



**TRL Compliance**  
part of TRAC global

**REPORT ON THE CERTIFICATION TESTING OF A  
55-203201  
FM REBROADCAST AMPLIFIER  
ON BEHALF OF  
AXELL WIRELESS LIMITED  
WITH RESPECT TO  
THE FCC RULES CFR 47, PART 73 and 74**



TEST REPORT NO: RU1491/8705  
COPY NO: 1  
ISSUE NO: 1  
FCC ID: NEO55-2032SERIES

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TEST DATE: 21<sup>st</sup> – 29<sup>th</sup> JULY 2008

TESTED BY: \_\_\_\_\_ S HODGKINSON  
APPROVED BY: \_\_\_\_\_ J CHARTERS  
RADIO SECTION  
LEADER  
DATE: 10<sup>th</sup> October 2008 \_\_\_\_\_

Distribution:

- Copy Nos:
1. Axell Wireless Limited
  2. TCB: TRL Compliance Limited
  3. TRL Compliance Ltd

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 <b>Notes:</b>		
1. Component failure during test	YES	<input type="checkbox"/>
	NO	<input checked="" type="checkbox"/>
2. If Yes, details of failure:		
3. The facilities used for the testing of the product contain in this report are FCC Listed.		



# TRL Compliance

part of TRAC global

## CERTIFICATE OF CONFORMITY & COMPLIANCE

FCC IDENTITY:	NEO55-2032SERIES
PURPOSE OF TEST:	Certification
TEST SPECIFICATION:	FCC RULES CFR 47, Part 73 and 74
TEST RESULT:	Compliant to Specification
EQUIPMENT UNDER TEST:	55 – 203201
EQUIPMENT TYPE:	FM rebroadcast amplifier
MAXIMUM GAIN:	Downlink 59.28dB
MAXIMUM INPUT:	Downlink -21.20dB
MAXIMUM OUTPUT CONDUCTED:	Downlink 36.68dBm
CHANNEL SPACING:	Not Applicable, Wideband
FREQUENCY GENERATION:	N/A
MODULATION TYPE:	F3E
POWER SOURCE(s):	+110Vac
TEST DATE(s):	21 <sup>st</sup> – 29 <sup>th</sup> July 2008
ORDER No(s):	51405
APPLICANT:	Axell Wireless Limited
ADDRESS:	Aerial House Asheridge Road Chesham Buckinghamshire HP5 2QD
TESTED BY:	----- S HODGKINSON
APPROVED BY:	----- J CHARTERS RADIO SECTION LEADER

RU1491/8705

## APPLICANT'S SUMMARY

EQUIPMENT UNDER TEST (EUT): 55 – 203201

EQUIPMENT TYPE: FM rebroadcast amplifier

PURPOSE OF TEST: Certification

TEST SPECIFICATION(s): FCC RULES CFR 47, Part 73 and 74

TEST RESULT: COMPLIANT Yes   
No

APPLICANT'S CATEGORY: MANUFACTURER   
IMPORTER   
DISTRIBUTOR   
TEST HOUSE   
AGENT

APPLICANT'S ORDER No(s): 51405

APPLICANT'S CONTACT PERSON(s): Mr Peter Bradfield

E-mail address: Peter.bradfield@axellwireless.com

APPLICANT: Axell Wireless Limited

ADDRESS: Aerial House  
Asheridge Road  
Chesham  
Buckinghamshire  
HP5 2QD  
United Kingdom

TEL: +44 (0)1494 777000

FAX: +44 (0)1494 778456

MANUFACTURER: Axell Wireless Limited

EUT(s) COUNTRY OF ORIGIN: United Kingdom

TEST LABORATORY: TRL Compliance Ltd

UKAS ACCREDITATION No: 0728

TEST DATE(s): 21<sup>st</sup> – 29<sup>th</sup> July 2008

TEST REPORT No: RU1491/8705

**EQUIPMENT TEST / EXAMINATIONS REQUIRED**

1.	TEST/EXAMINATION	RULE PART	APPLICABILITY	RESULT
	RF Power Output	2.1046	Yes	Complies
	Audio Frequency Response	TIA EIA-603.3.2.6	N/A	N/A
	Audio Low-Pass Filter Response	TIA EIA-603.3.2.6	N/A	N/A
	Modulation Limiting	TIA EIA-603.3.2.6	N/A	N/A
	Occupied Bandwidth	2.1047	Yes	Complies
	Spurious Emissions at Antenna Terminals	2.1051	Yes	Complies
	Field Strength of Spurious Emissions	2.1053	Yes	Complies
	Frequency Stability	2.1055	N/A(note 1)	N/A

Notes:

1 The EUT does not contain modulation circuitry, therefore the test was not performed.

2 The EUT is not a keyed carrier system, therefore the test was not performed.

2. Product class: Downlink Class A  Class B
3. Product Use: Private Land Mobile Repeater
4. Emission Designator: F3E
5. Temperatures: Ambient (Tnom) 25°C
6. Supply Voltages: Vnom +110Vac
- Note: Vnom voltages are as stated above unless otherwise shown on the test report page
7. Equipment Category: Single channel   
Two channel   
Multi-channel
8. Channel spacing: Narrowband   
Wideband
9. Test Location TRL Compliance Limited  
Up Holland   
Malvern
10. Modifications made during test program No modifications were performed.

**System description:**

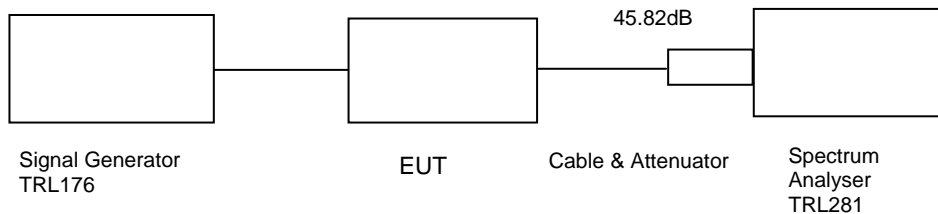
The 55-203201 FM rebroadcast amplifier uses a downlink path only. The downlink path operates over the frequency band 88.0MHz -108MHz

## COMPLIANCE TESTS

### AMPLIFIER GAIN – CONDUCTED – PART 2.1046 – DOWNLINK

Ambient temperature = 25°C  
 Relative humidity = 62%  
 Supply voltage = +110Vac  
 Channel number = See test results

Radio Laboratory



Frequency MHz	Signal Generator input level dBm	Input Cable Loss dB	Output Cable & Attenuator loss dB	Level at Spectrum Analyser dBm	Gain dB	Conducted Output Power dBm	Gain after 10dB input level increase dB
88.0	-15.8	6.0	45.82	-9.14	58.48	36.68	49.52
98.0	-16.6	6.0	45.82	-9.14	59.28	36.68	50.30
108.0	-15.2	6.0	45.82	-9.36	57.66	36.46	48.54

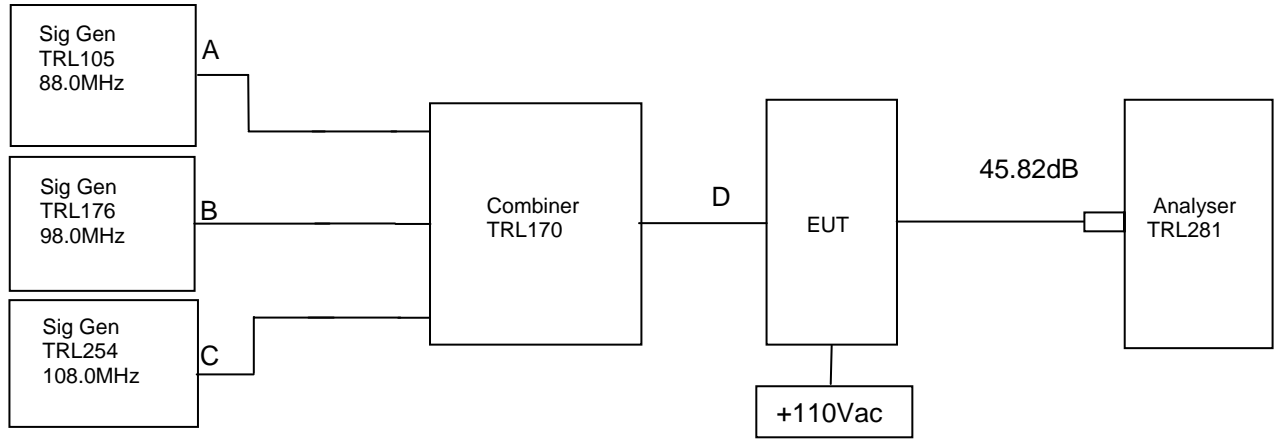
Notes: 1. The signal generator input was increased by 10dBs and the level of the output signal remeasured.

