TEST REPORT NO: RU1061/4766

COPY NO: ----------

ISSUE NO: 1

FCC ID: Q89-5150

REPORT ON THE CERTIFICATION TESTING OF A
BOWENS INTERNATIONAL Ltd.
Lite Link
WITH RESPECT TO
THE FCC RULES CFR 47, PART 15.231
INTENTIONAL RADIATOR SPECIFICATION

TEST DATE: 19th – 20th August 2003

TESTED BY: JOHN CHARTERS Digitally signed by JOHN CHARTERS DN: cn=JOHN CHARTERS, o=TRL COMPLIANCE SERVICES, c=US Date: 2003.10.01 16:05:46 Z ---------- J CHARTERS

APPROVED BY: Peter Green Digitally signed by Peter Green DN: cn=Peter Green, o=TRL Compliance Services, c=US Date: 2003.10.02 12:12:24 Z ---------- P GREEN
EMC PRODUCT MANAGER

DATE: ----------

Distribution:

Copy Nos: 1. BOWENS INTERNATIONAL Ltd.

2. TRL COMPLIANCE SOLUTIONS TCB

3. TRL EMC

TRL COMPLIANCE SERVICES LTD EMC DIVISION
LONG GREEN FORTHAMPTON GLOUCESTER GL19 4QH UNITED KINGDOM
TELEPHONE +44 (0)1684 833818 FAX +44 (0)1684 833858
E-MAIL test@trlcompliance.com www.trlcompliance.com

Quality System Certified
To BS EN ISO 9001 (1994)
Registration FS 21805

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:	Q89-5150					
PURPOSE OF TEST:	CERTIFICATION					
TEST SPECIFICATION:	FCC RULES CFR 47, Part 15.231					
TEST RESULT:	Compliant to Specification					
EQUIPMENT UNDER TEST:	Lite Link					
EQUIPMENT SERIAL No:	#1					
ITU: EMISSION CODE:	166KDAD					
EQUIPMENT TYPE:	CE-5150					
PRODUCT USE:	Telemetry					
CARRIER EMISSION:	204.17μV/m @3m					
ANTENNA TYPE:	Integral					
ALTERNATIVE ANTENNA:	Not applicable					
BAND OF OPERATION:	260MHz-470MHz					
CHANNEL SPACING:	Wideband					
NUMBER OF CHANNELS:	1					
FREQUENCY GENERATION:	SAW Resonator	[X]	Crystal	[ ]	Synthesiser	[ ]
MODULATION METHOD:	Amplitude	[X]	Digital	[ ]	Angle	[ ]
POWER SOURCE(s):	3Vdc Battery operation 110v ac via AC/DC power brick					
TEST DATE(s):	19th – 20th August 20003					
ORDER No(s):	44884					
APPLICANT:	BOWENS INTERNATIONAL Ltd.					
ADDRESS:	335 Old Road Clacton on Sea ESSEX CO15 3RH United Kingdom					

TESTED BY: JOHN CHARTERS — Signature Not Verified — Digitally signed by JOHN CHARTERS DN: cn=JOHN CHARTERS, o=TRL COMPLIANCE SERVICES, c=US Date: 2003.10.01 16:06:10 Z

J CHARTERS

APPROVED BY: Peter Green — Signature Not Verified — Digitally signed by Peter Green DN: cn=Peter Green, o=TRL Compliance Services, c=US Date: 2003.10.02 12:12:50 Z

P GREEN
EMC PRODUCT MANAGER

APPLICANT'S SUMMARY

EQUIPMENT UNDER TEST (EUT):	Lite Link
EQUIPMENT TYPE:	CE-5150
SERIAL NUMBER OF EUT:	#1
PURPOSE OF TEST:	CERTIFICATION
TEST SPECIFICATION(s):	FCC RULES CFR 47, Part 15.209,151207 15.109,15.107
TEST RESULT:	COMPLIANT Yes [X] No [ ]
APPLICANT'S CATEGORY:	MANUFACTURER [X] IMPORTER [ ] DISTRIBUTOR [ ] TEST HOUSE [ ] AGENT [ ]
APPLICANT'S ORDER No(s):	44884
APPLICANT'S CONTACT PERSON(s):	Mr Mark Aherne
E-mail address:	Mark.aherne@calumetint.com
APPLICANT:	BOWENS INTERNATIONAL Ltd.
ADDRESS:	335 Old Road Clacton on Sea Essex CO15 3RH United Kingdom
TEL:	0044 1255 422807
FAX:	00441255 436342
MANUFACTURER:	BOWENS INTERNATIONAL Ltd.
EUT(s) COUNTRY OF ORIGIN:	United Kingdom
TEST LABORATORY:	TRL EMC
UKAS ACCREDITATION No:	0728
TEST DATE(s)	19th – 20th August 2003
TEST REPORT No:	RU1061/4766

EQUIPMENT TEST / EXAMINATIONS REQUIRED

1.

TEST/EXAMINATION	RULE PART	DETECTOR	APPLICABILITY
Intentional Emission Frequency:	15.231(a)	Quasi Peak	Yes
Intentional Emission Field Strength:	15.231(b)	Quasi Peak	Yes
Intentional Emission Band Occupancy:	15.231(c)	Quasi Peak	Yes
Intentional Emission ERP (mW):	N/A	-	No
Spurious Emissions – Conducted:	15.207	Quasi Peak/ Average	Yes
Spurious Emissions – Radiated <1000MHz:	15.209	Quasi Peak	Yes
Spurious Emissions – Radiated >1000MHz:	15.209 15.231	Average	Yes
Maximum Frequency of Search:	15.33	N/A	Yes
Antenna Arrangements Integral:	15.203	-	Yes
Antenna Arrangements External Connector:	N/A	N/A	No
Restricted Bands	15.205	-	Yes
Extrapolation Factor	15.31(f)	-	No

2. Product Use: Signal control

3. Emission Designator: 166KDAD

4. Duty Cycle: <10%

5. Transmitter bit or pulse rate and level: 166kbps

6. Temperatures: Ambient (Tnom) 22°C

7. Supply Voltages: Vnom 3Vdc

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	=	22°C(<1GHz)	3m measurements <1GHz	[X]
Relative humidity	=	60% (<1GHz),	0.3m measurements >1GHz	[X]
Conditions	=	Open Area Test Site (OATS)	3m extrapolated from 0.3m	[ ]
Supply voltage	=	3V		
Channel number	=	1		

