dB Technology
(Cambridge Ltd.)

EMC Testing | EMC Consultancy | EMC Training

23, Headington Drive,
Cambridge.
CB1 9HE
Tel : 01954 251974 (test site)
or : 01223 241140 (accounts)
Fax : 01954 251907
web : www.dbtechnology.co.uk
email: mail@dbtechnology.co.uk

REPORT ON ELECTROMAGNETIC COMPATIBILITY TESTS

Performed at:
TWENTY PENCE TEST SITE

Twenty Pence Road,
Cottenham,
Cambridge
U.K.
CB24 8PS

on

Raspberry Pi (Trading) Ltd

Raspberry Pi

dated

9th December 2013

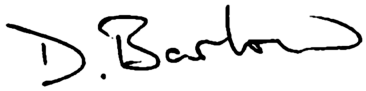
Document History

Issue	Date	Affected page(s)	Description of modifications	Revised by	Approved by
1	09/12/13		Initial release		

Based on report template:
v090319

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

Equipment Under Test (EUT):	Raspberry Pi
Test Commissioned by:	Raspberry Pi (Trading) Ltd Mount Pleasant House Mount Pleasant Cambridge Cambridgeshire CB3 0RN
Representative:	Gordon Hollingworth
Test Started:	7th December 2013
Test Completed:	8th December 2013
Test Engineer:	Dave Smith
Date of Report:	9th December 2013

Written by:	Dave Smith	Checked by:	Derek Barlow
Signature:		Signature:	
Date:	9th December 2013	Date:	9th December 2013

dB Technology can only report on the specific unit(s) tested at its site. The responsibility for extrapolating this data to a product line lies solely with the manufacturer.

Test Standards Applied

CFR 47 **Class B**	*Code of Federal Regulations: Pt 15 Subpart B- Radio Frequency Devices - Unintentional Radiators*

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

Emissions Test Results Summary

CFR 47 **PASS**

Test	Port	Method	Limit	PASS/FAIL	*Notes*
Conducted Emissions	ac power	ANSI C63.4:2003	FCC_B	PASS	
Radiated Emissions		ANSI C63.4:2003	FCC_B	PASS	

specs_fccv100412

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

Contents

1 EUT Details 5
1.1 General 5
1.2 Modifications to EUT and Peripherals 6
1.3 EUT Operating Modes 6
Figure 1 Arrangement of EUT and Peripherals - HDMI Mode 7
1.4 Details of Interconnecting Cables - HDMI Mode 7
Figure 2 Arrangement of EUT and Peripherals - Composite Mode 8
1.5 Details of Interconnecting Cables - Composite Mode 8
Photograph 1 Conducted Emissions - Front, HDMI 9
Photograph 2 Conducted Emissions - Back, HDMI 9
Photograph 3 Conducted Emissions - Front , Composite Video 10
Photograph 4 Conducted Emissions - Back, Composite Video 10
Photograph 5 Radiated Emissions - HDMI 11
Photograph 6 Radiated Emissions - HDMI 11
Photograph 7 Radiated Emissions - Composite Video 12
Photograph 8 Radiated Emissions - Composite Video 12
Photograph 9 Radiated Emissions - HDMI 13
Photograph 10 Radiated Emissions - Composite Video 13
2 Test Equipment 14
3 Test Methods 15
3.1 Conducted Emissions - ac power 15
3.2 Radiated Emissions 15
4 Test Results 15
4.1 Conducted Emissions (Power) - HDMI Results 16
4.2 Conducted Emissions (Power) - Composite Video Results 17
4.3 Radiated Emissions Results - HDMI mode; <1GHz - Vertical 18
4.4 Radiated Emissions Results - HDMI mode; <1GHz - Horizontal 19
4.5 Radiated Emissions Results - Composite Video mode; <1GHz - Vertical 20
4.6 Radiated Emissions Results - Composite Video mode; <1GHz - Horizontal 21
4.7 Radiated Emissions Results - HDMI mode; >1GHz - Vertical 22
4.8 Radiated Emissions Results - HDMI mode; >1GHz - Horizontal 23
4.9 Radiated Emissions Results - Composite Video mode; >1GHz - Vertical 24
4.10 Radiated Emissions Results - Composite Video mode; >1GHz - Horizontal 25
PLOT 1 Conducted Emissions - HDMI - Live 26
PLOT 2 Conducted Emissions - HDMI - Neutral 27
PLOT 3 Conducted Emissions - Composite - Live 28
PLOT 4 Conducted Emissions - Composite - Neutral 29
PLOT 5 Radiated Emissions - 25MHz to 275MHz - HDMI 30
PLOT 6 Radiated Emissions - 250MHz to 1GHz - HDMI 31
PLOT 7 Radiated Emissions - 1GHz to 3GHz - HDMI 32
PLOT 8 Radiated Emissions - 3GHz to 5GHz - HDMI 33
PLOT 9 Radiated Emissions - 25MHz to 275MHz - Composite Video 34
PLOT 10 Radiated Emissions - 250MHz to 1GHz - Composite Video 35
PLOT 11 Radiated Emissions - 1GHz to 3GHz - Composite Video 36
PLOT 12 Radiated Emissions - 3GHz to 5GHz - Composite Video 37

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

1 EUT Details

1.1 General

The EUT was a Raspberry Pi single board computer. It was uncased and powered from a mini USB style plugtop power supply.

It had two USB ports, an EtherNet port, an HDMI port, a stereo audio output socket and an RCA composite video output socket. The EUT also has a socket for an SD card which contains the operating system. The system was tested in two modes - one with EtherNet and HDMI and both USB interfaces connected and one with the audio and composite video connected instead of the HDMI.

It is designed to be used primarily by hobbyists or in places of education. The circuitry operates with a maximum clock frequency of 700MHz.

Details of the EUT and associated peripherals used during the tests are listed below. Figure 1 shows the interconnections between the EUT and peripherals.

Item	Manufacturer	Model	Description	Serial No:	FCC Status
1	Raspberry Pi	Raspberry Pi	SBC with element14 4GB SD Card	PCB Rev 2.4	EUT
2	Stontronics	DSA-12CA-05	5V 2A PSU	none	#1
3	Microsoft	Keyboard 600	Keyboard	0065806454108	DoC
4	Microsoft	Model 1480	Express Mouse	none	DoC
5	D Link	DES-1008D	EtherNet Switch	B2A714C003282	DoC
6	D-Link	071-AD	7.5V 1A PSU	none	#1
7	Hyundai	Q321	Monitor with Composite Input	Q321SABT65E06220	PJILT32DW000
8	HP	Pavilion 22xi	Monitor with HDMI input	3CM33709CB	DoC
9	Liteon	PA-1041-91	19V 2.1A PSU	L21335001302	#1

#1 PSU so FCC ID or DoC not required

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

1.2 Modifications to EUT and Peripherals

Details of any modifications that were required to achieve compliance are listed below. The modification numbers are referred to in the results sections as appropriate.

Mod No:	Details	Implemented for
1	As supplied 26th November 2013, with Ethernet mag jack shell bonded to GND plane. PCB changed to Rev 2.4.	Radiated emissions

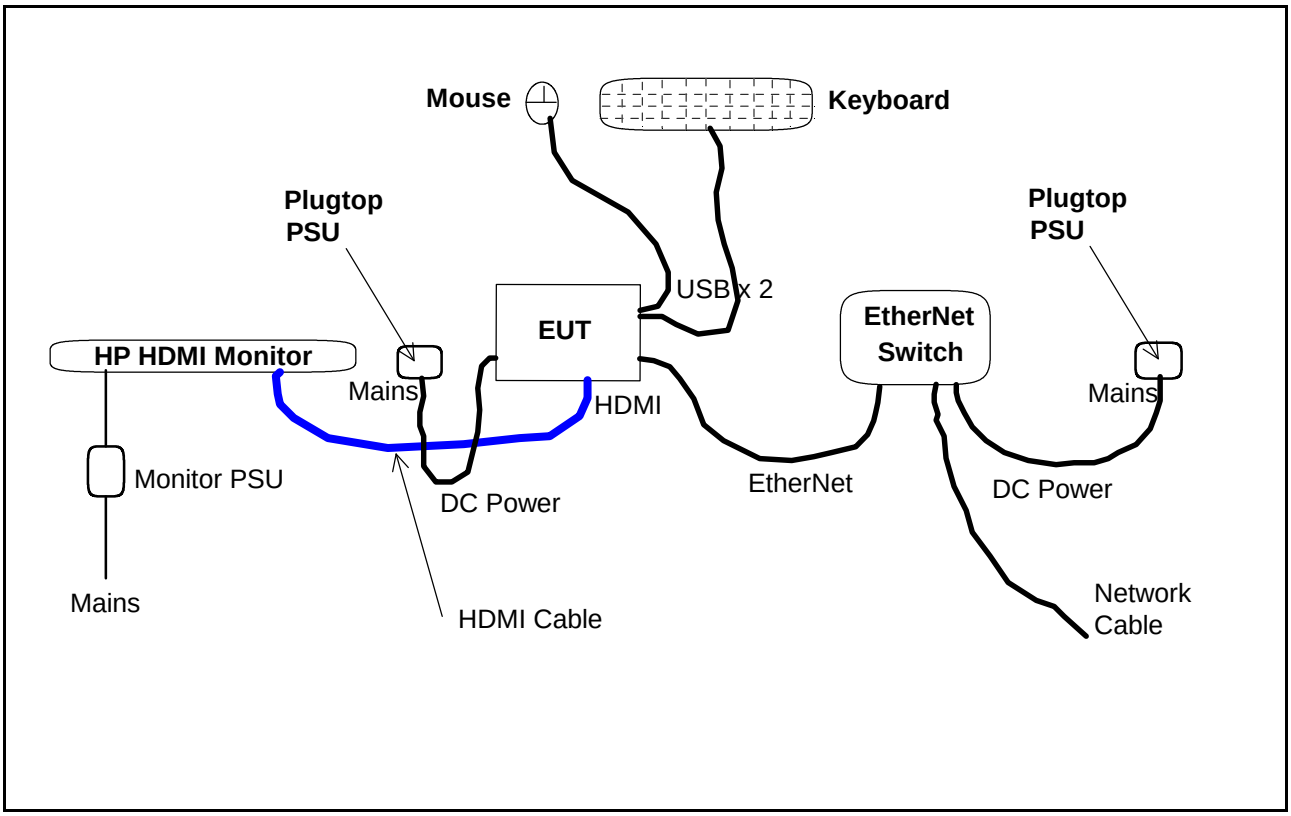
1.3 EUT Operating Modes

The EUT was tested in the following operating mode or modes. Generally, operating modes are chosen that will exercise the functions of the EUT as fully as possible and in a manner likely to produce maximum emission levels or susceptibility. Individual test result sheets reference the operating mode of the EUT.

Operating Mode	Details
1	HDMI mode, running program to read / write memory whilst scrolling H's on the screen.
2	Composite mode, running program as above.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

Figure 1 Arrangement of EUT and Peripherals - HDMI Mode



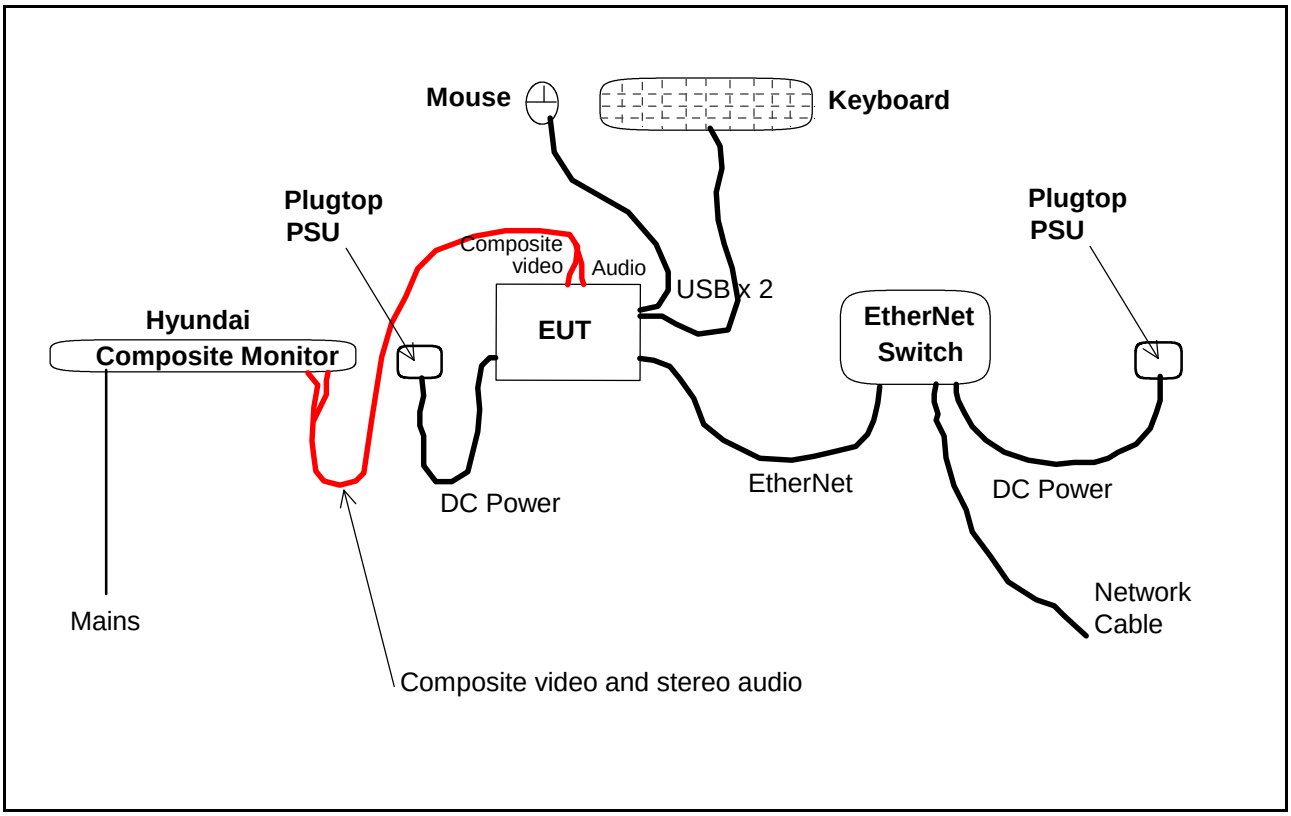
1.4 Details of Interconnecting Cables - HDMI Mode

The following table lists details of the cables connected to the EUT.

