



Test Report: 4W33046.1 Issue 2


Applicant: VTech Engineering Canada Ltd.
Suite 200 – 7671 Alderbridge Way
Richmond, B.C.,
Canada
V6X 1Z9

**Equipment Under Test:
(EUT)** VTech 5829, 5851 Base

FCC ID: EW780-5587-00

In Accordance With: **FCC Part 15, Subpart C, 15.249**

Tested By: Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2



Authorized By: Glen Westwell, Wireless Specialist

Date: 9 December 2004

Total Number of Pages: 28

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EQUIPMENT: Vtech 5829,5851 Base

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 15.249. All tests were conducted using measurement procedure ANSI C63.4-2001. Radiated Emissions were made on an open area test site. A description of the test facility is on file with the FCC.

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".



TESTED BY: _____
Chris Maidens, EMC Specialist

DATE: 9 December 2004

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This report applies only to the items tested.

EQUIPMENT: Vtech 5829,5851 Base

Summary Of Test Data

Name Of Test	Para. No.	Result
Conducted Emissions	15.207	Complied
Radiated Emissions	15.249	Complied

Test Conditions:

Indoor Temperature: 22°C
 Humidity: 30%

Outdoor Temperature: 10°C
 Humidity: 30%

EQUIPMENT: Vtech 5829,5851 Base

Section 2. General Equipment Specification

Manufacturer:	VTech (Dongguan) Electronics and Communications Ltd. Xia Ling Bei Management Zone, Liaobu, Dongguan, guangdong, China 523411
Model No.:	5829, 5851
Serial No.:	None.
Date Received In Laboratory:	November 8, 2004
Nemko Identification No.:	See Nemko Receiving Report
EUT Description:	<ul style="list-style-type: none">➤ The 5829 is a cordless phone system consisting of a CID handset unit that transmits in the 5863.8 to 5872.5MHz range, and a base unit that transmits in the 912.75 to 917.1MHz range.➤ The 5851 system uses the same frequencies, but has a digital answering machine built in to the base.
Tx Frequency Range:	912.75-917.1MHz
Emission Designator:	343KF3E & 120KF1D
Number of Channels:	30
Modulation:	Voice: FM Data: FSK
Rated Power:	Transmit power is fixed at an output power which produces less than 94 dBuV at 3m

EQUIPMENT: Vtech 5829,5851 Base

EUT Configuration

Equipment Configuration List		
Item	Description	Identification: (M/N #, S/N #, P/N #, Rev.)
A	Handset	None.
B	Headset with mini-din cable integral	None.
C	Base Unit	M/N: ia5829, ia5839, ia5851, or ia5859
D	-48V DC feed	None.
E	Component telephone power supply Class 2	M/N: UO93040D (with the ia5829 or ia5839) M/N: UO90050D (with the ia5851 or the ia5859)

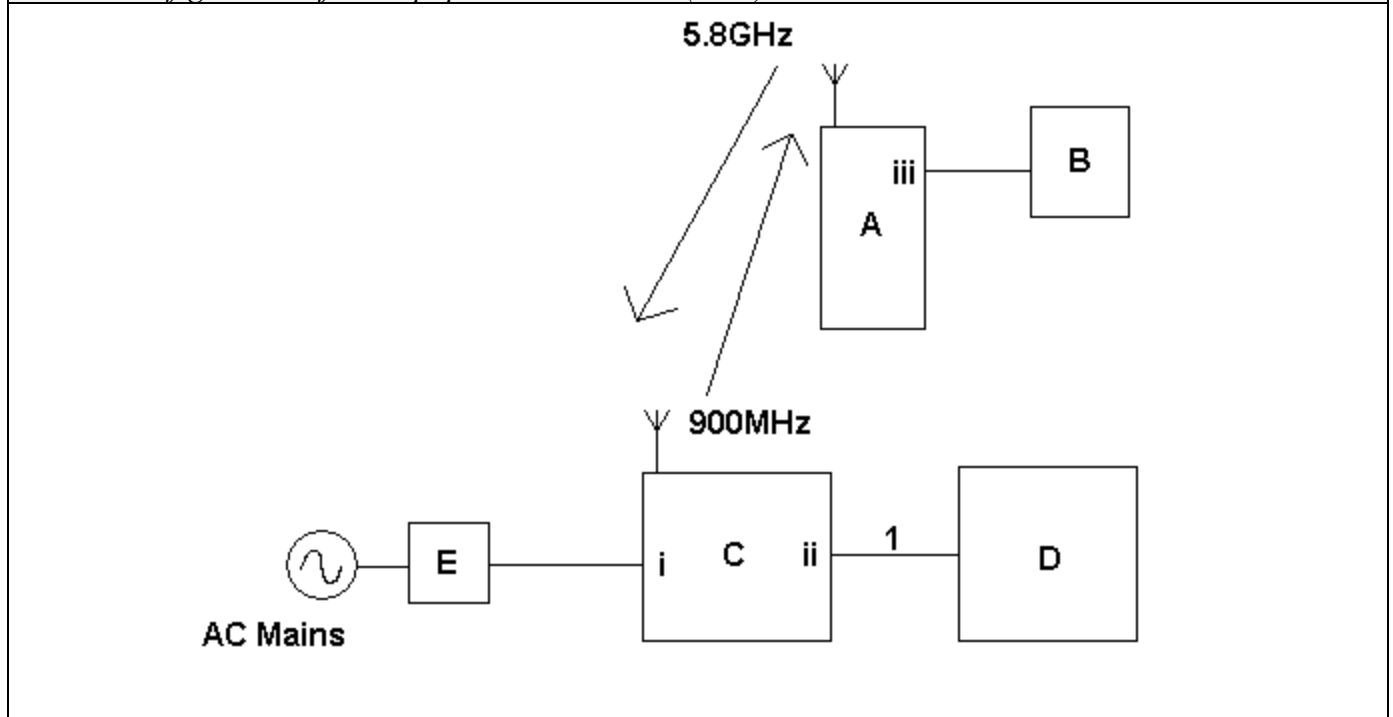
EUT Ports				
Item	Description	Indoor/Outdoor	Type (See Legend)	Qty
i	AC Mains Input	Outdoor	1	1
ii	PSTN	Outdoor	3	1
iii	Headset	Indoor	4	1

