TEST REPORT NO: RU1231/6922

COPY NO: 2

ISSUE NO: 1

FCC ID: OE5PP2

REPORT ON THE CERTIFICATION TESTING OF A
GROUP 4 TECHNOLOGY Ltd
PROXIPEN
WITH RESPECT TO
THE FCC RULES CFR 47, PART 15.209
INTENTIONAL RADIATOR SPECIFICATION

TEST DATE: 27th – 29th March 2006

TESTED BY: Daniel Winstanley Digitally signed by Daniel Winstanley DN: CN = Daniel Winstanley, C = <n Reason: I am the author of this document Date: 2006.08.07 08:38:08 +01'00' D WINSTANLEY

APPROVED BY: Peter Green I am approving this document 2006.08.07 09:56:37 +01'00' P GREEN EMC PRODUCT MANAGER

DATE: 3rd August 2006

Distribution:

Copy Nos:
1. Group 4 Technology Limited
2. TCB: TRL Compliance Limited
3. TRL Compliance Limited

TRL COMPLIANCE LTD
MOSS VIEW NIPE LANE UP HOLLAND WEST LANCASHIRE WN8 9PY UNITED KINGDOM
TELEPHONE +44 (0)1695 556666 FAX +44 (0)1695 557077
E-MAIL test@trlcompliance.com www.trlcompliance.com

UKAS TESTING
0728

CONTENTS

Notes:

1. Component failure during test — YES [ ] NO [X]
2. If Yes, details of failure:
3. The facilities used for the testing of the product contain in this report are FCC Listed.
4. The contents of the attached applicants declarations and other supplied information are not covered by the scope of this laboratory's UKAS or FCC accreditations' and is provided in good faith.

CERTIFICATE OF CONFORMITY & COMPLIANCE

FCC IDENTITY:	OE5PP2					
PURPOSE OF TEST:	Certification					
TEST SPECIFICATION:	FCC RULES CFR 47, Part 15.209					
TEST RESULT:	Compliant to Specification					
EQUIPMENT UNDER TEST:	Proxipen					
EQUIPMENT SERIAL No:	001					
ITU: EMISSION CODE:	52k8K1N					
EQUIPMENT TYPE:	Inductive Tag Reader					
PRODUCT USE:	Time and Location Verification					
CARRIER EMISSION:	0.019µV/m @ 300m					
ANTENNA TYPE:	Integral					
ALTERNATIVE ANTENNA:	Not applicable					
FREQUENCY OF OPERATION:	125.95 kHz					
CHANNEL SPACING:	Not applicable					
NUMBER OF CHANNELS:	1					
FREQUENCY GENERATION:	SAW Resonator	[X]	Crystal	[ ]	Synthesiser	[ ]
MODULATION METHOD:	Amplitude	[ ]	Digital	[X]	Angle	[ ]
POWER SOURCE(s):	1.2Vdc					
TEST DATE(s):	27th – 29th March 2006					
ORDER No(s):	PUR71540					
APPLICANT:	Group 4 Technology Limited					
ADDRESS:	Building 2 Challenge House International Drive Tewkesbury Gloucestershire GL20 8UQ					

TESTED BY: Daniel Winstanley — Digitally signed by Daniel Winstanley DN: CN = Daniel Winstanley, C = <n Reason: I am the author of this document Date: 2006.08.07 08:37:59 +01'00' — D WINSTANLEY

APPROVED BY: Peter Green — Peter Green I am approving this document 2006.08.07 09:56:53 +01'00' — P GREEN EMC PRODUCT MANAGER

APPLICANT'S SUMMARY

EQUIPMENT UNDER TEST (EUT):	Proxipen
EQUIPMENT TYPE:	Inductive Tag Reader
SERIAL NUMBER OF EUT:	001
PURPOSE OF TEST:	Certification
TEST SPECIFICATION(s):	FCC RULES CFR 47, Part 15.209
TEST RESULT:	COMPLIANT Yes [X] No [ ]
APPLICANT'S CATEGORY:	MANUFACTURER [X] IMPORTER [ ] DISTRIBUTOR [ ] TEST HOUSE [ ] AGENT [ ]
APPLICANT'S ORDER No(s):	PUR71540
APPLICANT'S CONTACT PERSON(s):	Mr E Porter
E-mail address:	eric.porter@g4tec.com
APPLICANT:	Group 4 Technology Limited
ADDRESS:	Building 2 Challenge House International Drive Tewkesbury Gloucestershire GL20 8UQ
TEL:	+44 (0) 1684 850977
FAX:	+44 (0) 1684 277500
MANUFACTURER:	Group 4 Technology Limited
EUT(s) COUNTRY OF ORIGIN:	United Kingdom
TEST LABORATORY:	TRL Compliance
UKAS ACCREDITATION No:	0728
TEST DATE(s):	27th – 29th March 2006
TEST REPORT No:	RU1231/6922

EQUIPMENT TEST / EXAMINATIONS REQUIRED

1.