From	To	Cable Type	Length	Notes
Mains adapter	EUT micro USB	DC twin unscreened	1.5m	
EUT USB	Keyboard	Integrated keyboard cable	1.5m	
EUT USB	Mouse	Integrated mouse cable	0.9m	
EUT Ethernet	Ethernet Switch	Ethernet SSTP	1m	
Ethernet Switch	PSU	DC twin unscreened	1.8m	
EUT HDMI	HDMI Monitor	Lindy Gold	1m	
HDMI Monitor	Monitor PSU	DC Co-ax	1m	
Monitor PSU	Mains	AC three core	1.8m	

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

Figure 2 Arrangement of EUT and Peripherals - Composite Mode

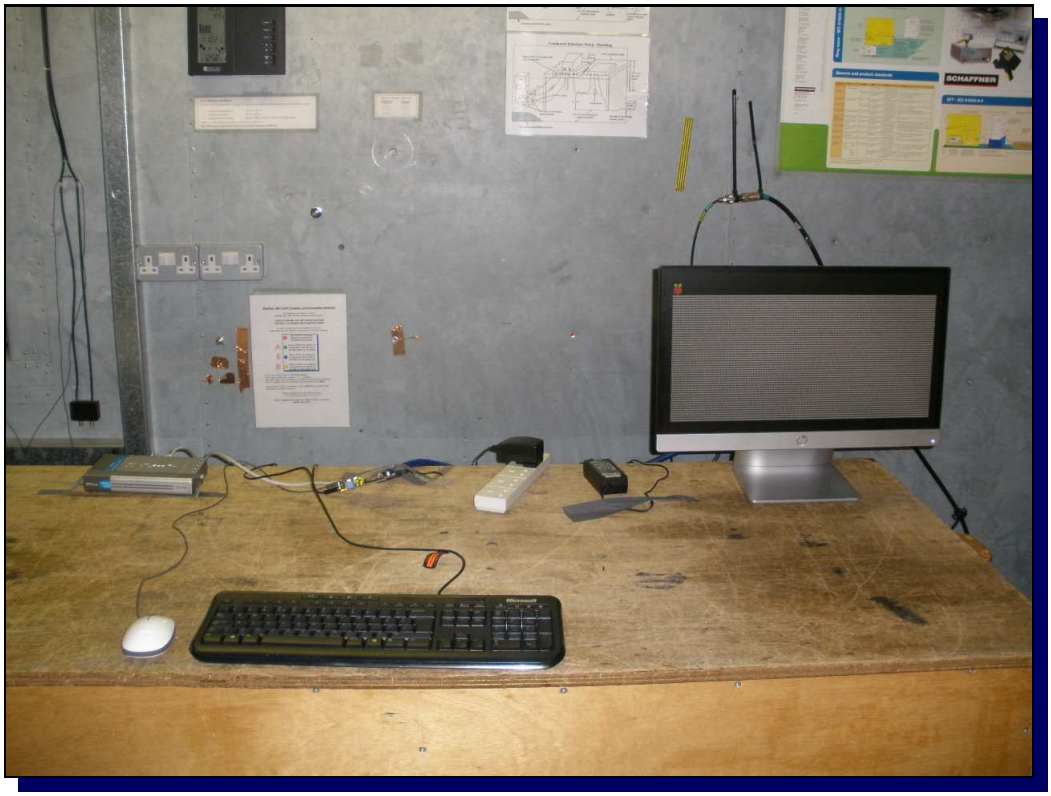


1.5 Details of Interconnecting Cables - Composite Mode

The following table lists details of the cables connected to the EUT.

From	To	Cable Type	Length	Notes
Mains adapter	EUT micro USB	DC twin unscreened	1.5m	
EUT USB	Keyboard	Integrated keyboard cable	1.5m	
EUT USB	Mouse	Integrated mouse cable	0.9m	
EUT Ethernet	Ethernet Switch	Ethernet SSTP	1m	
Ethernet Switch	PSU	DC twin unscreened	1.8m	
EUT Composite	Monitor Composite	Video co-ax	1.4m	
EUT Audio L + R	Monitor Audio	Audio twin co-ax	1.4m	
Monitor	Mains	AC three core	1.8m	

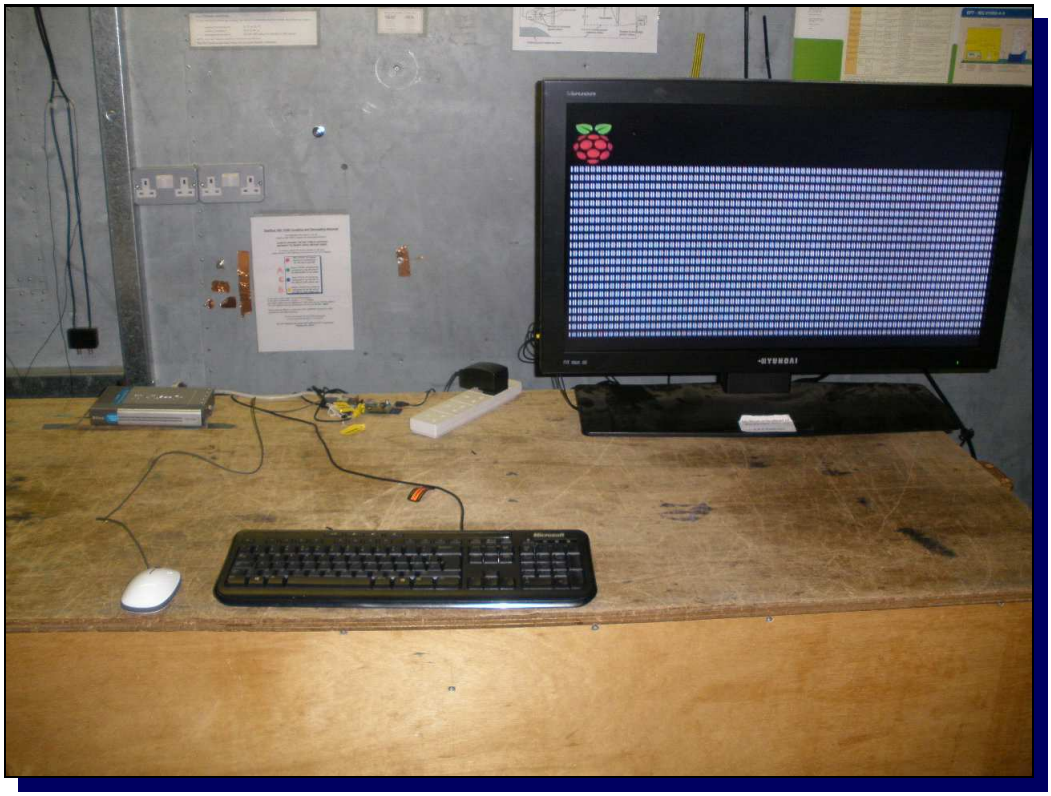
This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



Photograph 1 Conducted Emissions - Front, HDMI

Photograph 2 Conducted Emissions - Back, HDMI

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



Photograph 3 Conducted Emissions - Front , Composite Video

Photograph 4 Conducted Emissions - Back, Composite Video

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

Photograph 5 Radiated Emissions - HDMI

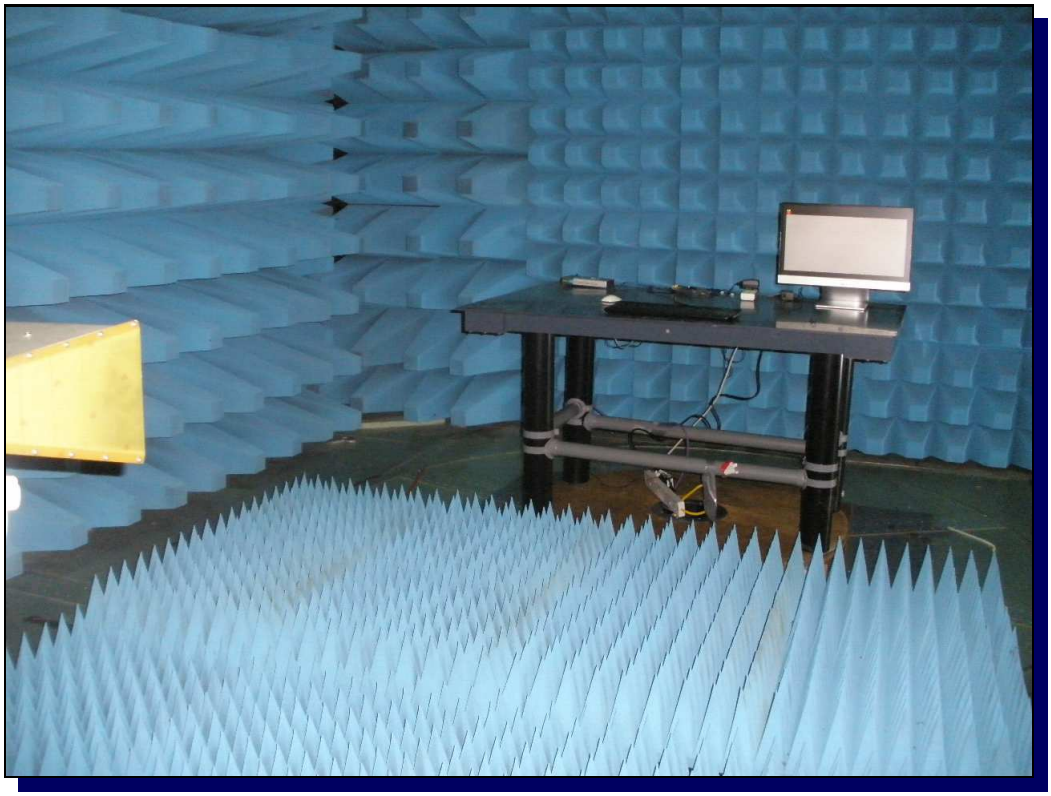
Photograph 6 Radiated Emissions - HDMI

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

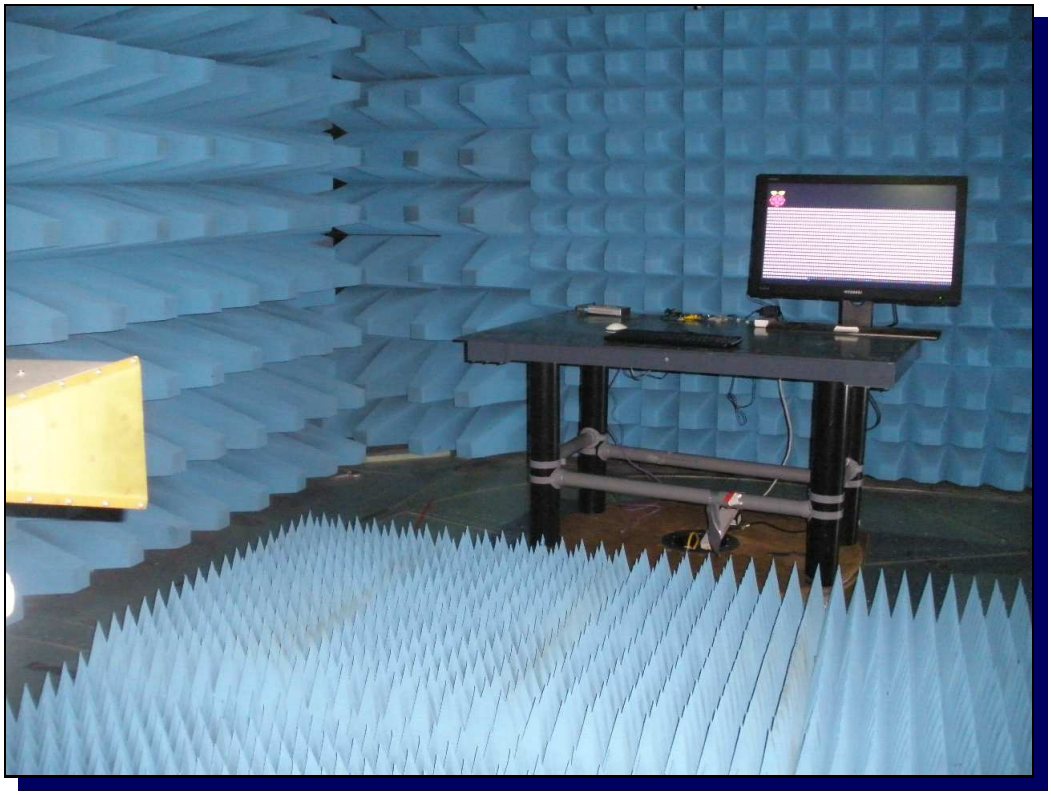
Photograph 7 Radiated Emissions - Composite Video

Photograph 8 Radiated Emissions - Composite Video

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



Photograph 9 Radiated Emissions - HDMI



Photograph 10 Radiated Emissions - Composite Video

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

2 Test Equipment

The test equipment used during the tests was one or more of the items listed below. Individual test result sheets indicate which items were used.