Inter-Connection Cables				
Item	Description	Shielded	Ferrite	Length (m)
1	RJ11 to RJ11 Standards telephone cable	No	No	1.5

Legend:
1 = AC Power Input/Output, 2 = DC Power Input/Output, 3 = Telecom, 4 = Non-telecom I/O, 5 = Maintenance, 6 = Fiber Optic

Notes
None

Configuration of the Equipment Under Test (EUT)



EQUIPMENT: Vtech 5829,5851 Base

Section 3. Powerline Conducted Emissions

Para. No.: 15.207(a)

Test Performed By: Chris Maidens	Date of Test: Nov. 9, 2004
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Minimum Standard:

Frequency of Emission (MHz)	Maximum Powerline Conducted RF Voltage	
	Quasi-peak (dBuV)	Average(dBμV)
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency

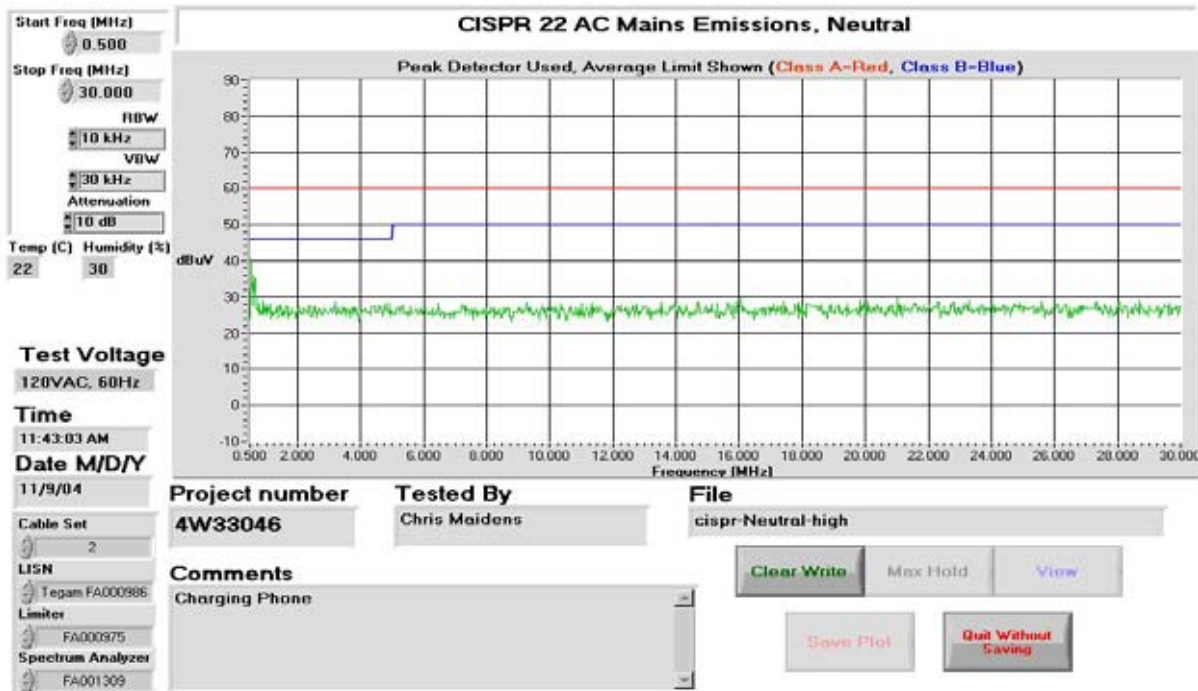
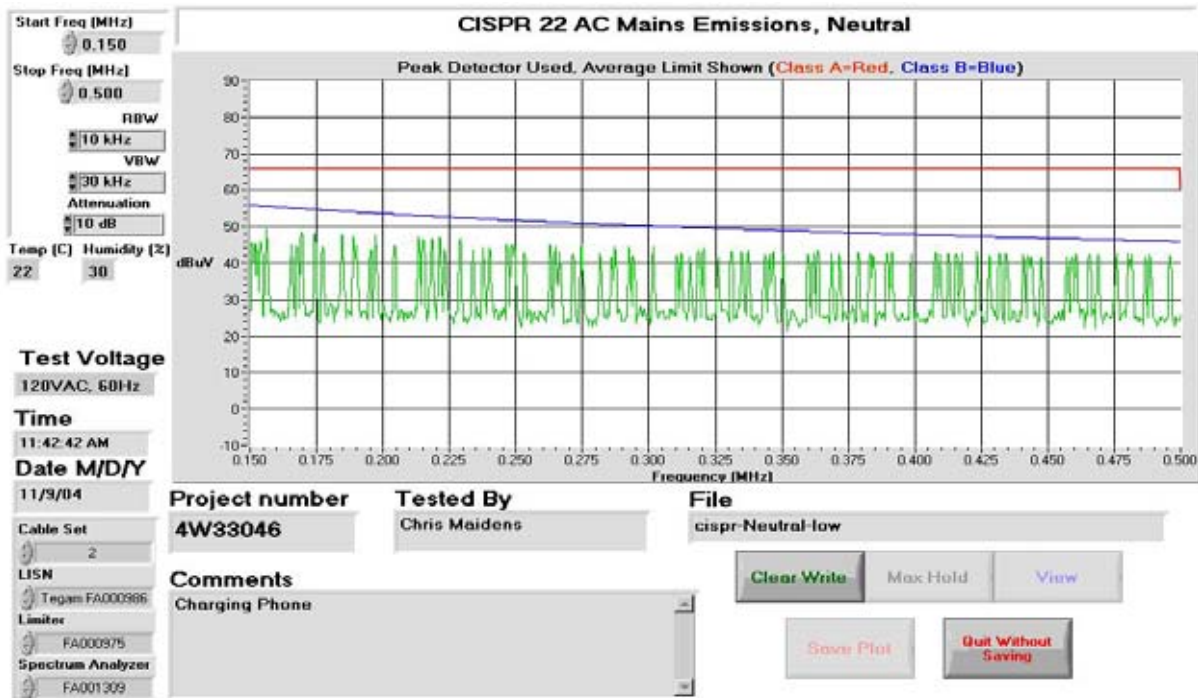
Test Results: Complied