	FREQ. (MHz)	MEAS. Rx. (dBµV)	CABLE LOSS (dB)	ANT FACTOR (dB/m)	FIELD STRENGTH (dBµV/m)	EXTRAP. FACTOR (dB)	FIELD STRENGTH (µV/m)
30MHz - 88MHz							
88MHz - 216MHz							
216MHz - 960MHz	867.8504	-1.4	3.4	20.1	22.1	-	12.73
960MHz - 1GHz							
1GHz - 5GHz							
Limits	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: 5000MHz inclusive, as per Part 15.33a
3 Extrapolation factor 9.5dB from 1m to 3m, as per Part 15.31f
4 Measurements >1GHz @ 1m as per Part 15.31f(1)
5 Receiver detector >1GHz = CISPR, Quasi-Peak, 120kHz bandwidth
6 Receiver detector >1GHz = Peak Hold, 1MHz resolution bandwidth
7 New batteries used for battery powered products.
8 Only emissions within 10dB of limit are recorded
9 **R** indicates frequencies within the restricted band from Part15.205
10 During the test program the Lite Link was connected to the following peripheral units:
Switch/Camera trigger port. 1m cable
AC/DC power supply. 1.5m 2 core cable
Load cables were attached to the sync input .1m cables.

Test Method:

1 As per Radio – Noise Emissions, ANSI C63.4: 1992
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.
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	
HORN ANTENNA	EMCO	3115	9010-3580	138	**X**
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	**X**
RECEIVER	ROHDE & SCHWARZ	ESHS 10	830051/001	UH03	
RECEIVER	ROHDE & SCHWARZ	ESVS 10	825892/003	UH04	**X**
RANGE 1	TRL	3 METRE	N/A	UH06	**X**
AE, LOOP, Z2, 9kHz - 30MHz	ROHDE & SCHWARZ	HFH2	881058 - 53	07	
BILOG ANTENNA	CHASE	CBL6112	2129	UH93	
SPECTRUM ANALYSER	MARCONI	2386/2380	152076/004	UH120	**X**

TRANSMITTER TESTS

TRANSMITTER INTENTIONAL EMISSION – RADIATED – Part 15.231

Ambient temperature	=	22°C(<1GHz),	3m measurements @ fc	[X]
Relative humidity	=	60%(<1GHz),	10m measurements @ fc	[ ]
Conditions	=	Open Area Test Site (OATS)	30m measurements @ fc	[ ]
Supply voltage	=	3V	30m extrapolated from 3m	[ ]
Channel number	=	1	30m extrapolated from 10m	[ ]

FREQ. (MHz)	MEASUREMENT Rx. READING (dBµV)	CABLE LOSS (dB)	ANT FACTOR	FIELD STRENGTH (dBµV/m)	EXTRAP. FACTOR (dB)	FIELD STRENGTH (µV/m)
433.9252	27.55	2.3	16.35	46.2	-	204.17
Limit value @ fc			**10996.9(µV/m)**			
Band occupancy @ -20dBc			**f lower**		**f higher**	
			433.771MHz		434.107MHz	
Transmitter on time			540 µSeconds			

See spectrum analyser plot – Annex D

Notes:
1 Results quoted are extrapolated as indicated
2 Receiver detector @ fc = Quasi Peak 120kHz bandwidth
3 When battery powered the EUT was powered with new batteries
4 See annex D for transmitter on time
5 To enable the measurements to be performed the transmitter was forced to continuously transmit.
6 During the test program the Lite Link was connected to the following peripheral units:
Switch/Camera trigger port. 1m cable
AC/DC power supply. 1.5m cable
Load cables were attached to the sync input .1m cables.

Test Method:
1 As per Radio – Noise Emissions, ANSI C63.4: 1992
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.
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 15.231 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	
RECEIVER	ROHDE & SCHWARZ	ESVS 10	825892/003	UH04	**X**
RANGE 1	TRL	3 METRE	N/A	UH06	**X**
AE, LOOP, Z2, 9kHz - 30MHz	ROHDE & SCHWARZ	HFH2	881058 - 53	07	
BILOG ANTENNA	CHASE	CBL6112	2129	UH93	**X**
SPECTRUM ANALYSER	MARCONI	2386/2380	152076/004	UH120	

TRANSMITTER TESTS

TRANSMITTER CONDUCTED EMISSIONS – AC POWER LINE Part 15.207

Ambient temperature = 22°C(<1GHz),
Relative humidity = 60%(<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 10dBs of limit.					

Notes: 1 See annex E for plots

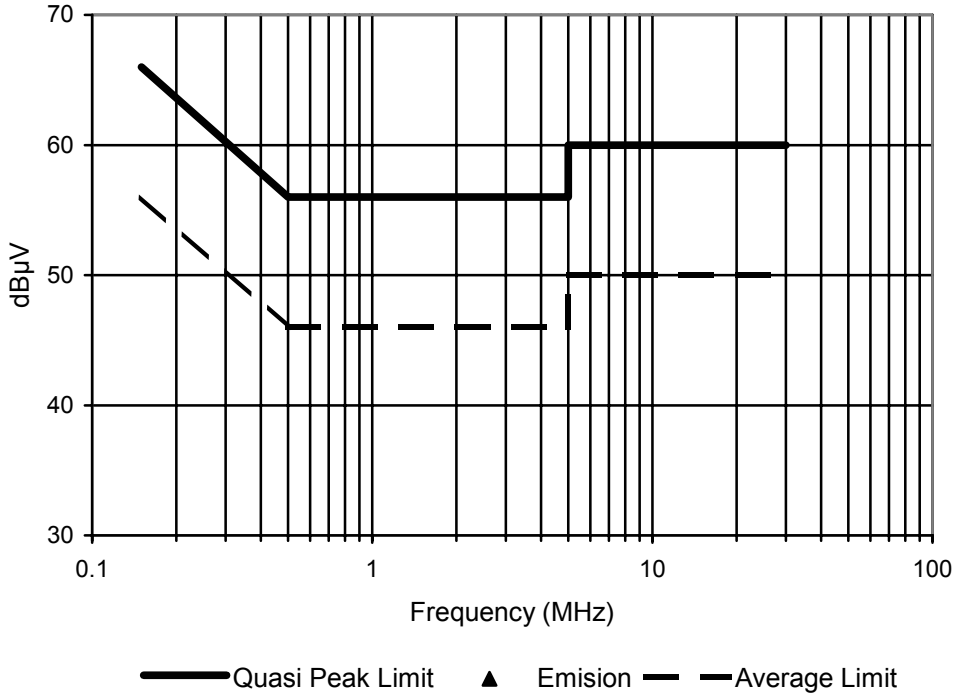
Test Method: 1 As per Radio – Noise Emissions, ANSI C63.4: 1992

