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EMC TEST REPORT

COMPANY: ERA TECHNOLOGY Ltd

PRODUCT : TESTING TO CFR47 PART15:231 ON A REMOTE ACTIVATION UNIT Z530A

REPORT : EM07028998b

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REVIEWED BY:	**D Griffin**	
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ISSUE: 3	**DATE: 29th April 2008**	**TOTAL PAGES: 13**

Opinions and interpretations based on test results are outside our scope of UKAS Accreditation.

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JOB DESCRIPTION

Equipment:	Short range transmitter operating on the frequency 433.92MHz
Equipment Model No.:	Remote Activation Unit - Z530A
Equipment Serial No.:	14
Phase:	Compliance
Customer:	ERA Technology Ltd Cleeve Road Leatherhead Surrey KT22 7SA United Kingdom
Test Plan Reference:	TN13110/030 Issue 1
Test Standards:	CFR47 Part 15: 231
FCC Ident	xxxxxxxxxx
Test Location:	Intertek ETL Semko (Leatherhead) Unit D Randalls Way Leatherhead KT22 TS
Test Work Started:	22/11/2007
Test Work Completed:	25th March 2008

1. TEST SUMMARY

1.1. Remote Activiation Unit – Z530A

1.1.1. CFR 47 Part 15:231

TEST STANDARD	TEST	COMMENT
CFR47:15: 231.a(1)	Automatic Deactiviation	Pass
CFR47:15: 231.b(2)	Radiated Emissions	Pass
CFR47:15: 231.c	20dB Bandwidth	Pass

2. EQUIPMENT UNDER TEST (EUT)

2.1. Description of the EUT

The ERA Technology Limited Remote Activation Unit (RAU) transmitter is a military transmitter for use exclusively with the Close Combat Radio.

The transmitter is powered by internal batteries, and operates at a fixed frequency of 433.92MHz. The transmitter is activated by a key press, at which time it transmits a short control signal burst which automatically terminates after 420mSeconds without user intervention even if the key is still pressed.

The EUT was as received with no external visible signs of damage and was of production quality.

2.2. EUT's Modes of Operation

All tests are performed with the EUT in a test mode which continuously transmits.This mode is not available to the user. The waveform is the same as that used in the normal mode.

2.3. EUT Configuration Diagram

See test set up photographs. The tests for radiated spurious emissions were carried out in all three orthogonal axes.

2.4. EUT Support Equipment

None

3. TESTS – REMOTE ACTIVATION UNIT Z530A

3.1. Modifications Performed During Testing

None.

3.2. Automatic Deactivation

The testing was performed in accordance with FCC CFR47 Part 15:231.a(1) on the 7th March 2008.

The plot shows the EUT response to a key press held down and not released.