TEST/EXAMINATION	RULE PART	DETECTOR	APPLICABILITY
Intentional Emission Frequency:	15.209(a)	Average	Yes
Intentional Emission Field Strength:	15.209(a)	Average	Yes
Intentional Emission Band Occupancy:	15.215(c)	Peak	Yes
Intentional Emission ERP (mW):	-	-	No
Spurious Emissions – Conducted:	15.207	Quasi Peak Average	Yes
Spurious Emissions – Radiated <1000MHz:	15.209	Quasi Peak Average	Yes
Spurious Emissions – Radiated >1000MHz:	-	-	No
Maximum Frequency of Search:	15.33	-	Yes
Antenna Arrangements Integral:	15.203	-	Yes
Antenna Arrangements External Connector:	15.204	-	Yes
Restricted Bands	15.205	-	Yes
Extrapolation Factor	15.31(f)	-	Yes

2. Product Use: Time and Location Verification

3. Emission Designator: 52k8k1N

4. Duty Cycle: <100%

5. Transmitter bit or pulse rate and level: 19200bps

6. Temperatures: Ambient (Tnom) 13^{o}C

7. Supply Voltages: Vnom +1.2Vdc

   Note: Vnom voltages are as stated above unless otherwise shown on the test report page

8. Equipment Category:
   Single channel [X]
   Two channel [ ]
   Multi-channel [ ]

9. Channel spacing:
   Narrowband [ ]
   Wideband [X]

TRANSMITTER TESTS

TRANSMITTER SPURIOUS EMISSIONS – RADIATED – PART 15.209

Ambient temperature	=	13°C(<1GHz)	3m measurements <30MHz	[X]
Relative humidity	=	48% (<1GHz),	3m measurements <1GHz	[X]
Conditions	=	Open Area Test Site (OATS)	300m extrapolated from 3m	[X]
Supply voltage	=	+1.2Vdc		
Channel number	=	1		

	FREQ (MHz)	MEAS. Rx. (dBµV)	CABLE LOSS (dB)	ANT FACT (dB 1/m)	FIELD STRENGTH (dBµV/m)	EXTRAP FACTOR (dB)	FIELD STRENGTH (µV/m)
0.009 MHz - 0.49 MHz	No Significant Emissions Detected						
0.49 MHz - 1.705 MHz	No Significant Emissions Detected						
1.705 MHz - 30 MHz	No Significant Emissions Detected						
30MHz - 88MHz	No Significant Emissions Detected						
88MHz - 216MHz	No Significant Emissions Detected						
216MHz - 960MHz	No Significant Emissions Detected						
960MHz - 1GHz	No Significant Emissions Detected						
1GHz - 5GHz	No Significant Emissions Detected						
Limits	0.009 MHz to 0.49 MHz			2400/F(kHz)		@ 300m	
	0.49 MHz to 1.705 MHz			24000/F(kHz)		@ 30m	
	1.705MHz to 30MHz			30µV/m		@ 30m	
	30MHz to 88MHz			100µV/m		@ 3m	
	88MHz to 216MHz			150µV/m		@ 3m	
	216MHz to 960MHz			200µV/m		@ 3m	
	960MHz to 1GHz			500µV/m		@ 3m	
	1GHz to 5GHz			500µV/m		@ 3m	

Notes:
1 Results quoted are extrapolated as indicated.
2 Emissions were searched to: (**x**) 1000MHz inclusive, as per Part 15.33a.
3 Extrapolation factor 9.5dB from 1m to 3m, as per Part 15.31f.
4 Extrapolation factor 80dB from 3m to 300m as per Part 15.31f.
5 Extrapolation factor 40dB from 3m to 30m as per Part 15.31f.
6 Measurements >1GHz @ 1m as per Part 15.31f(1).
7 Receiver detector 9kHz – 30MHz CISPR, Quasi-Peak,10kHz bandwidth.
Apart from the bands 9kHz-90kHz and 110kHz-490kHz where an Average detector is used.
8 Receiver detector 30MHz – 1GHz = CISPR, Quasi-Peak, 120kHz bandwidth.
9 Receiver detector >1GHz = Peak Hold, 1MHz resolution bandwidth.
10 New batteries used for battery powered products.
11 Emissions 20dB's below the limit are not recorded.
12 For emissions below 30MHz, the measuring receiver automatically compensates for the loss due to the antenna factor of the loop antenna. This loss is 20dB's across the measurement range 9kHz to 30MHz.
13 For emissions below 30MHz the cable losses are assumed to be negligible.
14 F(kHz) is the frequency of operation or spurious emission.

Test
1 As per Radio – Noise Emissions, ANSI C63.4: 2003.
2 Measuring distances as Notes 1 to 4 above.
3 EUT 0.8 metre above ground plane.
4 Emissions maximised by rotation of EUT, on an automatic turntable.
Raising and lowering the receiver antenna between 1m & 4m >30MHz.
Horizontal and vertical polarisations, of the receive antenna.
EUT orientation in three orthagonal planes. Maximum results recorded.