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	830051/001	UH03	**X**
LISN/AMN	ROHDE & SCHWARZ	ESH3-Z5	863906/018	UH05	**X**
SPECTRUM ANALYSER	MARCONI	2386/2380	152076/004	UH120	

POWER LINE CONDUCTION EMISSIONS

Quasi Peak and Average Limit Part 15.207
(Levels below the limit are only displayed if
within 10dB of the limit)



No significant emissions detected with in 10dB of limit. See annex E for scan data.

RECEIVER TESTS

RECEIVER SPURIOUS EMISSIONS – RADIATED – PART 15.109

Ambient temperature	=	22°C(<1GHz)	3m measurements <1GHz	[X]
Relative humidity	=	60% (<1GHz),	0.3m measurements >1GHz	[X]
Conditions	=	Open Area Test Site (OATS)	3m extrapolated from 0.3m	[ ]
Supply voltage	=	3V		
Channel number	=	1		

	FREQ. (MHz)	MEAS. Rx. (dBµV)	CABLE LOSS (dB)	ANT FACTOR (dB/m)	FIELD STRENGTH (dBµV/m)	EXTRAP. FACTOR (dB)	FIELD STRENGTH (µV/m)
30MHz - 88MHz	No significant emissions within 10dB's of the limit.						
88MHz - 216MHz	No significant emissions within 10dB's of the limit.						
216MHz - 960MHz	No significant emissions within 10dB's of the limit.						
960MHz - 1GHz	No significant emissions within 10dB's of the limit.						
1GHz - 5GHz	No significant emissions within 10dB's of the limit.						
Limits	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: 5000MHz inclusive, as per Part 15.33a
3 Extrapolation factor 9.5dB from 1m to 3m, as per Part 15.31f
4 Measurements >1GHz @ 1m as per Part 15.31f(1)
5 Receiver detector >1GHz = CISPR, Quasi-Peak, 120kHz bandwidth
6 Receiver detector >1GHz = Peak Hold, 1MHz resolution bandwidth
7 New batteries used for battery powered products.
8 Only emissions within 10dB of limit are recorded

Test Method:

1 As per Radio – Noise Emissions, ANSI C63.4: 1992
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.
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 15.109 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	**X**
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	**X**
RECEIVER	ROHDE & SCHWARZ	ESHS 10	830051/001	UH03	
RECEIVER	ROHDE & SCHWARZ	ESVS 10	825892/003	UH04	**X**
RANGE 1	TRL	3 METRE	N/A	UH06	**X**
AE, LOOP, Z2, 9kHz - 30MHz	ROHDE & SCHWARZ	HFH2	881058 - 53	07	
BILOG ANTENNA	CHASE	CBL6112	2129	UH93	
SPECTRUM ANALYSER	MARCONI	2386/2380	152076/004	UH120	**X**

RECEIVER TESTS

RECEIVER CONDUCTED EMISSIONS – AC POWER LINE Part 15.107

Ambient temperature = 22°C(<1GHz),
Relative humidity = 60%(<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 10dBs of limit.					

Notes: 1 See annex E for plots

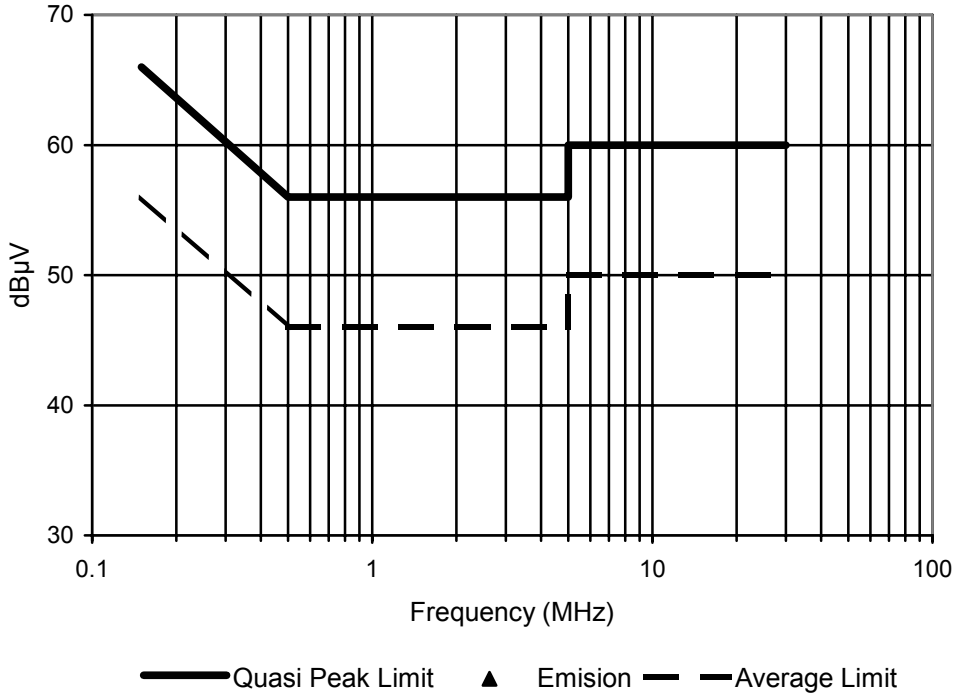
Test Method: 1 As per Radio – Noise Emissions, ANSI C63.4: 1992

The test equipment used for the Transmitter Conducted Emissions – AC Power Line Part 15.107 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	830051/001	UH03	**X**
LISN/AMN	ROHDE & SCHWARZ	ESH3-Z5	863906/018	UH05	**X**
SPECTRUM ANALYSER	MARCONI	2386/2380	152076/004	UH120	

POWER LINE CONDUCTION EMISSIONS

Quasi Peak and Average Limit Part 15.207
(Levels below the limit are only displayed if
within 10dB of the limit)



No significant emissions detected with in 10dB of limit. See annex E for scan data.