Measurement Data: See attached graphs.

Note: The EUT was verified in 3 modes of operation; “Charging”, “Off hook”, and “Idle, off charger”. Charging was the worst case and has been reported and photographed.

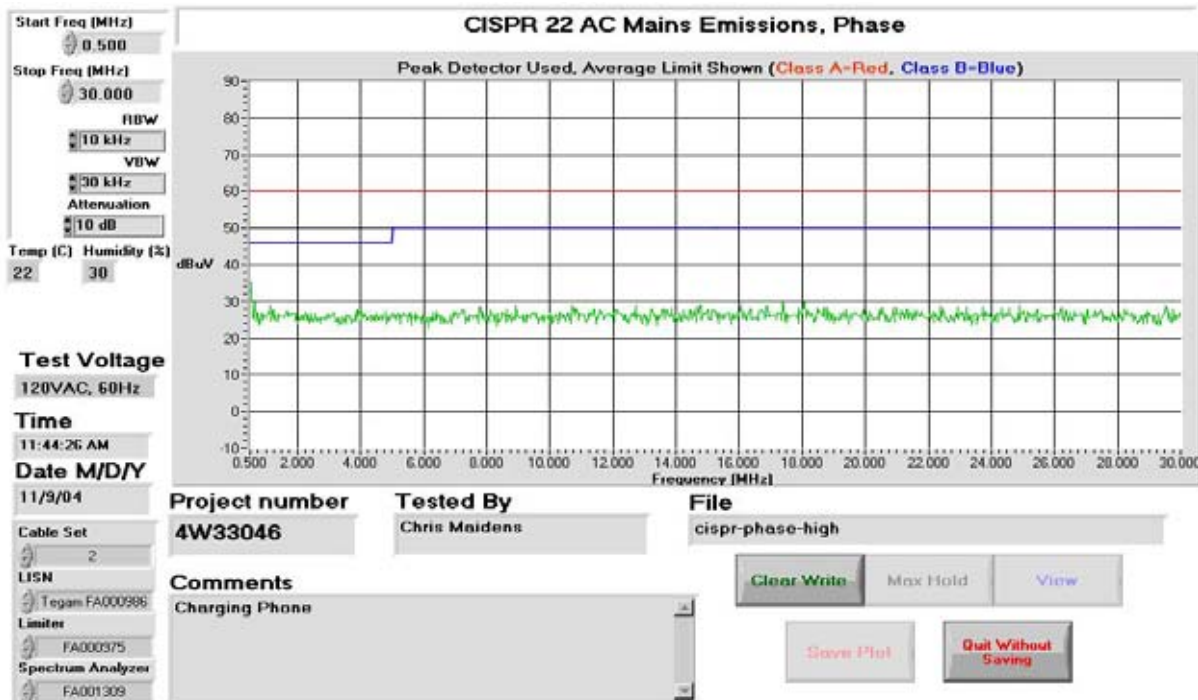
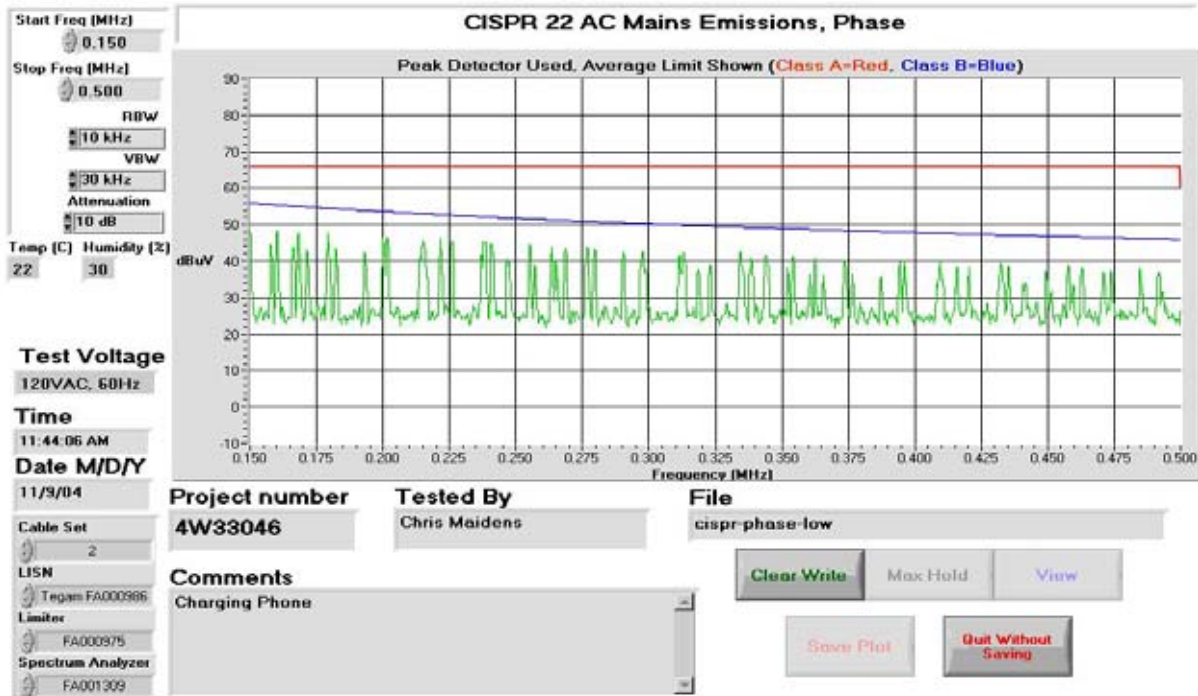
EQUIPMENT: Vtech 5829,5851 Base