The test equipment used for the Transmitter Spurious Emissions – Radiated – Part 15.209 tests is shown overleaf:

TYPE OF EQUIPMENT	MAKER/ SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
AE, LOOP, Z2, 9kHz - 30MHz	ROHDE & SCHWARZ	HFH2	881058 - 53	07	**X**
HORN ANTENNA	EMCO	3115	9010-3580	138	
HORN ANTENNA	EMCO	3115	9010-3581	139	
SPECTRUM ANALYSER	TEKTRONIX	2756P	B010109	164	
BICONE ANTENNA	CHASE	BBA9106	N/A	193	
ANTENNA, LOG PERIODIC 300MHz – 1GHz	CHASE	UPA6108	1061	203	
RECEIVER	ROHDE & SCHWARZ	ESHS20	837960/003	237	
ANTENNA, BICONE 20MHz - 300MHz	CHASE	VBA6106A	1193	251	
BILOG ANTENNA	CHASE	CBL6112	2098	274	
RECEIVER	ROHDE & SCHWARZ	ESVS10	837948/003	317	
RECEIVER	ROHDE & SCHWARZ	ESVS10	844594/003	352	
RECEIVER	ROHDE & SCHWARZ	ESHS10	844077/019	353	
V / UHF RECEIVER 20MHz - 1GHz	ROHDE & SCHWARZ	ESVS 20	838804 / 005	415	
BILOG ANTENNA	SCHAFFNER	CBL6112B	2761	431	
RECEIVER	ROHDE & SCHWARZ	ESHS 10	830051/001	UH03	**X**
RECEIVER	ROHDE & SCHWARZ	ESVS 10	825892/003	UH04	**X**
RANGE 1	TRL	3 METRE	N/A	UH06	**X**
BILOG ANTENNA	CHASE	CBL6112	2129	UH93	**X**
SPECTRUM ANALYSER	MARCONI	2386/2380	152076/004	UH120	

TRANSMITTER TESTS

TRANSMITTER INTENTIONAL EMISSION – RADIATED – Part 15.209

Ambient temperature	=	13°C(<1GHz),	3m measurements @ fc	[X]
Relative humidity	=	48%(<1GHz),	10m measurements @ fc	[ ]
Conditions	=	Open Area Test Site (OATS)	30m measurements @ fc	[ ]
Supply voltage	=	+1.2Vdc	300m extrapolated from 3m	[X]
Channel number	=	1	30m extrapolated from 10m	[ ]

FREQ. (kHz)	MEASUREMENT DISTANCE (Metres)	MEASUREMENT Rx. READING (dBµV/m)	EXTRAP. FACTOR (dB)	FIELD STRENGTH (µV/m)
125.92	3	45.5	80	0.019

Limit value @ fc	**19.05(µV/m) @ 300m**	
Band occupancy @ -20dBc	**f lower**	**f higher**
	105.720 kHz	158.520 kHz

See spectrum analyser plot – Annex C

Notes:

1 Results quoted are extrapolated as indicated.
2 Receiver detector @ fc = Average, 200Hz bandwidth, measurement time 1s.
3 The EUT was powered with new batteries.
4 For emissions below 30MHz the measuring receiver automatically compensates for the loss due to the antenna factor of the loop antenna. This loss is 20dB's across the measurement range 9kHz to 30MHz.
5 For emissions below 30MHz the cable losses are assumed to be negligible.
6 Peak emissions were found to be less than or equal to the average limit therefore deemed to comply with 15.35(b).
7 The test results quoted are the maximum seen after the supply voltage was varied between 85% and 115% of Vnom.
8 Results for measurements @ 10m are not quoted as the EUT field strength was so low that only noise floor was seen @ 10m.

Test Method:

1 As per Radio – Noise Emissions, ANSI C63.4: 2003.
2 Measuring distances 3m.
3 EUT 0.8 metre above ground plane.
4 Emissions maximised by rotation of EUT, on an automatic turntable.
Raising and lowering the receiver antenna between 1m & 4m at frequencies >30MHz.
Horizontal and vertical polarisations, of the receive antenna.
EUT orientation in three orthagonal planes.
Maximum results recorded.

The test equipment used for the Transmitter Intentional Emission – Radiated – Part 15.209 tests is shown overleaf:

TYPE OF EQUIPMENT	MAKER/ SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
AE, LOOP, Z2, 9kHz - 30MHz	ROHDE & SCHWARZ	HFH2	881058 - 53	07	
HORN ANTENNA	EMCO	3115	9010-3580	138	
HORN ANTENNA	EMCO	3115	9010-3581	139	
SPECTRUM ANALYSER	TEKTRONIX	2756P	B010109	164	
BICONE ANTENNA	CHASE	BBA9106	N/A	193	
ANTENNA, LOG PERIODIC 300MHz – 1GHz	CHASE	UPA6108	1061	203	
RECEIVER	ROHDE & SCHWARZ	ESHS20	837960/003	237	
ANTENNA, BICONE 20MHz - 300MHz	CHASE	VBA6106A	1193	251	
BILOG ANTENNA	CHASE	CBL6112	2098	274	
RECEIVER	ROHDE & SCHWARZ	ESVS10	837948/003	317	
RECEIVER	ROHDE & SCHWARZ	ESVS10	844594/003	352	
RECEIVER	ROHDE & SCHWARZ	ESHS10	844077/019	353	
V / UHF RECEIVER 20MHz - 1GHz	ROHDE & SCHWARZ	ESVS 20	838804 / 005	415	
BILOG ANTENNA	SCHAFFNER	CBL6112B	2761	431	
RECEIVER	ROHDE & SCHWARZ	ESHS 10	830051/001	UH03	**X**
RECEIVER	ROHDE & SCHWARZ	ESVS 10	825892/003	UH04	
RANGE 1	TRL	3 METRE	N/A	UH06	**X**
AE, LOOP, Z2, 9kHz - 30MHz	ROHDE & SCHWARZ	HFH2	881058 - 53	07	**X**
BILOG ANTENNA	CHASE	CBL6112	2129	UH93	
SPECTRUM ANALYSER	ANRITSU	MS2665C	MT26089	479	**X**