ANNEX A

PHOTOGRAPHS

PHOTOGRAPH No. 1 **TEST SETUP**

PHOTOGRAPH No. 2 **TEST SETUP**

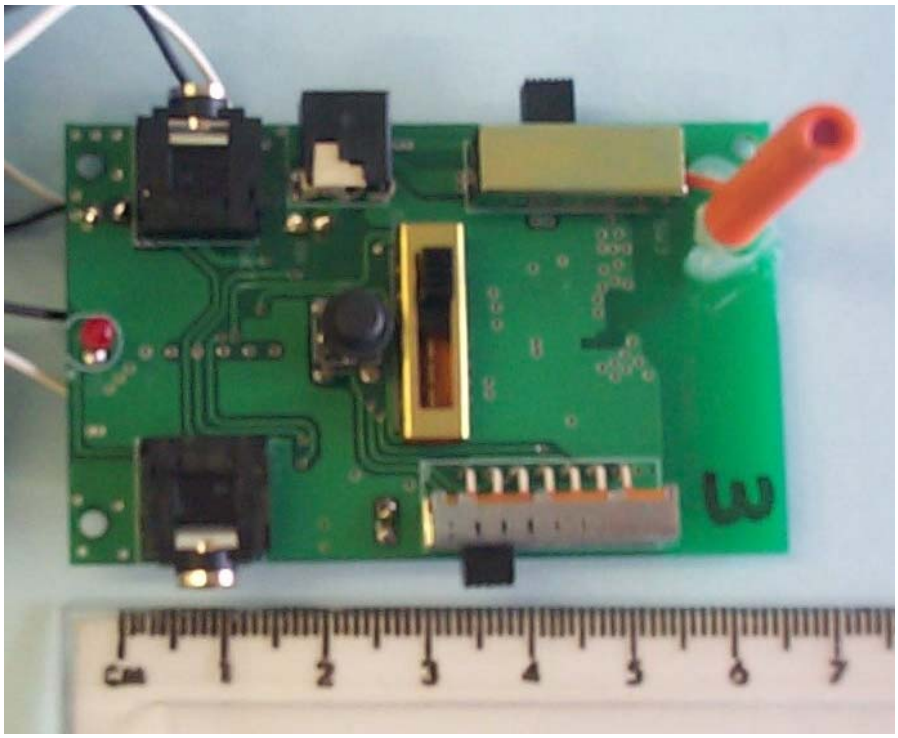
PHOTOGRAPH No. 3 **TRANSMITTER FRONT VIEW**

PHOTOGRAPH No. 4 **TRANSMITTER REAR VIEW**

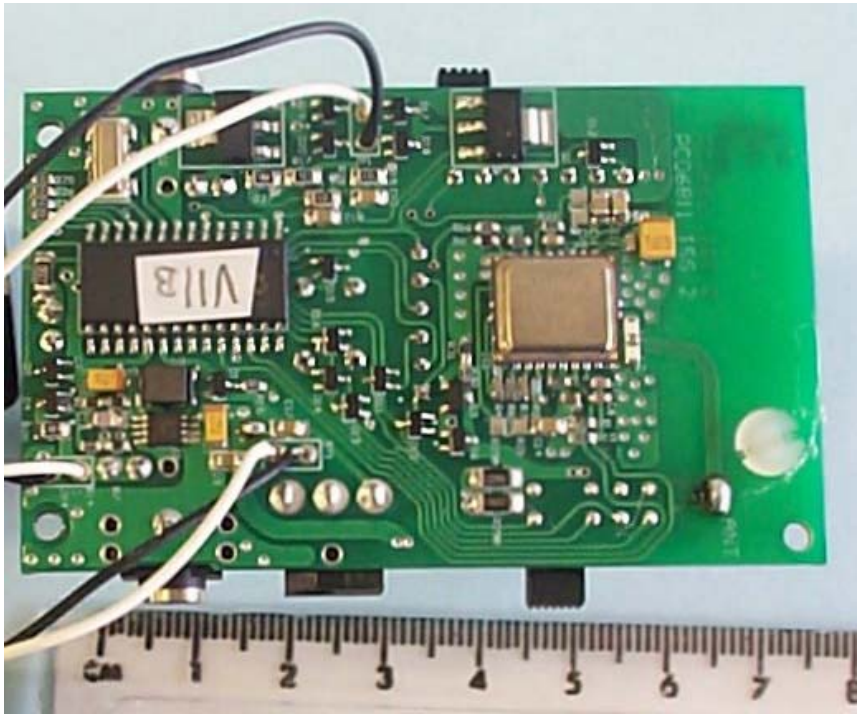
PHOTOGRAPH No. 5 **TRANSMITTER SIDE VIEW**