TYPE OF EQUIPMENT	MAKER/SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
SPECTRUM ANALYSER	RHODE & SCHWARZ	FSU	200034	281	X
ATTENUATOR	BIRD	8308-200-N	N/A	103	X
ATTENUATOR	SPINNER	745357	D57224	225	X
ATTENUATOR	BIRD	8304-0600n	N/A	246	X
SIGNAL GENERATOR	MARCONI	2042	119388/080	176	X

**AMPLIFIER INTERMODULATION SPURIOUS EMISSIONS – CONDUCTED – PART 2.1053– DOWNLINK**

Ambient temperature = 24°C  
 Relative humidity = 65%  
 Supply voltage = 110Vac

Radio Laboratory



The intermodulation and spurious products were measured with the amplifier operating at maximum gain. A three tone test was conducted using the equipment as above. The signal input power level was adjusted until the amplifier reached the +1dB compression point across the three carriers, the signal input power level was then increased by 10dB (-17dBm). The cable and attenuator loss between the EUT and the spectrum analyser was 45.82dB.

RF Input Frequency (MHz)			Highest Intermodulation Product Level (dBm)	Limit (dBm)
88.0	98.0	108.0	-15.67dBm@ 101.36538MHz	-13

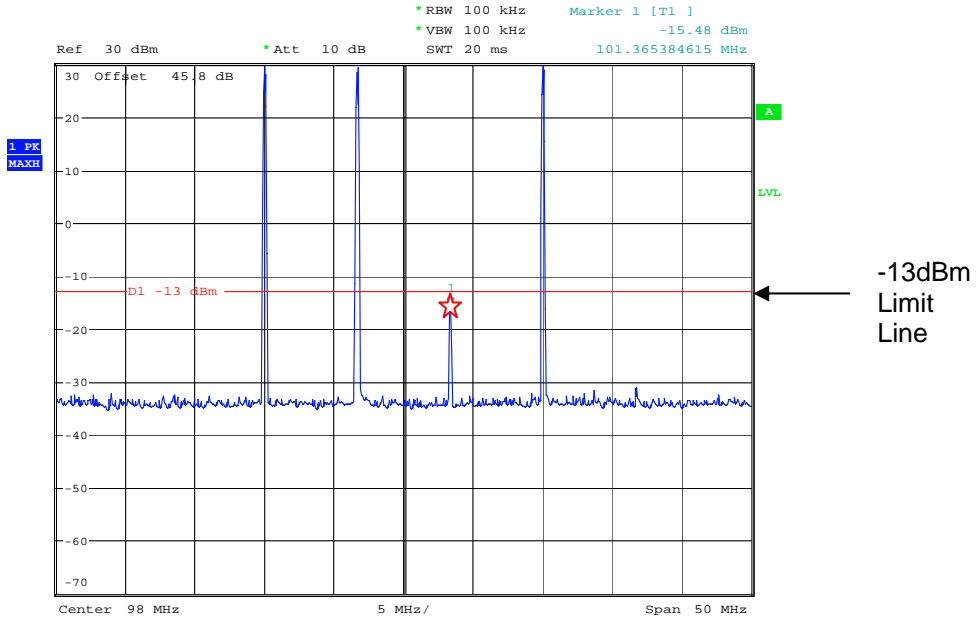
Sweep data is shown on the next page:

Test equipment used for intermodulation test

TYPE OF EQUIPMENT	MAKER/SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
SPECTRUM ANALYSER	R&S	FSU46	200034	UH281	X
SIGNAL GENERATOR	MARCONI	2042	119388/080	176	X
SIGNAL GENERATOR	MARCONI	2042	119562/021	254	X
SIGNAL GENERATOR	MARCONI	2023	112224/040	UH105	X
COMBINER	ELCOM	RC-4-50	N/A	170	X
ATTENUATOR	BIRD	8308-200-N	N/A	103	X
ATTENUATOR	SPINNER	745357	D57224	225	X
ATTENUATOR	BIRD	8304-0600n	N/A	246	X



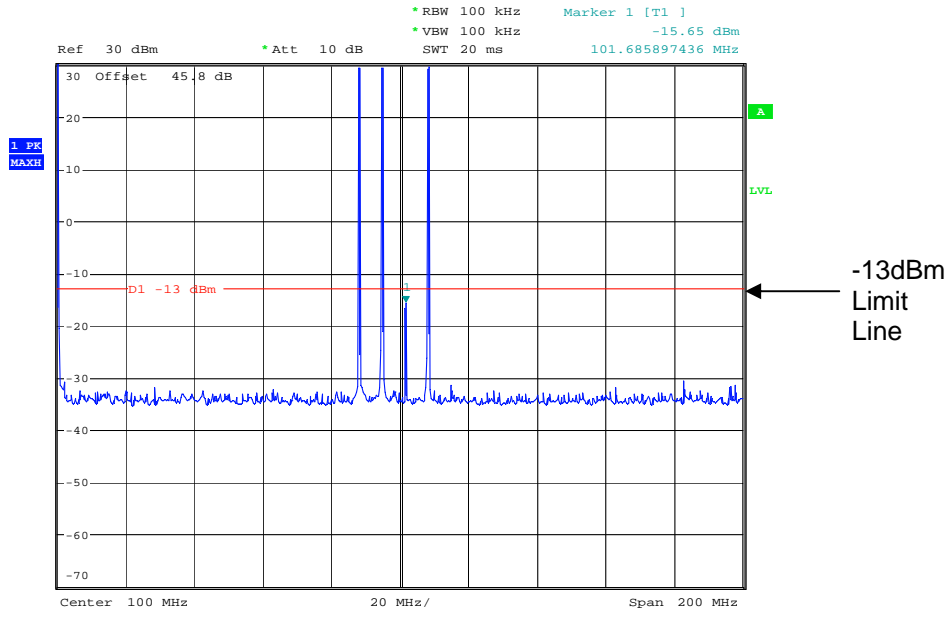
# Intermodulation Inband



Date: 29.JUL.2008 11:18:55

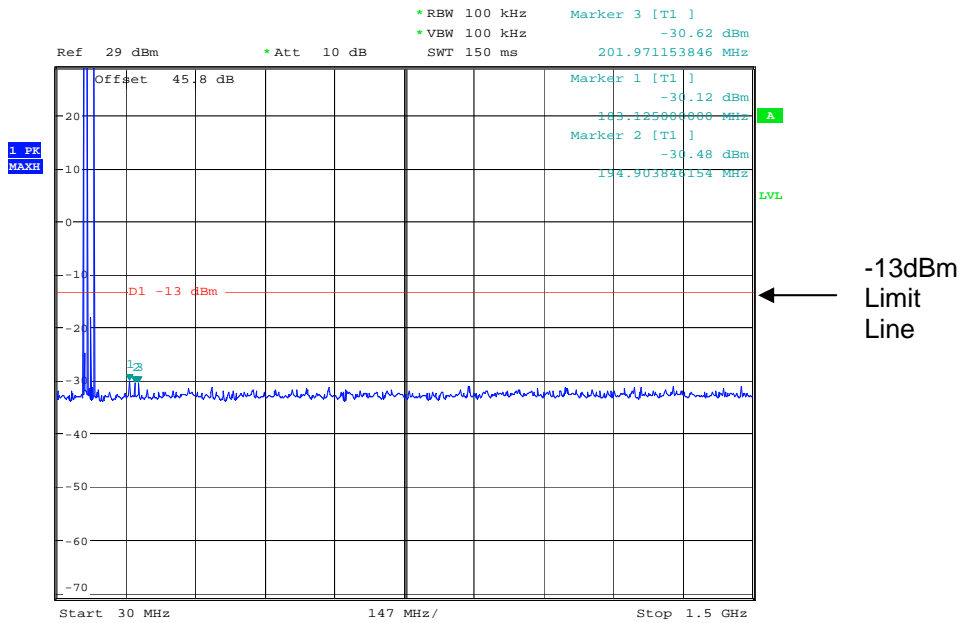
The above plot shows that all products (designated by ☆) are below the spurious limit.