TRANSMITTER TESTS

TRANSMITTER CONDUCTED EMISSIONS – AC POWER LINE Part 15.207

Ambient temperature	=	19^{o}C(<1GHz),
Relative humidity	=	45%(<1GHz),
Conditions	=	Power Line Laboratory
Supply voltage	=	110V AC
Supply Frequency	=	60Hz

SIGNIFICANT EMISSIONS

FREQUENCY (MHz)	MEASUREMENT RECEIVER READING (dBµV)	DETECTOR	LISN CORRECTION (dB)	CONDUCTOR (L or N)	EMISSION (µV)
No Significant Emissions within 20 dBs of the limit					

Notes:
1 See Annex D for plot
2 Measurements were taken on both live & neutral lines; levels are recorded in the table.
3 Proxi pen seated in and connected to mains Via DTU.

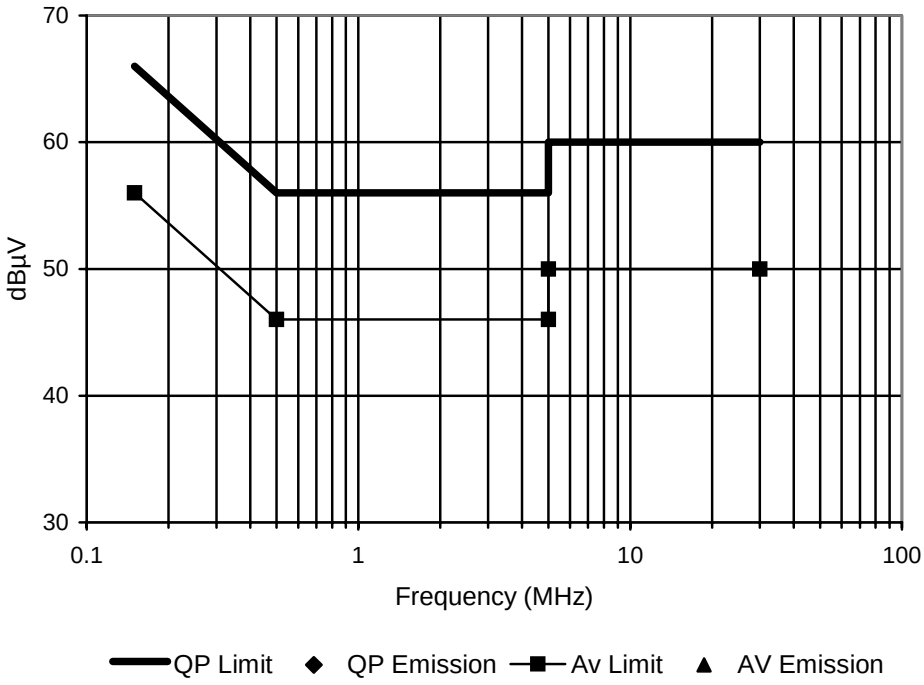
Test Method:
1 As per Radio – Noise Emissions, ANSI C63.4: 2003.

The test equipment used for the Transmitter Conducted Emissions – AC Power Line Part 15.207 test was:

TYPE OF EQUIPMENT	MAKER/ SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
RECEIVER	ROHDE & SCHWARZ	ESHS20	837960/003	237	
LISN / AMN	ROHDE & SCHWARZ	ESH3-Z5	83746/010	289	
RECEIVER	ROHDE & SCHWARZ	ESHS10	844077/019	353	
RECEIVER	ROHDE & SCHWARZ	ESHS 10	841429/012	UH187	**X**
LISN/AMN	ROHDE & SCHWARZ	ESH3-Z5	8470 31/015	UH195	**X**
SPECTRUM ANALYSER	MARCONI	2386/2380	152076/004	UH120	