PHOTOGRAPH No. 6 **TRANSMITTER SIDE VIEW**

PHOTOGRAPH No. 7 **TRANSMITTER PCB TRACK SIDE**



PHOTOGRAPH No. 8 **TRANSMITTER PCB COMPONENT SIDE**



ANNEX B

APPLICANT'S SUBMISSION OF DOCUMENTATION LIST

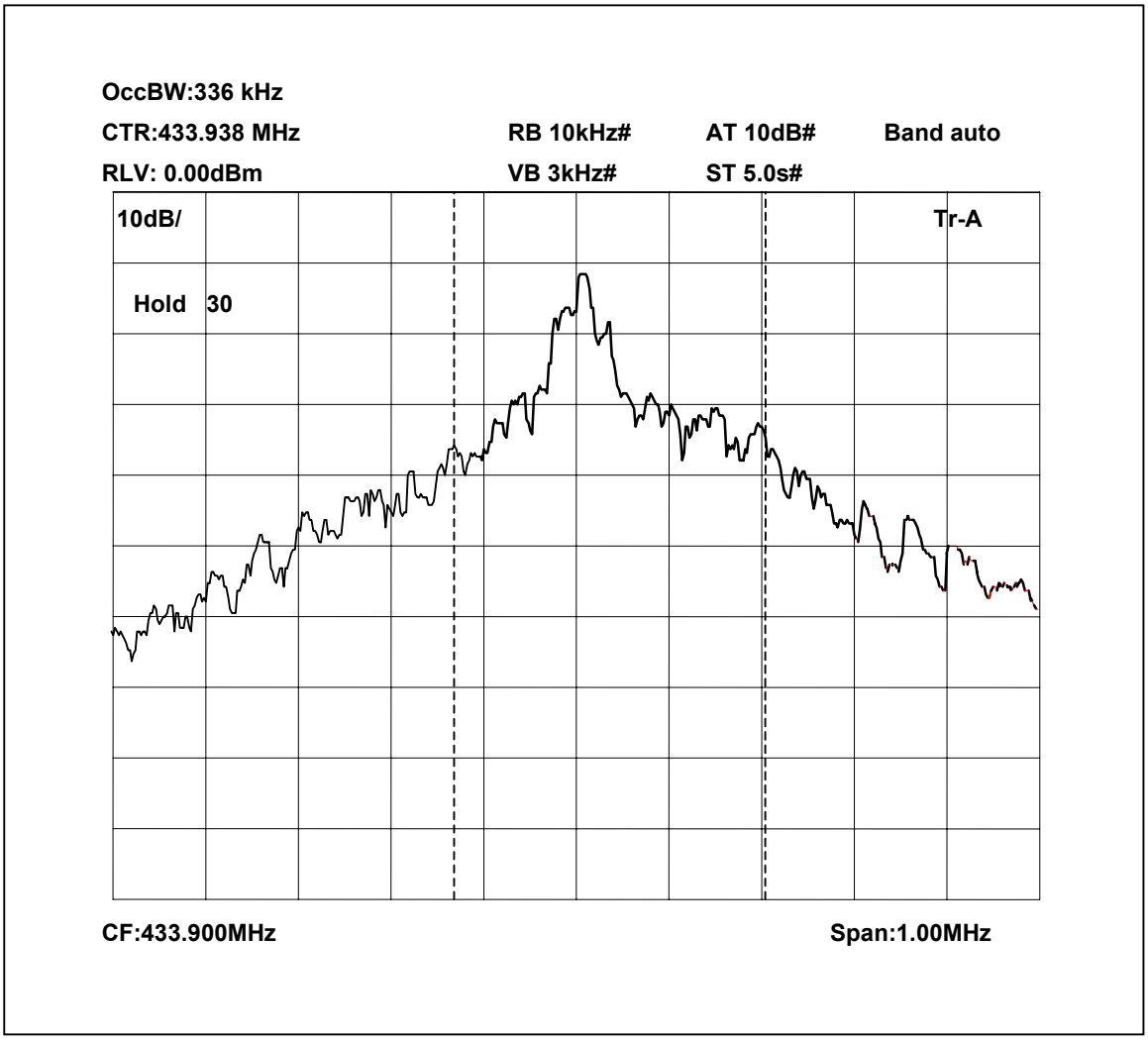
APPLICANT'S SUBMISSION OF DOCUMENTATION LIST

a.	TCB	-	APPLICATION	[X]
		-	FEE	[X]
b.	AGENT'S LETTER OF AUTHORISATION	-		[X]
c.	MODEL(s) vs IDENTITY	-		[ ]
d.	ALTERNATIVE TRADE NAME DECLARATION(s)	-		[ ]
e.	LABELLING	-	PHOTOGRAPHS	[X]
		-	DECLARATION	[ ]
		-	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