# Intermodulation Wideband



Date: 29.JUL.2008 11:19:39

## Intermodulation Wideband



Date: 29.JUL.2008 11:06:47

### AMPLIFIER INTERMODULATION SPURIOUS EMISSIONS – CONDUCTED – PART 2.1053– DOWNLINK

#### RESULTS

SPURIOUS FREQUENCY	MEASURED LEVEL (dBm)	LIMIT (dBm)
183.125MHz	-30.12	-13
194.903MHz	-30.48	
201.971MHz	-30.62	

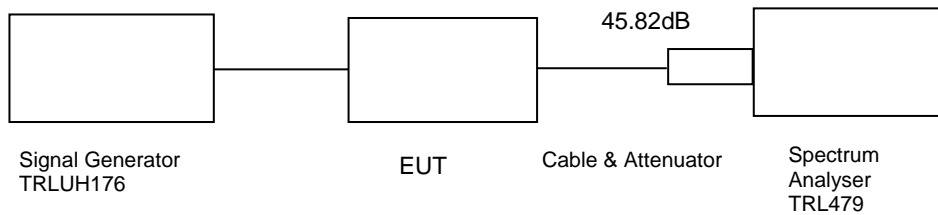
Test equipment used for intermodulation test

TYPE OF EQUIPMENT	MAKER/SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
SPECTRUM ANALYSER	R&S	FSU46	200034	UH281	X
SIGNAL GENERATOR	MARCONI	2042	119388/080	176	X
SIGNAL GENERATOR	MARCONI	2042	119562/021	254	X
SIGNAL GENERATOR	MARCONI	2023	112224/040	UH105	X
COMBINER	ELCOM	RC-4-50	N/A	170	X
ATTENUATOR	BIRD	8308-200-N	N/A	103	X
ATTENUATOR	SPINNER	745357	D57224	225	X
ATTENUATOR	BIRD	8304-0600n	N/A	246	X

**TRANSMITTER TESTS**

**AMPLIFIER MODULATED CHANNEL TEST – CONDUCTED – Part 2.1049– DOWNLINK**

Ambient temperature = 24°C Radio Laboratory  
 Relative humidity = 62%  
 Supply voltage = +110Vac  
 Channel number = See test results



This test was performed to show that the amplifier does not alter the input signal in any way. The input signal was set to the maximum input level (-11.20dBm) and modulated with a 100kHz tone. The plots show the signal measured at the signal generator and the signal measured at the output of the EUT.

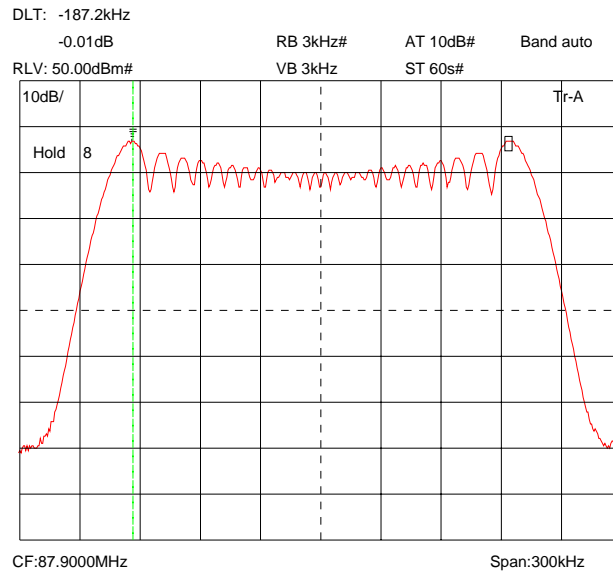
Note: The cables and attenuators had the following losses.

1. Cable and attenuator between EUT and spectrum analyser 45.82dB
2. Cable between signal generator and EUT 6.0dB

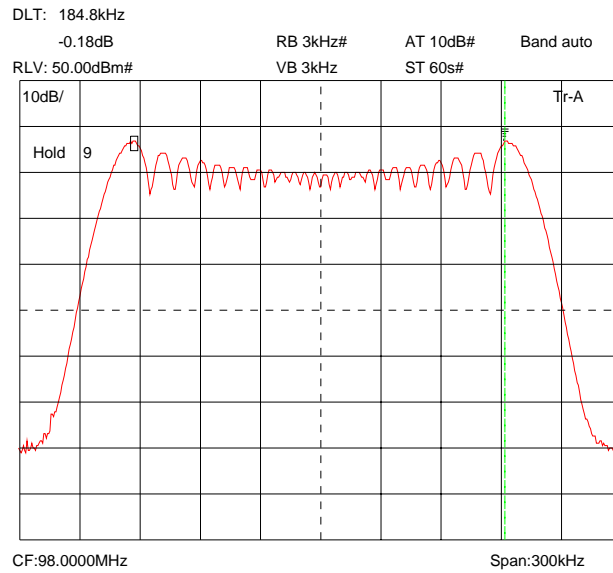
TYPE OF EQUIPMENT	MAKER/SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
ATTENUATOR	BIRD	8304-0600n	N/A	246	X
ATTENUATOR	SPINNER	745357	D57224	225	X
ATTENUATOR	BIRD	8308-200-N	N/A	103	X
SIGNAL GENERATOR	MARCONI	2042	119388/080	176	X
SPECTRUM ANALYSER	ANRITSU	MS2665C	MT26089	479	X

## Amplifier

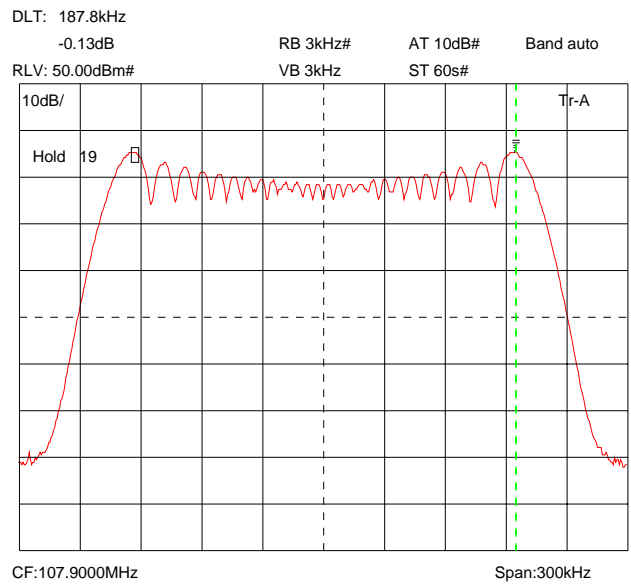
Bottom channel 87.9MHz Signal Generator and EUT, deviation set to 100.0kHz