Ref No:	Details	Serial Number	Cal Date	Cal Interval
A12	Chase Bilog CBL6111A	1012	30/01/2013	1 year
A24	Chase X-wing Bilog CBL6144 26MHz-3GHz	27590	28/10/2013	1 year
A8	EMCO 3115 DR Guide	6070	30/01/2013	1 year
L1	EMCO 3825/2 LISN	1358	12/03/2013	1 year
L2	R&S ESH3-Z5 LISN	843862/009	12/03/2013	1 year
PRE10	LUCIX 100M-20G pre-amp	10	20/08/2013	1 year
R10	Narda PMM 9010 Receiver (10Hz-30MHz)	595WX11003	30/01/2013	1 year
R4	R&S ESVS10	843744/002	17/12/2012	1 year
R9	Agilent E7405A Spectrum Analyser	MY45110758	19/11/2013	1 year

1

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

3 Test Methods

3.1 Conducted Emissions - ac power

This section describes the general method of performing this test. The specific method used and any deviations from this general method are listed in the appropriate results section.

Bench top EUTs and peripheral equipment are normally placed on a 0.8m high non-conducting bench, positioned 0.4m from one of the metallic walls of a screened room. Floor standing EUTs are normally placed 0.1m above the metallic floor of the screened room. Mains leads are bundled so as not to exceed 1m.

The EUT is powered using a 50ohm/50uH Line Impedance Stabilisation Network (LISN). Peripherals are powered using a second a 50ohm/50uH LISN. These LISNs are bonded to the screened room floor.

With the correct supply voltage applied to the EUT scans are performed on both the live and neutral line outputs of the LISN using quasi-peak detection over the specified frequency range. The results of these scans are shown in the plots section at the end of the report.

Significant emissions identified by the scans are measured and the results tabulated. The table of results is shown in the conducted emissions results section.

Final Level (dBuV)	=	Receiver Reading (dBuV)	+	Combined Cable & Attenuator Correction Factor (dB)

Example: if, @ 191kHz, receiver reading was 35.8dBuV

Final Level = 45.8 + 10.0 = 55.8 dBuV

3.2 Radiated Emissions

Initial scans are performed in a semi-anechoic screened room at a distance of 3m. Scans are performed over the frequency range specified in the test standard with the antenna both horizontally and vertically polarised. During these scans the EUT and peripherals are rotated through 360°. Bench top EUTs are placed on a non-conducting bench at a height of 0.8m above the ground plane. Floor standing EUTs are placed 0.1m above the ground plane. The EUT cables were manipulated in an attempt to produce maximum emissions. The results of the scans are shown in the plots included at the end of the report.

Significant emissions identified by the scans are measured on an open area test site at the appropriate test distance. Maximised readings are obtained by rotating the EUT through 360° and adjusting the height of the antenna from 1m to 4m. Measurements are made with the antenna both horizontally and vertically polarised and the results tabulated.

Tabulated results show levels based on the following calculation:

Field Strength (dBuV) = receiver reading (dBuV) + CF (dB/m)

CF is the correction factor for the antenna and cable.

For example: if, at 114MHz, receiver reading was 17.9 dBuV, combined correction factor = 13.1 (dB/m).

Total field strength = 17.9 + 13.1 = 31.0 dBuV/m.

4 Test Results

The following sections contain tabulated test results. Plots of various scans are included at the back of this section.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.1 Conducted Emissions (Power) - HDMI Results

Factor Set 1: L1_13A AB002_CBL005_CBL039_12A - -
Factor Set 2: - - - -
Factor Set 3: - - - -
Test Equipment: R10 L1 CSET001 L2

Conducted Emissions (Power)

Company: Raspberry Pi (Trading) Ltd *Product:* Raspberry Pi
Date: 08/12/2013 *Test Eng:* Dave Smith
Ports: ac power
Test: ANSI C63.4:2003 using limits of FCC B
Ports:
Test: using limits of

Plot	Op Mode	Mod State	Line (L/N)	Fact Set	Freq. MHz	Det qp/ av	Rec. Level dBuV	Corr'n Factor dB	Total Level dBuV	Limit FCC_B dBuV	Margin FCC_B dB	Notes
1	1	1	L	1	0.160	qp	28.8	10.0	38.8	65.5	26.7	
1	1	1	L	1	0.160	av	22.3	10.0	32.3	55.5	23.2	
1	1	1	L	1	0.315	qp	30.4	10.0	40.4	59.8	19.5	
1	1	1	L	1	0.315	av	27.7	10.0	37.6	49.8	12.2	
1	1	1	L	1	0.355	qp	27.8	9.9	37.7	58.8	21.1	
1	1	1	L	1	0.355	av	25.8	9.9	35.7	48.8	13.1	
1	1	1	L	1	4.000	qp	28.0	10.0	38.1	56.0	17.9	
1	1	1	L	1	4.000	av	19.7	10.0	29.7	46.0	16.3	
1	1	1	L	1	4.225	qp	27.9	10.0	38.0	56.0	18.0	
1	1	1	L	1	4.225	av	21.6	10.0	31.6	46.0	14.4	
1	1	1	L	1	6.545	qp	32.8	10.1	42.9	60.0	17.1	
1	1	1	L	1	6.545	av	26.4	10.1	36.5	50.0	13.5	
2	1	1	N	1	0.155	qp	32.8	10.0	42.7	65.7	23.0	
2	1	1	N	1	0.155	av	27.6	10.0	37.5	55.7	18.2	
2	1	1	N	1	0.353	qp	33.6	9.9	43.6	58.9	15.3	
2	1	1	N	1	0.353	av	33.6	9.9	43.6	48.9	5.3	
2	1	1	N	1	0.420	qp	27.0	10.0	36.9	57.4	20.5	
2	1	1	N	1	0.420	av	23.6	10.0	33.6	47.4	13.9	
2	1	1	N	1	4.000	qp	28.7	10.0	38.7	56.0	17.3	
2	1	1	N	1	4.000	av	22.6	10.0	32.6	46.0	13.4	
2	1	1	N	1	4.230	qp	30.8	10.0	40.9	56.0	15.1	
2	1	1	N	1	4.230	av	24.6	10.0	34.7	46.0	11.3	
2	1	1	N	1	6.765	qp	32.9	10.1	43.0	60.0	17.0	
2	1	1	N	1	6.765	av	27.1	10.1	37.2	50.0	12.8	

Results	**Minimum Margin**	**5.3 dB**	
	PASS/FAIL	**PASS**	

Notes	Comments and Observations
	Results of scans are shown in plots 1 to 2. HDMI video mode. Measured with 9kHz bandwidth QP and linear average detectors.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.2 Conducted Emissions (Power) - Composite Video Results

Factor Set 1: L1_13A AB002_CBL005_CBL039_12A - -
Factor Set 2: - - - -
Factor Set 3: - - - -
Test Equipment: R10 L1 CSET001 L2

Conducted Emissions (Power)

Company: Raspberry Pi (Trading) Ltd *Product:* Raspberry Pi
Date: 08/12/2013 *Test Eng:* Dave Smith
Ports: ac power
Test: ANSI C63.4:2003 using limits of FCC B
Ports:
Test: using limits of

Plot	Op Mode	Mod State	Line (L/N)	Fact Set	Freq. MHz	Det qp/ av	Rec. Level dBuV	Corr'n Factor dB	Total Level dBuV	Limit FCC_B dBuV	Margin FCC_B dB	Notes
3	2	1	L	1	0.151	qp	28.5	10.0	38.4	66.0	27.5	
3	2	1	L	1	0.151	av	18.7	10.0	28.6	56.0	27.4	
3	2	1	L	1	0.175	qp	32.6	10.0	42.5	64.7	22.2	
3	2	1	L	1	0.175	av	27.9	10.0	37.8	54.7	16.9	
3	2	1	L	1	0.320	qp	30.4	9.9	40.4	59.7	19.3	
3	2	1	L	1	0.320	av	28.7	9.9	38.7	49.7	11.0	
3	2	1	L	1	0.350	qp	25.7	9.9	35.6	59.0	23.3	
3	2	1	L	1	0.350	av	25.7	9.9	35.7	49.0	13.3	
3	2	1	L	1	4.335	qp	28.4	10.0	38.4	56.0	17.6	
3	2	1	L	1	4.335	av	23.1	10.0	33.2	46.0	12.8	
3	2	1	L	1	7.420	qp	35.1	10.1	45.2	60.0	14.8	
3	2	1	L	1	7.420	av	27.5	10.1	37.6	50.0	12.4	
4	2	1	N	1	0.161	qp	30.9	10.0	40.9	65.4	24.5	
4	2	1	N	1	0.161	av	30.9	10.0	40.9	55.4	14.5	
4	2	1	N	1	0.175	qp	31.7	10.0	41.7	64.7	23.1	
4	2	1	N	1	0.175	av	28.0	10.0	38.0	54.7	16.7	
4	2	1	N	1	0.350	qp	34.3	9.9	44.3	59.0	14.7	
4	2	1	N	1	0.350	av	33.8	9.9	43.7	49.0	5.2	
4	2	1	N	1	0.425	qp	26.8	10.0	36.8	57.3	20.6	
4	2	1	N	1	0.425	av	25.1	10.0	35.1	47.3	12.3	
4	2	1	N	1	4.300	qp	30.8	10.0	40.8	56.0	15.2	
4	2	1	N	1	4.300	av	25.4	10.0	35.4	46.0	10.6	
4	2	1	N	1	7.135	qp	36.2	10.1	46.3	60.0	13.7	
4	2	1	N	1	7.135	av	29.5	10.1	39.6	50.0	10.4	

Results	Minimum Margin PASS/FAIL	5.2 dB PASS	

Notes	Comments and Observations
	Results of scans are shown in plots 3 to 4. Composite video mode. Measured with 9kHz bandwidth QP and linear average detectors.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.3 Radiated Emissions Results - HDMI mode; <1GHz - Vertical

Factor Set 1: A12_FS_13B - - CBL015_11A 1 m cable
Factor Set 2: - - - -
Factor Set 3: - - - -
Test Equipment: R4 A12 CSET005

Radiated Emissions

Company: Raspberry Pi (Trading) Ltd *Product:* Raspberry Pi
Date: 07/12/2013 *Test Eng:* Derek Barlow
Ports:
Test: ANSI C63.4:2003 using limits of FCC B
Ports:
Test: using limits of

Plot	Op Mode	Mod State	Dist m	Fact Set	Freq. MHz	Ant Pol	Rec. Level dBuV	Corr'n Factor dB/m	Corr'n Factor dB	Total Level dBuV/m	Limit FCC_B dBuV/m	Margin FCC_B dB	Notes
5	2	1	3	1	69.410	V	13.6	6.0		19.6	40.0	20.4	
5	2	1	3	1	72.451	V	16.9	6.4		23.3	40.0	16.7	
5	2	1	3	1	84.449	V	16.1	8.0		24.1	40.0	15.9	
5	2	1	3	1	122.500	V	14.4	13.1		27.5	43.5	16.0	
5	2	1	3	1	140.076	V	18.9	12.9		31.8	43.5	11.7	
5	2	1	3	1	148.518	V	26.0	12.6		38.6	43.5	4.9	
5	2	1	3	1	178.520	V	16.1	11.6		27.7	43.5	15.8	
5	2	1	3	1	183.025	V	10.4	11.5		21.9	43.5	21.6	
5	2	1	3	1	192.178	V	14.2	11.3		25.5	43.5	18.0	
6	2	1	3	1	275.507	V	18.3	15.4		33.7	46.0	12.3	
6	2	1	3	1	280.247	V	19.2	15.5		34.7	46.0	11.3	
6	2	1	3	1	378.392	V	12.2	18.8		31.0	46.0	15.0	
6	2	1	3	1	385.431	V	10.1	19.0		29.1	46.0	16.9	
6	2	1	3	1	413.138	V	15.0	20.1		35.1	46.0	10.9	
6	2	1	3	1	420.331	V	15.6	20.3		35.9	46.0	10.1	
6	2	1	3	1	445.527	V	11.0	20.4		31.4	46.0	14.6	
6	2	1	3	1	480.042	V	16.9	21.1		38.0	46.0	8.0	

Results	**Minimum Margin**	**4.9 dB**	
	PASS/FAIL	**PASS**	

Notes	Comments and Observations
	Results of scans shown in plots 5 and 6. HDMI with HP monitor Maximised readings using 120kHz QP detector.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.4 Radiated Emissions Results - HDMI mode; <1GHz - Horizontal

Factor Set 1:	A12_FS_13B - - CBL015_11A	1 m cable
Factor Set 2:	- - - -	
Factor Set 3:	- - - -	
Test Equipment:	R4 A12 CSET005	

Radiated Emissions

Company:	Raspberry Pi (Trading) Ltd	*Product:*	Raspberry Pi
Date:	07/12/2013	*Test Eng:*	Derek Barlow
Ports:			
Test:	ANSI C63.4:2003 using limits of		FCC B
Ports:			
Test:	using limits of		