Plots: 5839



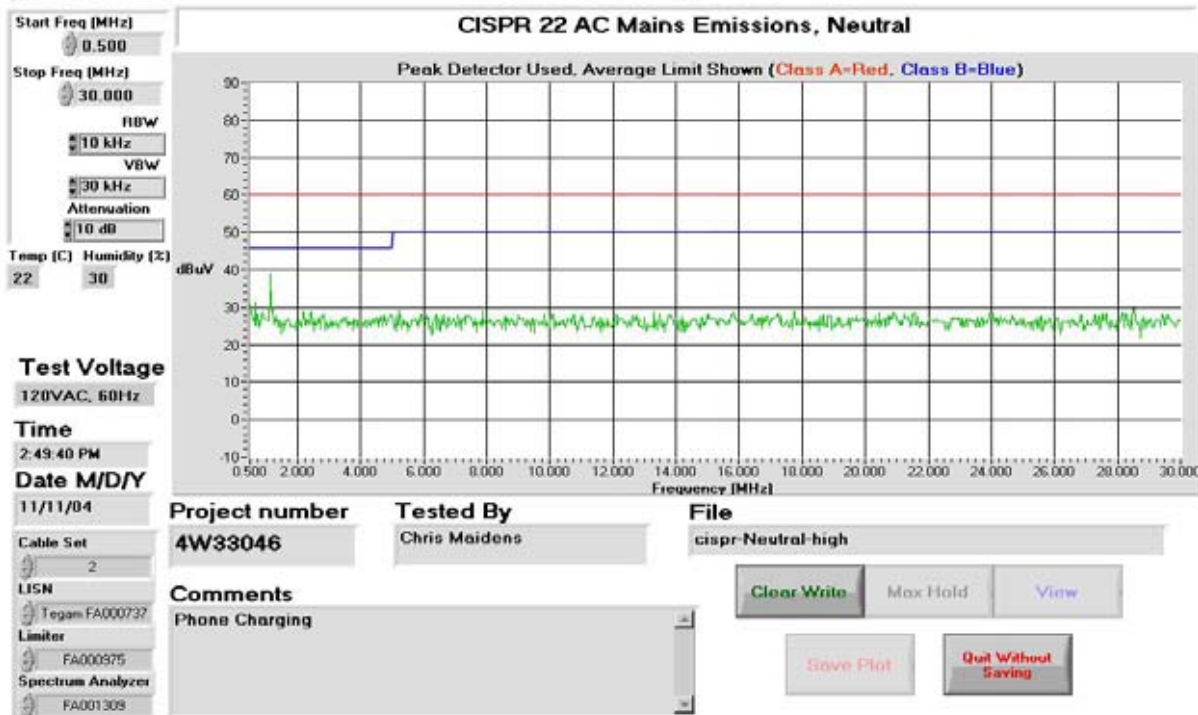
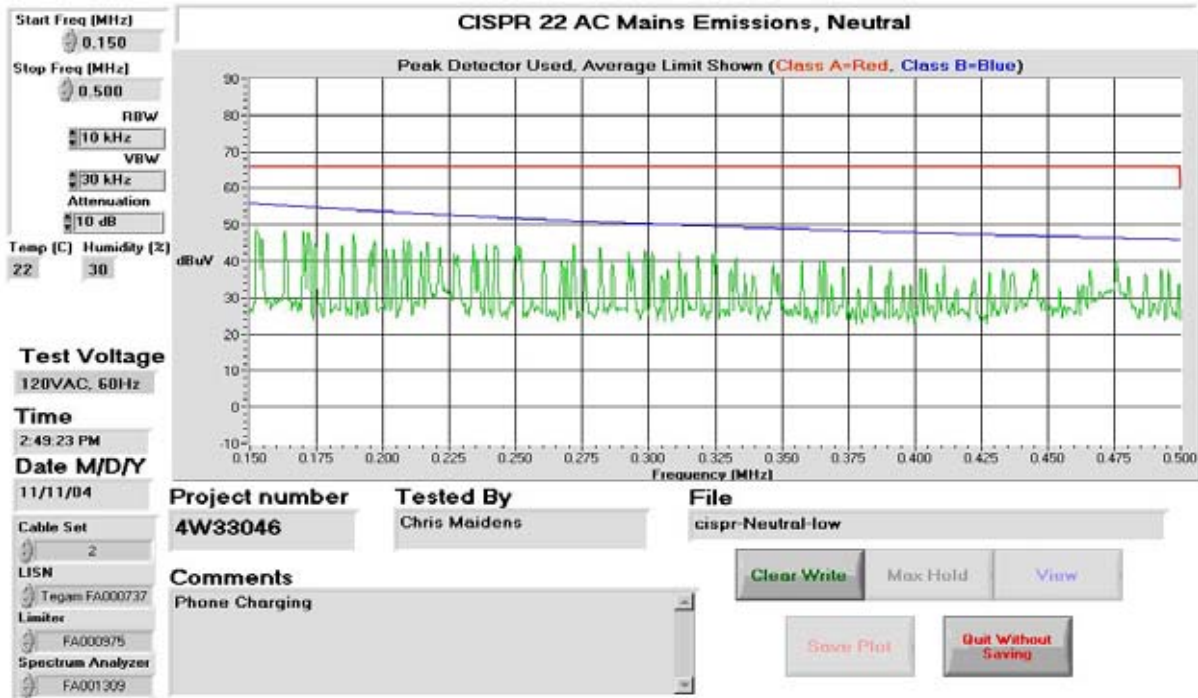
EQUIPMENT: Vtech 5829,5851 Base