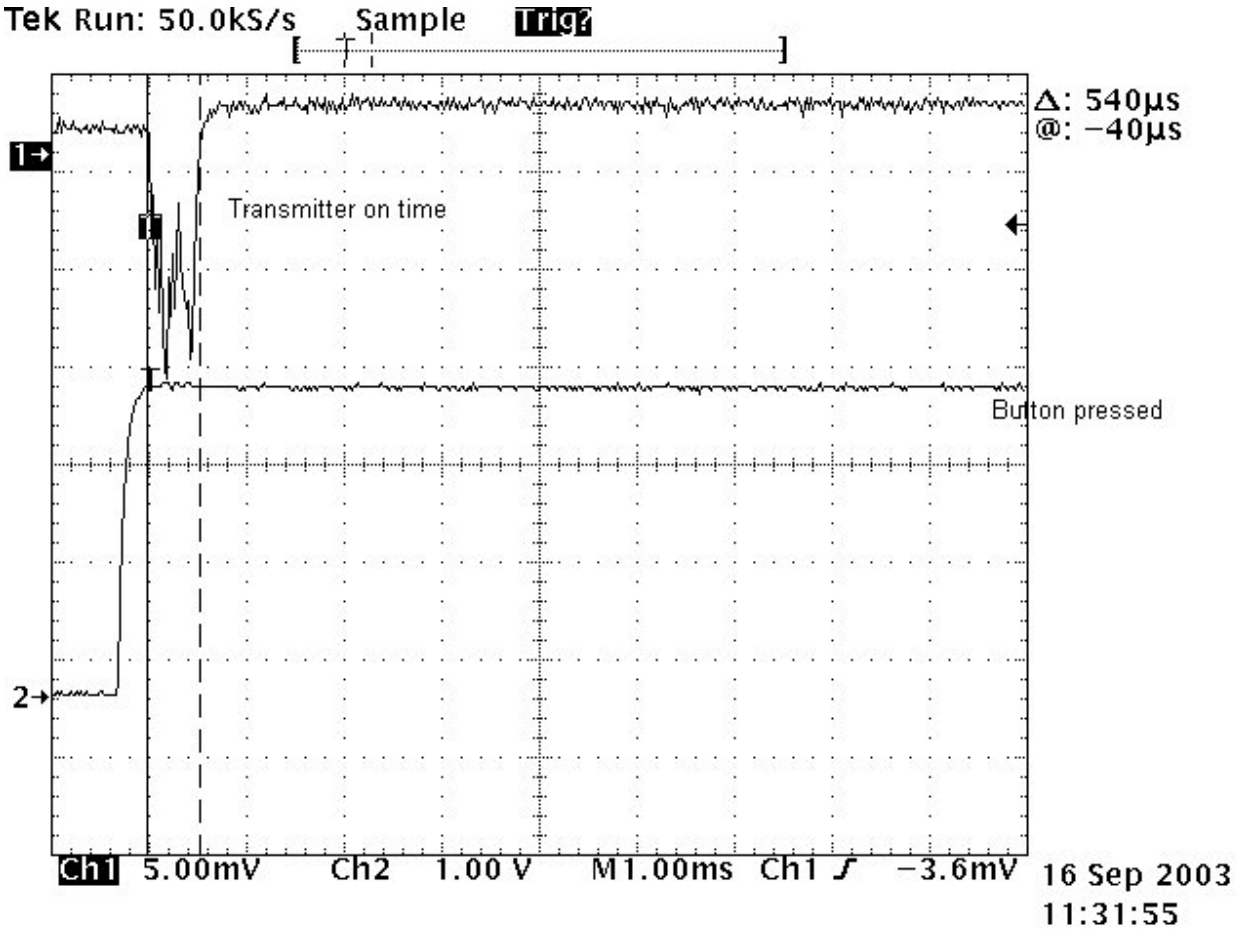


Fl= 433.772MHz
Fh= 434.106MHz

ANNEX D

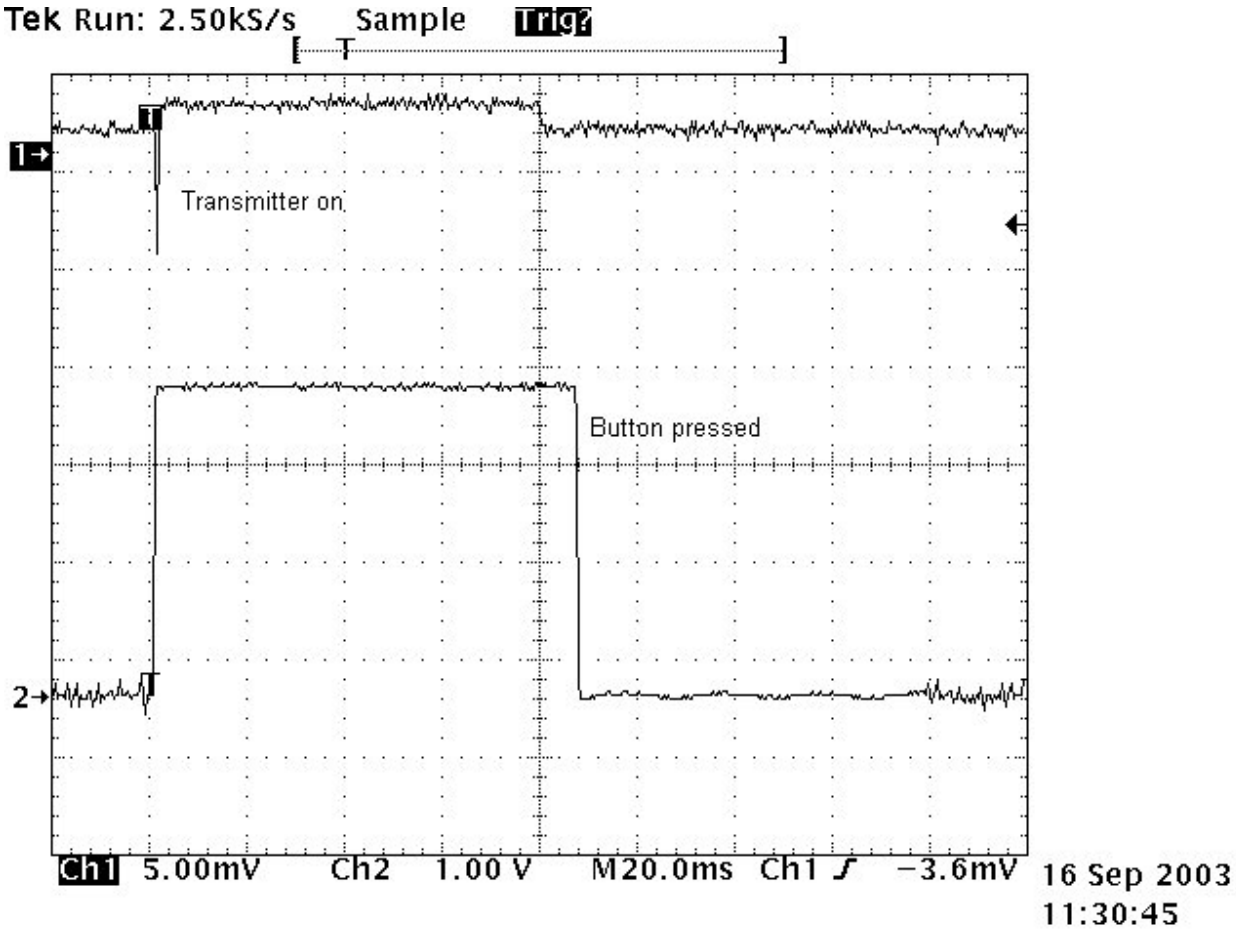
TRANSMITTER ON TIME

Transmitter on time test button.