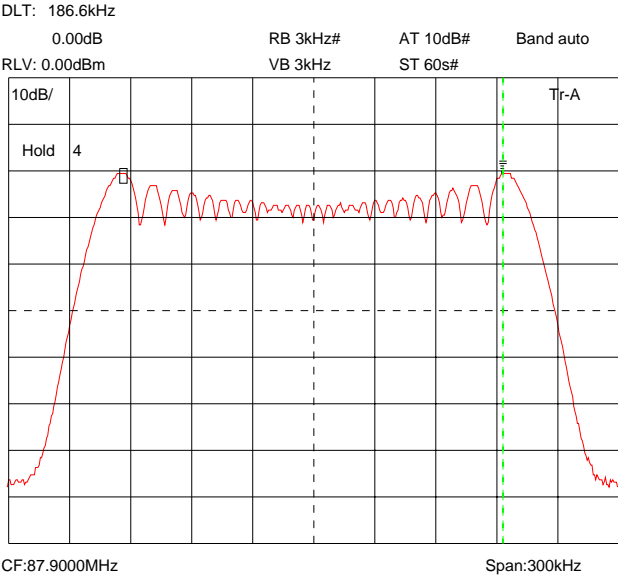
Middle channel 98.0MHz Signal Generator and EUT, deviation set to 100.0kHz



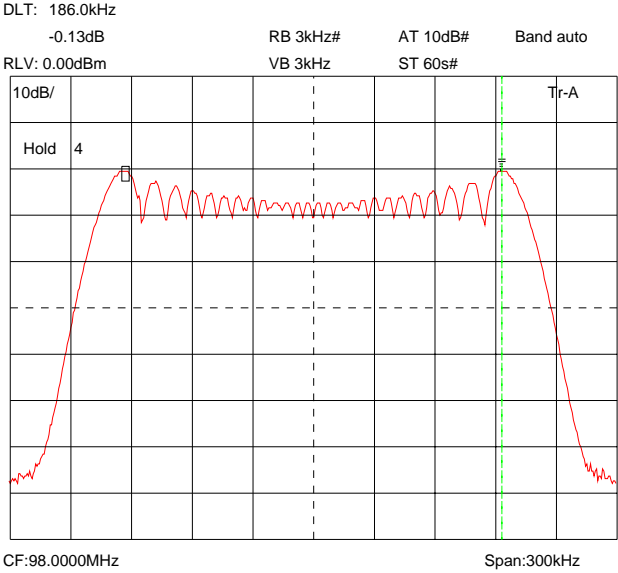
Top channel 107.9MHz Signal Generator and EUT, deviation set to 100.0kHz



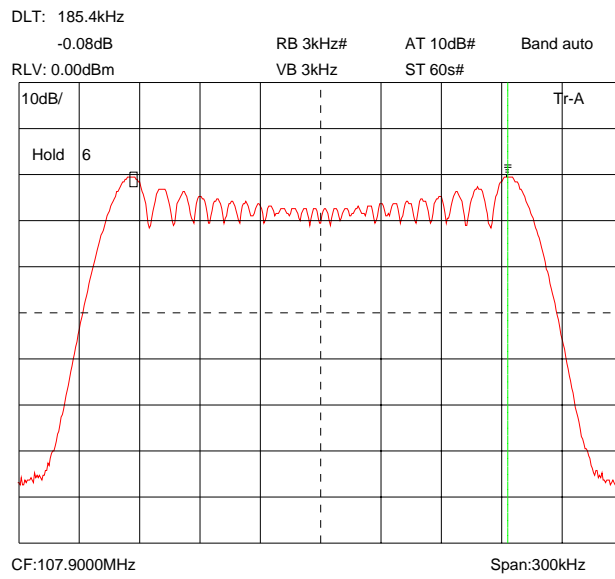
Bottom channel 87.9MHz Signal Generator, deviation set to 100.0kHz



Middle channel 98.0MHz Signal Generator, deviation set to 100.0kHz



Top channel 107.9MHz Signal Generator, deviation set to 100.0kHz



The above plots depicting the out waveshape show no measurable distortion visible when compared to the input signal.

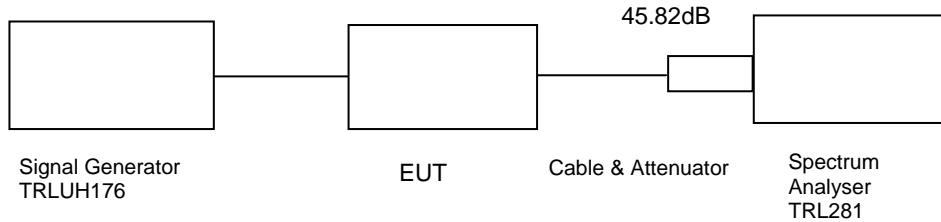


**TRANSMITTER TESTS**

**AMPLIFIER SPURIOUS EMISSIONS – CONDUCTED – Part 2.1053– DOWNLINK**

Ambient temperature = 24°C  
 Relative humidity = 63%  
 Supply voltage = +110Vac

Radio Laboratory Test Signal = F3E



The test was set up as per the diagram. The level at the input was adjusted to compensate for the loss of the interconnecting cable. The unit was tested operating at maximum power and on three test frequencies.

The Spurious limit was calculated as follows:

On any frequency removed from the assigned frequency by more that 250% of the authorised bandwidth

At least 43 + 10 log PdB

$$(10\log P_{\text{watts}}) - (43+10\log (P_{\text{watts}} * 1000)) = \text{LIMIT} = -13 \text{ dBm}$$

**RESULTS**

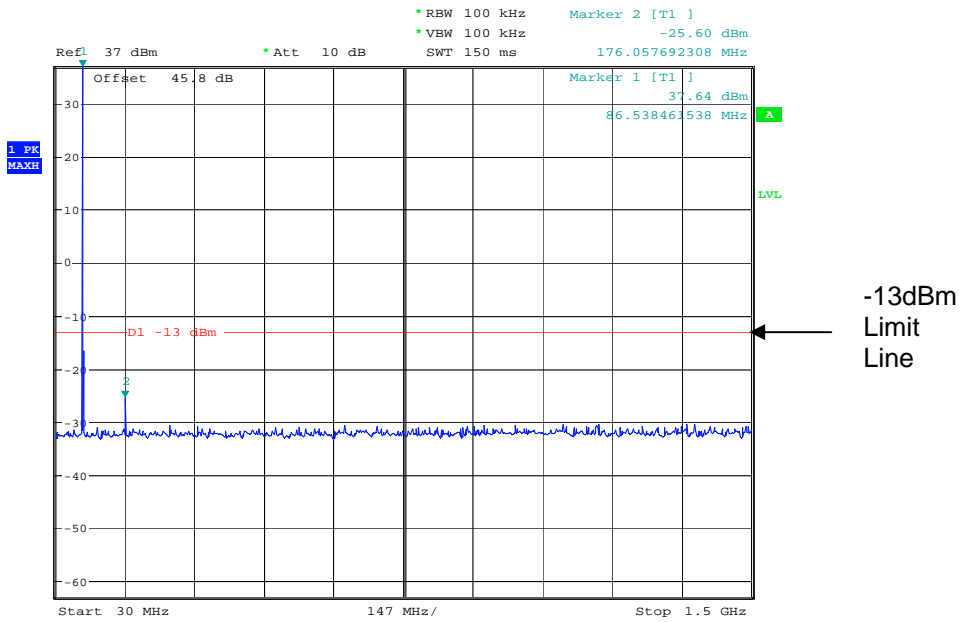
FREQUENCY (MHz)	SPURIOUS FREQUENCY (MHz)	MEASURED LEVEL (dBm)	LIMIT (dBm)
88.0	176.00	-25.04	-13
98.0	196.33	-24.84	
108.0	215.99	-25.14	

The test equipment used for the Transmitter Conducted Emissions:

TYPE OF EQUIPMENT	MAKER/SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
SPECTRUM ANALYSER	R&S	FSU46	200034	UH281	X
ATTENUATOR	SPINNER	745357	D57224	225	X
ATTENUATOR	BIRD	8308-200-N	N/A	103	X
ATTENUATOR	BIRD	8304-0600n	N/A	246	X
SIGNAL GENERATOR	MARCONI	2042	119388/080	176	X