POWER LINE CONDUCTION EMISSIONS

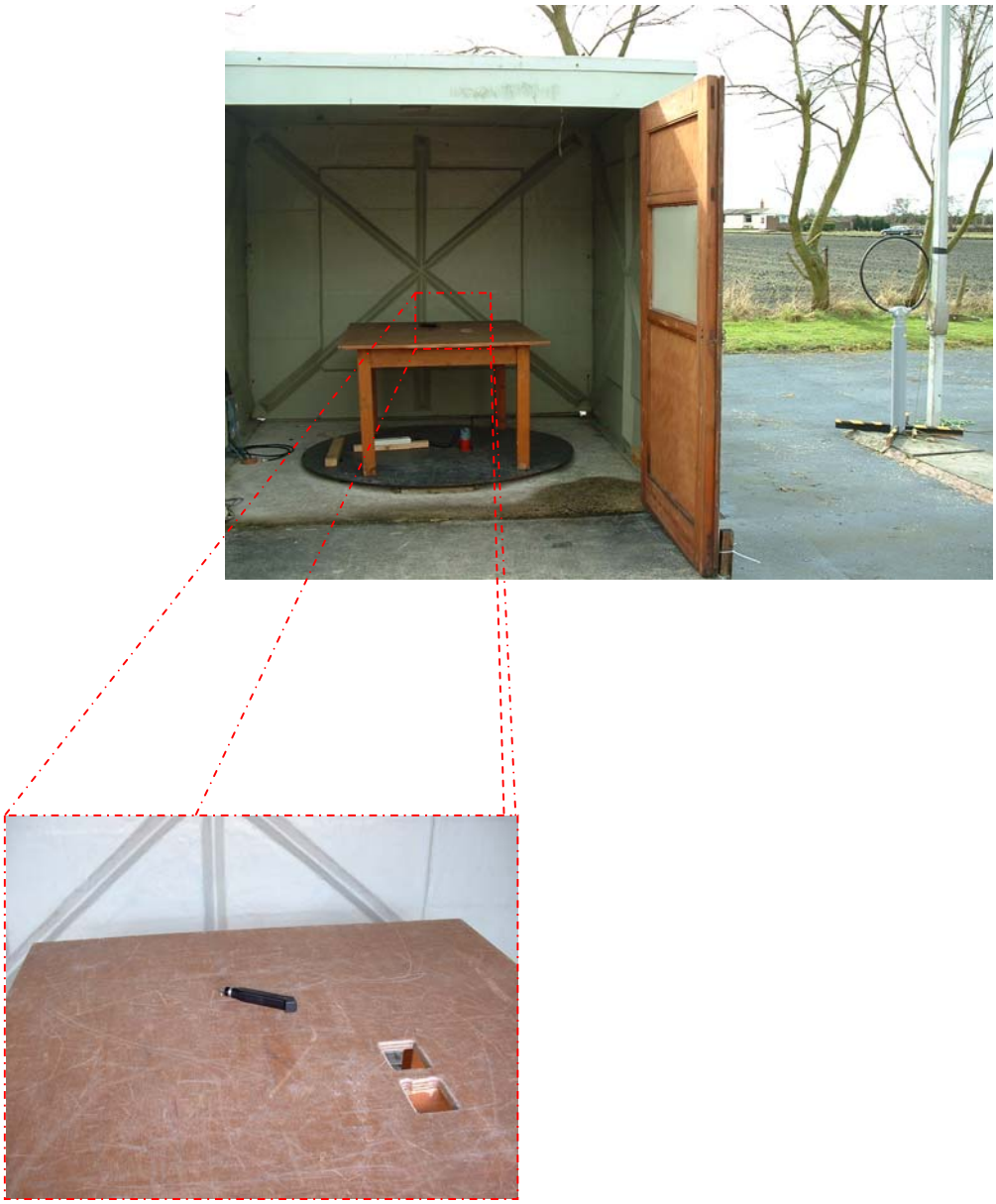
Limits Part 15.207
(Levels below the limit are only displayed if
within 20dB of the limit)



ANNEX A

PHOTOGRAPHS

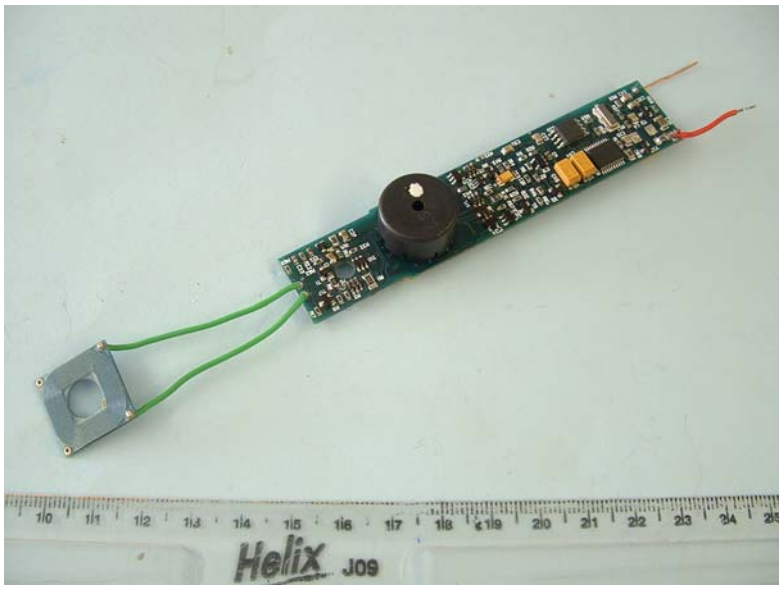
PHOTOGRAPH No. 1 **TEST SETUP**



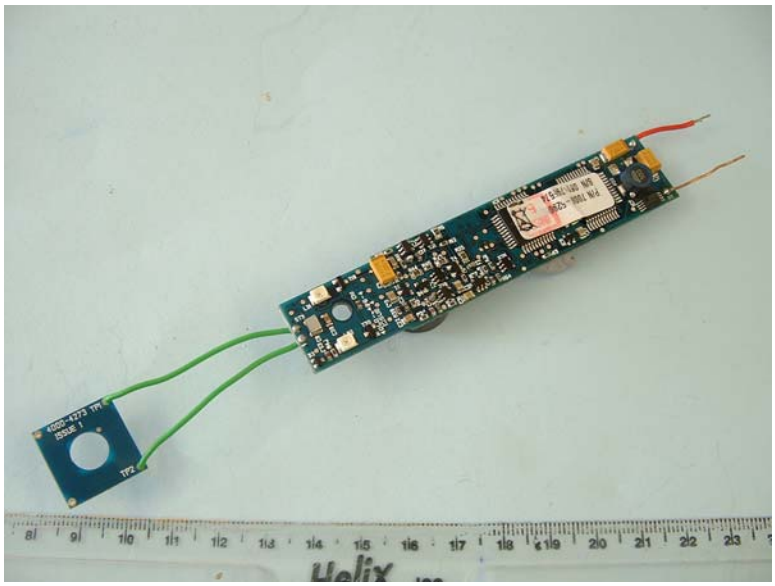
PHOTOGRAPH No. 2 **TRANSMITTER TOP VIEW**