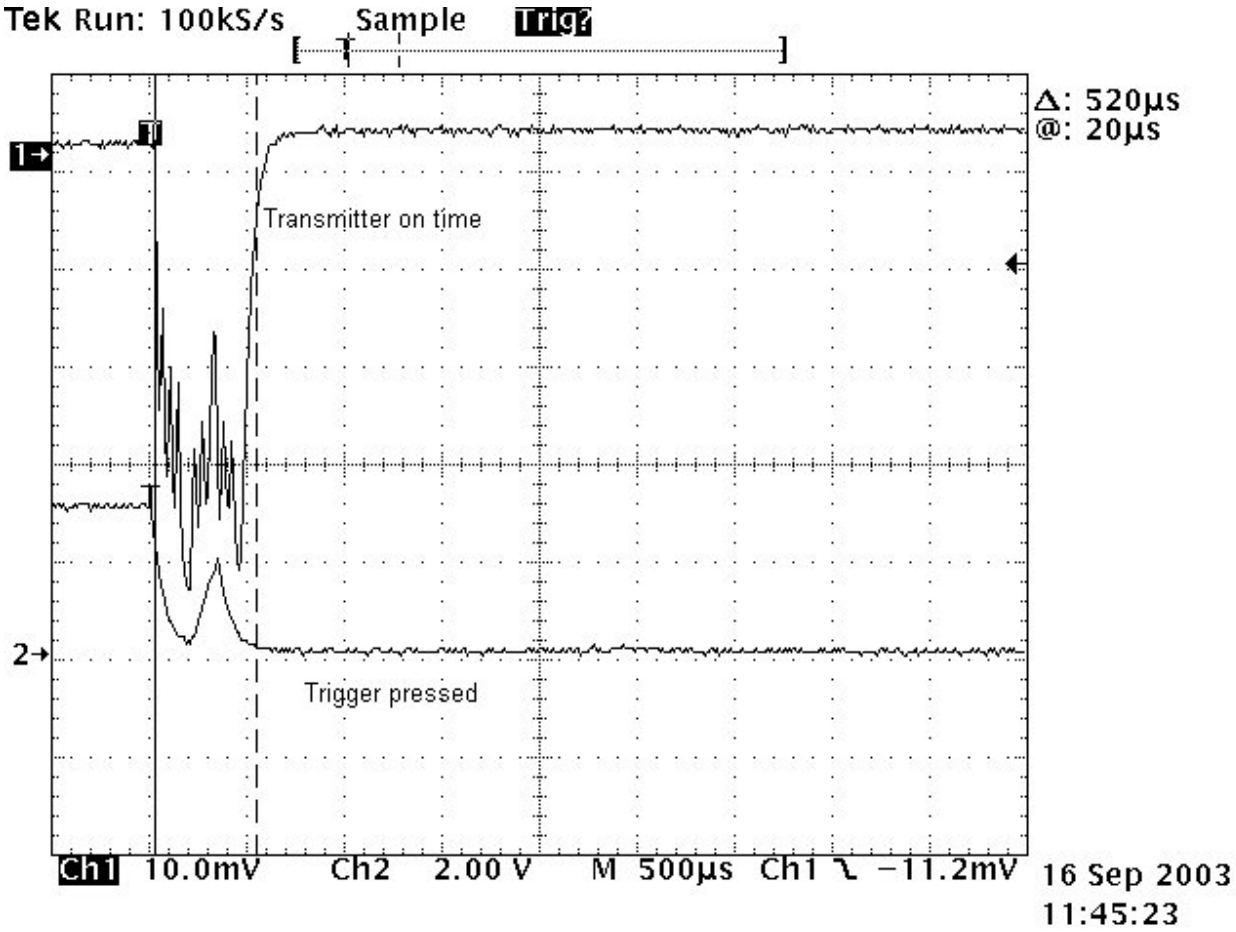
Plot showing transmitter on time.
Note: To see Tx on time the button release is not seen.

Transmitter on time Test Button



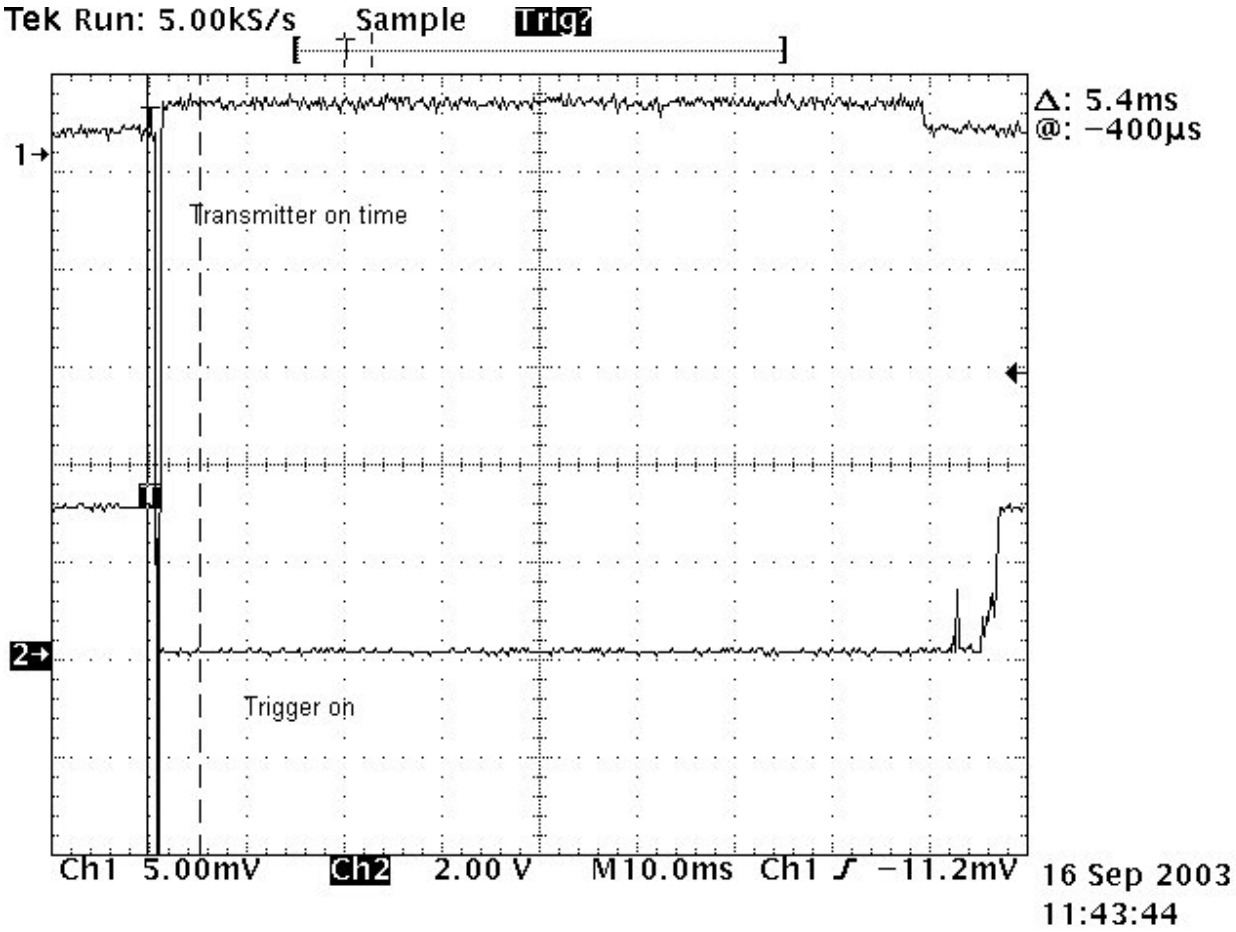
Plot showing button release

Transmitter on time external trigger.