Plot	Op Mode	Mod State	Dist m	Fact Set	Freq. MHz	Ant Pol	Rec. Level dBuV	Corr'n Factor dB/m	Corr'n Factor dB	Total Level dBuV/m	Limit FCC_B dBuV/m	Margin FCC_B dB	Notes
5	2	1	3	1	69.410	H	16.7	6.0		22.7	40.0	17.3	
5	2	1	3	1	72.451	H	23.5	6.4		29.9	40.0	10.1	
5	2	1	3	1	84.449	H	18.1	8.0		26.1	40.0	13.9	
5	2	1	3	1	122.500	H	11.1	13.1		24.2	43.5	19.3	
5	2	1	3	1	140.076	H	22.0	12.9		34.9	43.5	8.6	
5	2	1	3	1	148.518	H	23.0	12.6		35.6	43.5	7.9	
5	2	1	3	1	178.520	H	17.2	11.6		28.8	43.5	14.7	
5	2	1	3	1	183.025	H	17.1	11.5		28.6	43.5	14.9	
5	2	1	3	1	192.178	H	14.4	11.3		25.7	43.5	17.8	
6	2	1	3	1	275.507	H	17.6	15.4		33.0	46.0	13.0	
6	2	1	3	1	280.247	H	21.4	15.5		36.9	46.0	9.1	
6	2	1	3	1	378.392	H	8.9	18.8		27.7	46.0	18.3	
6	2	1	3	1	385.431	H	13.0	19.0		32.0	46.0	14.0	
6	2	1	3	1	413.138	H	16.0	20.1		36.1	46.0	9.9	
6	2	1	3	1	420.331	H	14.0	20.3		34.3	46.0	11.7	
6	2	1	3	1	445.527	H	20.2	20.4		40.6	46.0	5.4	
6	2	1	3	1	480.042	H	17.1	21.1		38.2	46.0	7.8	

Results	**Minimum Margin**	**5.4**	**dB**
	PASS/FAIL	**PASS**	

Notes	Comments and Observations
	Results of scans shown in plots 5 and 6. HDMI with HP monitor Maximised readings using 120kHz QP detector.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.5 Radiated Emissions Results - Composite Video mode; <1GHz - Vertical

Factor Set 1:	A12_FS_13B - - CBL015_11A	1 m cable
Factor Set 2:	- - - -	
Factor Set 3:	- - - -	
Test Equipment:	R4 A12 CSET005	

Radiated Emissions

Company:	Raspberry Pi (Trading) Ltd	*Product:*	Raspberry Pi
Date:	08/12/2013	*Test Eng:*	Dave Smith
Ports:			
Test:	ANSI C63.4:2003 using limits of		FCC B
Ports:			
Test:	using limits of		

Plot	Op Mode	Mod State	Dist m	Fact Set	Freq. MHz	Ant Pol	Rec. Level dBuV	Corr'n Factor dB/m	Corr'n Factor dB	Total Level dBuV/m	Limit FCC_B dBuV/m	Margin FCC_B dB	Notes
9	2	1	3	1	69.410	V	16.7	6.0		22.7	40.0	17.3	
9	2	1	3	1	80.310	V	26.3	7.5		33.8	40.0	6.2	
9	2	1	3	1	84.664	V	19.5	8.0		27.5	40.0	12.5	
9	2	1	3	1	174.000	V	14.5	11.6		26.1	43.5	17.4	
9	2	1	3	1	183.000	V	10.5	11.5		22.0	43.5	21.5	
9	2	1	3	1	199.364	V	8.5	11.4		19.9	43.5	23.6	
10	2	1	3	1	268.000	V	8.4	15.6		24.0	46.0	22.0	
10	2	1	3	1	358.585	V	15.0	17.9		32.9	46.0	13.1	
10	2	1	3	1	362.886	V	18.3	18.1		36.4	46.0	9.6	
10	2	1	3	1	480.028	V	15.9	21.1		37.0	46.0	9.0	
10	2	1	3	1	555.100	V	16.1	25.0		41.1	46.0	4.9	
10	2	1	3	1	565.197	V	18.6	24.4		43.0	46.0	3.0	
10	2	1	3	1	607.500	V	13.5	24.0		37.5	46.0	8.5	
10	2	1	3	1	660.454	V	11.0	25.0		36.0	46.0	10.0	
10	2	1	3	1	694.326	V	11.8	26.3		38.1	46.0	7.9	
10	2	1	3	1	729.012	V	12.0	27.0		39.0	46.0	7.0	
10	2	1	3	1	972.010	V	6.3	31.1		37.4	54.0	16.6	

Results	**Minimum Margin**	**3.0**	**dB**
	PASS/FAIL	**PASS**	

Notes	Comments and Observations
	Results of scans shown in plots 9 and 10. Composite video mode. Maximised readings using 120kHz QP detector.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.6 Radiated Emissions Results - Composite Video mode; <1GHz - Horizontal

Factor Set 1:	A12_FS_13B - - CBL015_11A	1 m cable
Factor Set 2:	- - - -	
Factor Set 3:	- - - -	
Test Equipment:	R4 A12 CSET005	

Radiated Emissions

Company:	Raspberry Pi (Trading) Ltd	*Product:*	Raspberry Pi
Date:	08/12/2013	*Test Eng:*	Dave Smith
Ports:			
Test:	ANSI C63.4:2003 using limits of		FCC B
Ports:			
Test:	using limits of		

Plot	Op Mode	Mod State	Dist m	Fact Set	Freq. MHz	Ant Pol	Rec. Level dBuV	Corr'n Factor dB/m	Corr'n Factor dB	Total Level dBuV/m	Limit FCC_B dBuV/m	Margin FCC_B dB	Notes
9	2	1	3	1	69.410	H	19.1	6.0		25.1	40.0	14.9	
9	2	1	3	1	80.310	H	23.8	7.5		31.3	40.0	8.7	
9	2	1	3	1	84.664	H	12.9	8.0		20.9	40.0	19.1	
9	2	1	3	1	174.000	H	16.6	11.6		28.2	43.5	15.3	
9	2	1	3	1	183.000	H	17.3	11.5		28.8	43.5	14.7	
9	2	1	3	1	199.364	H	11.3	11.4		22.7	43.5	20.8	
10	2	1	3	1	268.000	H	14.2	15.6		29.8	46.0	16.2	
10	2	1	3	1	358.585	H	24.0	17.9		41.9	46.0	4.1	
10	2	1	3	1	362.886	H	25.6	18.1		43.7	46.0	2.3	
10	2	1	3	1	480.028	H	18.2	21.1		39.3	46.0	6.7	
10	2	1	3	1	555.100	H	17.3	25.0		42.3	46.0	3.7	
10	2	1	3	1	565.197	H	18.5	24.4		42.9	46.0	3.1	
10	2	1	3	1	607.500	H	20.2	24.0		44.2	46.0	1.8	#1
10	2	1	3	1	660.454	H	9.2	25.0		34.2	46.0	11.8	
10	2	1	3	1	694.326	H	15.2	26.3		41.5	46.0	4.5	
10	2	1	3	1	729.012	H	16.1	27.0		43.1	46.0	2.9	
10	2	1	3	1	972.010	H	12.2	31.1		43.3	54.0	10.7	

Results	**Minimum Margin**	**1.8**	**dB**
	PASS/FAIL	**PASS**	

Notes	Comments and Observations
	Results of scans shown in plots 9 and 10. Composite video mode.
#1	Maximised readings using 120kHz QP detector. Generated by the monitor. Level unchanged when EUT and other peripherals turned off.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.7 Radiated Emissions Results - HDMI mode; >1GHz - Vertical

Factor Set 1: A8_3m_12B CBL050_11A PRE10_12A -
Factor Set 2: - - - -
Factor Set 3: - - - -
Test Equipment: R9 A8 PRE10

Radiated Emissions

Company: Raspberry Pi (Trading) Ltd *Product:* Raspberry Pi
Date: 04/12/2013 *Test Eng:* Dave Smith
Ports:
Test: ANSI C63.4:2003 using limits of FCC B
Ports:
Test: using limits of

Plot	Op Mode	Mod State	Dist m	Fact Set	Freq. MHz	Ant Pol	Rec. Level dBuV	Corr'n Factor dB/m	Corr'n Factor dB	Total Level dBuV/m	Limit FCC_B dBuV/m	Margin FCC_B dB	Notes
7	1	1	3	1	1100.950	V	65.5	-10.9		54.6	74.0	19.4	Pk
7	1	1	3	1	1100.950	V	44.9	-10.9		34.0	54.0	20.0	avg
7	1	1	3	1	1169.800	V	61.5	-10.4		51.1	74.0	22.9	Pk
7	1	1	3	1	1169.800	V	41.0	-10.4		30.5	54.0	23.5	avg
7	1	1	3	1	1192.550	V	65.9	-10.2		55.7	74.0	18.3	Pk
7	1	1	3	1	1192.550	V	44.2	-10.2		34.0	54.0	20.0	avg
7	1	1	3	1	1238.750	V	64.8	-9.9		54.9	74.0	19.1	Pk
7	1	1	3	1	1238.750	V	43.3	-9.9		33.4	54.0	20.6	avg
7	1	1	3	1	1332.825	V	60.8	-9.5		51.3	74.0	22.7	Pk
7	1	1	3	1	1332.825	V	35.4	-9.5		25.9	54.0	28.1	avg
7	1	1	3	1	1445.150	V	55.8	-9.5		46.3	74.0	27.7	Pk
7	1	1	3	1	1445.150	V	35.4	-9.5		25.8	54.0	28.2	avg
7	1	1	3	1	1613.450	V	55.2	-10.0		45.3	74.0	28.7	Pk
7	1	1	3	1	1613.450	V	35.0	-10.0		25.0	54.0	29.0	avg
7	1	1	3	1	1931.000	V	59.2	-8.9		50.3	74.0	23.7	Pk
7	1	1	3	1	1931.000	V	51.8	-8.9		42.9	54.0	11.1	avg
7	1	1	3	1	1964.000	V	59.2	-8.9		50.3	74.0	23.7	Pk
7	1	1	3	1	1964.000	V	51.8	-8.9		42.9	54.0	11.1	avg
7	1	1	3	1	2079.275	V	59.5	-8.6		50.9	74.0	23.1	Pk
7	1	1	3	1	2079.275	V	48.1	-8.6		39.5	54.0	14.5	avg
7	1	1	3	1	2227.660	V	60.9	-8.3		52.5	74.0	21.5	Pk
7	1	1	3	1	2227.660	V	49.4	-8.3		41.1	54.0	12.9	avg
8	1	1	3	1	3712.650	V	53.4	-4.0		49.4	74.0	24.6	Pk
8	1	1	3	1	3712.650	V	41.6	-4.0		37.6	54.0	16.4	avg

Results	Minimum Margin PASS/FAIL	11.1 dB PASS	

Notes	Comments and Observations
	Results of scans shown in plots 7 and 8. Measurements made with 1MHz RBW peak detector and linear average detector.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.8 Radiated Emissions Results - HDMI mode; >1GHz - Horizontal

Factor Set 1: A8_3m_12B CBL050_11A PRE10_12A -
Factor Set 2: - - - -
Factor Set 3: - - - -
Test Equipment: R9 A8 PRE10

Radiated Emissions

Company: Raspberry Pi (Trading) Ltd *Product:* Raspberry Pi
Date: 04/12/2013 *Test Eng:* Dave Smith
Ports:
Test: ANSI C63.4:2003 using limits of FCC B
Ports:
Test: using limits of

Plot	Op Mode	Mod State	Dist m	Fact Set	Freq. MHz	Ant Pol	Rec. Level dBuV	Corr'n Factor dB/m	Corr'n Factor dB	Total Level dBuV/m	Limit FCC_B dBuV/m	Margin FCC_B dB	Notes
7	1	1	3	1	1100.950	H	62.9	-10.9		52.0	74.0	22.0	Pk
7	1	1	3	1	1100.950	H	39.8	-10.9		28.9	54.0	25.1	avg
7	1	1	3	1	1169.800	H	66.2	-10.4		55.8	74.0	18.2	Pk
7	1	1	3	1	1169.800	H	43.4	-10.4		33.0	54.0	21.0	avg
7	1	1	3	1	1192.550	H	65.9	-10.2		55.7	74.0	18.3	Pk
7	1	1	3	1	1192.550	H	44.2	-10.2		34.0	54.0	20.0	avg
7	1	1	3	1	1238.750	H	64.8	-9.9		54.9	74.0	19.1	Pk
7	1	1	3	1	1238.750	H	43.2	-9.9		33.3	54.0	20.7	avg
7	1	1	3	1	1332.825	H	59.4	-9.5		49.9	74.0	24.1	Pk
7	1	1	3	1	1332.825	H	37.7	-9.5		28.2	54.0	25.8	avg
7	1	1	3	1	1445.150	H	60.5	-9.5		51.0	74.0	23.0	Pk
7	1	1	3	1	1445.150	H	39.4	-9.5		29.9	54.0	24.1	avg
7	1	1	3	1	1613.450	H	58.9	-10.0		48.9	74.0	25.1	Pk
7	1	1	3	1	1613.450	H	37.4	-10.0		27.4	54.0	26.6	avg
7	1	1	3	1	1931.000	H	58.3	-8.9		49.4	74.0	24.6	Pk
7	1	1	3	1	1931.000	H	43.3	-8.9		34.4	54.0	19.6	avg
7	1	1	3	1	1964.000	H	60.2	-8.9		51.4	74.0	22.6	Pk
7	1	1	3	1	1964.000	H	39.6	-8.9		30.7	54.0	23.3	avg
7	1	1	3	1	2079.275	H	57.4	-8.6		48.8	74.0	25.2	Pk
7	1	1	3	1	2079.275	H	44.5	-8.6		35.9	54.0	18.1	avg
7	1	1	3	1	2227.660	H	59.7	-8.3		51.3	74.0	22.7	Pk
7	1	1	3	1	2227.660	H	47.8	-8.3		39.5	54.0	14.5	avg
8	1	1	3	1	3712.650	H	51.2	-4.0		47.2	74.0	26.8	Pk
8	1	1	3	1	3712.650	H	39.4	-4.0		35.4	54.0	18.6	avg