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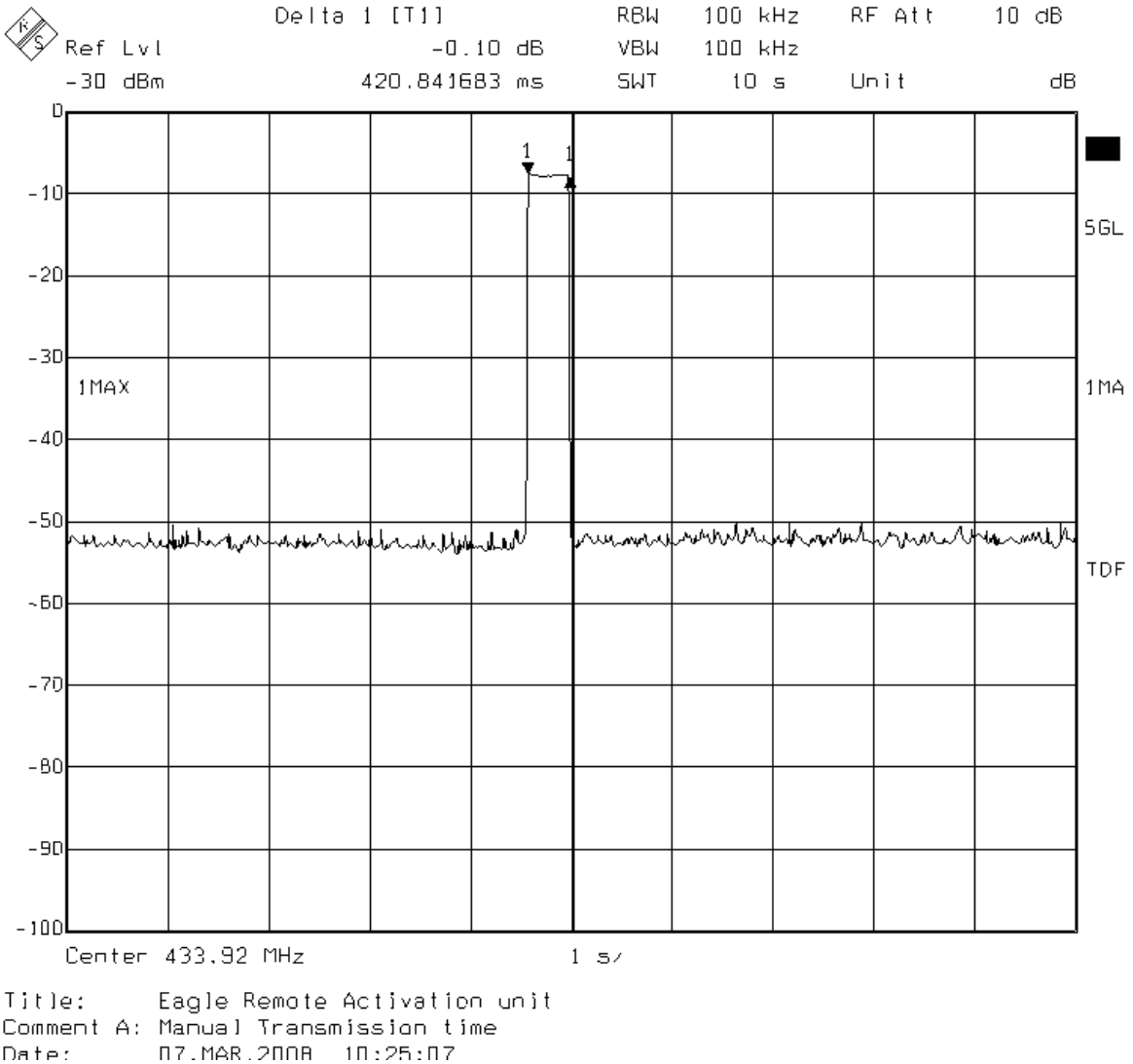


4. RADIATED EMISSIONS CFR47 PART15:231

The testing was performed as required by CFR47 Part15:31(b) in a FCC registered test site. Testing was carried out at a distance of 3 metres with an automated test system below 1000MHz. Both horizontal and vertical polarisations were measured and the mast height adjusted for maximum amplitude levels. From 1GHz to 5GHz the appropriate antenna's were connected to a spectrum analyser situated outside the test chamber. Again both horizontal and vertical polarisations were measured at a fixed height, bore sighting the EUT. All transducer factors are automatically added to the measured values.

The Remote Activation Unit is a fixed frequency transmitter at 433.92MHz. The frequency was scanned over the frequency range of 30MHz to 5GHz. These measurements were carried out using an average detector and quasi peak detector.