Plots 5839 (continued)



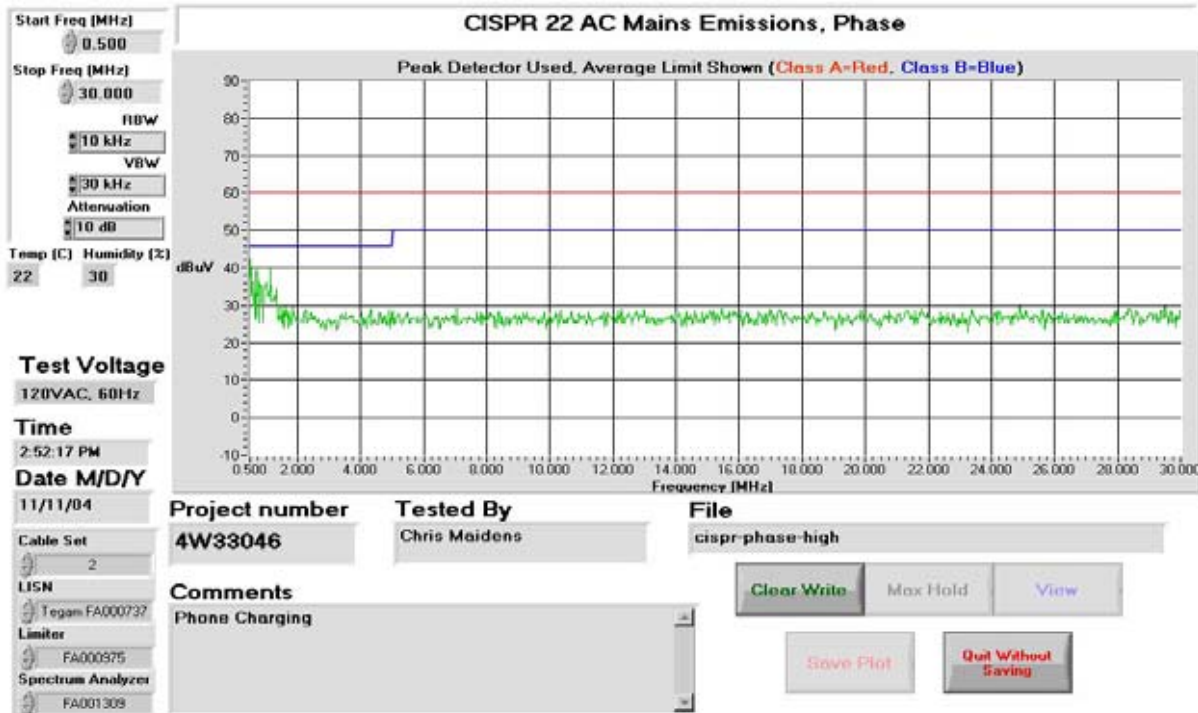
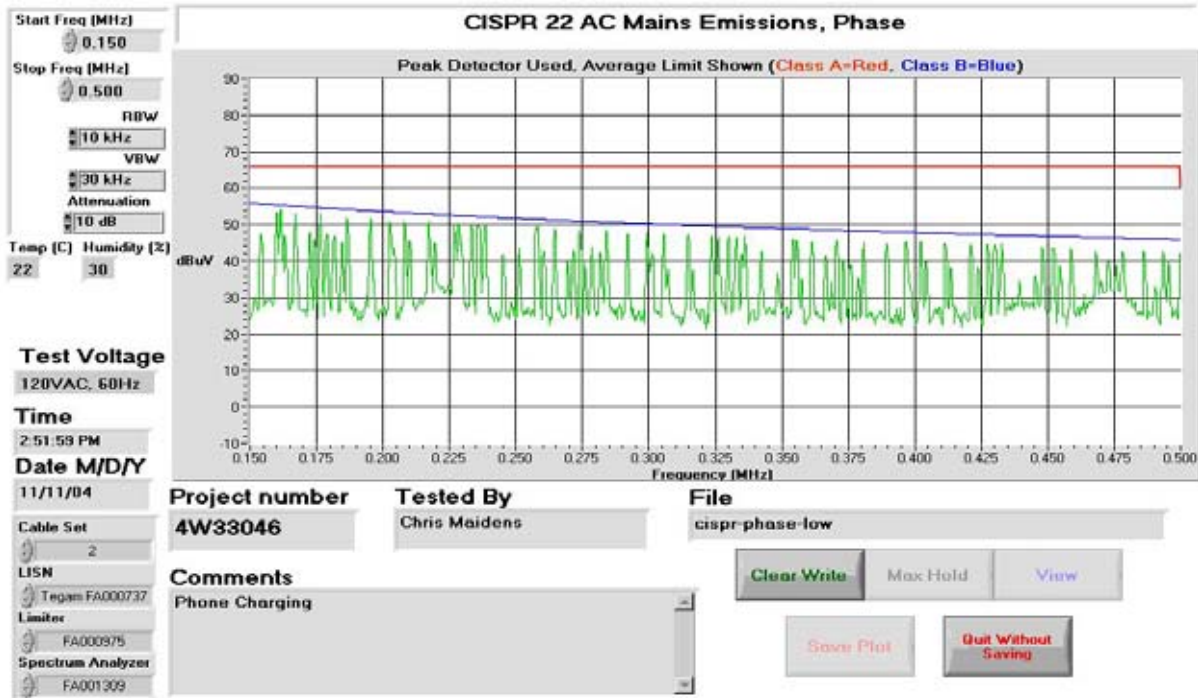
EQUIPMENT: Vtech 5829,5851 Base