Results	**Minimum Margin**	**14.5 dB**
	PASS/FAIL	**PASS**

Notes	Comments and Observations
	Results of scans shown in plots 7 and 8. Measurements made with 1MHz RBW peak detector and linear average detector.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.9 Radiated Emissions Results - Composite Video mode; >1GHz - Vertical

Factor Set 1: A8_3m_12B CBL050_11A PRE10_12A -
Factor Set 2: - - - -
Factor Set 3: - - - -
Test Equipment: R9 A8 PRE10

Radiated Emissions

Company: Raspberry Pi (Trading) Ltd *Product:* Raspberry Pi
Date: 04/12/2013 *Test Eng:* Dave Smith
Ports:
Test: ANSI C63.4:2003 using limits of FCC B
Ports:
Test: using limits of

Plot	Op Mode	Mod State	Dist m	Fact Set	Freq. MHz	Ant Pol	Rec. Level dBuV	Corr'n Factor dB/m	Corr'n Factor dB	Total Level dBuV/m	Limit FCC_B dBuV/m	Margin FCC_B dB	Notes
11	2	1	3	1	1309.128	V	60.4	-9.6		50.9	74.0	23.1	Pk
11	2	1	3	1	1309.128	V	42.7	-9.6		33.2	54.0	20.8	avg
11	2	1	3	1	1426.550	V	58.0	-9.5		48.5	74.0	25.5	Pk
11	2	1	3	1	1426.550	V	36.8	-9.5		27.3	54.0	26.7	avg
11	2	1	3	1	1453.750	V	57.4	-9.5		47.9	74.0	26.1	Pk
11	2	1	3	1	1453.750	V	36.2	-9.5		26.7	54.0	27.3	avg
11	2	1	3	1	1458.000	V	54.0	-9.6		44.4	74.0	29.6	Pk
11	2	1	3	1	1458.000	V	48.2	-9.6		38.6	54.0	15.4	avg
11	2	1	3	1	1600.113	V	61.6	-10.0		51.6	74.0	22.4	Pk
11	2	1	3	1	1600.113	V	42.2	-10.0		32.1	54.0	21.9	avg
11	2	1	3	1	1664.700	V	61.0	-9.7		51.3	74.0	22.7	Pk
11	2	1	3	1	1664.700	V	38.6	-9.7		28.9	54.0	25.1	avg
11	2	1	3	1	1981.650	V	55.1	-8.8		46.3	74.0	27.7	Pk
11	2	1	3	1	1981.650	V	33.2	-8.8		24.3	54.0	29.7	avg

Results	Minimum Margin PASS/FAIL	15.4 dB PASS	

Notes	Comments and Observations
	Results of scans shown in plots 11 and 12. Measurements made with 1MHz RBW peak detector and linear average detector.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.

4.10 Radiated Emissions Results - Composite Video mode; >1GHz - Horizontal

Factor Set 1: A8_3m_12B CBL050_11A PRE10_12A -
Factor Set 2: - - - -
Factor Set 3: - - - -
Test Equipment: R9 A8 PRE10

Radiated Emissions

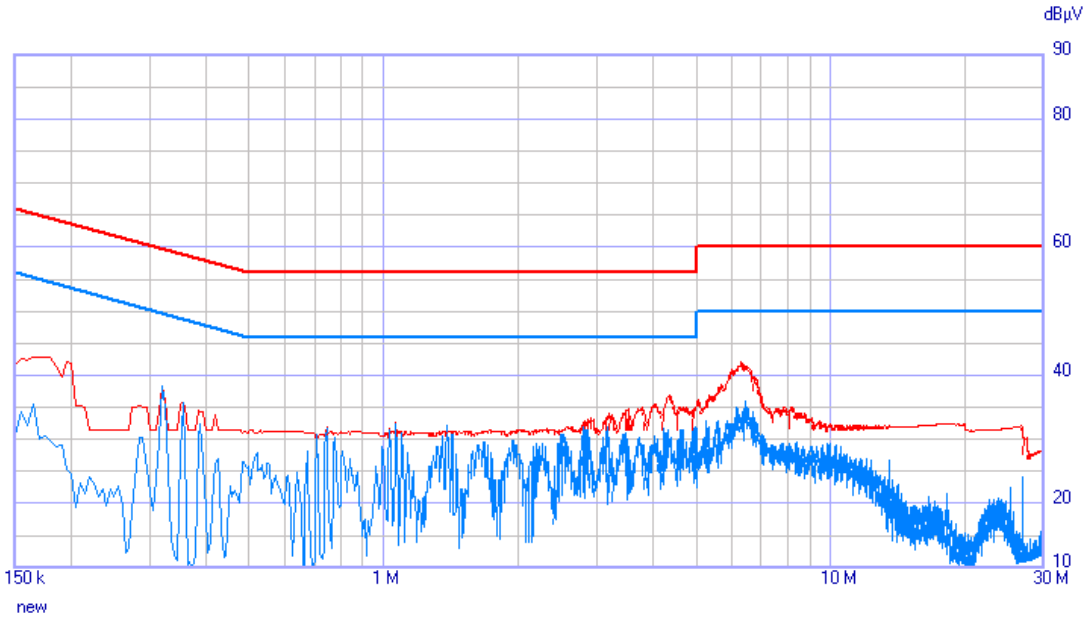
Company: Raspberry Pi (Trading) Ltd *Product:* Raspberry Pi
Date: 04/12/2013 *Test Eng:* Dave Smith
Ports:
Test: ANSI C63.4:2003 using limits of FCC B
Ports:
Test: using limits of

Plot	Op Mode	Mod State	Dist m	Fact Set	Freq. MHz	Ant Pol	Rec. Level dBuV	Corr'n Factor dB/m	Corr'n Factor dB	Total Level dBuV/m	Limit FCC_B dBuV/m	Margin FCC_B dB	Notes
11	2	1	3	1	1309.128	H	62.0	-9.6		52.4	74.0	21.6	Pk
11	2	1	3	1	1309.128	H	45.0	-9.6		35.4	54.0	18.6	avg
11	2	1	3	1	1426.550	H	64.5	-9.5		55.0	74.0	19.0	Pk
11	2	1	3	1	1426.550	H	41.9	-9.5		32.4	54.0	21.6	avg
11	2	1	3	1	1453.750	H	64.1	-9.5		54.5	74.0	19.5	Pk
11	2	1	3	1	1453.750	H	40.4	-9.5		30.9	54.0	23.1	avg
11	2	1	3	1	1458.000	H	57.9	-9.6		48.3	74.0	25.7	Pk
11	2	1	3	1	1458.000	H	55.0	-9.6		45.5	54.0	8.5	avg
11	2	1	3	1	1600.113	H	60.1	-10.0		50.0	74.0	24.0	Pk
11	2	1	3	1	1600.113	H	41.1	-10.0		31.1	54.0	22.9	avg
11	2	1	3	1	1664.700	H	66.7	-9.7		56.9	74.0	17.1	Pk
11	2	1	3	1	1664.700	H	43.7	-9.7		34.0	54.0	20.0	avg
11	2	1	3	1	1981.650	H	60.8	-8.8		52.0	74.0	22.0	Pk
11	2	1	3	1	1981.650	H	37.4	-8.8		28.5	54.0	25.5	avg

Results	Minimum Margin	8.5 dB
	PASS/FAIL	PASS

Notes	Comments and Observations
	Results of scans shown in plots 11 and 12. Measurements made with 1MHz RBW peak detector and linear average detector.

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.15	30	AUTO (5 kHz)	P Q A pwr_B_QP Margin 5 dB	20 ms	9 kHz	10	OFF	ON	...	...
2	0.15	0.151	500 Hz	P pwr_B_Avg Margin 0 dB	1.9 ms	9 kHz	10	OFF	ON	...	...

Ancillary = General
Limits:
pwr_B_QP
pwr_B_Avg
Factors:
L1
AB002_CBL005_CBL039
QPeak
Avg

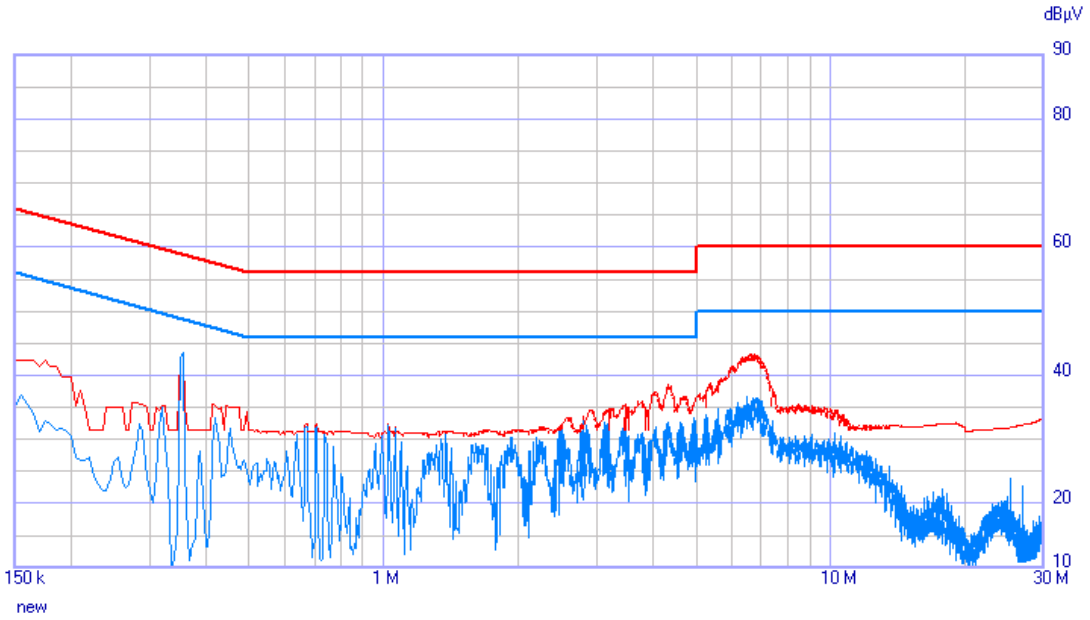
PLOT 1 Conducted Emissions - HDMI - Live

Company:	Raspberry Pi	Product:	Raspberry Pi Rev 2.4
Date:	08 Dec 13	Test Engineer:	Dave Smith
Test:	Ansi C63.4	Limit:	FCC (B) QP & Avg

Notes:
115V operation. Running test prog with H's plus read/write access.
HDMI with HP monitor

Line:	Live	Attenuator:	10dB PAD	Operating Mode:	1
Detector:	QP & Avg			Mod. State:	1
LISN:	EMCO	Filename:	C3C08617.png		

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.15	30	AUTO (5 kHz)	P Q A pwr_B_QP Margin 5 dB	20 ms	9 kHz	10	OFF	ON	...	...
2	0.15	0.151	500 Hz	P pwr_B_Avg Margin 0 dB	1.9 ms	9 kHz	10	OFF	ON	...	...

Ancillary = General
Limits:
pwr_B_QP
pwr_B_Avg
Factors:
L1
AB002_CBL005_CBL039
QPeak
Avg

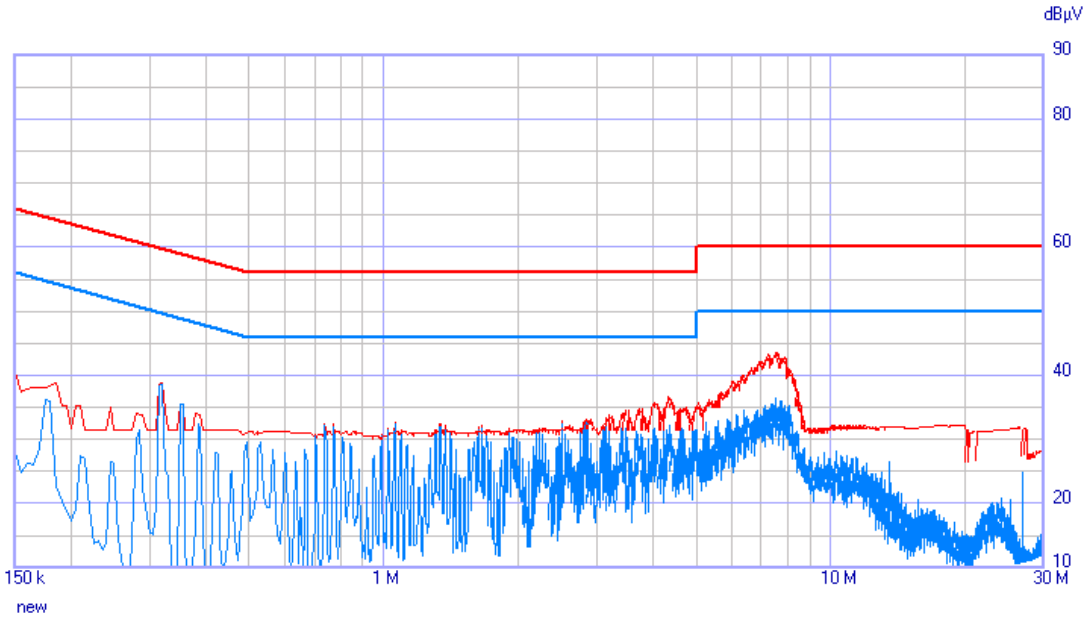
PLOT 2 Conducted Emissions - HDMI - Neutral

Company:	Raspberry Pi	Product:	Raspberry Pi Rev 2.4
Date:	08 Dec 13	Test Engineer:	Dave Smith
Test:	Ansi C63.4	Limit:	FCC (B) QP & Avg

Notes:
115V operation. Running test prog with H's plus read/write access.
HDMI with HP monitor

Line:	Neutral	Attenuator:	10dB PAD	Operating Mode:	HDMI
Detector:	QP & Avg			Mod. State:	1
LISN:	EMCO	Filename:	C3C0862E.png		1

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.15	30	AUTO (5 kHz)	P Q A pwr_B_QP Margin 5 dB	20 ms	9 kHz	10	OFF	ON	...	...
2	0.15	0.151	500 Hz	P pwr_B_Avg Margin 0 dB	1.9 ms	9 kHz	10	OFF	ON	...	...

Ancillary = General
Limits:
pwr_B_QP
pwr_B_Avg
Factors:
L1
AB002_CBL005_CBL039
QPeak
Avg

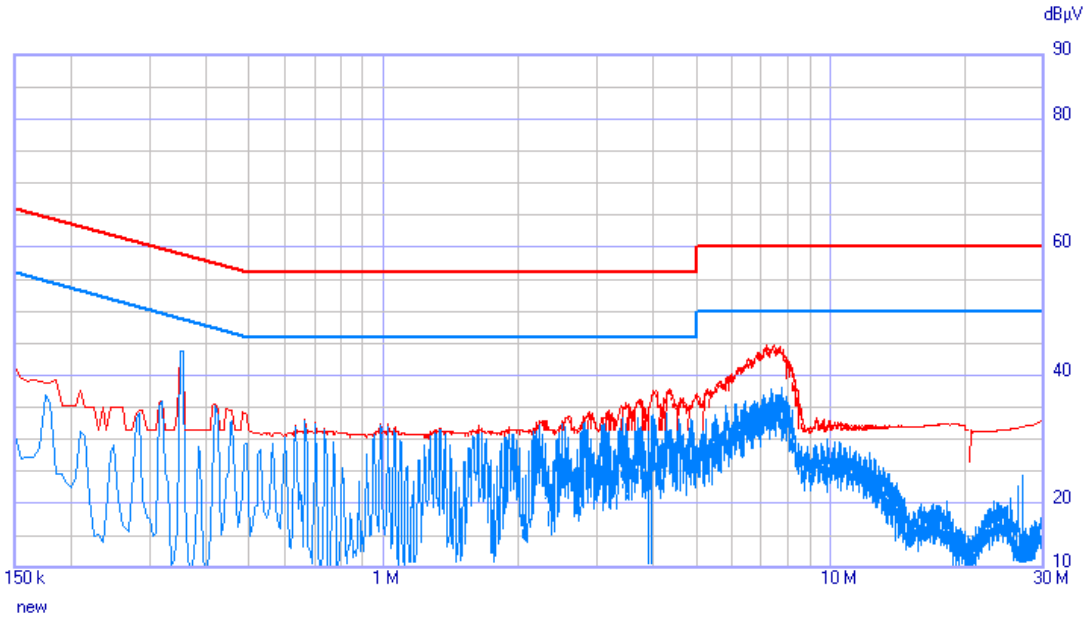
PLOT 3 Conducted Emissions - Composite - Live

Company:	Raspberry Pi	Product:	Raspberry Pi Rev 2.4
Date:	08 Dec 13	Test Engineer:	Dave Smith
Test:	Ansi C63.4	Limit:	FCC (B) QP & Avg

Notes:
115V operation. Running test prog with H's plus read/write access.
Composite Video

Line:	Live	Attenuator:	10dB PAD	Operating Mode:	2
Detector:	QP & Avg			Mod. State:	1
LISN:	EMCO	Filename:	C3C0868D.png		

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



	Start [MHz]	Stop [MHz]	Step	Detector	Hold Time	RBW	Min Att	Pre Amp	Pre Sel	Prompt start	Ancillary
1	0.15	30	AUTO (5 kHz)	P Q A pwr_B_QP Margin 5 dB	20 ms	9 kHz	10	OFF	ON	...	...
2	0.15	0.151	500 Hz	P pwr_B_Avg Margin 0 dB	1.9 ms	9 kHz	10	OFF	ON	...	...

Ancillary = General
Limits:
pwr_B_QP
pwr_B_Avg
Factors:
L1
AB002_CBL005_CBL039
QPeak
Avg

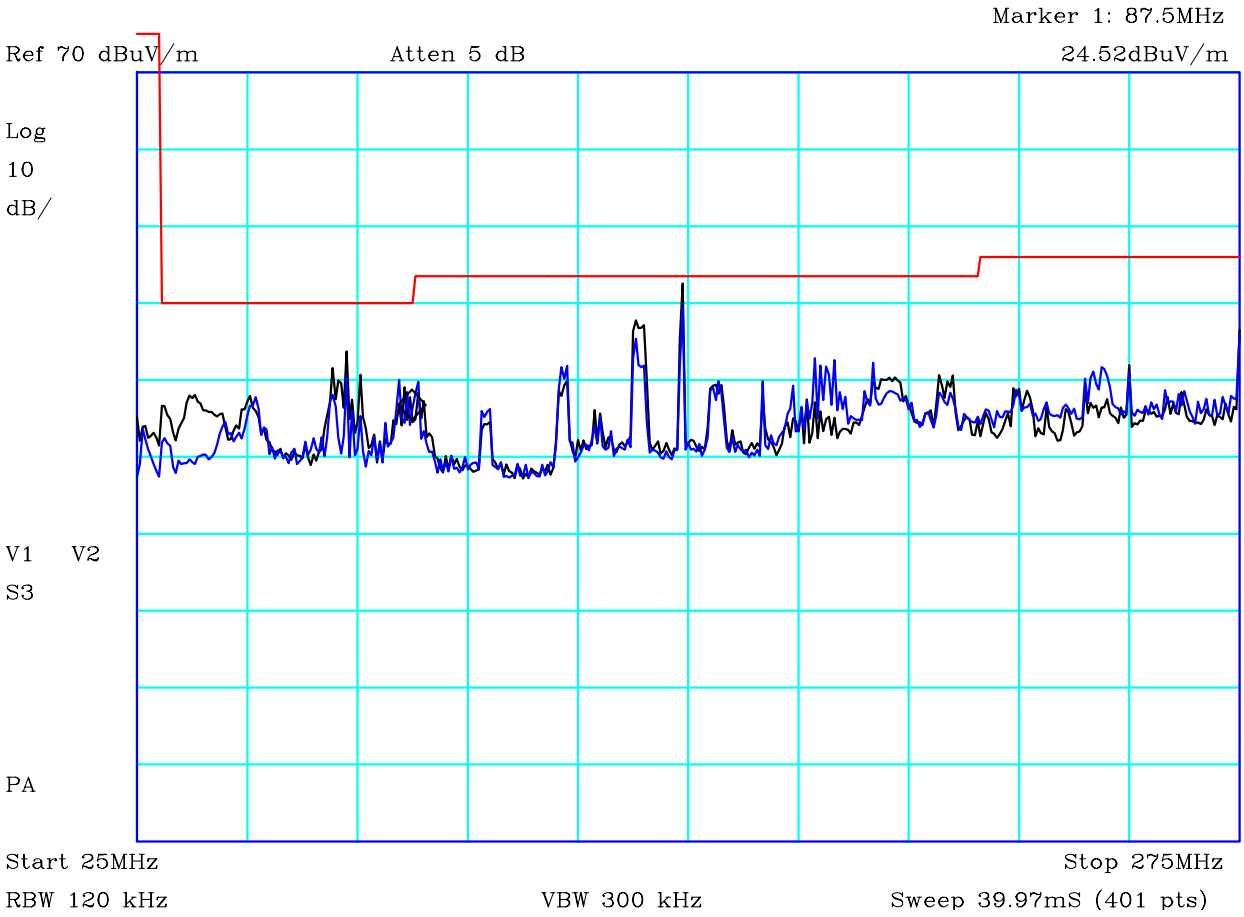
PLOT 4 Conducted Emissions - Composite - Neutral

Company:	Raspberry Pi	Product:	Raspberry Pi Rev 2.4
Date:	08 Dec 13	Test Engineer:	Dave Smith
Test:	Ansi C63.4	Limit:	FCC (B) QP & Avg

Notes:
115V operation. Running test prog with H's plus read/write access.
Composite Video

Line:	Neutral	Attenuator:	10dB PAD	Operating Mode:	2
Detector:	QP & Avg			Mod. State:	1
LISN:	EMCO	Filename:	C3C086AC.png		

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



CF1:A24_3m_130215 CF2:CBL059_CBL018_CBL065_CBL060_100806

PLOT 5 Radiated Emissions - 25MHz to 275MHz - HDMI

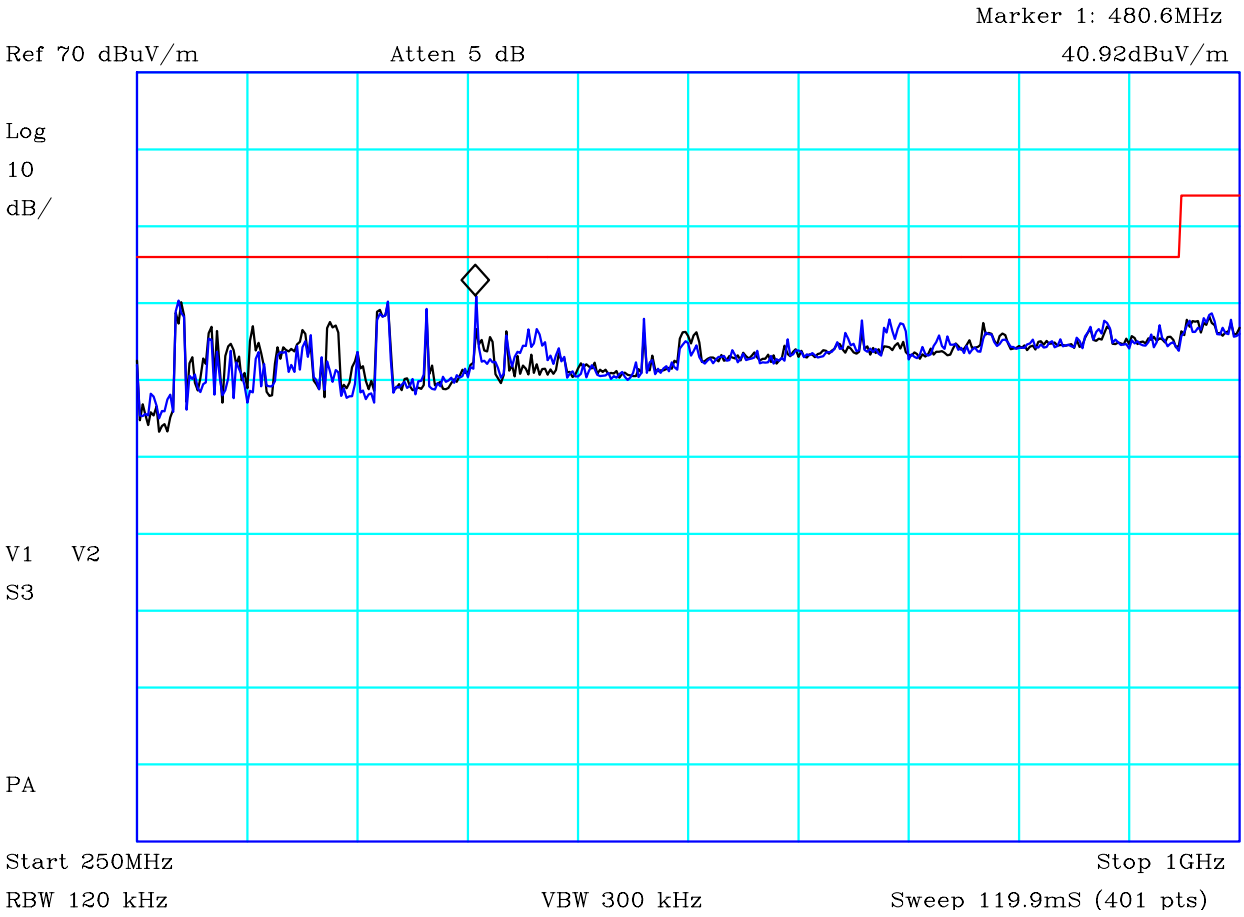
Company:	Raspberry Pi	Product:	Raspberry Pi
Date:	7th December 2013	Test Eng:	Derek Barlow
Method:	CISPR16	Method:	
Limit1:(RED)	FCC(B)@3m	Limit2:	
Limit3:		Limit4:	

Running HDMI video, scrolling H pattern
HP monitor

Black trace = vertical polarisation, Blue trace = horizontal polarisation

Facility:	Anech_1	Height	1m,1.5m,2m	Mode:	1
Distance	3m	Polarisation	V+H	Modification State:	1
Angle	0-360	File:	H3B0838D	Analyser:	R9

