

Test Report:	2007 040745 FCC
Applicant:	Broadcast Microwave Services 12367 Crosthwaite Circle Dock 10 Poway, CA 92064 (858) 391-3050 x147 (858) 391-3049 - fax
Equipment Under Test:	Model: Field-Coder II (FCII) with Power Amplifier (FCII-MAX)
FCC ID:	CNVFC-FCII-7
In Accordance With:	FCC PART 2, FCC PART 74.637, PART 90.209
Tested By:	Nemko USA Inc. 11696 Sorrento Valley Road San Diego, CA 92121-1024
Date:	April 10, 2007
Total Number of Pages:	37

DOCUMENT HISTORY

REVISION	DATE	COMMENTS	
-	April 10, 2007	Prepared By:	F.S.Custodio
-	April 10, 2007	Initial Release:	M. T. Krumweide

NOTE: Nemko USA, Inc. hereby makes the following statements so as to conform to Chapter 10 (Test Reports) Requirements of ANSI C63.4: 2003 "Methods and Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz":

- The unit described in this report was received at Nemko USA, Inc.'s facilities on April 3, 200. Testing was performed on the unit described in this report on April 3, 2007 to April 6, 2007.
- The Test Results reported herein apply only to the Unit actually tested, and to substantially identical Units.
- This report does not imply the endorsement of the Federal Communications Commission (FCC), NVLAP or any other government agency.

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CERTIFICATION

Nemko USA, Inc., an independent Electromagnetic Compatibility (EMC) Test Laboratory, produced this Test Report and performed the Radio Frequency Interference (RFI) testing and data evaluation contained herein.

Nemko USA, Inc.'s measurement facility is currently registered with the United States Federal Communications Commission (FCC) in accordance with the provisions of 47 United States Code (CFR) Part 2, Subpart I, Section 2.948(a). A current description of Nemko USA, Inc.'s measurement facility is on file with the FCC. Nemko USA Inc. has additionally satisfied the FCC that it complies with the requirements set forth in 47 CFR Part 2, Subpart I, Section 2.948(d) regarding the accreditation of EMC laboratories. As a result, the FCC has placed Nemko USA Inc. on its list of EMC laboratories approved to perform Declaration of Conformity (DOC) procedure testing.

The RFI testing, test data collection and test data evaluation were accomplished in accordance with the ANSI C63.4: 2003 Standard, and in accordance with the applicable sections of the FCC rules (47 CFR Parts 2 and 18)." digital devices. The testing was also accomplished in accordance with Industry Canada's ICES-003 standard for unintentional radiating device per EMCAB-3, Issue 3 (May 1998). The administrative summary of this test report provides a description of the test sample

I hereby certify that the test data, test data evaluation, and equipment configurations used to compile this test report are a true and accurate representation of the test sample's radio frequency interference characteristics as of the test date(s), and, for the design of the test sample.

Mihul 7. 2

Mike T. Krumweide, EMC Test Supervisor

Section 1. Summary of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 22, Subpart H.

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	PASS
Modulation Characteristics	2.1047	AS REPORTED
Occupied Bandwidth	2.1049	PASS
Spurious Emissions at Antenna Terminals	2.1051	PASS
Field Strength of Spurious Emissions	2.1053	PASS
Frequency Stability	2.1055	PASS

Footnotes for 2.1047: EUT is a digitally modulated transmitter. Parts 74 and Part 90 do not express limits or pass/fail criteria for Modulation Characteristics.

Test Conditions:

Indoor	Temperature: Humidity:	<u>2223 </u> °C <u>43-45 </u> %
Outdoor	Temperature: Humidity:	<u>15</u> °C <u>72</u> %

Section 2. General Equipment Specification

Manufacturer:	Broadcast Microwave Services
Model No.:	Portable COFDM Transmitter
Serial No.:	123 (FCII) 167 (FCII-MAX) 143 (FCII-AC)
Test Voltage:	115VAC 60Hz for the FCII-AC (Power Supply)
Frequency Range:	1.99475GHz to 2.49625GHz
Date Received In Laboratory:	April 3, 2007
Nemko Identification No.:	26-745R2-WL

Section 3. RF Power Output

Para. No.: 2.1046(c)

Test Performed By:	F. S. Custodio	Date of Test: 04-03-07

Minimum Standard: Subpart F--Television Broadcast Auxiliary Stations Sec. 74.636 Power limitations.

(a) On any authorized frequency, transmitter peak output power and the average power delivered to an antenna in this service must be the minimum amount of power necessary to carry out the communications desired and shall not exceed the values listed in the following table. Application of this principle includes, but is not to be limited to, requiring a licensee who replaces one or more of its antennas with larger antennas to reduce its antenna input power by an amount appropriate to compensate for the increased primary lobe gain of the replacement antenna(s). In no event shall the average equivalent isotropically radiated power (EIRP), as referenced to an isotropic radiator, exceed the values specified in the following table. In cases of harmful interference, the Commission may, after notice and opportunity for hearing, order a change in the effective radiated power of this station. The table follows:

Frequency Band (MHz)	Maximum allowable	Maximum allowable EIRP ²	
	transmitter power	Fixed (dBW)	Mobile
	Mobile (W)		(dBW)
2,025 to 2,110	12.0	+45	+35
2,450 to 2,483.5	12.0	+45	+35
6,425 to 6,525	12.0		+35
6,875 to 7,125	12.0	+55	+35
12,700 to 13,250	1.5	+55	+35
17,700 to 18,600		+55	
18,600 to 18,800 ¹		+35	
18,800 to 19,700		+55	

¹ The power delivered to the antenna is limited to -3 dBW.