Plots 5851



EQUIPMENT: Vtech 5829,5851 Base

Plots 5851 (continued)



EQUIPMENT: Vtech 5829,5851 Base

Setup Photos:

5839



5851



EQUIPMENT: Vtech 5829,5851 Base

Section 4. Radiated Emissions

Para. No.: 15.249

Test Performed By: Chris Maidens	Date of Test: Nov 9 & 10, 2004
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Minimum Standard:

Fundamental (MHz)	Field Strength (mV/m)	Field Strength (dBµV)	Harmonic (mV/m)	Harmonic (dBµV)
902-928	50	94	0.5	54

Test Results: Complied

Measurement Data: See attached tabulated data.

EQUIPMENT: Vtech 5829,5851 Base

Radiated Emissions, Base Unit 5839:

Tested as per: Table Top							Mains Input: 120VAC, 60Hz				
Test Distance (meters): 3							Dome: 1				
Channel 14 (middle channel)											
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Amp.
914.8500	LP2	V	56.8	23.0	0	4.0	83.8	94.0	10.2	Peak	N/A
914.8500	LP2	H	59.5	24.5	0	4.0	88.0	94.0	6.0	Peak	N/A
1829.7000	Horn1	V	52.2	28.2	46.6	3.9	37.8	54.0	16.2	Peak	1-2GHz
1829.7000	Horn1	H	51.2	28.1	46.6	3.9	36.6	54.0	17.4	Peak	1-2GHz
2744.5500	Horn1	V	64.0	30.3	56.6	5.7	43.4	54.0	10.6	Peak	2-4GHz
2744.5500	Horn1	H	63.5	30.3	56.6	5.7	42.9	54.0	11.1	Peak	2-4GHz
3659.4000	Horn1	V	65.5	32.7	54.9	7.0	50.2	54.0	3.8	Peak	2-4GHz
3659.4000	Horn1	H	64.3	32.7	54.9	7.0	49.0	54.0	5.0	Peak	2-4GHz
4574.2500	Horn1	V	60.5	34.3	53.2	7.7	49.2	54.0	4.8	Peak	4-8GHz
4574.2500	Horn1	H	59.8	34.1	53.2	7.7	48.3	54.0	5.7	Peak	4-8GHz
5489.1000	Horn1	V	58.5	34.6	51.2	8.7	50.7	54.0	3.3	Peak	4-8GHz
5489.1000	Horn1	H	58.7	34.4	51.2	8.7	50.7	54.0	3.3	Peak	4-8GHz
Channel 29 (high channel)											
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Amp.
917.1000	LP2	V	58.7	23.0	0.0	4.0	85.7	94.0	8.3	Peak	N/A
917.1000	LP2	H	58.2	24.5	0.0	4.0	86.7	94.0	7.3	Peak	N/A
1834.2000	Horn1	V	54.2	28.3	46.6	3.9	39.8	54.0	14.2	Peak	1-2GHz
1834.2000	Horn1	H	52.5	28.1	46.6	3.9	37.9	54.0	16.1	Peak	1-2GHz
2751.3000	Horn1	V	53.0	30.3	56.6	5.7	32.4	54.0	21.6	Peak	2-4GHz
2751.3000	Horn1	H	53.7	30.3	56.6	5.7	33.1	54.0	20.9	Peak	2-4GHz
3668.4000	Horn1	V	59.7	32.7	54.9	7.0	44.5	54.0	9.5	Peak	2-4GHz
3668.4000	Horn1	H	60.2	32.7	54.9	7.0	45.0	54.0	9.0	Peak	2-4GHz
4585.5000	Horn1	V	49.3	34.3	53.3	7.7	38.0	54.0	16.0	Peak	4-8GHz
4585.5000	Horn1	H	48.8	34.1	53.3	7.7	37.4	54.0	16.6	Peak	4-8GHz
5502.6000	Horn1	V	47.8	34.8	51.2	8.7	40.1	54.0	13.9	Peak	4-8GHz
5502.6000	Horn1	H	47.7	34.7	51.2	8.7	39.9	54.0	14.1	Peak	4-8GHz

EQUIPMENT: Vtech 5829,5851 Base

Radiated Emissions, Base Unit 5839 (continued):

Tested as per: Table Top							Mains Input: 120VAC, 60Hz				
Test Distance (meters): 3							Dome: 1				
Channel 0 (low channel)											
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Amp.
912.7500	LP2	V	58.5	23.0	0	4.0	85.5	94.0	8.5	Peak	N/A
912.7500	LP2	H	59.3	24.5	0	4.0	87.8	94.0	6.2	Peak	N/A
1825.5000	Horn1	V	53.2	28.2	46.6	3.9	38.7	54.0	15.3	Peak	1-2GHz
1825.5000	Horn1	H	51.8	28.1	46.6	3.9	37.2	54.0	16.8	Peak	1-2GHz
2738.2500	Horn1	V	63.3	30.3	56.6	5.7	42.7	54.0	11.3	Peak	2-4GHz
2738.2500	Horn1	H	63.5	30.3	56.6	5.7	42.9	54.0	11.1	Peak	2-4GHz
3651.0000	Horn1	V	64.3	32.7	54.9	6.9	48.9	54.0	5.1	Peak	2-4GHz
3651.0000	Horn1	H	65.8	32.7	54.9	6.9	50.5	54.0	3.5	Peak	2-4GHz
4563.7500	Horn1	V	59.8	34.3	53.2	7.6	48.5	54.0	5.5	Peak	4-8GHz
4563.7500	Horn1	H	58.7	34.1	53.2	7.6	47.2	54.0	6.8	Peak	4-8GHz
5476.5000	Horn1	V	57.7	34.6	51.2	8.7	49.9	54.0	4.1	Peak	4-8GHz
5476.5000	Horn1	H	57.8	34.4	51.2	8.7	49.8	54.0	4.2	Peak	4-8GHz
Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole											
Notes											
<ol style="list-style-type: none"> 1) A measurement BW of 100kHz was used on emissions <1GHz & 1MHz for emissions >1GHz. 2) The base is intended to be mounted in a fixed horizontal orientation. 3) The spectrum was searched from 8MHz up to the 10th harmonic of the fundamental (9171MHz). No emissions were detected other than those reported in this table. 4) The EUT was verified in both voice and data mode. Data mode was the worst case, therefore it has been reported. 5) The EUT fundamental FS was verified at +/-15% of the specified test voltage. No effect was observed. 											