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



CF1:A24_3m_130215 CF2:CBL059_CBL018_CBL065_CBL060_100806

PLOT 6 Radiated Emissions - 250MHz to 1GHz - HDMI

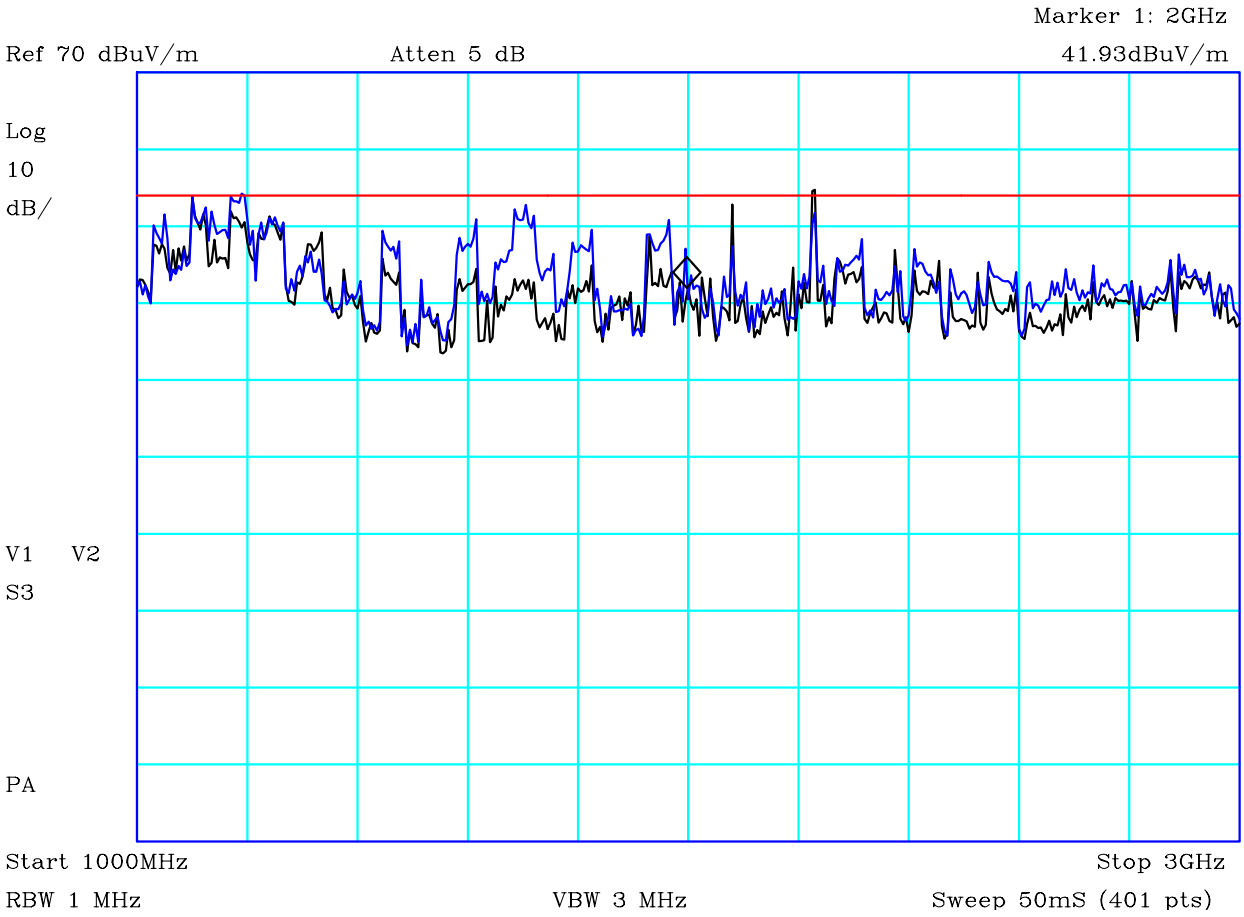
Company:	Raspberry Pi	Product:	Raspberry Pi
Date:	7th December 2013	Test Eng:	Derek Barlow
Method:	CISPR16	Method:	
Limit1:(RED)	FCC(B)@3m	Limit2:	
Limit3:		Limit4:	

Running HDMI video, scrolling H pattern
HP monitor

Black trace = vertical polarisation, Blue trace = horizontal polarisation

Facility:	Anech_1	Height	1m,1.5m,2m	Mode:	1
Distance	3m	Polarisation	V+H	Modification State:	1
Angle	0-360	File:	H3B08457	Analyser:	R9

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



CF1:A8_3m_120807 CF2:CBL050_110107 CF3:PRE10_120627

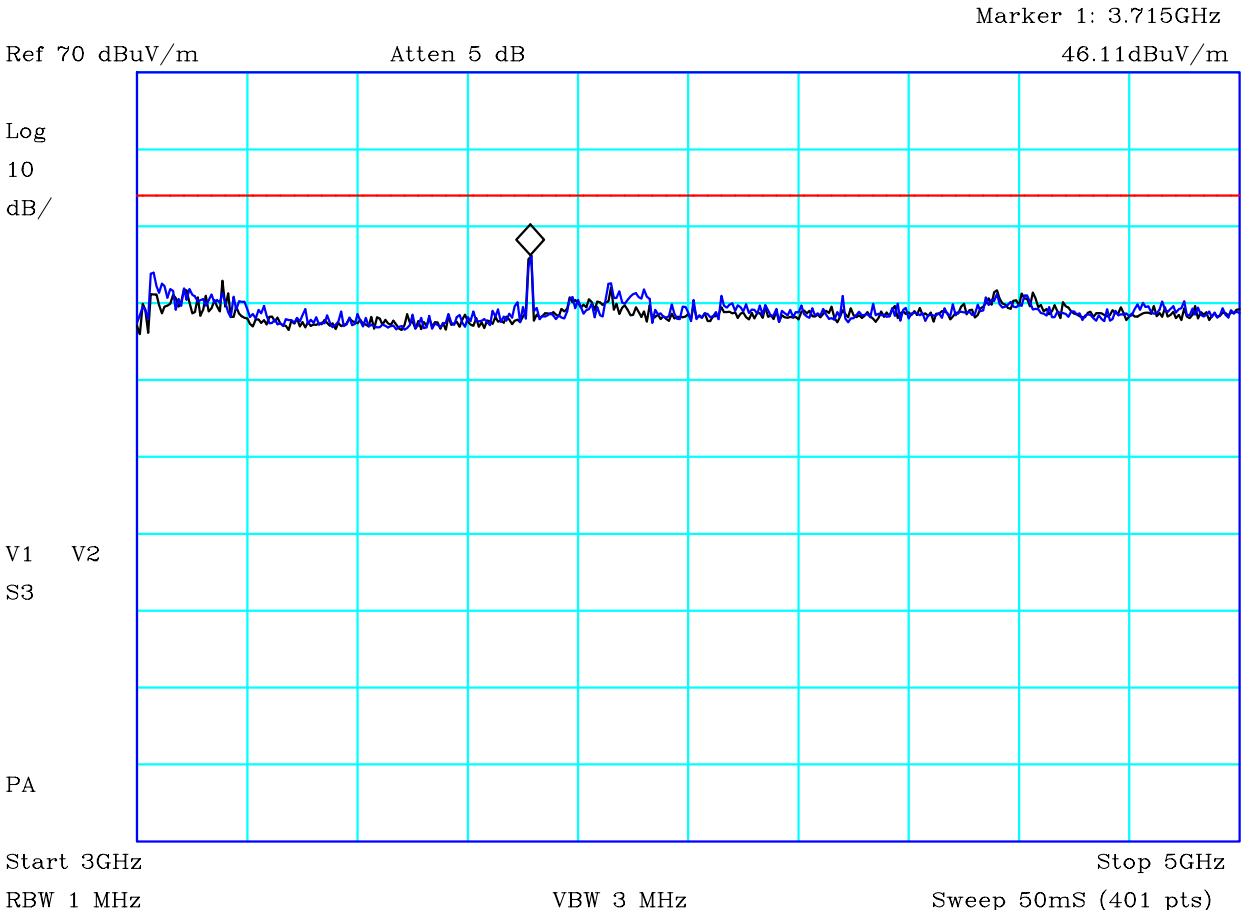
PLOT 7 Radiated Emissions - 1GHz to 3GHz - HDMI

Company:	Raspberry Pi	Product:	Raspberry Pi Rev 2.4
Date:	08/12/2013	Test Eng:	Dave Smith
Method:	ANSI C63.4	Method:	
Limit1:(RED)	FCC(B)@3m	Limit2:	
Limit3:		Limit4:	

Black trace = Vertical Polarisation, Blue trace = Horizontal polarisation
Running HDMI video, scrolling H pattern
HP Monitor

Facility:	Anech_2	Height	1m,1.5m,2m	Mode:	1
Distance	3m	Polarisation	V+H	Modification State:	1
Angle	0-360	File:	H3B086F1	Analyser:	R9

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



CF1:A8_3m_120807 CF2:CBL050_110107 CF3:PRE10_120627

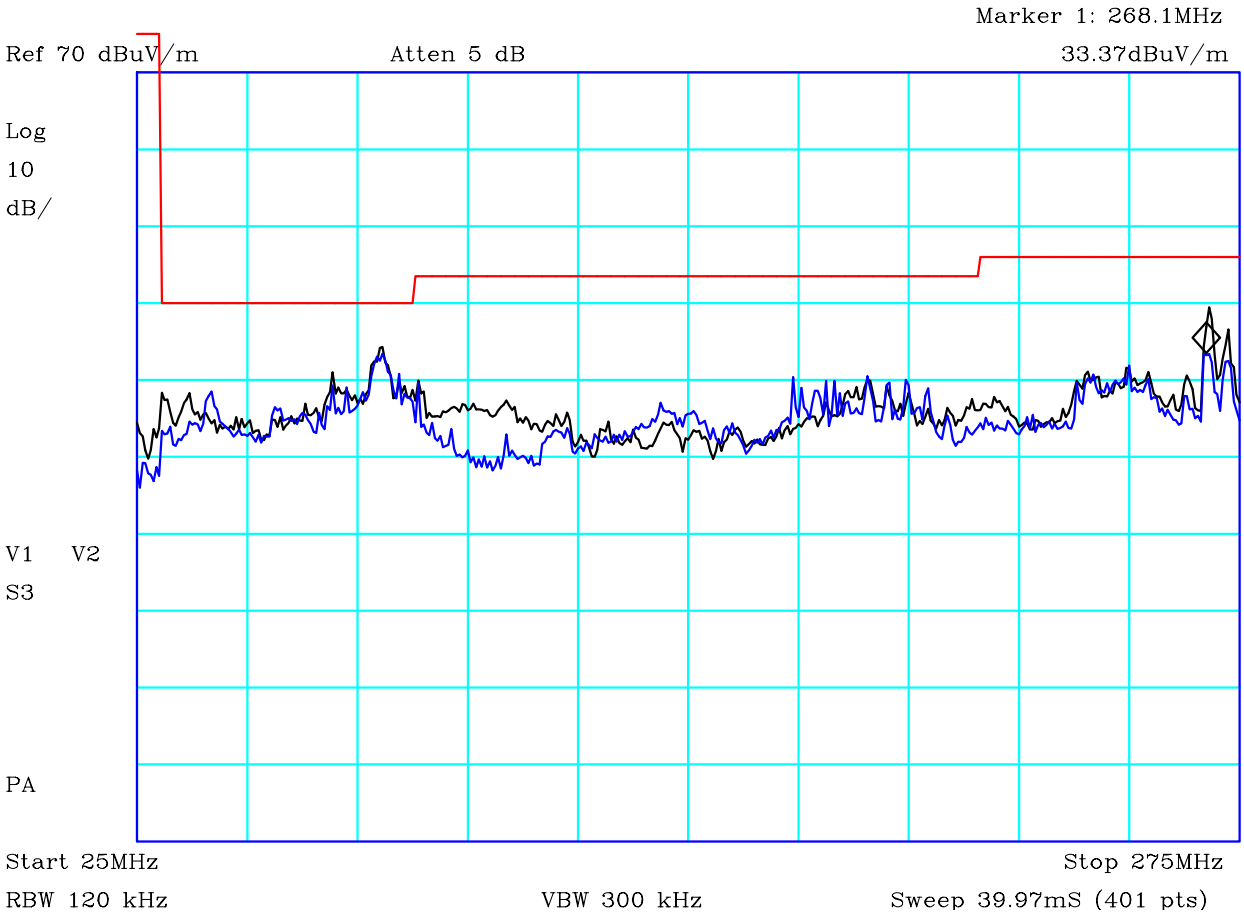
PLOT 8 Radiated Emissions - 3GHz to 5GHz - HDMI

Company:	Raspberry Pi	Product:	Raspberry Pi Rev 2.4
Date:	08/12/2013	Test Eng:	Dave Smith
Method:	ANSI C63.4	Method:	
Limit1:(RED)	FCC(B)@3m	Limit2:	
Limit3:		Limit4:	

Black trace = Vertical Polarisation, Blue trace = Horizontal polarisation
Running HDMI video, scrolling H pattern
HP Monitor

Facility:	Anech_2	Height	1m,1.5m,2m	Mode:	1
Distance	3m	Polarisation	V+H	Modification State:	1
Angle	0-360	File:	H3B08705	Analyser:	R9