PHOTOGRAPH No. 3 **TRANSMITTER SIDE VIEW**

PHOTOGRAPH No. 4 **TRANSMITTER PCB TOP SIDE**



PHOTOGRAPH No. 5 **TRANSMITTER PCB BOTTOM SIDE**



ANNEX B

APPLICANT'S SUBMISSION OF DOCUMENTATION LIST

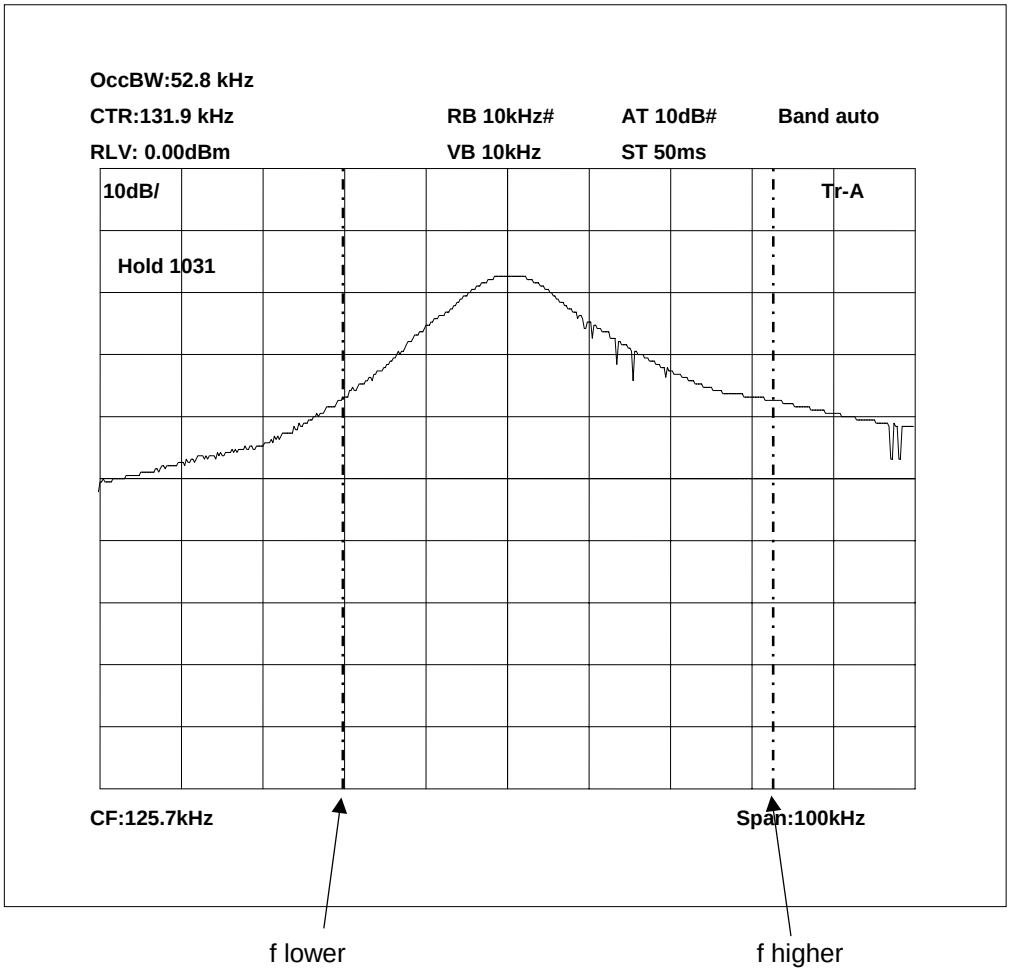
APPLICANT'S SUBMISSION OF DOCUMENTATION LIST

a.	TCB	-	APPLICATION	[X]
		-	FEE	[X]
b.	AGENT'S LETTER OF AUTHORISATION	-		[X]
c.	MODEL(s) vs IDENTITY	-		[X]
d.	ALTERNATIVE TRADE P GREEN DECLARATION(s)	-		[ ]
e.	LABELLING	-	PHOTOGRAPHS	[ ]
		-	DECLARATION	[X]
		-	DRAWINGS	[ ]
f.	TECHNICAL DESCRIPTION	-		[X]
g.	BLOCK DIAGRAMS	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
h.	CIRCUIT DIAGRAMS	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
i.	COMPONENT LOCATION	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
j.	PCB TRACK LAYOUT	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
k.	BILL OF MATERIALS	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
l.	USER INSTALLATION / OPERATING INSTRUCTIONS	-		[X]

ANNEX C

BANDWIDTH PLOT

BANDWIDTH PLOT



Occupied Bandwidth	=	52.8 kHz
f lower	=	105.720 kHz
f higher	=	158.520 kHz

ANNEX D

CONDUCTED EMISSIONS PLOTS

Powerline Conduction

29 Mar 2006 12:38

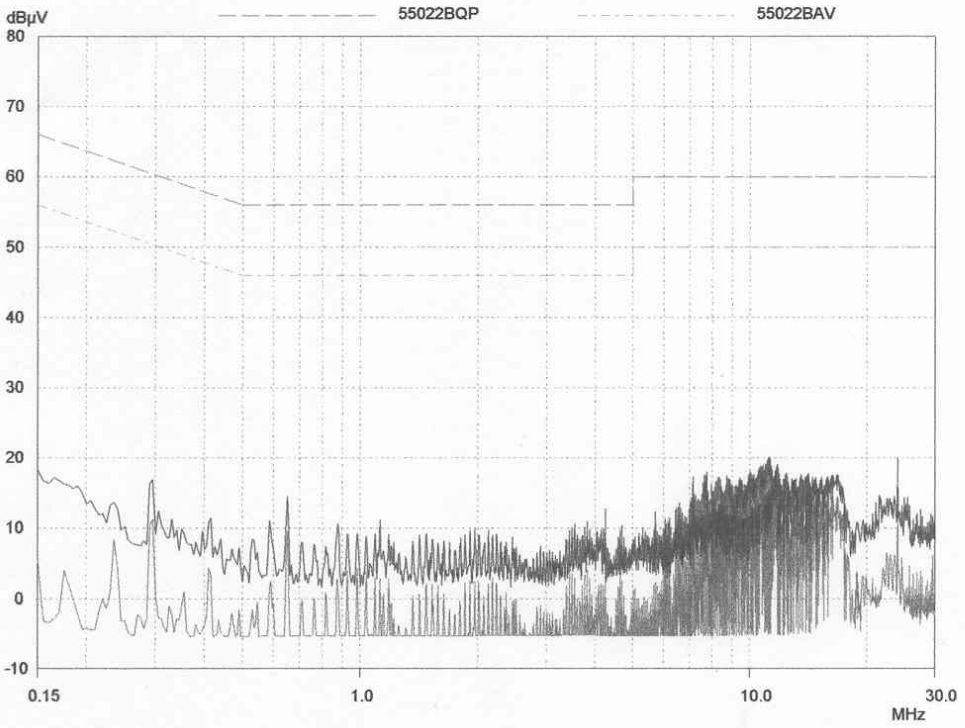
150kHz - 30MHz

EUT:	Proxi pen
Manuf:	Group 4
Op Cond:	LISN UH05, cable UH21 & Receiver UH187
Operator:	D Winstanley
Test Spec:	EN55022 Class B (or Variant)
Comment:	Neutral Line, 110Vac Unit seated in DTU
Result File:	proxil~1.dat : New Measurement
Scan Settings	(1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	5kHz	10kHz	PK+AV	50msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	UH21

Prescan Measurement:	Detectors:	X PK / + AV
	Meas Time:	see scan settings
	Subranges:	25
	Acc Margin:	20 dB



PAGE 1

ANNEX E

30MHz – 1000MHz SCAN PLOT

TRL Compliance Ltd

27 Mar 2006 13:56

E-Field Radiation (30MHz-1GHz)

EUT:	Proxi Pen
Manuf:	Group 4
Op Cond:	Prescan 30MHz - 1000MHz
Operator:	D Winstanley
Test Spec:	Part15
Comment:	Unit on TXing No tag present
	RX Antenna Vertical

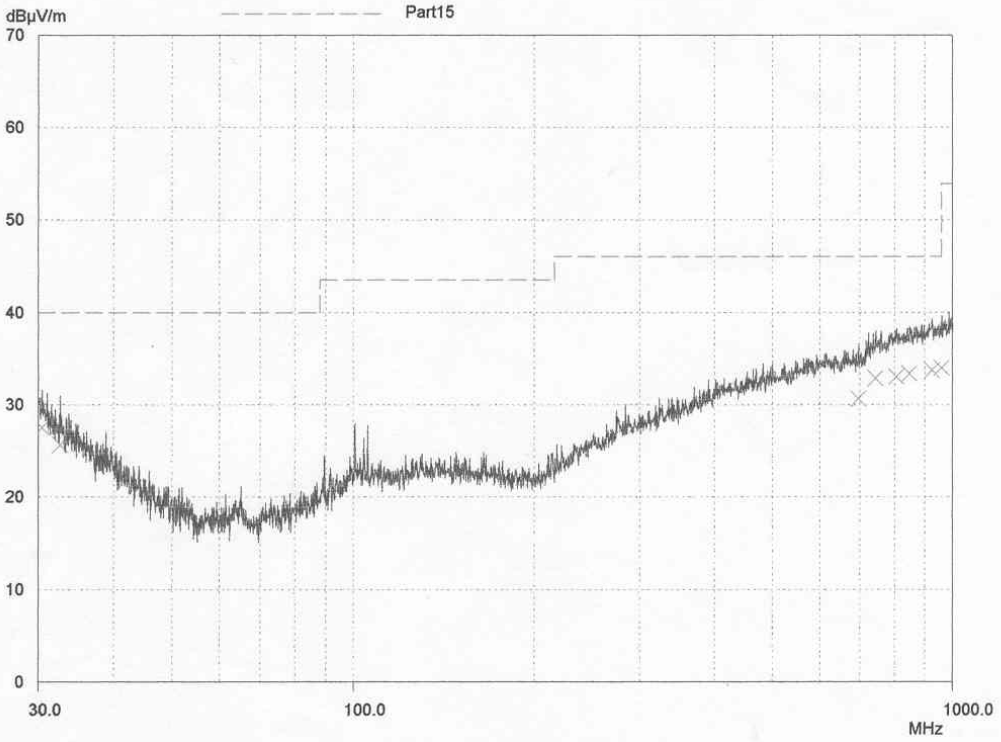
Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	50kHz	120kHz	PK	1msec	Auto	ON	60dB

Transducer	No.	Start	Stop	Name
1	21	30MHz	1000MHz	UH72
	22	30MHz	1000MHz	UH93

Final Measurement:

Detector:	X QP
Meas Time:	2sec
Subranges:	50
Acc Margin:	10 dB



PAGE 1

ANNEX F

TEST EQUIPMENT CALIBRATION

TRL Number	Equipment Type	Manufacturer	Last Cal Calibration	Calibration Period	Due For Calibration
UH006	3m Range ERP CAL	TRL	06/01/2006	12	06/01/2007
UH028	Log Periodic Ant	Schwarbeck	28/04/2005	24	28/04/2007
UH029	Bicone Antenna	Schwarbeck	27/04/2005	24	27/04/2007
UH041	Multimeter	AVOmeter	20/12/2005	12	20/12/2006
UH093	Bilog	Schaffner	19/08/2005	24	19/08/2007
UH120	Spectrum Analyser	Marconi	15/03/2005	12	15/03/2006
UH122	Oscilloscope	Tektronix	07/06/2005	24	07/06/2007
UH132	Power meter	Marconi	03/01/2006	12	03/01/2007
UH162	ERP Cable Cal	TRL	06/01/2006	12	06/01/2007
UH177	Power Supply	Manson	Use Calibrated Multimeter		
UH187	Receiver	R&S	22/06/2005	12	22/06/2006
UH191	Bilog	York	16/04/2004	24	16/04/2006
UH195	LISN/AMN	R&S	22/12/2005	12	22/12/2006
UH226	Bidirectional Coupler	Narda	Calibrate in use		
UH228	Power Sensor	Marconi	03/01/2006	12	03/01/2007
UH253	1m Cable N type	TRL	05/01/2006	12	05/01/2007
UH254	1m Cable N type	TRL	05/01/2006	12	05/01/2007
UH265	Notch filer	Telonic	24/06/2005	12	24/06/2006
L005	CMTA	R&S	05/12/2005	12	05/12/2006
L007	Loop Antenna	R&S	29/03/2005	24	29/03/2007
L011	Temperature Chamber	Shartree	Use Calibrated Temperature Indicator		
L138	1-18GHz Horn	EMCO	15/04/2005	24	15/04/2007
L139	1-18GHz Horn	EMCO	03/05/2005	24	03/05/2007
L176	Signal Generator	Marconi	31/01/2005	12	31/01/2006
L280	18GHz Cable	Rosenberger	05/01/2006	12	05/01/2007
L343	CCIR Noise Filter	TRL	07/06/2005	12	07/06/2006
L426	Temperature Indicator	Fluke	04/01/2006	12	04/01/2007
L479	Analyser	Anritsu	18/11/2005	12	18/11/2006
L552	Signal Generator	Agilent	25/04/2005	12	25/04/2006

ANNEX G

MEASUREMENT UNCERTAINTY

Radio Testing – General Uncertainty Schedule

All statements of uncertainty are expanded standard uncertainty using a coverage factor of 1.96 to give a 95% confidence where no required test level exists.

[1] Adjacent Channel Power

Uncertainty in test result = **1.86dB**

[2] Carrier Power

Uncertainty in test result (Equipment - TRLUH120) = **2.18dB**
Uncertainty in test result (Equipment – TRL05) = **1.08dB**
Uncertainty in test result (Equipment – TRL479) = **2.48dB**

[3] Effective Radiated Power

Uncertainty in test result = **4.71dB**

[4] Spurious Emissions

Uncertainty in test result = **4.75dB**

[5] Maximum frequency error

Uncertainty in test result (Equipment - TRLUH120) = **119ppm**
Uncertainty in test result (Equipment – TRL05) = **0.113ppm**
Uncertainty in test result (Equipment – TRL479) = **0.265ppm**

[6] Radiated Emissions, field strength OATS 14kHz-18GHz Electric Field

Uncertainty in test result (14kHz – 30MHz) = **4.8dB**, Uncertainty in test result (30MHz – 1GHz) = **4.6dB**, Uncertainty in test result (1GHz-18GHz) = **4.7dB**

[7] Frequency deviation

Uncertainty in test result = **3.2%**

[8] Magnetic Field Emissions

Uncertainty in test result = **2.3dB**

[9] Conducted Spurious

Uncertainty in test result (Equipment TRL479) Up to 8.1GHz = **3.31dB**
Uncertainty in test result (Equipment TRL479) 8.1GHz – 15.3GHz = **4.43dB**
Uncertainty in test result (Equipment TRL479) 15.3GHz – 21GHz = **5.34dB**
Uncertainty in test result (Equipment TRLUH120) Up to 26GHz = **3.14dB**

[10] Channel Bandwidth

Uncertainty in test result = **15.5%**

[11] Amplitude and Time Measurement – Oscilloscope

Uncertainty in overall test level = **2.1dB**, Uncertainty in time measurement = **0.59%,** Uncertainty in Amplitude measurement = **0.82%**

[11] Power Line Conduction

Uncertainty in test result = **3.4dB**