EQUIPMENT: Vtech 5829,5851 Base

Radiated Emissions, Base Unit 5851:

Tested as per: Table Top							Mains Input: 120VAC, 60Hz				
Test Distance (meters): 3							Dome: 1				
Channel 14 (middle channel)											
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Amp.
914.8500	LP2	V	59.8	23.0	0	4.0	86.8	94.0	7.2	Peak	N/A
914.8500	LP2	H	60.3	24.5	0	4.0	88.8	94.0	5.2	Peak	N/A
1829.7000	Horn1	V	55.0	28.2	46.6	3.9	40.6	54.0	13.4	Peak	1-2GHz
1829.7000	Horn1	H	55.2	28.1	46.6	3.9	40.6	54.0	13.4	Peak	1-2GHz
2744.5500	Horn1	V	63.5	30.3	56.6	5.7	42.9	54.0	11.1	Peak	2-4GHz
2744.5500	Horn1	H	63.3	30.3	56.6	5.7	42.7	54.0	11.3	Peak	2-4GHz
3659.4000	Horn1	V	58.7	32.7	54.9	7.0	43.4	54.0	10.6	Peak	2-4GHz
3659.4000	Horn1	H	57.7	32.7	54.9	7.0	42.4	54.0	11.6	Peak	2-4GHz
4574.2500	Horn1	V	54.7	34.3	53.2	7.7	43.4	54.0	10.6	Peak	4-8GHz
4574.2500	Horn1	H	54.2	34.1	53.2	7.7	42.7	54.0	11.3	Peak	4-8GHz
5489.1000	Horn1	V	53.5	34.6	51.2	8.7	45.7	54.0	8.3	Peak	4-8GHz
5489.1000	Horn1	H	52.5	34.4	51.2	8.7	44.5	54.0	9.5	Peak	4-8GHz
Channel 29 (high channel)											
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Amp.
917.1000	LP2	V	60.2	23.0	0	4.0	87.2	94.0	6.8	Peak	N/A
917.1000	LP2	H	60.5	24.5	0	4.0	89.0	94.0	5.0	Peak	N/A
1834.2000	Horn1	V	55.2	28.3	46.6	3.9	40.8	54.0	13.2	Peak	1-2GHz
1834.2000	Horn1	H	53.8	28.1	46.6	3.9	39.2	54.0	14.8	Peak	1-2GHz
2751.3000	Horn1	V	62.8	30.3	56.6	5.7	42.2	54.0	11.8	Peak	2-4GHz
2751.3000	Horn1	H	63.2	30.3	56.6	5.7	42.6	54.0	11.4	Peak	2-4GHz
3668.4000	Horn1	V	56.8	32.7	54.9	7.0	41.6	54.0	12.4	Peak	2-4GHz
3668.4000	Horn1	H	57.3	32.7	54.9	7.0	42.1	54.0	11.9	Peak	2-4GHz
4585.5000	Horn1	V	54.5	34.3	53.3	7.7	43.2	54.0	10.8	Peak	4-8GHz
4585.5000	Horn1	H	54.0	34.1	53.3	7.7	42.6	54.0	11.4	Peak	4-8GHz
5502.6000	Horn1	V	52.0	34.8	51.2	8.7	44.3	54.0	9.7	Peak	4-8GHz
5502.6000	Horn1	H	52.3	34.7	51.2	8.7	44.5	54.0	9.5	Peak	4-8GHz

EQUIPMENT: Vtech 5829,5851 Base

Radiated Emissions, Base Unit 5851 (continued):

Tested as per: Table Top							Mains Input: 120VAC, 60Hz				
Test Distance (meters): 3							Dome: 1				
Channel 0 (low channel)											
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Amp.
912.7500	LP2	V	61.2	23.0	0	4.0	88.2	94.0	5.8	Peak	N/A
912.7500	LP2	H	59.8	24.5	0	4.0	88.3	94.0	5.7	Peak	N/A
1825.5000	Horn1	V	53.8	28.2	46.6	3.9	39.3	54.0	14.7	Peak	1-2GHz
1825.5000	Horn1	H	55.3	28.1	46.6	3.9	40.7	54.0	13.3	Peak	1-2GHz
2738.2500	Horn1	V	62.0	30.3	56.6	5.7	41.4	54.0	12.6	Peak	2-4GHz
2738.2500	Horn1	H	62.5	30.3	56.6	5.7	41.9	54.0	12.1	Peak	2-4GHz
3651.0000	Horn1	V	57.5	32.7	54.9	6.9	42.1	54.0	11.9	Peak	2-4GHz
3651.0000	Horn1	H	56.0	32.7	54.9	6.9	40.7	54.0	13.3	Peak	2-4GHz
4563.7500	Horn1	V	53.3	34.3	53.2	7.6	42.0	54.0	12.0	Peak	4-8GHz
4563.7500	Horn1	H	54.7	34.1	53.2	7.6	43.2	54.0	10.8	Peak	4-8GHz
5476.5000	Horn1	V	52.3	34.6	51.2	8.7	44.5	54.0	9.5	Peak	4-8GHz
5476.5000	Horn1	H	52.7	34.4	51.2	8.7	44.7	54.0	9.3	Peak	4-8GHz

Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole

Notes

- 1) A measurement BW of 100kHz was used on emissions <1GHz & 1MHz for emissions >1GHz.
- 2) The base is intended to be mounted in a fixed horizontal orientation.
- 3) The spectrum was searched from 8MHz up to the 10th harmonic of the fundamental (9171MHz).
No emissions were detected other than those reported in this table.
- 4) The EUT was verified in both voice and data mode. Data mode was the worst case, therefore it has been reported.

