Nemko Test Report:	4L0655RUS1rev1
Applicant:	Enfora, Inc.
Equipment Under Test: (E.U.T.)	DBH0104 Dual Band Phone

In Accordance With:

FCC Part 24, Subpart E Broadband PCS Subscriber Station

Tested By:

Nemko USA Inc. 802 N. Kealy Lewisville, TX 75057-3136

Authorized By:

)usting aks L

Dustin Oaks, Engineer

Date:

29 Nov. 2004

Table of Contents

Section 1.	Summary of Test Results	\$
Section 2.	General Equipment Specification5	,
Section 3.	RF Power Output7	,
Section 4.	Occupied Bandwidth8	;
Section 5.	Field Strength of Spurious10)
Section 7.	Frequency Stability15	,
Section 8.	Test Equipment List17	,
ANNEX A - 1	EST METHODOLOGIES 18	;
ANNEX B - 1	EST DIAGRAMS	ļ

EQUIPMENT: DBH0104 Dual Band Phone

Section 1. **Summary of Test Results** Manufacturer: Enfora, Inc. Model No.: DBH0104 Serial No.: None 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 24, Subpart E. \square New Submission **Production Unit** Х **Class II Permissive Change Pre-Production Unit** THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED. THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE. See "Summary of Test Data".

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This report applies only to the items tested.

Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
RF Power Output	24.232	Complies
Occupied Bandwidth	24.238	Complies
Spurious Emissions at Antenna Terminals	24.238(a)	NA
Field Strength of Spurious Emissions	24.238(a)	Complies
Frequency Stability	24.235	Complies

Footnotes:

The phone has an integral antenna.

Section 2. General Equipment Specification

Supply Voltage Input:	3.6 Vdc Battery		
Frequency Bands:	Block A : Block B : Block C : Block D : Block E : Block F :	1850 – 1865 MHz 1865 – 1870 MHz 1870 – 1885 MHz 1885 – 1890 MHz 1890 – 1895 MHz 1895 – 1910 MHz	
Type of Modulation and Designator:	CDMA (F9W)	GSM (GXW)	NADC (DXW)
Emission Designator:	300KGXW		
Necessary Bandwidth:	300 kHz		
Output Impedance:	50 ohms		
RF Output (Rated):		0.501 W eirp	

System Description

The phone is a dual band GSM phone operating in the 800 MHz cellular band and 1900 PCS band.

System Diagram



Section 3. RF Power Output

NAME OF TEST: RF Power Output

PARA. NO.: 2.1046

TESTED BY: David Light

DATE:

Test Results: Complies.

Measurement Data:

Frequency (MHz)	Output Power EIRP (Watts)	Output Power EIRP (dBm)
1850.2	0.407	26.1
1880.2	0.537	27.3
1909.8	0.295	24.7

Note: Measurements were done radiated using the signal substitution method of measurement.

Equipment Used: 1304-1036-1484-1485

Measurement Uncertainty: +/- 1.7 dB

Temperature: 19 °C

Relative Humidity: 40 %

Section 4. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 2.1047
TESTED BY:	DATE:

Test Results: Complies.

Test Data: See attached plots.

FCC PART 24, SUBPART E BROADBAND PCS SUBSCRIBER STATION **Test Report No.: 4L0655RUS1rev1**

Test Data – Occupied Bandwidth

Ner	nko Dallas, Inc	emk				Dall Lev Te Fa	las Headq 802 N. Ke wisville, T> I: (972) 43 x: (972) 43	uarters: ealy < 75057 36-9600 36-2667		
ata Plot	<u>, </u>		Occ	upied Bar	ndwidth					
Page <u>1</u> o No.: ecification: ated By: J.T.: nfiguration:	f <u>1</u> 4L0655R PT24 David Light Dual Band Phone TX	Temp Relative F	Date: 11 erature(°C): 19 Iumidity(%) 40	/11/2004						
		Marker	1 [11]		RBM	3 к	Hz	RF Att	30 GB	
γ Kef Ο α	∟vi dBm	1	-46.	ьь dBm 172 GHz	УВИ БИТ	ЗК 280 m	:HZ IS	Unit	dBm	
- 10						▼1 △ ¹	[T1]	-4 1,8800 - 290,5811	6.65 dBm 6072 GHz 0.75 dB 6233 kHz	A
-30 1 V I	EW			and a state	MAN WULL					1 M
.60										
70		. Www.				44		U .		
90 — 08	minderently							"When we have	minutin	
Cen	ter 1.8802 10.NOV	2 GHz .2004 15	:17:01	100	kHz∕			Sp	an 1 MHz	
NOTES:	20 dB Bandwid	tn = 300 kHz								