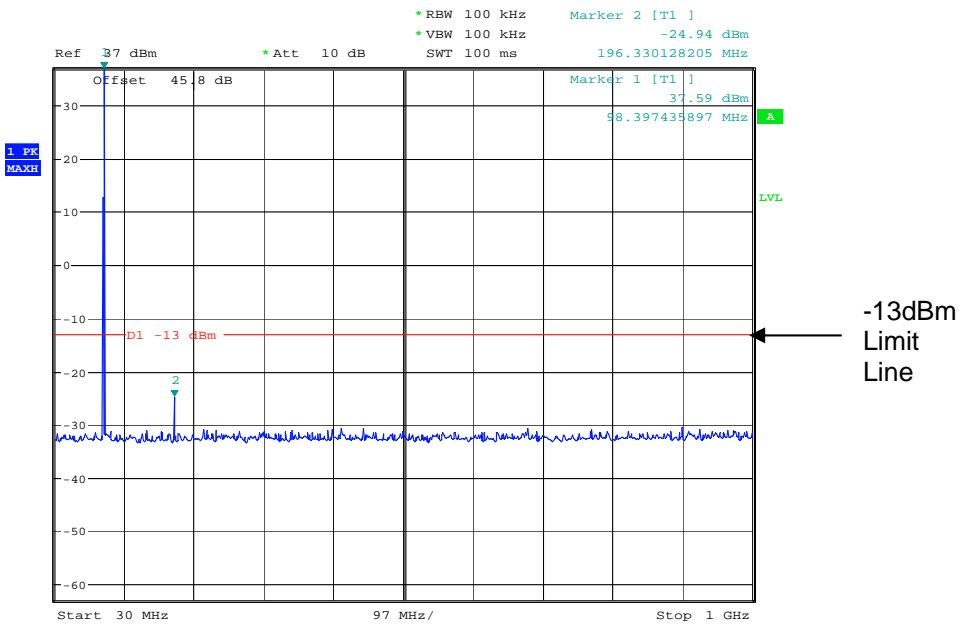
# Amplifier

Conducted emissions bottom channel 88.0MHz 30MHz – 1.5GHz



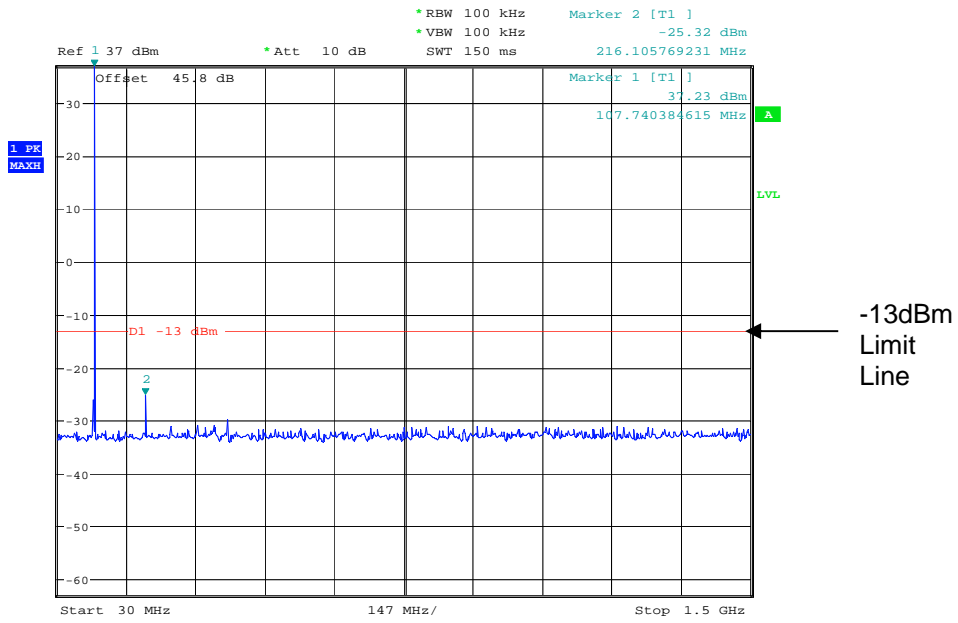
Date: 29.JUL.2008 11:37:53

Conducted emissions Middle channel 98.0MHz 30MHz – 1.5GHz



Date: 29.JUL.2008 11:41:10

# Conducted emissions Top channel 108.0MHz 30MHz 1.5GHz



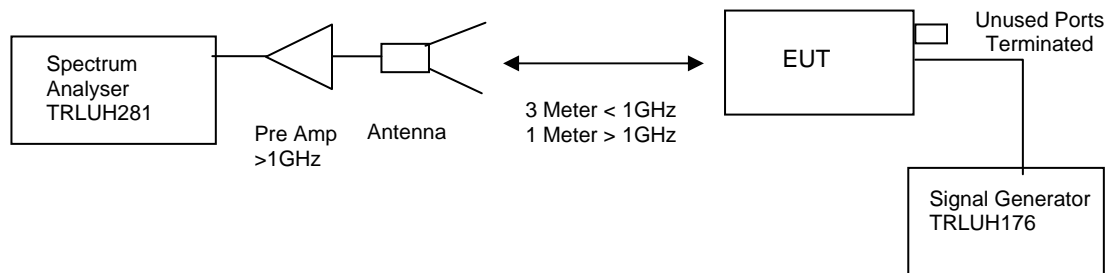
Date: 29.JUL.2008 11:43:02

## TRANSMITTER TESTS

### AMPLIFIER SPURIOUS EMISSIONS – RADIATED – Part 2.1053– DOWNLINK

Ambient temperature = 23°C  
 Relative humidity = 63%  
 Conditions = OATS  
 Supply voltage = +110Vac  
 Supply Frequency = N/A

Test Signal = F3E



The test was set up as per the diagram. The level at the input was adjusted to compensate for the loss of the interconnecting cable. The unit was tested operating maximum power on three test frequencies with a 50 ohm load on the output.

The Spurious limit was calculated as follows:

On any frequency removed from the assigned frequency by more that 250% of the authorised bandwidth

At least  $43 + 10 \log P_{dB}$

$(10 \log P_{watts}) - (43 + 10 \log (P_{watts} * 1000)) = \text{LIMIT} = -13 \text{ dBm}$

## RESULTS

FREQUENCY RANGE	FREQ. (MHz)	MEAS. Rx. (dBµV)	CABLE LOSS (dB)	ANT FACTOR	FIELD STRENGTH (dBµV/m)	CALCULATED EIRP (dBm)	LIMIT (dBm)
30MHz – 2GHz	No Significant Emissions Within 20 dB of the Limit						-13dBm

The test equipment used for the Transmitter Spurious Emissions:

TYPE OF EQUIPMENT	MAKER/SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
RECEIVER	R&S	ESVS10	825892/006	TRL04	X
HORN	EMCO	3115	9010-3580	138	X
SPECTRUM ANALYSER	R&S	FSU46	200034	UH281	X
PRE AMPLIFIER	HP	8449B	3008A016	572	X
SIGNAL GENERATOR	MARCONI	2042	119388/080	176	X
ANTENNA	YORK	CBL611/A	1618	UH191	X

Radiated E-Field Emissions

EUT: 55-203201  
 Manuf: Axell wireless Ltd  
 Op Cond: 3m Indoor Prescan MAC Chamber  
 Operator: JL  
 Test Spec: part 15  
 Comment: Unit in permanent Tx mode , bottom channel selected, max signal input.  
 Rx antenna Horizontal. Case door facing Rx antenna.  
 Result File: ps2.dat : bottom channel, antenna horizontal