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



CF1:A24_3m_130215 CF2:CBL059_CBL018_CBL065_CBL060_100806

PLOT 9 Radiated Emissions - 25MHz to 275MHz - Composite Video

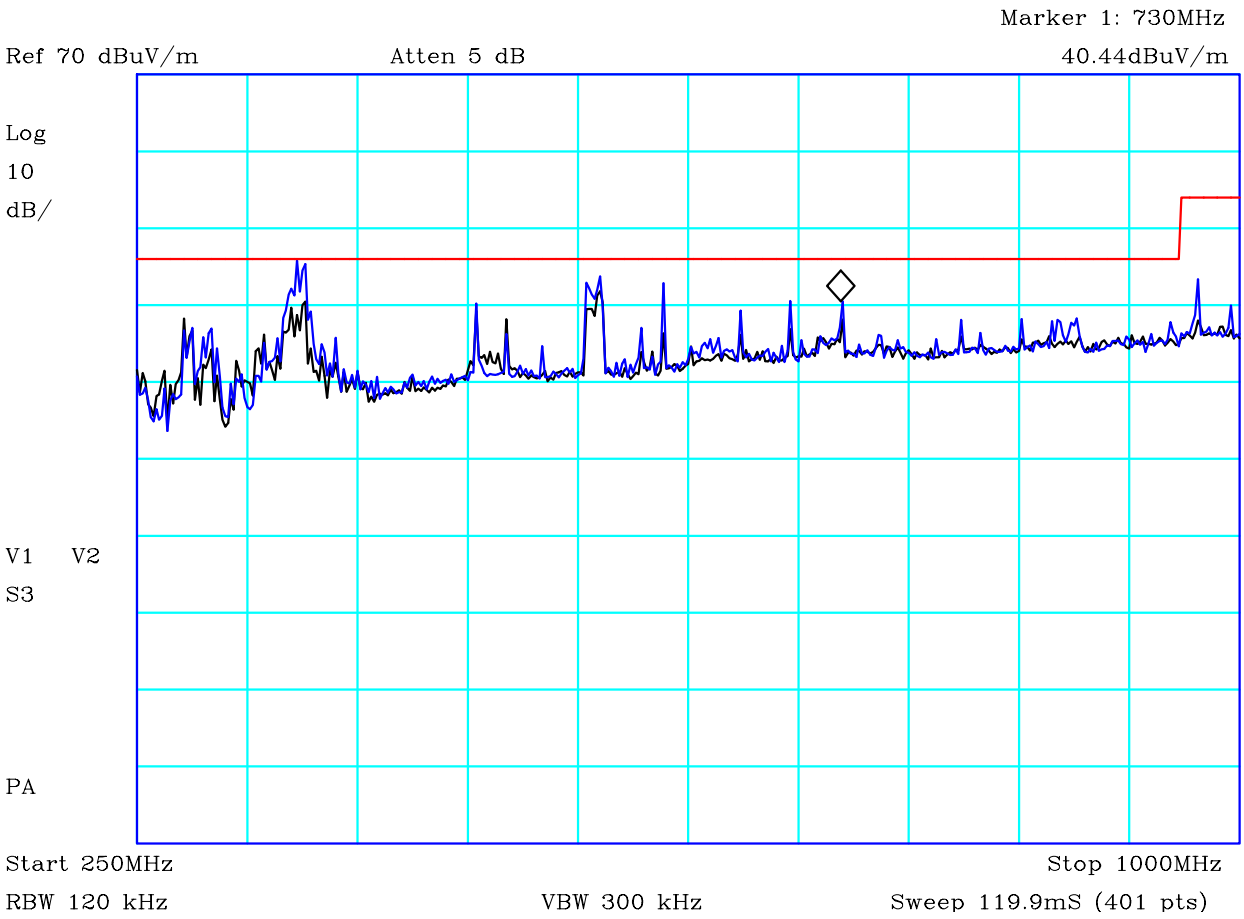
Company:	Raspberry Pi	Product:	Raspberry Pi
Date:	7th December 2013	Test Eng:	Derek Barlow
Method:	CISPR16	Method:	
Limit1:(RED)	FCC(B)@3m	Limit2:	
Limit3:		Limit4:	

Running composite video, scrolling H pattern

Black trace = vertical polarisation, Blue trace = horizontal polarisation

Facility:	Anech_1	Height	1m,1.5m,2m	Mode:	2
Distance	3m	Polarisation	V+H	Modification State:	1
Angle	0-360	File:	H3B0856B	Analyser:	R9

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



CF1:A24_3m_130215 CF2:CBL059_CBL018_CBL065_CBL060_100806

PLOT 10 Radiated Emissions - 250MHz to 1GHz - Composite Video

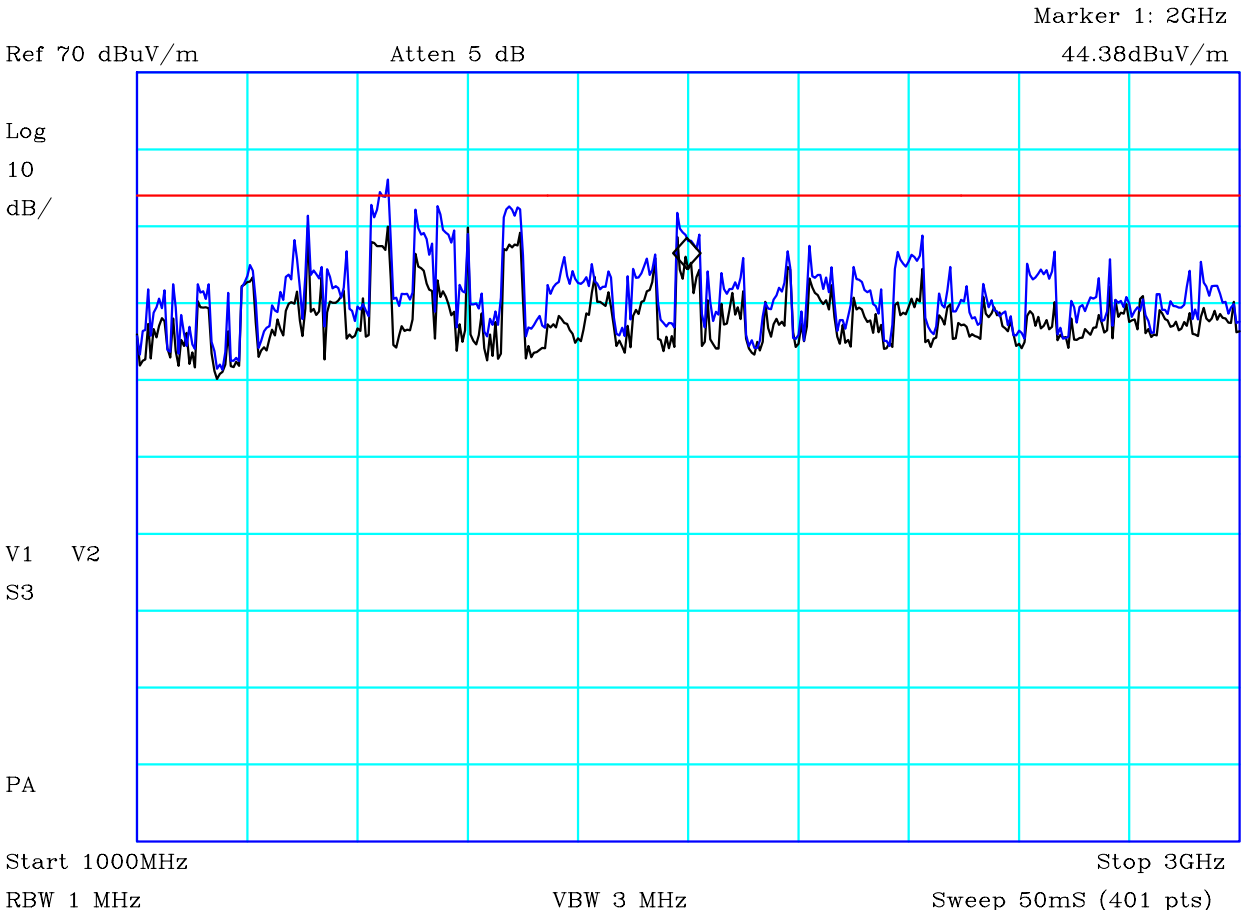
Company:	Raspberry Pi	Product:	Raspberry Pi
Date:	7th December 2013	Test Eng:	Derek Barlow
Method:	CISPR16	Method:	
Limit1:(RED)	FCC(B)@3m	Limit2:	
Limit3:		Limit4:	

Running composite video, scrolling H pattern

Black trace = vertical polarisation, Blue trace = horizontal polarisation

Facility:	Anech_1	Height	multi	Mode:	2
Distance	3m	Polarisation	V+H	Modification State:	1
Angle	0-360	File:	H3B084D8	Analyser:	R9

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



CF1:A8_3m_120807 CF2:CBL050_110107 CF3:PRE10_120627

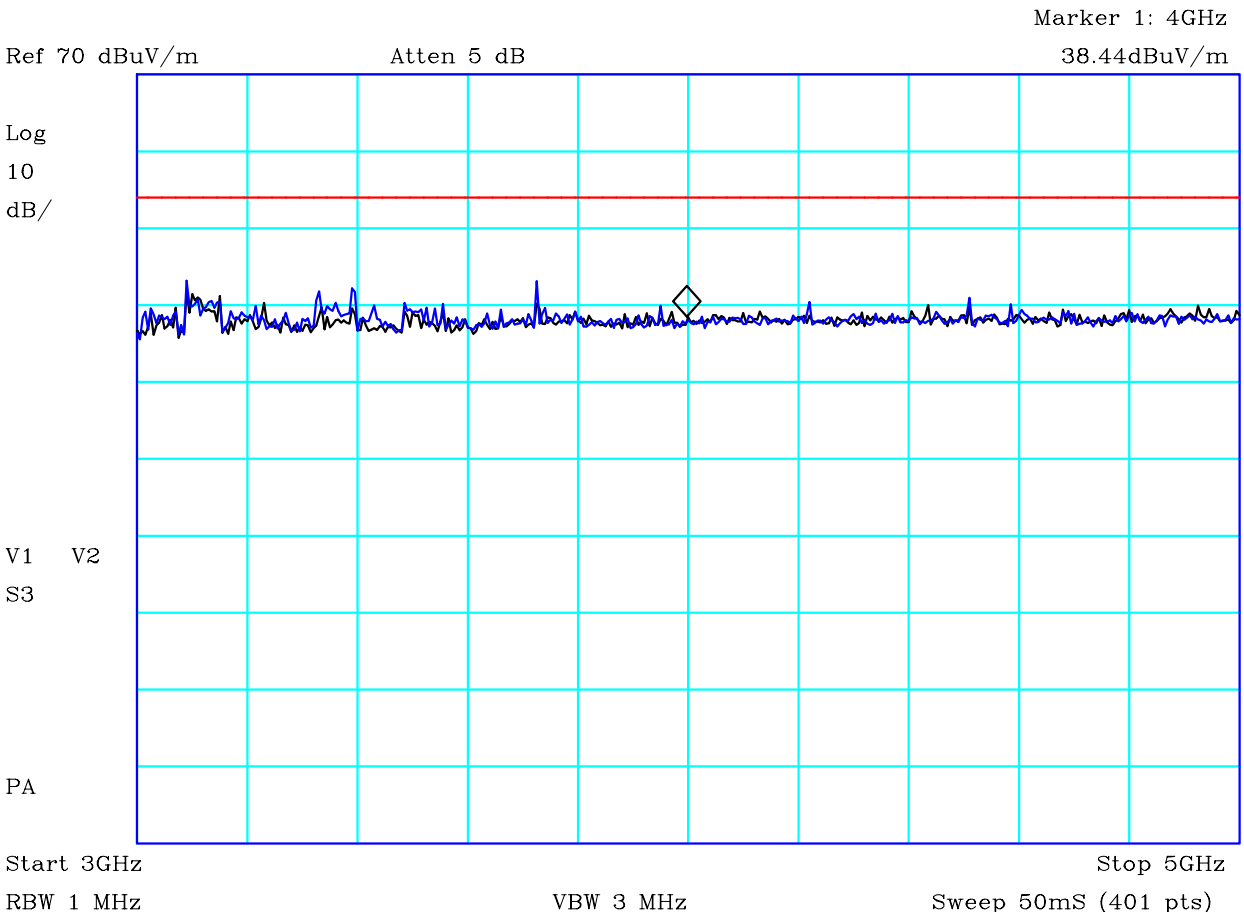
PLOT 11 Radiated Emissions - 1GHz to 3GHz - Composite Video

Company:	Raspberry Pi	Product:	Raspberry Pi Rev 2.4
Date:	08/12/2013	Test Eng:	Dave Smith
Method:	ANSI C63.4	Method:	
Limit1:(RED)	FCC(B)@3m	Limit2:	
Limit3:		Limit4:	

Black trace = Vertical Polarisation, Blue trace = Horizontal polarisation
Running composite video, scrolling H pattern

Facility:	Anech_2	Height	1m,1.5m,2m	Mode:	2
Distance	3m	Polarisation	V+H	Modification State:	1
Angle	0-360	File:	H3B08855	Analyser:	R9

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.



CF1:A8_3m_120807 CF2:CBL050_110107 CF3:PRE10_120627

PLOT 12 Radiated Emissions - 3GHz to 5GHz - Composite Video

Company:	Raspberry Pi	Product:	Raspberry Pi Rev 2.4
Date:	08/12/2013	Test Eng:	Dave Smith
Method:	ANSI C63.4	Method:	
Limit1:(RED)	FCC(B)@3m	Limit2:	
Limit3:		Limit4:	

Black trace = Vertical Polarisation, Blue trace = Horizontal polarisation
Running composite video, scrolling H pattern

Facility:	Anech_2	Height	1m,1.5m,2m	Mode:	2
Distance	3m	Polarisation	V+H	Modification State:	1
Angle	0-360	File:	H3B08862	Analyser:	R9

This report shall not be reproduced except in full, without the written approval of:
dB Technology (Cambridge) Ltd.