Section 5. Field Strength of Spurious

NAME OF TEST: Field Strength of Spurious	PARA. NO.: 2.1053
TESTED BY: David Light	DATE: 1/11/04

Test Results: Complies.

Test Data:

See attached table.

Test Data - Radiated Emissions

N) R	en					Lew Tel: Fax	/isville, TX 7 (972) 436- : (972) 436-	5057 9600 2667
Nem	nko Dallas	, Inc.		-	P P				
Paga 1 o	f 1						Complete	v	
rage <u>1</u> 0	41.0655P		г	late: 11/11/0/			Preliminary	Λ	-
ecification:	PT24		Temperature(°C): 10			i icinina y		-
ested By:	David Light		Relative Humidity	(%) 40					
U.T.:	DUAL BAN	ID PHONE	-	(,,,,					
onfiguration:	TX					-			
mple No:	1					-			
ocation:	AC 3			RBW:	1 MHz		Measurement		
etector Type:	Peak			VBW:	1 MHz	-	Distance:	3	m
est Equipm	ent Used								
ntenna:	1304			Directional Coupler:		_			
e-Amp:	1016			Cable #1:	1484	-			
lter:	1482			Cable #2:	1485	_			
eceiver:	1036			Cable #3:		_			
ttenuator #1				Cable #4:		_			
ttenuator #2:				Mixer:		_			
dditional equip	ment used:					_			
leasurement Ur	ncertainty:	+/-1.7 dB	-						
Frequency	Meter	Correction	Pre-Ai	np Substitution		EIRP	EIRP	Polarity	Comments
	(dBm)	(JD)	(JD)				(
(MHZ)	(авш)	(UB)	(ub)	(цы)		(авш)	(IIIVV)		
			i – – – – – – – – – – – – – – – – – – –						
1880.2	-11.1	29.9	0	8.5		27.3	530.88	V	Carrier
1880.2 1880.2	-11.1	29.9 32.7	0	8.5		27.3 16.7	530.88 47.21	V H	Carrier Carrier
1880.2 1880.2	-11.1 -22.3	29.9 32.7	0	8.5 6.4		27.3 16.7	530.88 47.21	V H	Carrier Carrier
1880.2 1880.2 3760.4	-11.1 -22.3 -61.2	29.9 32.7 34.3		8.5 6.4 8.0		27.3 16.7 -18.9	530.88 47.21 0.0130	V H H	Carrier Carrier
1880.2 1880.2 3760.4 5640.6	-11.1 -22.3 -61.2 -60.1	29.9 32.7 34.3 36.0	0 0 0 0 32	8.5 6.4 8.0 9.1		27.3 16.7 -18.9 -47.0	530.88 47.21 0.0130 0.0000	V Н Н Н	Carrier Carrier
1880.2 1880.2 3760.4 5640.6 7520.8	-11.1 -22.3 -61.2 -60.1 -61.1	29.9 32.7 34.3 36.0 39.8	0 0 0 0 32 32	8.5 6.4 8.0 9.1 9.4		27.3 16.7 -18.9 -47.0 -43.9	530.88 47.21 0.0130 0.0000 0.0000	V H H H H	Carrier Carrier
1880.2 1880.2 3760.4 5640.6 7520.8 9401	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0	29.9 32.7 34.3 36.0 39.8 41.4	0 0 0 32 32 34	8.5 6.4 9.1 9.4 10.1		27.3 16.7 -18.9 -47.0 -43.9 -34.6	530.88 47.21 0.0130 0.0000 0.0000 0.0000	V H H H H H	Carrier Carrier
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -53.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4	0 0 0 32 32 34 34.	8.5 6.4 9.1 9.4 10.1 11.1		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006	V H H H H H	Carrier Carrier
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -53.0 -55.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5	0 0 32 32 34 34.6 34.6	8.5 6.4 9.1 9.4 10.1 11.1 11.2		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009	V H H H H H H H	Carrier Carrier
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -53.0 -55.0 -65.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5 47.1	0 0 32 32 34 34.6 34.6 34 32	8.5 6.4 9.1 9.4 10.1 11.1 11.2 11.4		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001	V H H H H H H H	Carrier Carrier