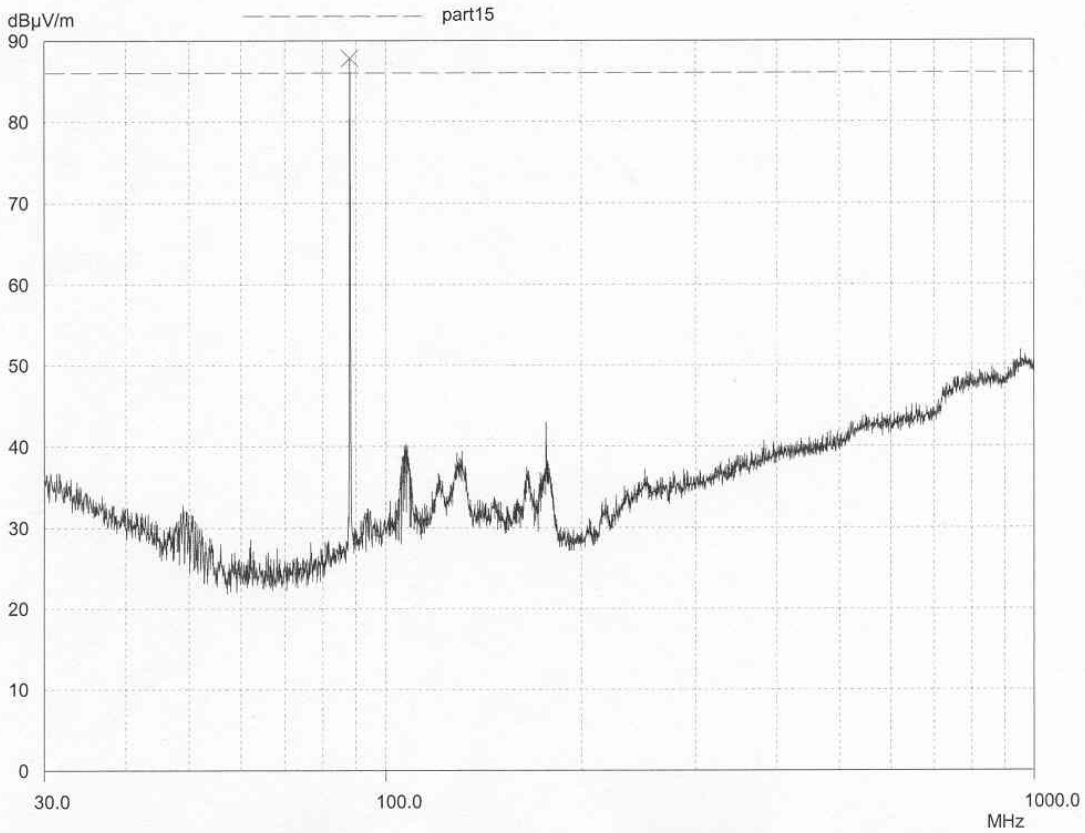
Scan Settings (1 Range)					Receiver Settings			
Frequencies		Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
Start	Stop							
30MHz	1000MHz	50kHz	120kHz	PK	1msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
3	21	30MHz	1000MHz	UH213PS
	22	30MHz	1000MHz	UH191

Prescan Measurement: Detector: X PK  
 Meas Time: see scan settings  
 Subranges: 50  
 Acc Margin: 20 dB



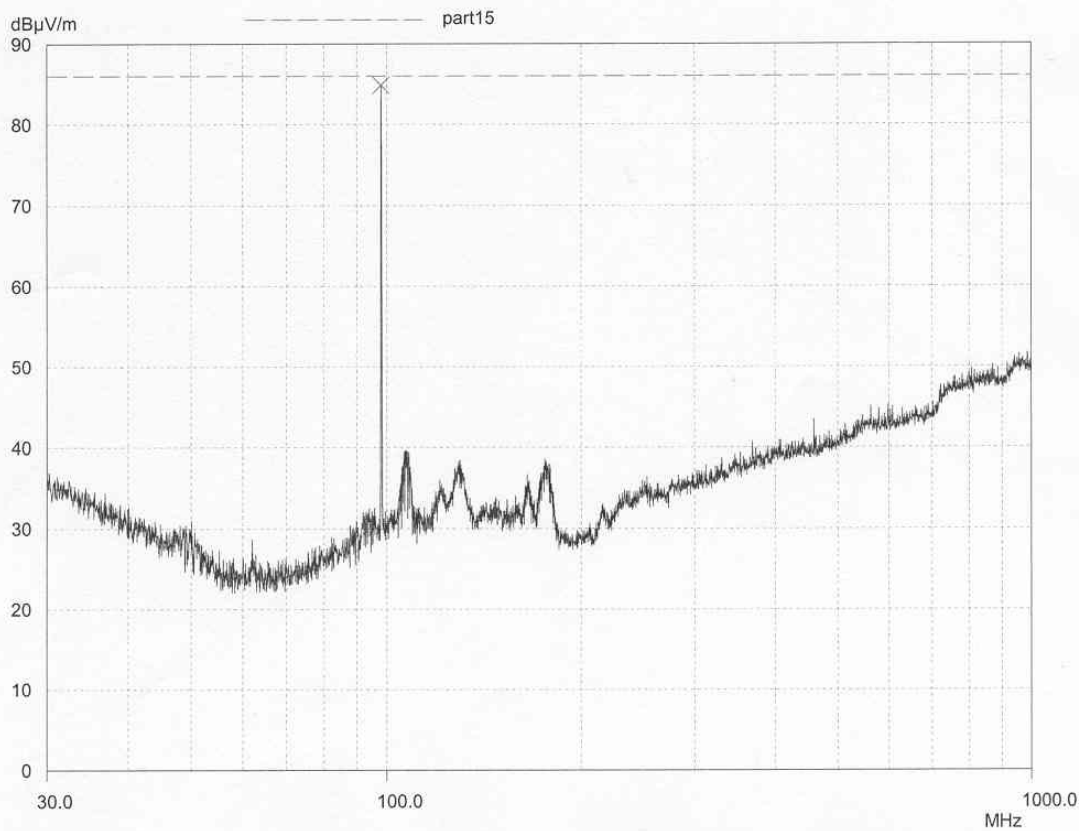
Radiated E-Field Emissions

EUT: 55-203201  
 Manuf: Axell wireless Ltd  
 Op Cond: 3m Indoor Prescan MAC Chamber  
 Operator: JL  
 Test Spec: part 15  
 Comment: Unit in permanent Tx mode , middle channel selected, max signal input.  
 Rx antenna Horizontal. Case,door facing Rx antenna.  
 Result File: ps4.dat : middle channel, antenna horizontal

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

Transducer	No.	Start	Stop	Name
3	21	30MHz	1000MHz	UH213PS
	22	30MHz	1000MHz	UH191

Prescan Measurement: Detector: X PK  
 Meas Time: see scan settings  
 Subranges: 50  
 Acc Margin: 20 dB