EQUIPMENT: Vtech 5829,5851 Base

EUT Setup Photo:

Base 5839

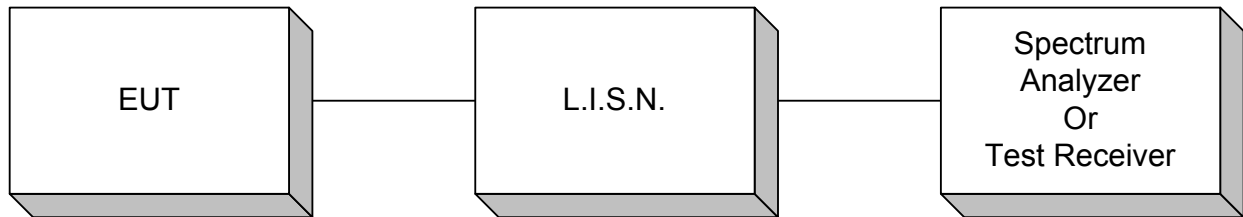


Base 5851

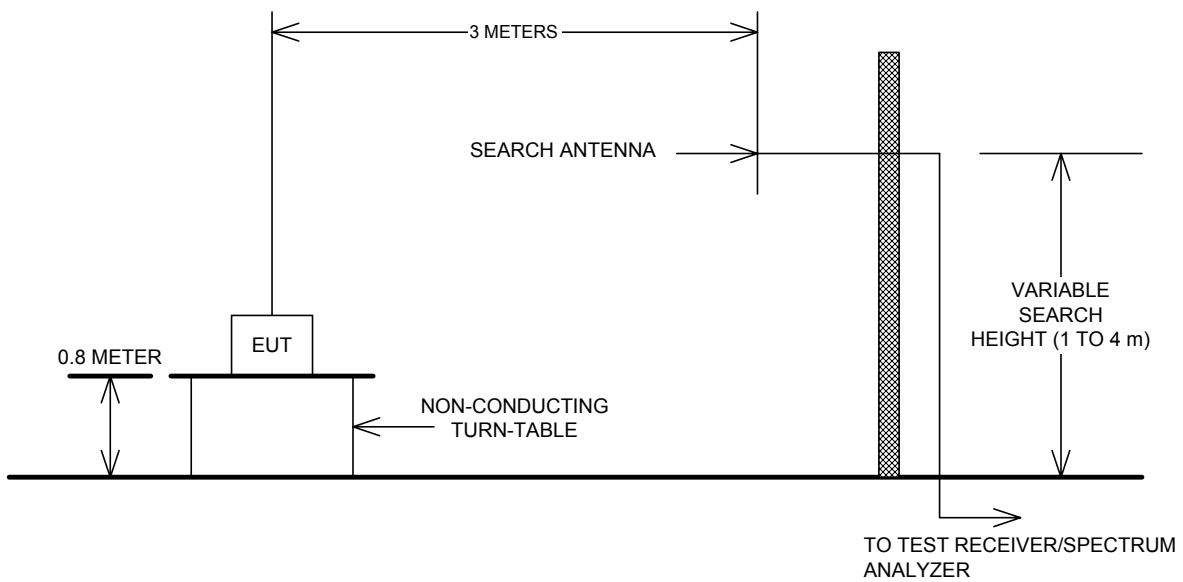


Section 6. Block Diagrams

Conducted Emissions



Test Site For Radiated Emissions



The spectrum was search up to the 10th harmonic of the fundamental frequency of operation.

EQUIPMENT: Vtech 5829,5851 Base

Section 7. Test Equipment List

Equipment List – Conducted Emissions

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	LISN (peripheral)	Tegam	95300-50	FA000986	Jan. 27/04	Jan. 27/05
1 Year	LISN (peripheral)	Tegam	95300-50	FA000987	Jan. 27/04	Jan. 27/05
1 Year	Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 28/04	May 28/05
1 Year	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 28/04	May 28/05
1 Year	Transient Limiter	Hewlett-Packard	1194 7A	FA000975	June 10/04	June 10/05

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair

Equipment List - Radiated Emissions

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Receiver	Rohde & Schwarz	ESVP	FA000871	Jan. 16/04	Jan. 16/05
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	May 31/04	May 31/05
1 Year	Biconical (1) Antenna	EMCO	3109	FA000805	April 23/04	April 23/05
1 Year	Horn Antenna #1	EMCO	3115	FA000649	Dec. 18/03	Dec. 18/04
1 Year	Log Periodic Antenna #2	EMCO	3148	FA001355	May 05/04	May 05/05
1 Year	Active Loop Antenna	EMCO	6502	FA001686	July 19/04	July 19/05
1 Year	Horn Antenna	ETS	3116	FA001847	Jan. 19/04	Jan. 19/05
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June 18/04	June 18/05
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June 18/04	June 18/05
1 Year	4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	June 18/04	June 18/05
COU	5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU	COU
COU	18.0 – 26.0 GHz Amplifier	NARDA	BBS-1826N612	FA001550	COU	COU
COU	26 – 40.0 GHz Amplifier	NARDA	DBL-2640N610	FA001556	COU	COU

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair