FCC CFR47 PART 87
CERTIFICATION TEST REPORT

FOR

RF POWER AMPLIFIER

MODEL NUMBER: PA3-2BH-AIR

FCC ID: BBD3-2BH-AIR

REPORT NUMBER: 05U3905-1

ISSUE DATE: JANUARY 26, 2006

Prepared for
TPL COMMUNICATION
3370 SAN FERNANDO ROAD, SUITE 206
LOS ANGELES, CA 90065, USA

Prepared by
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d.b.a.
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LAB CODE:200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
A	1/26/06	Initial Issue	Thu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: TPL COMMUNICATION
3370 SAN FERNANDO ROAD, SUITE 206
LOS ANGELES, CA 90065 USA

EUT DESCRIPTION: RF POWER AMPLIFIER

MODEL: PA3-3BH-AIR

SERIAL NUMBER: CCS 01660

DATE TESTED: JANUARY 18 - 19, 2006

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 87	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

CHIN PANG
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603C (2004), FCC CFR 47 Part 2, and FCC CFR 47 Part 87.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a RF Power Amplifier which is tuned to 132.65MHz single channel with AM modulation, and it only operates at 240VAC, 60Hz @ Single Phase.

The input signal is AM modulated, 6K00A3E or 5K6A3E as applicable to the station at which the EUT is installed.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Modulation	Conducted Output Power (dBm)	Conducted Output Power (W)
132.65	CW	57	501.2

5.3. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the single channel at 132.65MHz.

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**Cal Due**
Amplifier	AR	75A250	303332	CNR
Signal Generator, 10 MHz ~ 20 GHz	HP	83732B	US34490599	10/5/06
2000W 30dB Attenuator	Bird Electronic Corp	8329	1025	1/5/07
30dB Attenuator	Mini-Circuit	VAT-30	15442	10/4/06

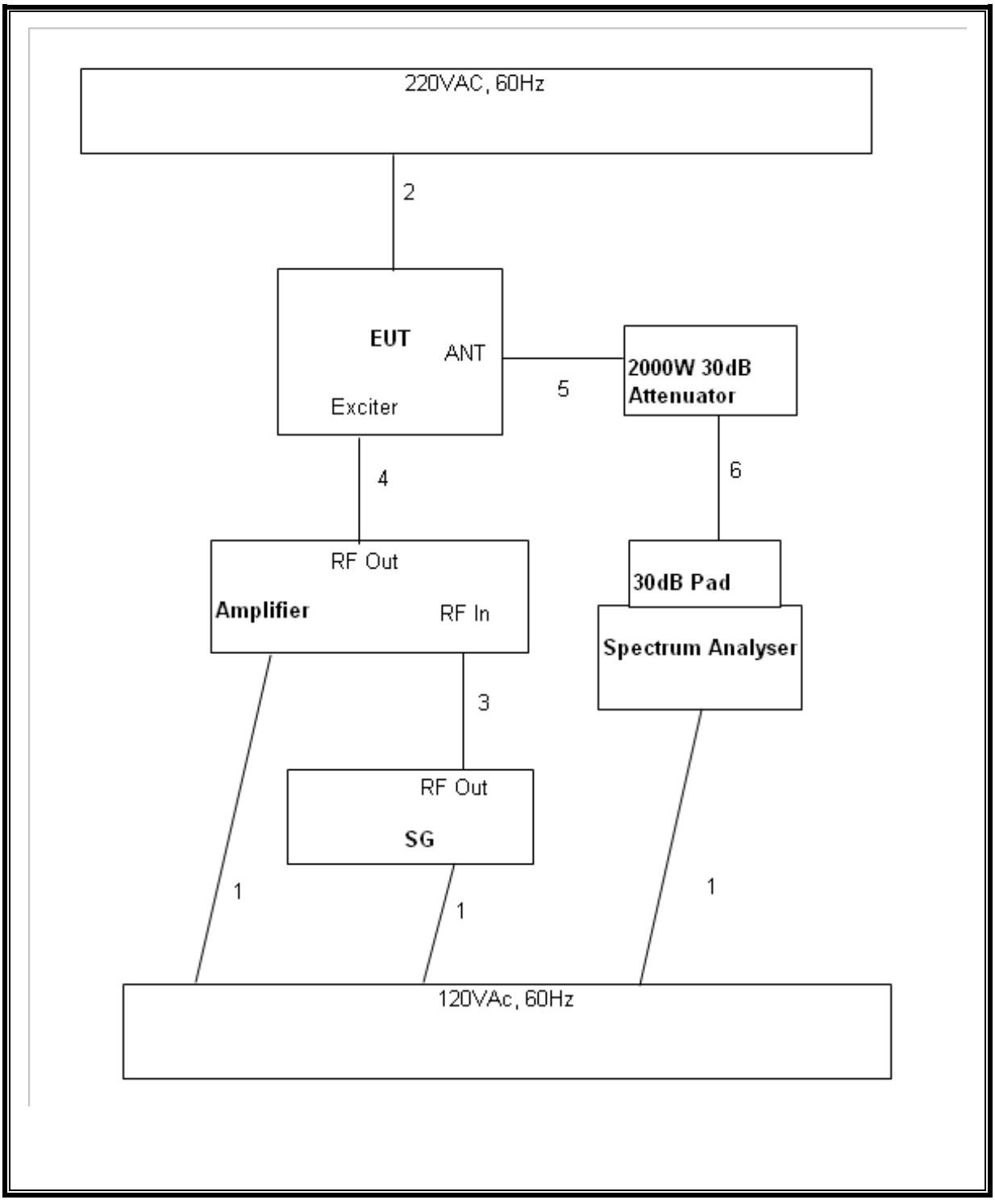
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	3	US 115V	Un-shielded	2m	N/A
2	AC	1	US 220V	Un-shielded	2m	N/A
3	RF Out	1	SG	Un-shielded	1m	RF-Out from SG to RF-In AR Amplifier
4	RF In	1	Amplifier	Un-shielded	1m	RF-Out from Amplifier to EUT's Exciter
5	ANT	1	N-Type	Un-shielded	1m	Connected to High Power Attenuator
6	Attenuator	1	N-Type to SMA	Un-shielded	5m	Connected between 2xattenuators & PSA

TEST SETUP

The EUT is a stand-alone device. The input was provided by a signal generator and driver amplifier. The output is a matched load.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial**	**Cal Due**
Antenna, Bilog 30 MHz ~ 2 GHz	Sunol Sciences	JB1	A121003	3/3/06
EMI Test Receiver	R & S	ESHS 20	827129/006	6/3/06
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/06
AC Power Source, 10 kVA	ACS	AFC-10K-AFC-2	J1568	CNR
Preamplifier, 1300 MHz	HP	8447D	1937A02062	1/7/06
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent	E4446A	US42070220	7/29/06
Spectrum Analyzer, 26.5 GHz	HP	8593EM	3710A00205	7/26/06

7. LIMITS AND RESULTS

7.1. RF OUTPUT POWER CONDUCTED

7.1.1. RF OUTPUT POWER AT NOMINAL AC MAINS VOLTAGE

LIMIT

§87.131 The maximum output power for Aeronautical en-route and Aeronautical fixed stations utilizing A3E modulation in the VHF band must not exceed 1500 Watts.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.1, CFR 87.131

The input drive level is 41.67 dBm (14.7 Watts).

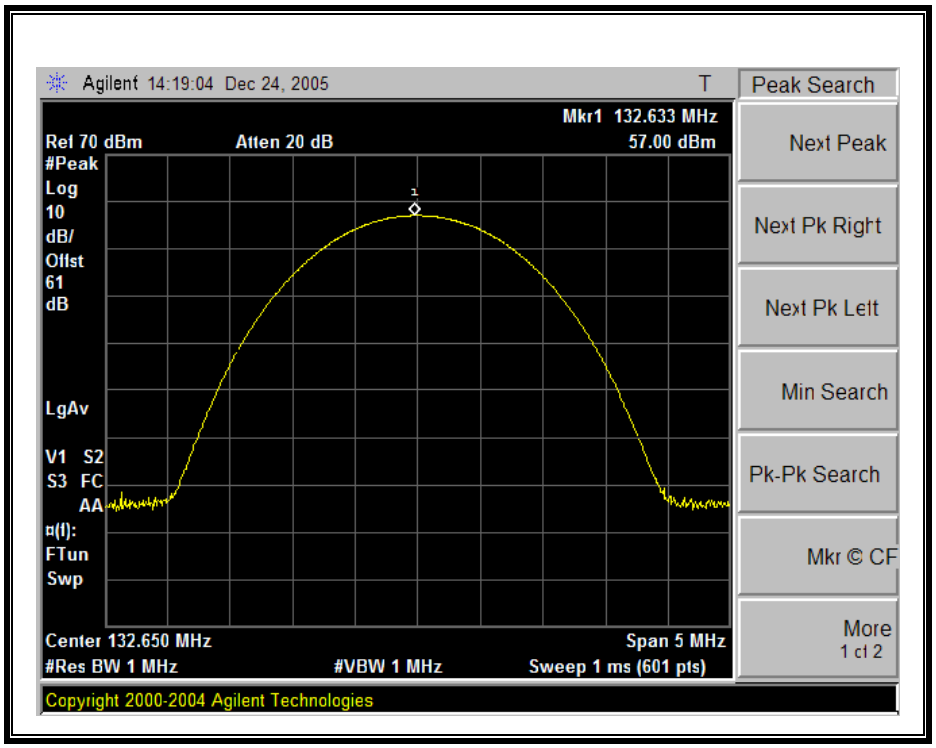
RESULTS

No non-compliance noted.

CW Output Power

Frequency (MHz)	Output Power (dBm)	Output Power (W)
132.65	57.00	501.19

Conducted Output Power



7.1.2. RF OUTPUT POWER AT EXTREME AC MAINS VOLTAGES

TEST PROCEDURE

See 7.1.1, additionally the AC Mains line voltage is varied +/- 15 % from nominal
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RESULTS

No non-compliance noted.

CW Output Power vs Voltage

Channel Frequency (MHz)	Output Power at normal voltage AC 220		Output Power at 85% voltage AC 187		Output Power at 115% voltage AC 253	
	dBm	Watt	dBm	Watt	dBm	Watt
132.65	57.00	501.19	56.98	498.88	57.01	502.34

7.2. MODULATION CHARACTERISTICS

Not Applicable. The EUT is a power amplifier and has no modulating circuitry.

7.3. OCCUPIED BANDWIDTH

The occupied bandwidth of the RF output is determined by the signal from the driving transmitter. The amplifier will have only a very small effect on this value.

7.4. FREQUENCY STABILITY

Not Applicable. The EUT is a power amplifier and has no Local Oscillator.

7.5. SPURIOUS EMISSION AT ANTENNA TERMINAL

LIMIT

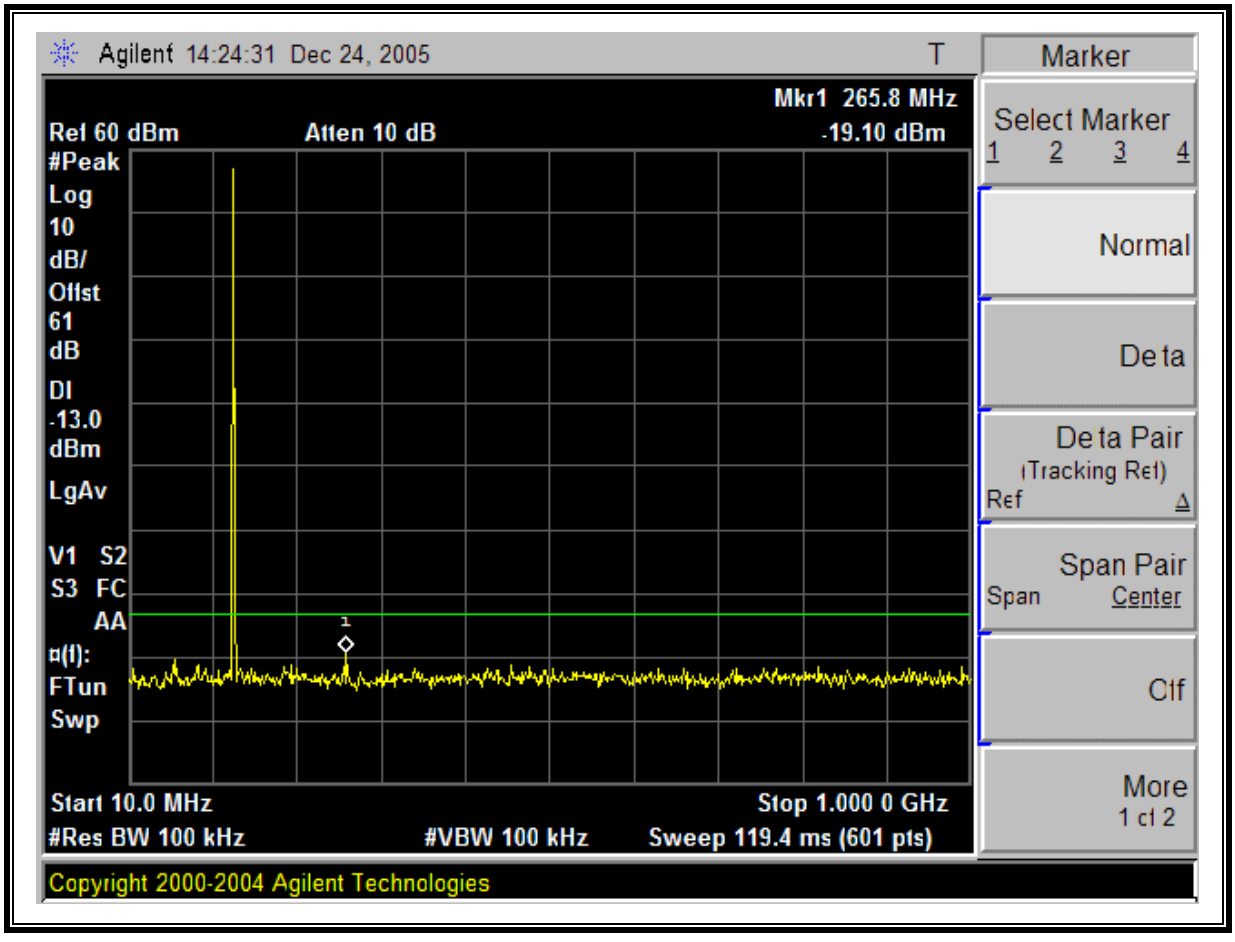
§87.139 the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.13, utilizing a CW source.

RESULTS

No non-compliance noted.



7.6. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§87.139 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.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 3.2.12, utilizing a CW source and a non-radiating load.

RESULTS

No non-compliance noted.

01/12/06 30 - 1000MHz Substitution Measurement
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr: Chin Pang
Project #: 05U3905-1
Company: TPL Communications
EUT Descrip.: RF Power Amplifier
EUT M/N: PA3-2BH-AIR
Test Target: FCC Part 87
Mode Oper: TX

Test Equipment:

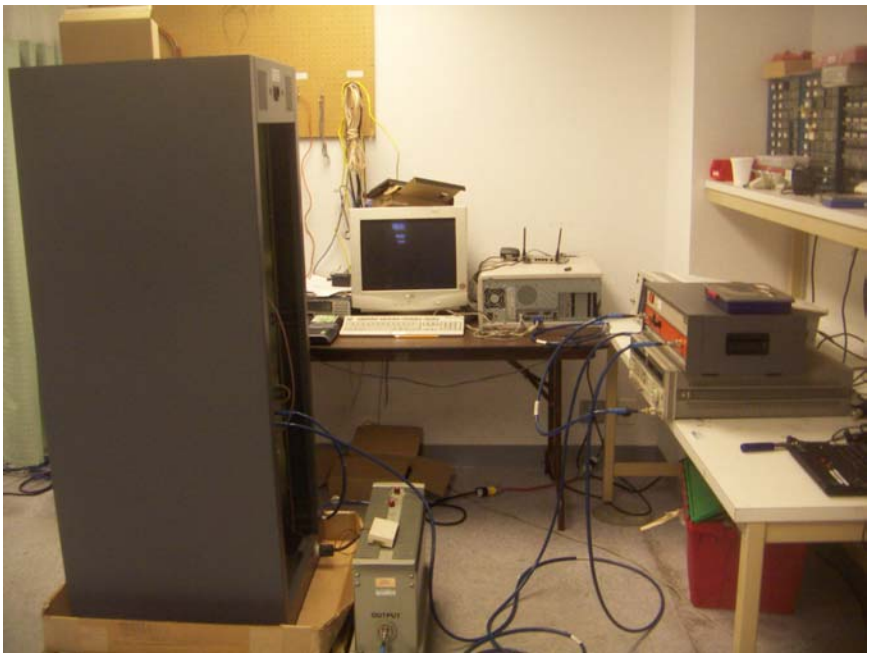
Bilog Antenna	Cable	Pre-amplifer 8447D	Limit
5m Chamber Sunol Bilog	5m Chamber Cable	T5 8447D	ERP

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
240.49	46.0	V	-63.4	1.9	6.0	3.8	-61.5	-13.0	-48.5	
269.59	47.7	V	-61.0	2.0	6.0	3.9	-59.0	-13.0	-46.0	
318.09	38.0	V	-68.9	2.1	6.0	3.9	-67.1	-13.0	-54.1	
329.73	37.5	V	-69.1	2.2	6.0	3.9	-67.4	-13.0	-54.4	
240.49	40.0	H	-69.5	1.9	6.0	3.8	-67.6	-13.0	-54.6	
269.59	51.0	H	-57.2	2.0	6.0	3.9	-55.3	-13.0	-42.3	
313.24	34.0	H	-72.1	2.1	6.0	3.9	-70.3	-13.0	-57.3	
337.50	30.0	H	-75.5	2.2	6.0	3.9	-73.8	-13.0	-60.8	

8. SETUP PHOTOS

ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP

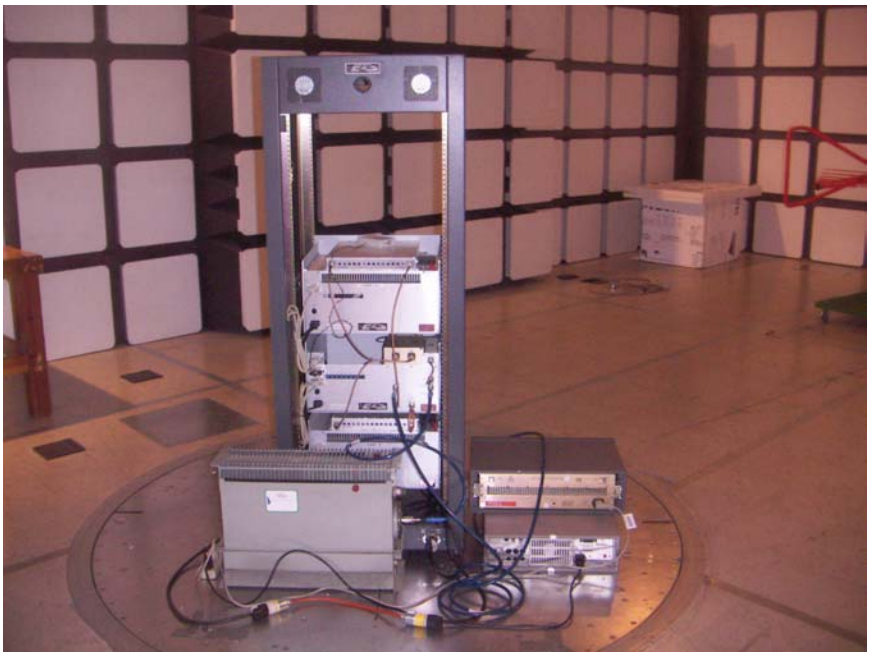
ANTENNA PORT CONDUCTED PHOTO



RADIATED RF MEASUREMENT SETUP

RADIATED FRONT PHOTO

RADIATED BACK PHOTO



END OF REPORT