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -53.0 -55.0 -65.0 -72.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5 47.1 46.1	0 0 32 32 34 34 34 34 34 32 33	8.5 6.4 9.1 9.4 10.1 11.2 11.4 13.0		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001 0.0000	V H H H H H H H H	Carrier Carrier Noise floor
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8 3760.4	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -53.0 -55.0 -65.0 -72.0 -72.0 -72.2	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5 47.1 46.1 40.4	0 0 0 32 32 34 34 6 34 34 34 0 0	8.5 6.4 8.0 9.1 9.4 10.1 11.2 11.4 13.0 10.1		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8 -21.7	530.88 47.21 0.0130 0.0000 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001 0.0000 0.0008	V H H H H H H H H V	Carrier Carrier Noise floor
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8 3760.4 5640.6	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -53.0 -55.0 -65.0 -72.0 -72.0 -72.2 -57.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5 47.1 46.1 40.4 38.5	0 0 0 32 32 34 6 34 34 32 33 30 0 32	8.5 6.4 8.0 9.1 9.4 10.1 11.2 11.4 13.0 10.1 11.2		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8 -21.7 -39.3	530.88 47.21 0.0130 0.0000 0.0000 0.0000 0.0000 0.0009 0.0001 0.0000 0.0008 0.0001	V H H H H H H H H V V V	Carrier Carrier Noise floor
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8 3760.4 5640.6 7520.8	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -55.0 -55.0 -65.0 -72.0 -72.0 -72.2 -57.0 -62.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5 47.1 46.1 40.4 38.5 40.4	0 0 0 32 32 34 34.6 34 32 33 0 0 32 32 32	8.5 6.4 8.0 9.1 9.4 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8 -21.7 -39.3 -42.0	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001 0.0000 0.0008 0.0001 0.0001	V H H H H H H H V V V V	Carrier Carrier Noise floor
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8 3760.4 5640.6 7520.8 9401	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -55.0 -55.0 -65.0 -72.0 -72.0 -72.2 -57.0 -62.0 -52.0 -52.0 -62.0 -52.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5 47.1 46.1 40.4 38.5 40.4 38.5 40.4 39.3	0 0 0 32 32 34 34 34 34 32 33 0 32 32 32 32	8.5 6.4 8.0 9.1 9.4 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8 -21.7 -39.3 -42.0 -34.5	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001 0.0000 0.0008 0.0001 0.0001 0.0001	V H H H H H H H V V V V V V	Carrier Carrier Noise floor
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8 3760.4 5640.6 7520.8 9401 11281.2	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -55.0 -55.0 -65.0 -72.0 -72.2 -57.0 -62.0 -52.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 44.4 44.4 47.5 47.1 46.1 40.4 38.5 40.4 39.3 42.0 41.0	0 0 0 32 32 34 34 34 34 32 33 0 32 32 32 32 32 34	8.5 6.4 8.0 9.1 9.4 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8 -21.7 -39.3 -42.0 -34.5 -32.4 -32.4 -32.6	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001 0.0000 0.0008 0.0001 0.0001 0.0001 0.0004 0.0004 0.0004	V H H H H H H H V V V V V V V V	Carrier Carrier Noise floor