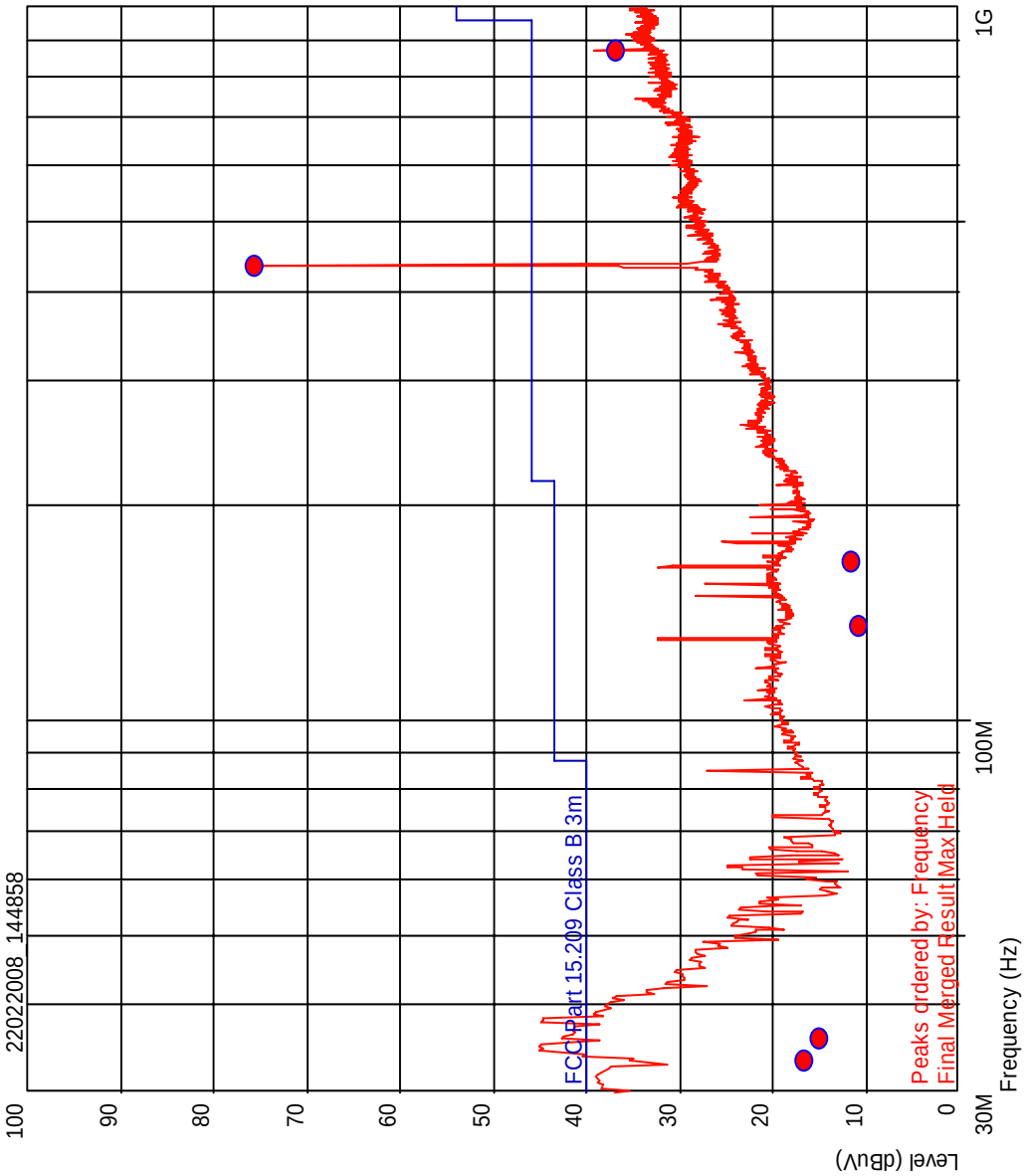
The results are shown in tables 1 and graph 1 below 1GHz and page 9 for frequencies 1GHz to 5GHz.

These tests were carried out on the 4th of February 2008 below 1GHz and on the 25th March above 1GHz..