Radiated E-Field Emissions

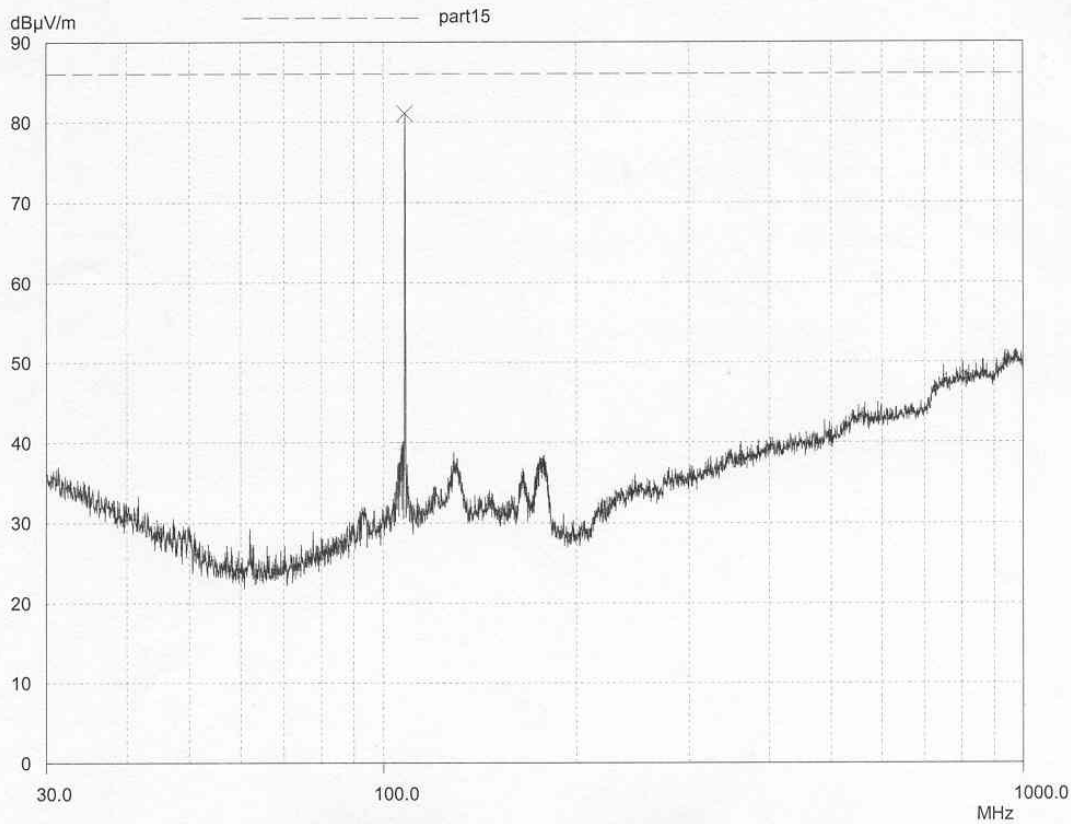
EUT: 55-203201  
 Manuf: Axell wireless Ltd  
 Op Cond: 3m Indoor Prescan MAC Chamber  
 Operator: JL  
 Test Spec: part 15  
 Comment: Unit in permanent Tx mode , Top channel selected, max signal input.  
 Rx antenna Horizontal, Case door facing Rx antenna.  
 Result File: ps6.dat : top channel, antenna horizontal

Scan Settings (1 Range)

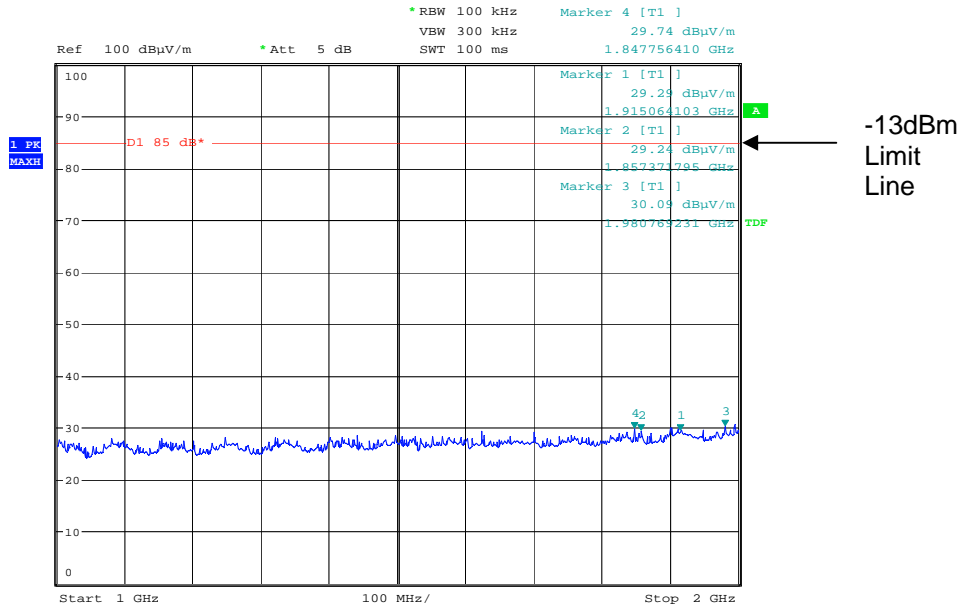
Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30MHz	1000MHz	50kHz	120kHz	PK	1msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
3	21	30MHz	1000MHz	UH213PS
	22	30MHz	1000MHz	UH191

Prescan Measurement: Detector: X PK  
 Meas Time: see scan settings  
 Subranges: 50  
 Acc Margin: 20 dB

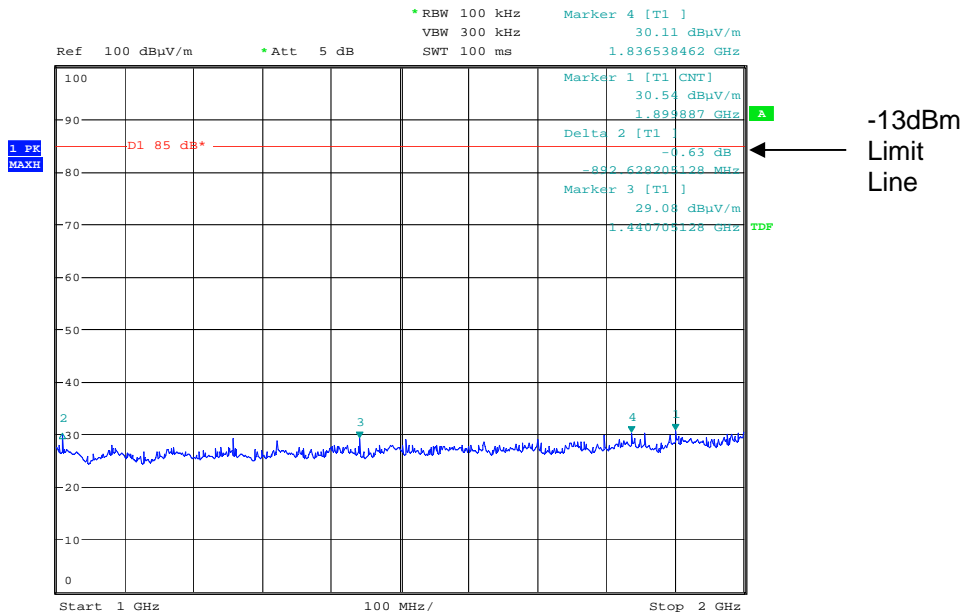


Radiated emissions bottom channel 88.0MHz 1-2GHz



Date: 21.JUL.2008 14:34:07

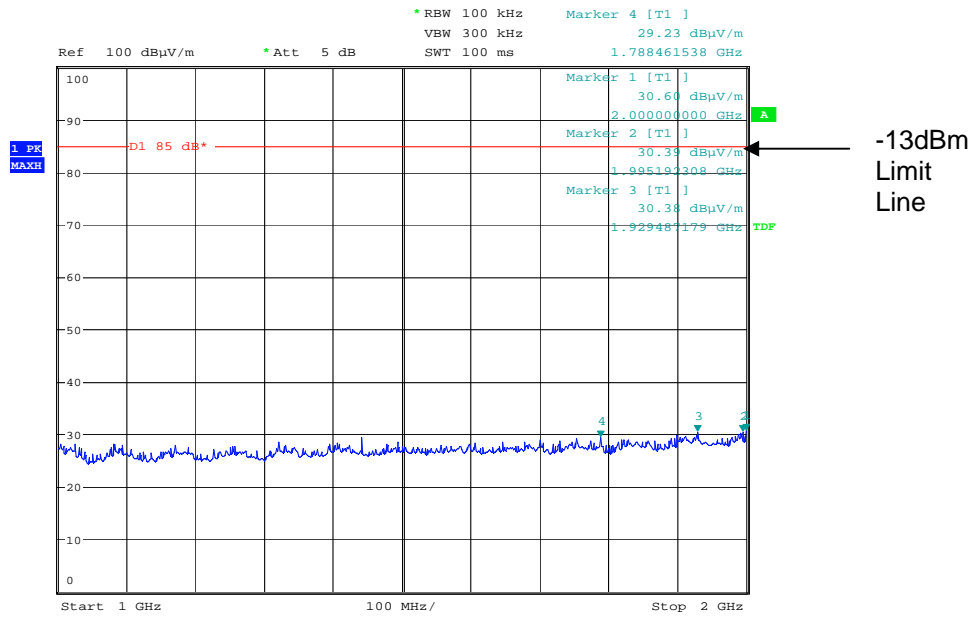
Radiated emissions Middle channel 98.0MHz 1-2GHz