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8 3760.4 5640.6 7520.8 9401 11281.2 13161.4 1524.2	-11.1 -22.3 -61.2 -60.1 -51.0 -55.0 -55.0 -55.0 -72.0 -72.0 -72.2 -57.0 -62.0 -52.0 -52.0 -53.0 -52.0 -53.0 -52.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -72.2 -53.0 -53.0 -72.2 -53.0 -72.2 -72.2 -72.2 -72.2 -72.2 -72.2 -72.0 -72.2 -72.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5 47.1 46.1 40.4 38.5 40.4 39.3 42.0 44.8	0 0 0 32 32 34 34 34 34 34 32 33 0 32 32 32 32 34 34 34 6 34	8.5 6.4 9.1 9.4 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.3 13.3 13.5		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8 -21.7 -39.3 -42.0 -34.5 -32.4 -29.9 -29.9	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001 0.0000 0.0008 0.0001 0.0001 0.0004 0.0004 0.0006 0.0010	V H H H H H H H V V V V V V V V V V	Carrier Carrier Noise floor
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6	-11.1 -22.3 -61.2 -60.1 -51.0 -55.0 -55.0 -65.0 -72.0 -72.0 -72.2 -57.0 -62.0 -52.0 -52.0 -53.0 -52.0 -53.0 -52.0 -53.0 -52.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -53.0 -72.0 -53.0 -53.0 -72.0 -53.0 -72.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 47.5 47.1 46.1 40.4 38.5 40.4 39.3 42.0 44.8 46.5	0 0 0 32 32 34 34 34 34 34 32 33 0 32 32 32 32 32 34 34 34 6 34 2 2 2	8.5 6.4 9.1 9.4 10.1 11.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.3 11.6 12.2 13.3 13.5 15.2		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8 -21.7 -39.3 -42.0 -34.5 -32.4 -29.9 -29.9 -44.0	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001 0.0000 0.0000 0.0006 0.0001 0.0001 0.0004 0.0006 0.0010 0.0000	V H H H H H H H V V V V V V V V V V V	Carrier Carrier Noise floor
1880.2 1880.2 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8 3760.4 5640.6 7520.8 9401 11281.2 13161.4 15041.6 16921.8	-11.1 -22.3 -61.2 -60.1 -61.1 -52.0 -55.0 -55.0 -65.0 -72.0 -72.0 -72.0 -57.0 -62.0 -53.0 -53.0 -53.0 -72.0 -72.0 -72.0	29.9 32.7 34.3 36.0 39.8 41.4 44.4 44.4 44.4 47.5 47.1 46.1 40.4 38.5 40.4 39.3 42.0 44.8 46.5 44.3	0 0 0 32 32 34 34 34 34 32 33 0 32 32 32 32 32 34 34 34 6 34 34 32 33	8.5 6.4 9.1 9.4 10.1 11.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.4 13.0 10.1 11.2 11.3 13.5 13.5 15.2		27.3 16.7 -18.9 -47.0 -43.9 -34.6 -32.1 -30.4 -38.5 -45.8 -21.7 -39.3 -42.0 -34.5 -32.4 -29.9 -44.0 -45.5	530.88 47.21 0.0130 0.0000 0.0000 0.0003 0.0006 0.0009 0.0001 0.0000 0.0008 0.0001 0.0001 0.0004 0.0004 0.0004 0.0000 0.0000 0.0000	V H H H H H H H V V V V V V V V V V V V	Carrier Carrier Noise floor Noise floor Noise floor
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The device was tested on three orthogonal axis' Worse case data is presented. The device was tested from 30 MHz to the 10th harmonic of the carrier.

FCC PART 24, SUBPART E BROADBAND PCS SUBSCRIBER STATION **Test Report No.: 4L0655RUS1rev1**

Bandedge Plots

	Nei	mko				Dall Lev	as Headquarte 802 N. Kealy visville, TX 750	ers: 57	
						Fax	: (972) 436-36 : (972) 436-26	67	
Nen	nko Dallas, Inc.								
<u>Data Plot</u>		<u>Spurious Emi</u>	ssions at A	Antenna '	<u>Ferminals</u>	<u>.</u>			
Page <u>1</u> of Job No.: Specification: Tested By: E.U.T.:	f <u>2</u> 4L0655R PT24 David Light DUAL BAND PHONE	Date: Temperature(°C): Relative Humidity(%)	11/11/2004 19 40			Complete Preliminary:			
Configuration: Sample Number: Location: Detector Type:	TX 1 AC 3 Peak		RBW: <u>3</u> VBW: <u>3</u>	kHz kHz		Measurement Distance	= <u>3</u> n	n	
Test Equipme Antenna: Pre-Amp: Filter: Receiver: Attenuator #1 Attenuator #2: Additional equip Measurement Un	ent Used 1304 1036 1036 ment used: acertainty: +/-1.7 di	Direct	ional Coupler: Cable #1: Cable #2: Cable #3: Cable #4: Mixer:	1485 1485					
10 m		Marker 1 [T1]		RBW	зк	Hz R	- Att	30 dB	
Ref	L∨l dBm	-27 1.850200	.43 dBm 000 GHz	VВW 5WT	3 k 280 m	:Hz 1s Ur	n i t	dBr	1
- 10					▼1	[T1]	-27 1.85020	.43 dBm 000 GHz	A
-20					KAU/N	hulently			
-30 1MA -40	×			Ň	pup · · ·		M.		1MA
-50 <mark>-01</mark>	-51.3 dBm-						Ч Ч		
-60			, when					MW	
-80	and market	un hullen he	N					Ч	
-90									
-100 Cent	ter 1.85 GHz	2	100	kHz/			Spa	n 1 MHz	J
Date:	10.NOV.2	004 15:00:29							
Notes:	Measurement taken substitution method	radiated. Display line at of measurement.	-51.3 dBm rep	resents -13 dl	BM EIRP as ta	aken using the	!		

FCC PART 24, SUBPART E BROADBAND PCS SUBSCRIBER STATION **Test Report No.: 4L0655RUS1rev1**

Bandedge Plots



FCC PART 24, SUBPART E BROADBAND PCS SUBSCRIBER STATION **Test Report No.: 4L0655RUS1rev1**

Photographs of Test Setup



Section 7. Frequency Stability

NAME OF TEST: Frequency Stability	PARA. NO.: 24.235
TESTED BY: David Light	DATE: 11/12/04

Test Results: Complies.

FCC PART 24, SUBPART E BROADBAND PCS SUBSCRIBER STATION **Test Report No.: 4L0655RUS1rev1**

Test Data	a – Frequency S	Stabili	ty				
					Dall	as Headqua	rters:
							/
	// 🔪 (🖵 i	11 (·	(•)		Lev	wisville, TX 7	5057
		Te	l: (972) 436-9	9600			
Ne	emko Dallas, Inc.				Fa	x: (972) 436-2	2667
			Freque	ency Stabili	ity		
Page 1 o	f 1			•1			
Job No.:	- 4L0655R		Date:	11/12/2004			
Specification:	PT24	Tem	perature(°C):	22			
Tested By:	David Light	Relative I	Humidity(%)	50			
E.U.T.:	DUAL BAND PHONE	-					
Configuration:	TX						
Sample Number:	1						
		<u>Test Equi</u>	- pment Used				
Antenna:	1304		Direc	ctional Coupler:			
Pre-Amp:				Cable #1:	1629		
Filter:				Cable #2:			
Receiver:	1026			Thermometer:	619		
Attenuator #1							
Attenuator #2:							
Measurement	1x10 ⁻¹⁷ ppp	Sto	ndord Too	t Frequency	1880	267300	MH2
Oneertainty.	1x10 ppm	Bla	nuaru res	i rrequency	1000.	207300	
	Measured	Rho	Test	Freqeuncy	Limit	Error	
Temp (°C) Frequency (MHz)		Voltage	Error (Hz)	(+/-Hz)	(ppm)	Comment
20	1880.267300	NA	3.6	0	4700.7	0	Fully charged battery
20	1880.268120	NA	4.2	820	4700.7	0.4	Connected to charger
20	1880.267750	NA	3.0	450	4700.7	0.2	Battery cutoff
50	1880.266894	NA		-406	4700.7	-0.2	
40	1880.266894	NA		-406	4700.7	-0.2	
30	1880.268419	NA		1119	4700.7	0.6	
10	1880.270808	NA		3508	4700.7	1.9	
0	1880.270500	NA		3200	4700.7	1.7	
-10	1880.269165	NA		1865	4700.7	1.0	
-20	1880.270700	NA		3400	4700.7	1.8	
-30	1880.267600	NA		300	4700.7	0.2	
Notes	:						

Section 8. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1629	CABLE, 6 ft	MEGAPHASE 10311 1GVT4	N/A	CBU	N/A
1026	FREQUENCY COUNTER	HEWLETT PACKARD 5350B	8232A01493	01/23/04	01/22/05
283	Environmental Chamber with controller # 1189006	ENVIROTRONICS SH27 & 2030-22844	129010083	04/22/03	04/21/04
619	THERMOMETER	FLUKE 51	4520028	09/16/04	09/16/05
1036	SPECTRUM ANALYZER	ROHDE & SCHWARZ FSEK30	830844/006	03/22/04	03/23/06
1484	Cable 2.0-18.0 Ghz	Storm PR90-010-072	N/A	08/26/04	08/26/05
1485	Cable 2.0-18.0 Ghz	Storm PR90-010-216	N/A	08/02/04	08/02/05
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	11/12/04	11/12/05
1481	Microwave Highpass Filter	K & L 3DH1-2000/T8000-0/0	4	Cal B4 Use	N/A
1482	Band Pass Filter	K & L 11SH10-4000/T12000-0/0	2	Cal B4 Use	N/A
759	ANTENNA, LOG PERIODIC	A.H. SYSTEMS SAS-200/510	556	07/23/04	07/23/05
791	PREAMP, 25dB	ICC LNA25	398	11/12/04	11/12/05
1983	CABLE	KTL Site A OATS	N/A	03/11/04	03/11/05
760	Antenna biconical	Electro Metrics MFC-25	477	06/22/04	06/22/05

EQUIPMENT: DBH0104 Dual Band Phone

ANNEX A - TEST METHODOLOGIES

FCC PART 24, SUBPART E BROADBAND PCS SUBSCRIBER STATION **Test Report No.: 4L0655RUS1rev1**

NAME OF TEST: RF Power Output

PARA. NO.: 2.1046

Minimum Standard:Para. No.24.232. Base stations are limited to 1640 watts peakE.I.R.P. with an antenna height up to 300 meters HAAT. In no case
may the peak output power of a base station transmitter exceed 100
watts.

Method Of Measurement: CDMA Per ANSI/J-STD-008 TDMA Per ANSI/J-STD-010 PCS 1900 Per ANSI/J-STD-007

Detachable Antenna:

The peak power at antenna terminals is measured using an in-line peak power meter or a spectrum analyzer.

Integral Antenna:

Test Method: TIA/EIA-603-1992, Section 2.2.12

The antenna substitution method was used to determine the equivalent radiated power at spurious frequencies. The spurious emissions were measured at a distance of 3 meters. The EUT was then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna was fed with a signal at the spurious frequency. The level of the signal was adjusted to repeat the previously measured level. The resulting erp is the signal level fed to the reference antenna corrected for gain referenced to a dipole.

EQUIPMENT: DBH0104 Dual Band Phone

FCC PART 24, SUBPART E BROADBAND PCS SUBSCRIBER STATION **Test Report No.: 4L0655RUS1rev1**

NAME OF TEST: Occupied Bandwidth

PARA. NO.: 2.1049

Minimum Standard: Para. No. 24.238(b). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB.

Method Of Measurement:

CDMA Per ANSI/J-STD-008

Spectrum analyzer settings: RBW: 30 kHz VBW: ≥ RBW Span: 5 MHz Sweep: Auto

GSM Per ANSI/J-STD-007

RBW: 3 kHz VBW: ≥ RBW Span: 2 MHz Sweep: Auto

NADC Per IS-136

RBW: 1 kHz VBW: ≥ RBW Span: 1 MHz Sweep: Auto

NAME OF TEST: Spurious Emission at Antenna Terminals PARA. NO.: 2.1051

Minimum Standard:Para. No.24.238(a). On any frequency outside a licensee's
frequency block, the power of any emission shall be attenuated
below the transmitter power by at least 43 + 10 log (P) dB.

Method Of Measurement:

Spectrum analyzer settings:

CDMA Per ANSI/J-STD-008

RBW: 1 MHz (> 1 MHz from Band Edge) RBW: 20 kHz (< 1MHz from Band Edge) VBW: ≥ RBW Sweep: Auto Video Avg: 6 Sweeps

NADC Per IS-136

RBW: 1 MHz (> 1 MHz from Band Edge) RBW: 1 kHz (< 1 MHz from Band Edge) VBW: ≥ RBW Sweep: Auto Video Avg: Disabled

GSM Per ANSI/J-STD-007

RBW: 1 MHz (> 1 MHz from Band Edge) RBW: 3 kHz (< 1 MHz from Band Edge) VBW: ≥ RBW Sweep: Auto Video Avg: Disabled

To demonstrate compliance at band edges the frequency of the input signal is set to the lowest and highest assigned channel and the center frequency of the spectrum analyzer is set to the upper and lower edges of the appropriate frequency block.

EQUIPMENT: DBH0104 Dual Band Phone

NAME OF TEST: Field Strength of Spurious Radiation PARA. NO.: 2.1053

Minimum Standard:	Para. No.24.238(a). On any frequency outside a licensee's
	frequency block, the power of any emission shall be attenuated
	below the transmitter power by at least $43 + 10 \log (P) dB$.

Test Method: TIA/EIA-603-1992, Section 2.2.12

The antenna substitution method was used to determine the equivalent radiated power at spurious frequencies. The spurious emissions were measured at a distance of 3 meters. The EUT was then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna was fed with a signal at the spurious frequency. The level of the signal was adjusted to repeat the previously measured level. The resulting erp is the signal level fed to the reference antenna corrected for gain referenced to a dipole.

FCC PART 24, SUBPART E BROADBAND PCS SUBSCRIBER STATION **Test Report No.: 4L0655RUS1rev1**

NAME OF TEST: Frequency Stability

PARA. NO.: 2.1055

Minimum Standard: Para. No. 24.235. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Method Of Measurement: CDMA Per ANSI/J-STD-008 TDMA Per ANSI/J-STD-007 NADC Per IS-136

Frequency Stability With Voltage Variation

The E.U.T. is placed in an environmental chamber and allowed to stabilize at +20 degrees Celsius for at least 15 minutes. With the voltage input to the E.U.T. set to 85% S.T.V., the frequency is measured in 30 second intervals for a period of 5 minutes. This procedure is repeated at 100% S.T.V. and 115% S.T.V.

Frequency Stability With Temperature Variation

The input voltage to the E.U.T. is set to S.T.V. and the temperature of the environmental chamber is varied in 10 degree steps from -30 degrees C to +50 degrees C. The E.U.T. is allowed to stabilize at each temperature and the frequency is measured in 30 second intervals for a period of 5 minutes.

Digitally Modulated Signals

Equipment that produces a digitally modulated carrier is tested using a vector modulation analyzer. Frequency accuracy and rho are measured over the specified environmental extremes.

EQUIPMENT: DBH0104 Dual Band Phone

ANNEX B - TEST DIAGRAMS

Para. No. 2.985 - R.F. Power Output



Para. No. 2.989 - Occupied Bandwidth



EQUIPMENT: DBH0104 Dual Band Phone

Para. No. 2.991 Spurious Emissions at Antenna Terminals



Para. No. 2.993 - Field Strength of Spurious Radiation



Para. No. 2.995 - Frequency Stability

EQUIPMENT: DBH0104 Dual Band Phone