Plot showing transmitter on time.
Note: To see Tx on time the button release is not seen.

Transmitter on time external trigger.



Plot showing button release

ANNEX E

POWER LINE CONDUCTION SCAN DATA

Powerline Conduction

01 Sep 2003 12:09

150kHz - 30MHz

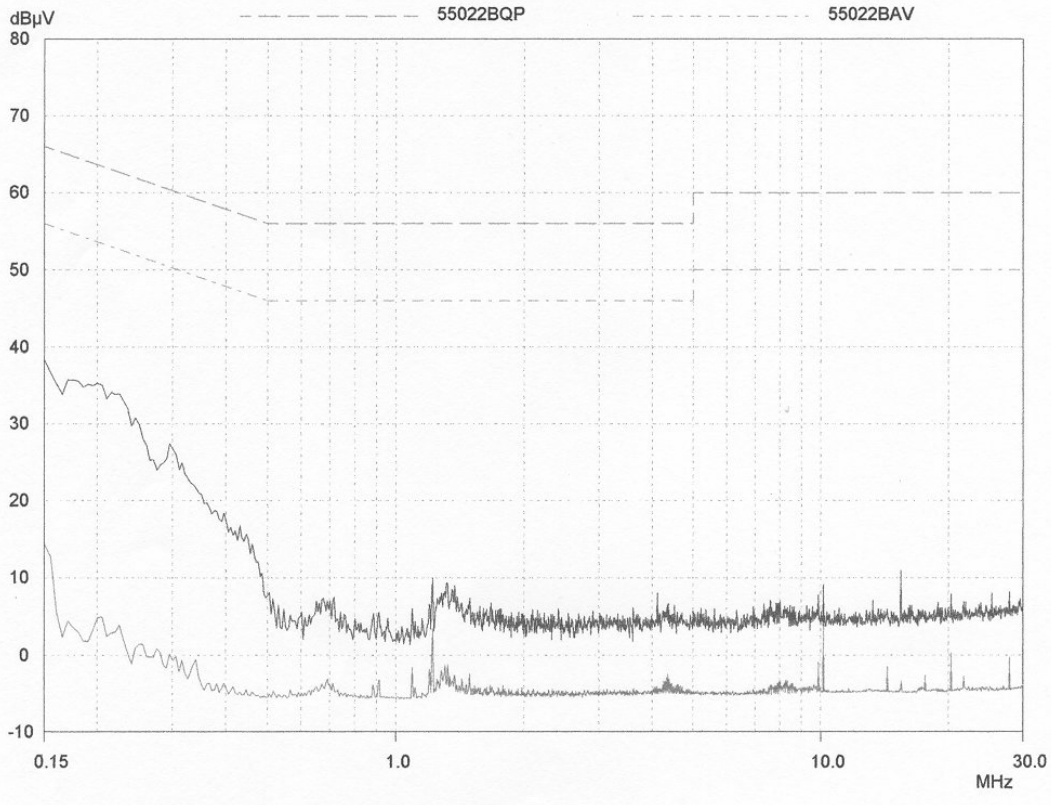
EUT:	Pulsar
Manuf:	Bowens
Op Cond:	LISN UH5, UH21
Operator:	J Charters
Test Spec:	EN55022 Class B (or Variant)
Comment:	Live tx

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



Transmitter Mode Power Line Measurement

Powerline Conduction

01 Sep 2003 12:35

150kHz - 30MHz

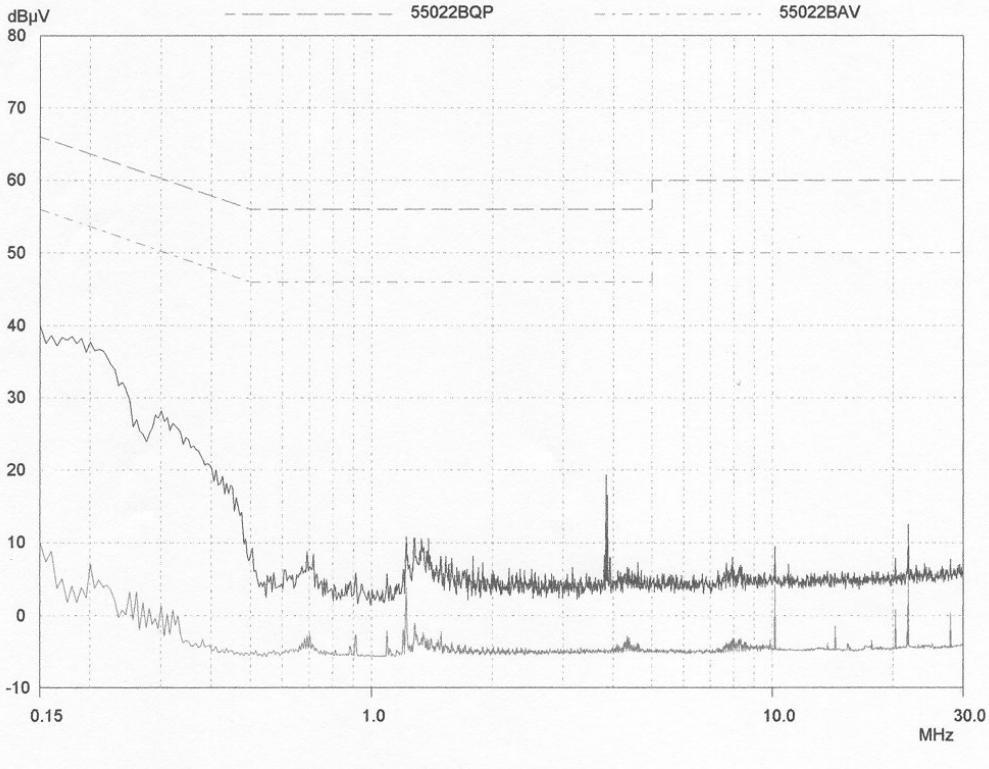
EUT:	Pulsar
Manuf:	Bowens
Op Cond:	LISN UH5, UH21
Operator:	J Charters
Test Spec:	EN55022 Class B (or Variant)
Comment:	Live Rx

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



Receiver Mode Power Line Measurement