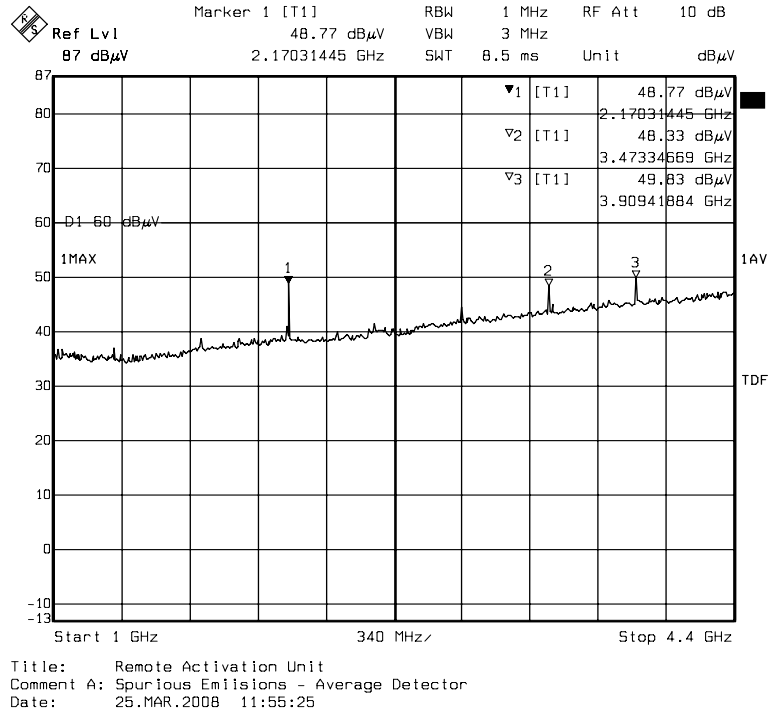
4.1. Table 1 - Quasi Peak Measurements

Frequency (MHz)	Level (dBuV)	Margin (dBuV)	Limit (dBuV)	Ant. Pol.	Detector	RBW(kHz)
33.3306	16.70	-44.1	60.80	V	QP	120
35.7749	15.02	-45.78	60.80	V	QP	120
135.9532	10.75	-32.75	43.50	V	QP	120
167.6355	11.54	-49.26	60.80	V	QP	120
433.9124	75.64	-5.16	80.80	V	QP	120
867.8321	36.93	-23.87	60.80	V	QP	120

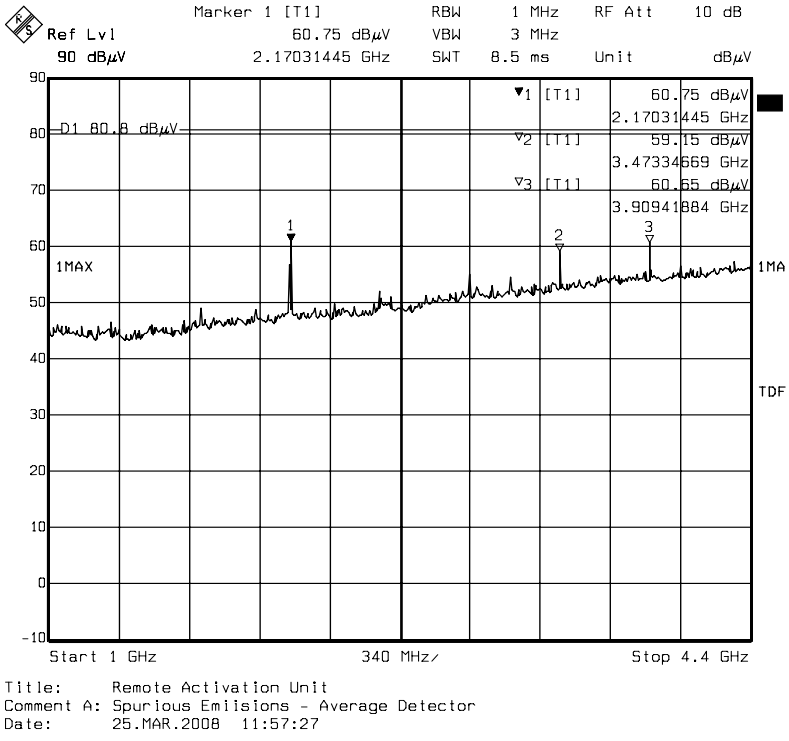
4.2. Graph 1


2202008 14858
FCC Part 15.209 Class B 3m
Peaks ordered by: Frequency
Final Merged Result Max Held
Level (dBuV)
100
90
80
70
60
50
40
30
20
10
0
30M
100M
1G
Frequency (Hz)

4.3. Radiated Emissions 1 – 5 GHz



Average – Vertical Polarisation

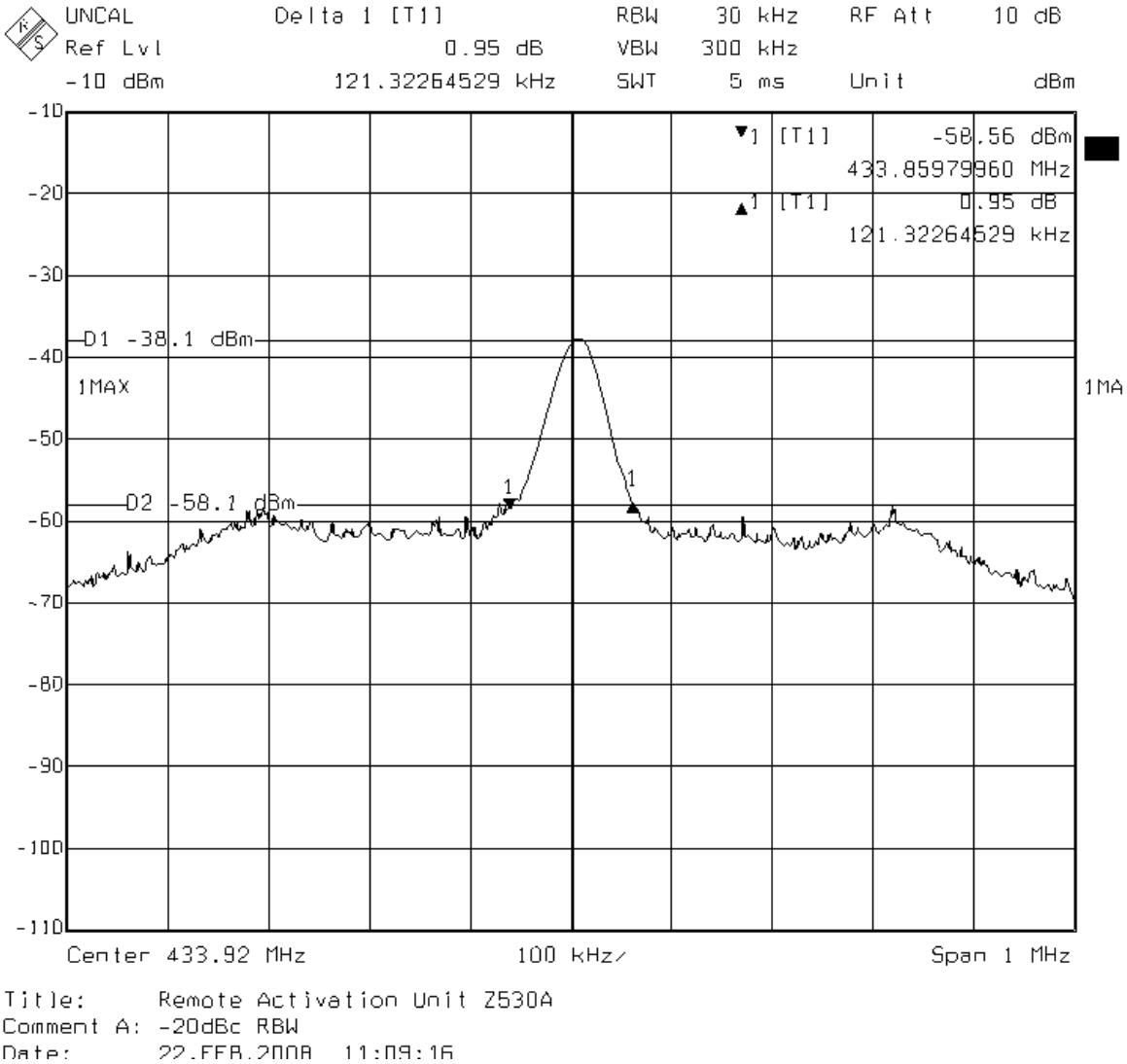


Peak – Vertical Polarisation

5. 20DB BANDWIDTH

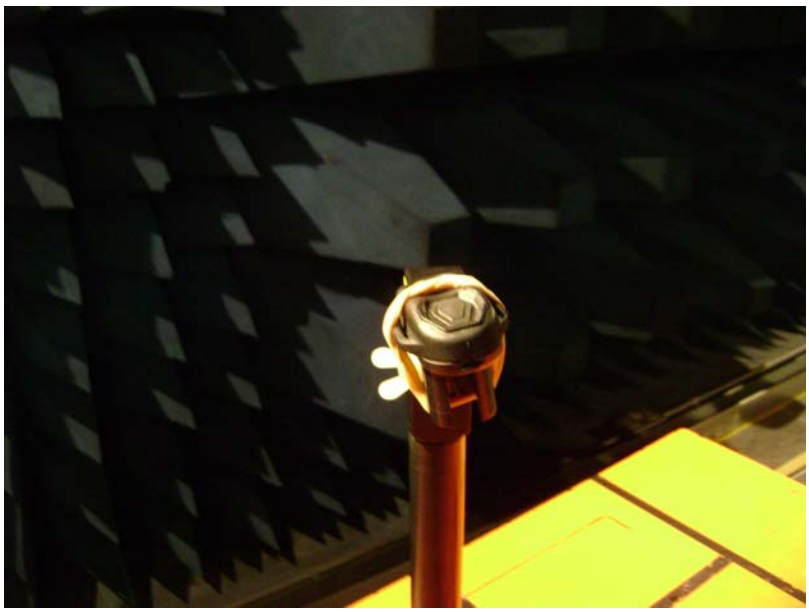
The bandwidth used is greater than that required by ANSI C63.4-2003 clause 13.1.7(10kHz). 0.25% of the centre frequency equates to 1.08MHz, therefore the 20dB bandwidth of 121.323kHz complys with the requirements.

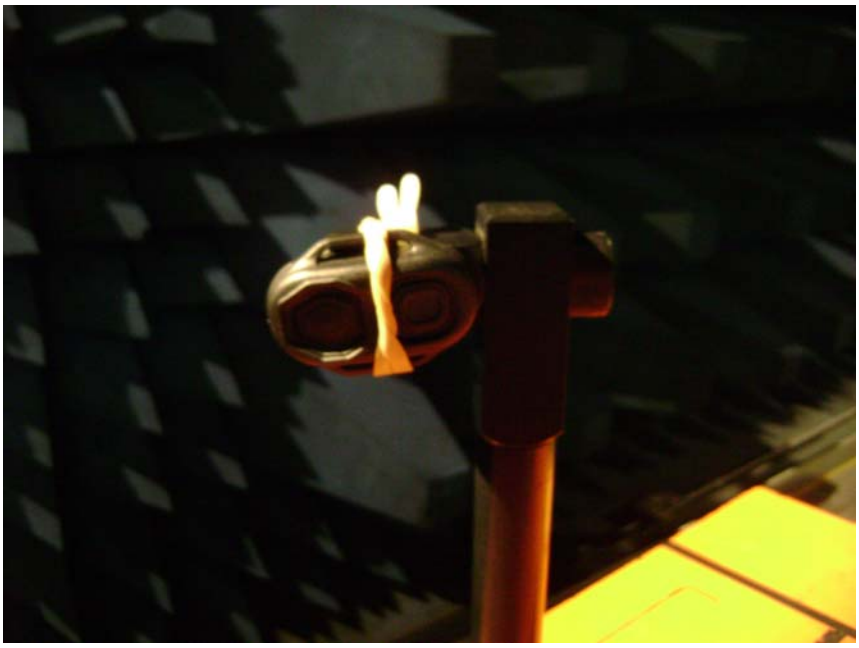
This test was carried out on the 22nd of February 2008.



6. TEST SETUP PHOTOGRAPHS OF 3 AXES

REMOTE CONTROLLER Z530A





7. TEST EQUIPMENT

Equipment	Type	ID
Test Bay 1	Environment	7400
Chase Bilog	Antenna	8164
3115 Horn	Antenna	7512
Advantest R3361	Spectrum Analyser	7461
Rohde & Schwarz FSEK	Spectrum Analyser	7811
Rohde & Schwarz	ESS Receiver	7700
Marconi Pre-amp	54432-010A	7772
ERA Microwave Pre-amp	WBA3-4	7534
Oregon Scientific	Environmental Sensor	7916
Cable N Type	10m	7063
Cable N Type	4m	7968
Cable N Type	1m	8185
Cable N Type	1m	8186
Cable microwave	5m	8247
Cable microwave	4m	7177
Cable microwave	2m	7405

Note: All equipment used is within its calibration period.