² Stations licensed based on an application filed before April 16, 2003, for EIRP values exceeding those specified above, may continue to operate indefinitely in accordance with the terms of their current authorizations, subject to periodic renewal.

Test Results: EUT complies

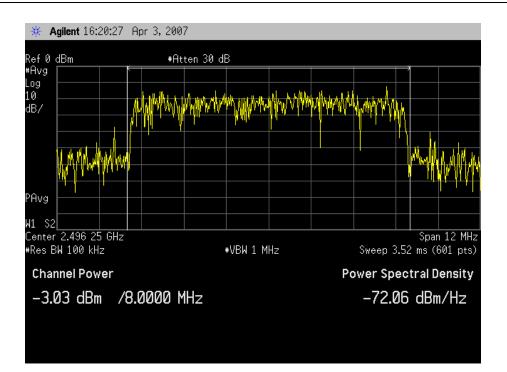
Test Conditions:

Measured using US 12 MHz and 17 MHz BAS channel plans (see table below). For each channel there are corresponding three (3) sub channels referred here as Low, Mid and High channels. RF setting set to Max using internal source via ASI (Asynchronous Serial Interface) option. Signal bandwidth is set to 8MHz, all modulation (QPSK,16QAM and 64QAM) were measured but only the worst is reported which is 64QAM. External attenuators and cable used were verified at 40dB between 2GHz and 2.5GHz. Peak power was measured using HP 8900D Peak power meter and adjusted to corresponding reading offset and correction. Average power was measured using Agilent E4440A PSA Series Spectrum Analyzer at the antenna terminal using Channel Power mode with reference level optimized. Detector is set to Average, RBW is 100 KHz, VBW is auto and Integ BW set to corresponding bandwidth.

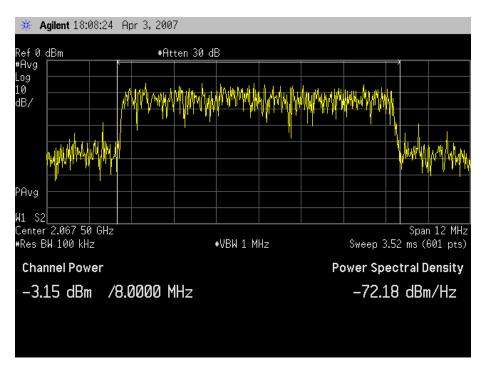
Ol	Old BAS Channel Plan				
2 (GHz (S) Band		17 MHz		
199	90-2110 MHz		CW		
1	1994.75	1999.00	2003.25		
2	2012.25	2016.50	2020.75		
3	2029.25	2033.50	2037.75		
4	2046.25	2050.50	2054.75		
5	2063.25	2067.50	2071.75		
6	2080.25	2084.50	2088.75		
7	2097.25	2101.50	2105.75		

New I	New BAS Channel Plan				
2 GH:	z (S) Band		12 MHz CW		
1990-	2110 MHz		12 MHz CS		
Alr	2028.50	2031.50	2034.50		
A2r	2040.50	2043.50	2046.50		
A3r	2052.50	2055.50	2058.50		
A4r	2064.50	2067.50	2070.50		
A5r	2076.50	2079.50	2082.50		
A6r	2088.50	2091.50	2094.50		
A7r	2100.50	2103.50	2106.50		

2.5 GHz (S) Band 2450-2500 MHz			17 MHz CW 17 MHz CS
8	2454.25	2458.50	2462.75
9	2471.25	2475.50	2479.75
10	2487.75	2492.00	2496.25



Channel 10 17MHz (High) 4.98 watts – Part 90.205 (n)



Channel 4 12MHz (Mid) 4.84 watts – Part 74.636 (a)

Measurement Data:

17Mhz Digital										
	LOW		MID		HIGH					
Channel	Peak(watts)	Ave(watts)	Peak(watts)	Ave(watts)	Peak(watts)	Ave(watts)				
1	38	3.95	38.5	3.96	38.6	4.02				
2	39.2	3.97	40.2	4.02	41.1	4.12				
3	42.1	4.56	42.5	4.42	43	4.47				
4	43.8	4.31	44	4.48	44.2	4.61				
5	44.4	4.57	44.4	4.54	44.5	4.59				
6	44.7	4.44	44.7	4.49	44.7	4.44				
7	44.7	4.55	44.7	4.55	44.6	4.62				
8	43.4	4.95	43	4.97	42.8	4.93				
9	42.2	4.93	42.1	4.98	41.9	4.95				
10	41.4	4.98	41.1	4.95	40.8	4.98				

12Mhz Digital										
	LOW		MID		HIGH					
Channel	Peak(watts)	Ave(watts)	Peak(watts)	Ave(watts)	Peak(watts)	Ave(watts)				
1	42.7	4.57	43.1	4.50	43.4	4.60				
2	44	4.73	44.3	4.65	44.5	4.69				
3	44.8	4.76	44.9	4.69	45	4.69				
4	45	4.72	45.1	4.84	45.2	4.63				
5	45.3	4.61	45.3	4.43	45.4	4.44				
6	45.4	4.41	45.4	4.37	45.4	4.30				
7	45.3	4.36	45.3	4.30	45.1	4.38				

Section 4. Modulation Characteristics

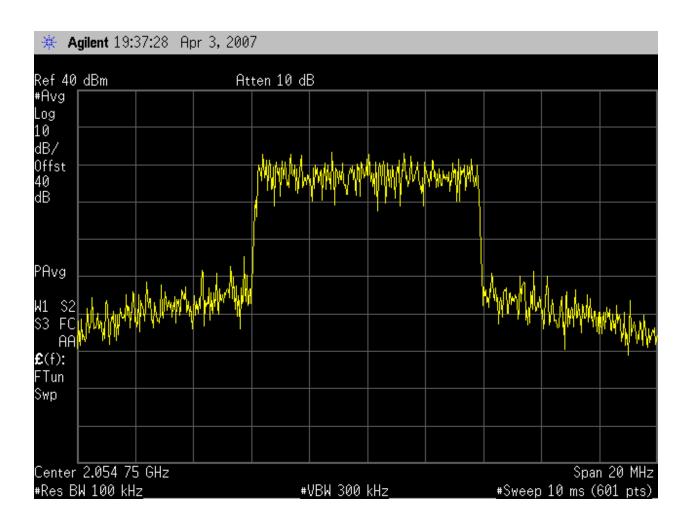
Para. No.: 2.1047

Test Performed By: Ferdinand S. Custodio	Date of Test: 04-04-2007
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Minimum Standard:	Part 74, Part 90
Test Results:	As Reported. Conducted emission plots captured on the Spectrum Analyzer thru a 40 dB attenuator.
Measurement Data:	See attached plots to exemplify the four modes of modulation:
	Modulation modes are QPSK, 16QAM, and 64QAM. Modulation mode has ro effect for spurious and frequency stability measurements.
	Measured channel is Channel 4 (High) 17MHz Plan, RF output set to Max and bandwidth set to 8MHz.

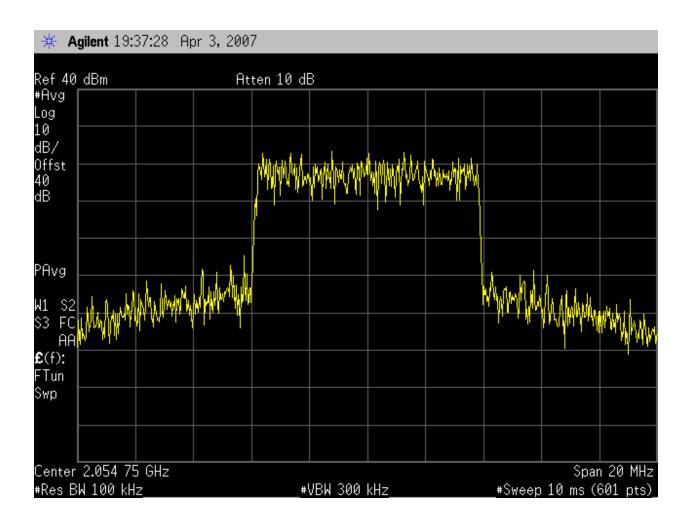
EQUIPMENT: Field Coder II (FCII)

Modulation Mode: 64QAM

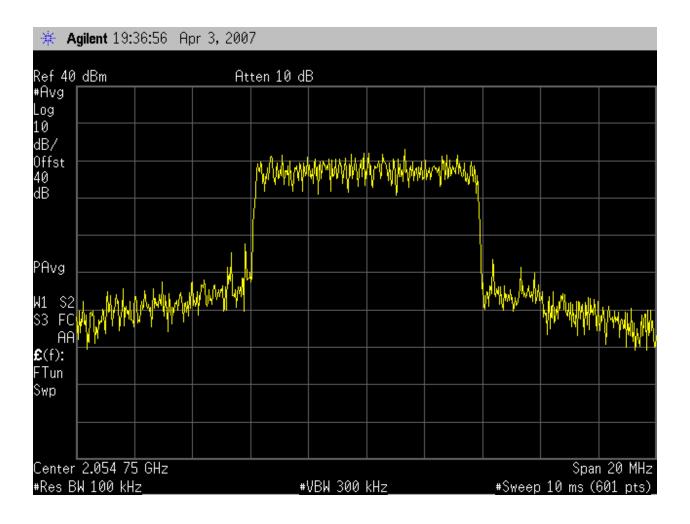


EQUIPMENT: Field Coder II (FCII)

Modulation Mode: 16QAM



Modulation Mode: QPSK



Section 5. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Ferdinand Custodio	Date of Test: 04-04-2007
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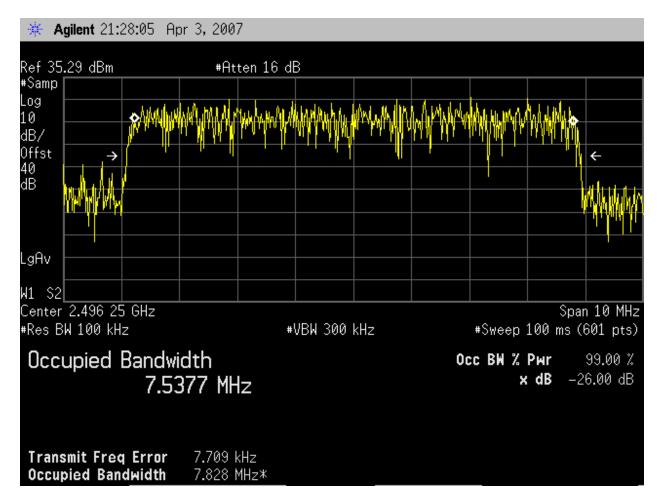
Minimum Standard:	Part 74.637 (g) and 90.209 (a) Occupied/Authorized
	bandwidth.

Maximum authorized bandwidth Frequency Band (MHz)	(MHz)
1,990 to 2,110 2,450 to 2,500	

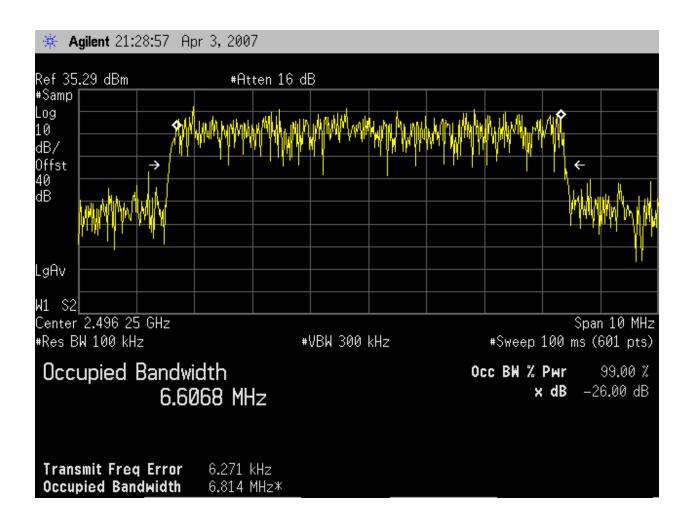
\2\ Bandwidths for radiolocation stations in the 420-450 MHz band and for stations operating in bands subject to this footnote will be reviewed and authorized on a case-by-case basis.

Test Results:EUT Complies. Conductive emission plots captured on the
Spectrum Analyzer thru a 40 dB attenuator.

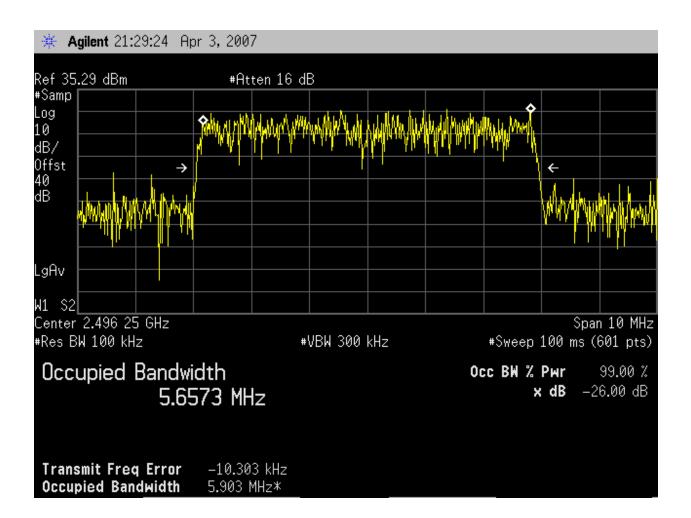
Test Data: See attached plots. The EUT has a selectable RF Bandwidth of 6, 7 and 8MHz (Digital COFDM). The EUT was investigated using 17 MHz and 12 MHz Channel Plans on all modulation (QPSK, 16QAM and 64QAM). The resulting plots submitted here represent each bandwidth since identical results were obtained on all configurations represented.



17MHz Channel Plan 8MHz Bandwidth



17MHz Channel Plan 7MHz Bandwidth



17MHz Channel Plan 6MHz Bandwidth

Section 6. Spurious Emissions At Antenna Terminals

Para. No.: 2.1051

Minimum Standard: Part 74.637 Emissions and emission limitations

(a) The mean power of emissions shall be attenuated below the mean transmitter power (P_{MEAN}) in accordance with the following schedule:

(1) When using frequency modulation:

(i) On any frequency removed from the assigned (center) frequency by more than 50% up to and including 100% of the authorized bandwidth: At least 25 dB in any 100 kHz reference bandwidth (B_{REF});

(ii) On any frequency removed from the assigned (center) frequency by more than 100% up to and including 250% of the authorized bandwidth: At least 35 dB in any 100 kHz reference bandwidth;

(iii) On any frequency removed from the assigned (center) frequency by more than 250% of the authorized bandwidth: At least 43+10 \log_{10} (P_{MEAN} in watts) dB, or 80 dB, whichever is the lesser attenuation, in any 100 kHz reference bandwidth.

(2) When using transmissions employing digital modulation techniques:

(i) For operating frequencies below 15 GHz, in any 4 kHz reference bandwidth (B_{REF}), the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 250 percent of the authorized bandwidth: As specified by the following equation but in no event less than 50 decibels:

 $A = 35 + 0.8 (G - 50) + 10 \log_{10} B.$

(Attenuation greater than 80 decibels is not required.)

Where:

A = Attenuation (in decibels) below the mean output power level.

G = Percent removed from the carrier frequency.

B = Authorized bandwidth in megahertz.

(c) For purposes of compliance with the emission limitation requirements of this section:

(3) For demonstrating compliance with the attenuation requirements for frequency modulation and digital modulation in paragraph (a) of this section, the resolution bandwidth (B_{RES}) of the measuring equipment used for measurements removed from the center frequency by more

than 250 percent of the authorized bandwidth shall be 100 kHz for operating frequencies below 1 GHz, and 1 MHz for operating frequencies above 1 GHz. The resolution bandwidth for frequencies removed from the center frequency by less than 250 percent of the authorized bandwidth shall be the reference bandwidth (B_{REF}) specified in the individual emission limitations, but may be reduced to not less than one percent of the authorized bandwidth (B), adjusted upward to the nearest greater resolution bandwidth available on the measuring equipment. In all cases, if B_{RES} and B_{REF} are not equal, then the attenuation requirement must be increased (or decreased) as determined by a factor of 10 log_{10} [(B_{REF} in megahertz)/(B_{RES} in megahertz)] decibels, where a positive factor indicates an increase in the attenuation requirement and a negative factor indicates a decrease in the attenuation requirement.

Test Results:	EUT Complies. Conductive emission plots captured on the Spectrum Analyzer thru a 40 dB attenuator Emissions were investigated from 30 MHz to 25 GHz.							
Test Data:	See attached Plots (balance in Appendix).							

RF setting set to Max using internal source via ASI (Asynchronous Serial Interface) option. Signal bandwidth is set to 8MHz. External attenuators and cable used were verified at 40dB between 2GHz and 2.5GHz

For each channel investigated, the reference level used is the Mean Output Power (Average) measured under RF Power Output Test. A compliance factor of 10 log (B_{ref}/B_{res}) was used for using 100kHz RBW to calculate the mask:

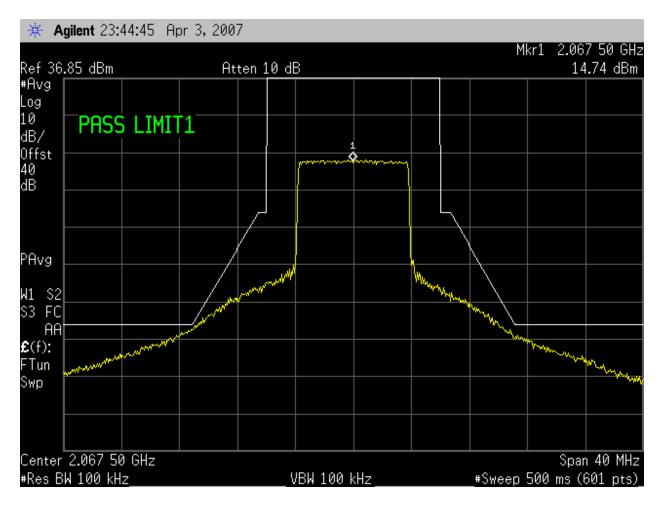
- A =35+0.8(G-50)+10log12+10log(4/100) =80+(-13.98)
 - = 66 db attenuation @100kHz RBW

The EUT was investigated using all three modulation schemes but identical results were obtained for all mode of operations.

Emission Mask Endpoints Part 74.637(C)(3):

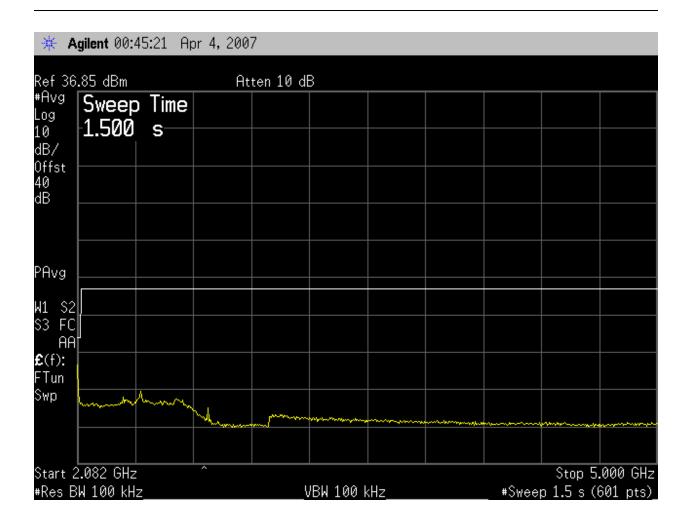
BW = 12 MHz, REF LVL = Mean Output Power

Digital Channel 4 (12MHz - Mid) – 2067.5 MHz 64QAM



∦ A	gilent 00:20):03 Ap	r 4,200	7						
	.85 dBm		At	ten 10 dl	3					
#Avg Log 10	Display	Line								
dB/	-16.15	abm								
Offst 40 dB										
DI										
-16.1 dBm										
PAvg										
W1 S2 S3 FC										
AA £ (f):										
FTun Swp										
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	10.0 MHz								Stop 1.00	
#Res B	W 100 kHz				/BW 100 W	кНz		#Sweep	500 ms (6	601 pts)

🔆 Agilent 00:34:21 Apr 4, 2007										
Ref 36	6.85 dBm		At	ten 10 di	В					
#Avg Log										
10 dB/ Offst 40 dB										
40 dB										
PAvg										
W1 S2 S3 FC										
AA										
£ (f): FTun										
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	mannahala	and a second second	Mangellenner-mi	and a second and the second	an a	and a state of the	and the second			
Start 1	1.000 GHz								Stop 2.	052 GHz
	3W 100 kHz				/BW 100 k	(Hz		#Sweep	500 ms (6	



₩ A	gilent 00:50	0:16 Ap	r 4,200)	7						
Ref 36	.85 dBm		At	ten 10 di	В					
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10 dB/	-10.15	dBm-								
Log 10 dB/ 0ffst 40 dB										
ав DI -16.1										
dBm PAvg										
i iivy										
W1 S2 S3 FC										
S3 FC AA										
£ (f): FTun										
Swp										
		hand		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
Start 5	5.00 GHz						^		Stop 1	5.00 GHz
	W 100 kHz			1	/BW 100 W	<hz< td=""><td></td><td>#Swe</td><td>ep 5 s (6</td><td></td></hz<>		#Swe	ep 5 s (6	

₩ А	gilent 00:	50:55 Ap	or 4, 200)	7					
	.85 dBm		At	ten 10 d	В				
#Avg Log	Stop	00000	a cu						
10 dB/	-25.00	00000	Ø GHZ						
Log 10 dB/ 0ffst 40 dB									
DI -16.1									
dBm PAvg									
W1 S2									
AA									
£ (f): FTun ∧									
Ѕพр							 	~	
	.5.00 GAz W 100 kH			(/BW 100	kHz	#Swe	Stop 2! ep 5 s (6	5.00 GHz 601 pts)

Section 7. Field Strength of Spurious

Para. No.: 2.1053

Test Performed By: Ferdinand Custodio	Date of Test: 04-04-2007 and 04-10-
	2007 (Substitution Method)

- Minimum Standard: Part 90.210, Part 74.637
- Test Results:EUT Complies. Emissions were searched from 30 MHz to 25
GHz with the antenna port terminated into a 50 ohm load. No
spurious emissions level within 20dB of the limit was
observed. All emissions measured were proved by substitution
method.

Test Data: See attached tables.

Quasi-peak measurements with a RBW =VBW = 100 kHz below 1GHz otherwise 1MHz.

Measured Frequency (MHz)	Antenna Polarization (H/V)	Meter Reading (dBuV)
69.8475	V	23.2
111.5575	Н	38.9
130.5636	V	32.1
135.845	Н	30.5
1702.5	V	37.4
3405.45	V	60.0
5107.88	V	59.8

Results—Substitution Method



San Diego Headquarters:

11696 Sorrento Valley Rd. San Diego, CA 92121 Tel: (858) 755-5525 Fax: (858) 452-1810

	Substitution Method For Radiated Emissions								
C Pre	Complete eliminary	Х					26-745R2-WL 1		2
		Broadcast Micro							
		FCII with FCII-A							
		Portable COFD	M Transmitte	er					
		8014203500							
		123,167 and 143							
EUT	Config. :								
Spec	ification :	FCC Part 90.21	0,74.637			,	Reference :		
		NA		. (deg. C) :	15	•		4/10/2007	
Bic	on Ant.#:	NA	Hur	nidity (%) :			Time :	8:00AM	
L	og Ant.#:	NA	EU	T Voltage :	NA			FSCustodio	
DR	RG Ant. #	NA 529 765	EUT F	requency :	NA		Photo ID:		
Dipo	ole Ant.#:	765			NA				
		NOATS			RN# 32955	50-01			
		901,842		Distance:	<u>3m</u>	,			
Sp		915							.
_		915					dwidth (<1GHz):		V
Pre	eSelect#:	NA				Peak Band	dwidth (>1GHz):	1MHz RBW	-
	-	Farget		Cable	Signal	Total	Spec	Margin	T
F	requency		dipole/horn	loss	Generator	(ERP)	•	5	
	MHz	dBuV/m		dB	dBm	`dBm ́	dBm	dBm	
	69.8475	23.20	0	0.20	-94.00	-94.20	-13	-81.2	
	11.5575	38.90	0	0.26	-76.00	-76.26	-13	-63.3	
	30.5636	32.10	0	0.50	-83.40	-83.90	-13	-70.9	
	135.845	30.50	0	0.51	-83.40	-83.91	-13	-70.9	
	1702.5	37.40	7.62	11.67	-72.67	-76.72	-13	-63.7	
	3405.45	60.00	9.1	15.10	-34.00	-40.00	-13	-27.0	
ţ	5107.88	59.80	10.06	18.82	-29.40	-38.16	-13	-25.2	
									1
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Section 8. Frequency Stability

Para. No.: 2.1055

Test Performed By: F	.S.Custodio	Date of Test: 04-09-2007
Minimum Standard:	2.1055 Frequency Power Supply Volta	Stability vs Temperature Variation and age Variation.
Minimum Standard:	Part 74.661	
Test Results:	8800 Hz difference Limit = 0.001 % = ²	which corresponds to 4.4115 ppm I0 ppm

Measurement Data:

Part 2.1055 (-30°C to +50 Spectrum Analyzer @ 10		3 <u>W, 1MHZ RBW, 1MHz</u> Span	Channel 1 Digital 17MHz		
Worst case variation:		8800.0 Hz (>Set freq.) 1000.0 Hz (<set freq.)<="" th=""><th>Set Frequency:</th><th>1.99475 GHz</th></set>	Set Frequency:	1.99475 GHz	
		85% of Vnom	Vnom=115VAC	115% of Vnom	
Temp.Set Point T	ime	Frequency ? (GHz)	Frequency ? (GHz)	Frequency ? (GHz)	
Temp.Actual		Difference (GHz)	Difference (GHz)	Difference (GHz)	
-30 8:3	30AM	1.994758	1.9947583	1.994758	
-29.9	507 111	0.000008000	0.00008300	0.000008000	
-20 9:3	30AM	1.9947583	1.994758	1.9947582	
-20		0.00008300	0.00008000	0.000008200	
	30AM	1.994757	1.9947575	1.9947575	
9.9		0.000007000	0.000007500	0.000007500	
0 11:	30AM	1.9947575	1.9947573	1.9947579	
0		0.000007500	0.000007300	0.000007900	
10 12:	30PM	1.994758	1.9947584	1.9947587	
10		0.000008000	0.000008400	0.000008700	
20 1:3	30PM	1.994751	1.99475745	1.99475844	
20.1	001 101	0.000001000	0.000007450	0.000008440	
20.1		0.00001000	0.00007430	0.00000440	
30 2:3	30PM	1.9947584	1.99475867	1.9947588	
30		0.000008400	0.00008670	0.00008800	
40 3:3	30PM	1.9947581	1.9947582	1.9947584	
39.9		0.00008100	0.000008200	0.000008400	
F0		1 0047594	4 00 475 94 0	4 00 47580	
50 4:3 49.9	30PM	1.9947581 0.000008100	1.99475812 0.000008120	1.9947582	
+3.3		0.000000100	0.00000120	0.000008200	

EQUIPMENT: Field Coder II (FCII)

This report represents the lowest frequency within the Channel Plan. Other frequencies were verified with identical results. Highest frequency is located in Appendix A.

Section 9. Test Equipment List

Nemko ID	Device	Manufacturer	Model	Serial Number	Cal Date	Cal Due Date
877	Antenna, DRG Horn, .7-18GHz	AH Systems	2882	688	6/20/06	6/20/07
110	Antenna, LPA	Electrometrics	LPA-25	1217	12/18/06	12/18/07
897	Spectrum Analyzer	Rohde & Schwarz	FSP	837620/009	8/11/2006	8/11/2007
836	Signal Generator	HP	E8254A	US41140229	7/27/2006	07/27/07
911	Spectrum Analyzer	Agilent	E4440A	US41421266	2/14/2007	2/14/2008
834	Peak Power Sensor	HP	HP84811A	2551A01194	3/31/2006	3/31/2007
833	Peak Power Meter	HP	HP8900D	2131A00861	3/31/2006	3/31/2007
N149	Environmental Chamber	Cincinnati Sub-Zero	ZPHS-32-2-2-H/AC	ZP0552665	5/11/2006	5/11/2007
765	Antenna Set, Dipole	EMCO	3121C	1214	6/27/06	6/27/07
529	Antenna, DRWG	EMCO	3115	2505	8/31/2006	08/31/07
901	pre amp	Sonoma	310 N	130607	2/9/2007	02/09/08
842	Preamp		Nemko	na	verified	04/06/07
915	EMI Test Receiver 20 Hz- 26.5	Rohde & Schwarz	1088.7490.26	837491/0002	2/6/2007	02/06/08
115	Antenna, Bicon	EMCO	3104	3020	8/7/2006	08/07/07

Appendix A.

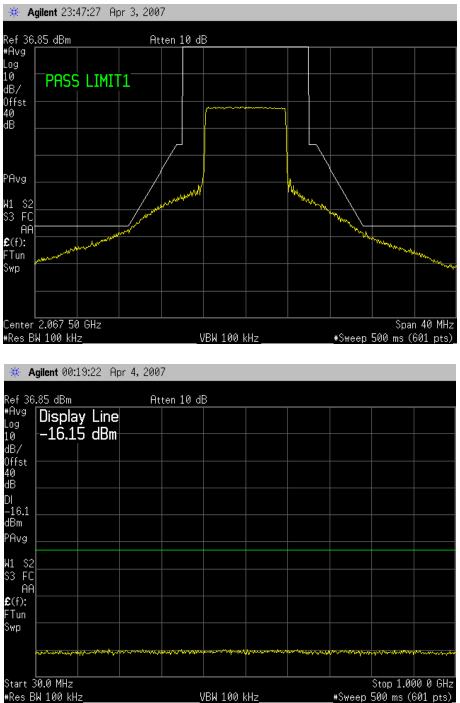
Para. No.: 2.1055 Frequency Stability Data (Channel 10 17MHz Band Plan)

Part 2.1055 (-30°C to +50°C			
Spectrum Analyzer @ 100 Worst case variation:	KHz RBW, 1MHZ RBW, 1MHz Span <u>8500.0</u> Hz (>Set freq.) 200.0 Hz (<set freq.)<="" th=""><th></th><th>2.49625 GHz</th></set>		2.49625 GHz
Temp.Set Point Tin Temp.Actual	e 85% of Vnom Frequency ? (GHz) Difference (GHz)	Vnom=115VAC Frequency ? (GHz) Difference (GHz)	115% of Vnom Frequency ? (GHz) Difference (GHz)
30 8:30	AM 2.4962556	2.4962558	2.4962554
29.9	0.000005600	0.000005800	0.000005400
20 9:30	AM 2.4962545	2.4962538	2.4962544
20	0.000004500	0.000003800	0.000004400
10 10:30	2.496253398	2.4962533	2.4962545
9.9	0.000003398	0.000003300	0.000004500
) 11:3(2.496255	2.4962556	2.4962576
)	0.000005000	0.000005600	0.000007600
0 12:30	2.496258	2.4962585	2.4962576
0	0.000008000	0.000008500	0.000007600
20 1:30	PM 2.496252	2.4962524	2.4962525
20.1	0.000002000	0.000002400	0.000002500
30 2:30	PM 2.4962528	2.4962498	2.4962531
30	0.000002800	0.000000200	0.000003100
40 3:30	PM 2.4962528	2.4962531	2.4962532
19.9	0.000002800	0.000003100	0.000003200
50 4:30	PM 2.4962534	2.49625332	2.4962545
49.9	0.000003400	0.000003320	0.000004500

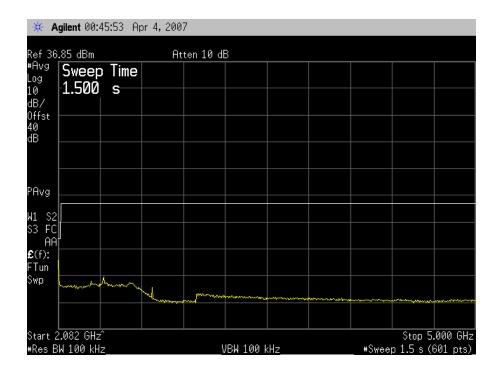
Appendix B.



Channel 4 (12MHz) QPSK



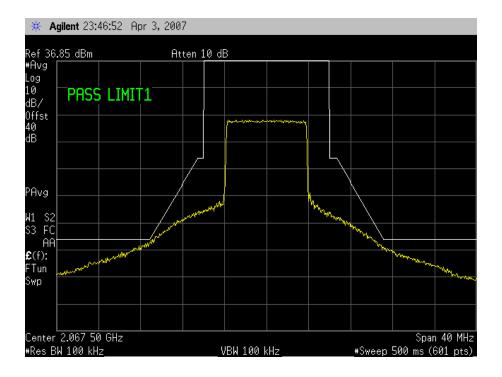
🔆 Agilent 00:33:47 Apr	4,2007		
Ref 36.85 dBm	Atten 10 dB		
#Avg Log			
10 dB/			
Offst			
40 dB			
PAvg			
W1 S2			
S3 FC AA			
£(f):			
FTun Swp			- Markow My
and the second as a second second second	and a second and the second	mannen	and the second
Start 1.000 GHz			Stop 2.052 GHz
#Res BW 100 kHz	VBW 100 kHz	<u>#</u> Sweep 5	00 ms (601 pts)_

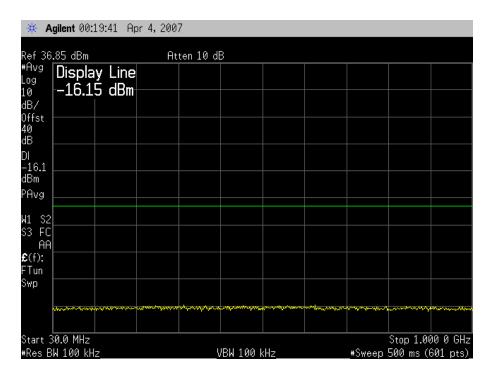


₩ Agilent 00:49:42 Apr 4, 2007				
	Atten 10 dB			
^{*Avg} Display Line 10 -16.15 dBm				
10 -16.15 dBm dB/				
Offst				
40 dB				
DI -16.1				
dBm PAvg				
W1 S2				
S3 FC				
AA £(f):				
FTun Swp				
Start 5.00 GHz		Stop 15.00 GHz		
#Res BW 100 kHz	VBW 100 kHz	#Sweep 5 s (601 pts)_		

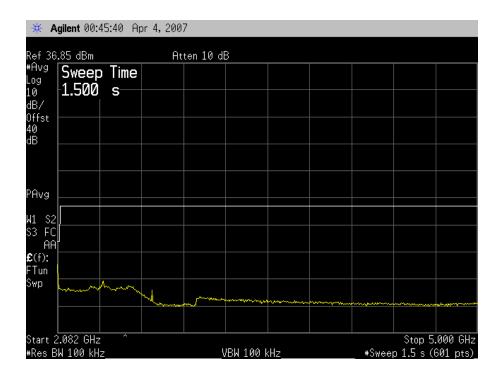
★ Agilent 00:51:29 Apr 4, 2007					
Ref 36 <u>.85</u> dBm	Atten 10 dB				
10 25.00000000 GH	HZ				
0ffst 40 dB					
DI					
-16.1 dBm					
PAvg					
W1 S2 S3 FC					
S3 FC AA					
£(f): FTun					
Swp					
Start 15.00 GHz ^		Stop 25.00 GHz #Sweep 5 s (601 pts)			

Channel 4 (12MHz) 16QAM





₩ Agilent 00:34:21 Apr 4, 2007				
Ref 36.85 dBm	Atten 10 dB			
#Avg Log				
10 dB/				
dB dB				
dB				
PAvg				
W1 S2				
S3 FC AA				
£(f): FTun				
Śwp		and and an and a second		
and the second	warming and a short of the second	ng pepaken seri California da		
Start 1.000 GHz		Stop 2.052 GHz		
#Res BW 100 kHz	VBW 100 kHz	#Sweep 500 ms (601 pts)_		



🔆 Agilent 00:49:58 Apr 4, 200	7	
Ref 36 <u>.85</u> dBm At	ten 10 dB	
^{*Avg} Display Line 10 -16.15 dBm		
10 -16.15 dBm dB/		
0ffst 40 dB		
DI -16.1		
dBm PAvg		
W1 S2		
S3 FC AA		
£(f): FTun		
Swp	·	
Start 5.00 GHz #Res BW 100 kHz_		Stop 15.00 GHz #Sweep 5 s (601 pts)