Date: 21.JUL.2008 14:29:45



Radiated emissions Top channel 108.0MHz 1-2GHz



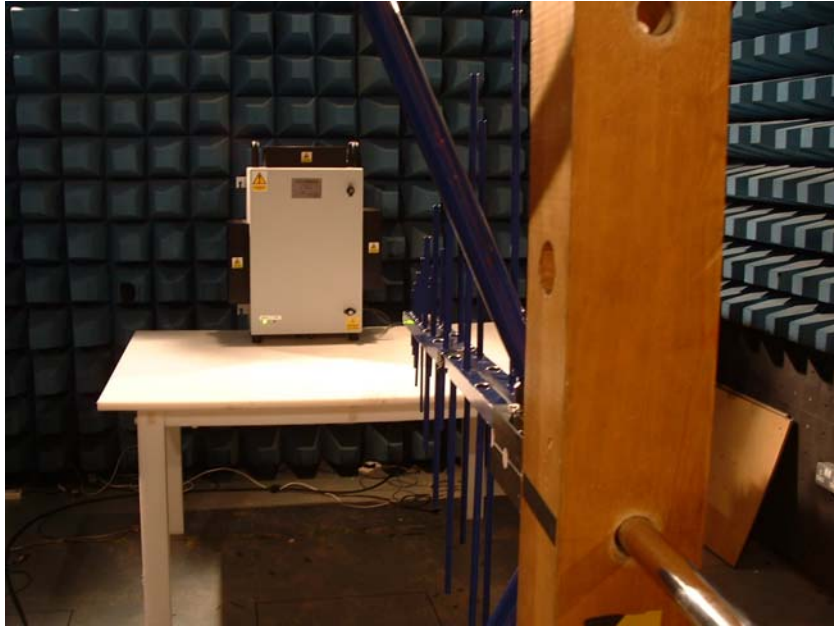
Date: 21.JUL.2008 14:28:13

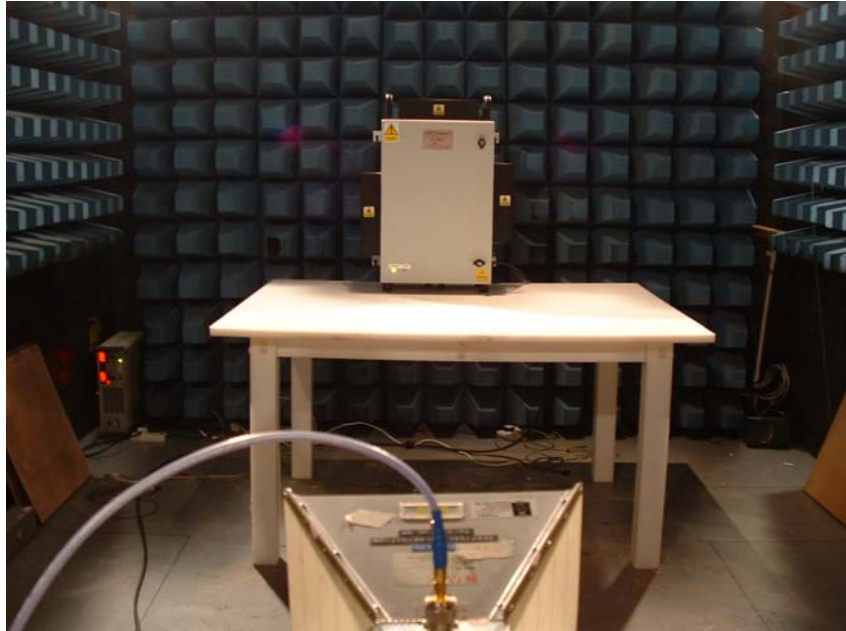
The above test results show that there were no emissions within 20dBs of the -13dBm limit.

**ANNEX A**  
**PHOTOGRAPHS**

PHOTOGRAPH No. 1

TEST SETUP





**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 NAME DECLARATION(s)	-		[ ]
e.	LABELLING	-	PHOTOGRAPHS	[X]
		-	DECLARATION	[X]
		-	DRAWINGS	[X]
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**  
**EQUIPMENT CALIBRATION**

TRL Number	Equipment Type	Manufacturer	Last Cal Calibration	Calibration Period	Due For Calibration
UH06/07	IC OATS Submission	TRL	01/06/2007	24	01/06/2009
UH006	3m Range ERP CAL	TRL	08/12/2006	12	08/12/2007
UH028	Log Periodic Ant	Schwarbeck	30/05/2007	24	30/05/2009
UH029	Bicone Antenna	Schwarbeck	22/05/2007	24	22/05/2009
UH041	Multimeter	AVOmeter	15/01/2008	12	15/01/2009
UH093	Bilog Antenna	Chase	21/05/2007	24	21/05/2009
UH105	Signal Generator	Marconi	04/06/2008	12	04/06/2009
UH162	ERP Cable Cal	TRL	02/01/2007	12	02/01/2008
UH253	1m Cable N type	TRL	18/01/2008	12	20/01/2009
UH254	1m Cable N type	TRL	18/01/2008	12	20/01/2009
UH269	1m Cable N type	TRL	18/01/2008	12	20/01/2009
UH270	1m Cable N type	TRL	18/01/2008	12	20/01/2009
UH271	1.5m Cable N type	TRL	18/01/2008	12	20/01/2009
UH272	1.5m Cable N type	TRL	18/01/2008	12	20/01/2009
UH273	2m Cable N type	TRL	18/01/2008	12	20/01/2009
UH274	2m Cable N type	TRL	18/01/2008	12	20/01/2009
UH281	Spectrum Analyser	R&S	25/10/2007	12	25/10/2008
L005	CMTA	R&S	30/10/2007	12	30/10/2008
L007	Loop Antenna	R&S	22/05/2007	24	22/05/2009
L103	Attenuator	Bird		Calibrate in Use	
L112	Attenuator	Bird		Calibrate in Use	
L138	1-18GHz Horn	EMCO	23/05/2007	24	23/05/2009
L139	1-18GHz Horn	EMCO	23/05/2007	24	23/05/2009
L170	Combiner	Elcom		Calibrate in Use	
L176	Signal Generator	Marconi	06/06/2008	12	06/06/2009
L220	Attenuator	Bird		Calibrate in Use	
L426	Temperature Indicator	Fluke	22/01/2008	12	22/01/2009
L479	Analyser	Anritsu	11/12/2007	12	11/12/2008
L572	Pre Amplifier	HP		Calibrate in Use	
TRL254	Signal Generator	Marconi	04/06/2008	12	04/06/2009
TRL225	Attenuator	Spinner		Calibrate in Use	
TRL246	Attenuator	Bird		Calibrate in Use	
UH191	Bilog Antenna	Chase	11/08/2006	24	11/08/2008



**ANNEX D**  
**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**

**[12] Spectrum Mask Measurements**

Uncertainty in test result = **2.59% (frequency)**  
Uncertainty in test result = **1.32dB (amplitude)**

**[13] Adjacent Sub Band Selectivity**

Uncertainty in test result = **1.24dB**

**[14] Receiver Blocking – Listen Mode, Radiated**

Uncertainty in test result = **3.42dB**

**[15] Receiver Blocking – Talk Mode, Radiated**

Uncertainty in test result = **3.36dB**

**[16] Receiver Blocking – Talk Mode, Conducted**

Uncertainty in test result = **1.24dB**

**[17] Receiver Threshold**

Uncertainty in test result = **3.23dB**

**[18] Transmission Time Measurement**

Uncertainty in test result = **7.98%**