC_2A_n41 509202 100M DFT-s-OFDM QPSK RB Size-1 RB Offset-1 SCS 30KHz 1G-18G H