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Report On

FCC Testing of the
Pace Plc
PX001BNT

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FCC ID: NQ8PX001BNT

Document 75921218 Report 02 Issue 5

April 2013



Product Service

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REPORT ON

FCC Testing of the
Pace Plc
PX001BNT

Document 75921218 Report 02 Issue 3

April 2013

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DATED

11 April 2013

This report has been up-issued to remove photograph in section 1.4.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 15B. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

G Steele



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SECTION 1

REPORT SUMMARY

FCC Testing of the
Pace Plc
PX001BNT



1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Pace Plc, PX001BNT to the requirements of FCC CFR 47 Part 15B.

Objective	To perform FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Pace Plc
Model Number(s)	See Declaration of Build Status
Serial Number(s)	See Declaration of Build Status
Software Version	See Declaration of Build Status
Hardware Version	See Declaration of Build Status
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 15B: 2011
Test Plan/Issue/Date	Not Applicable
Incoming Release Date	Declaration of Build Status 29 March 2013
Disposal Reference Number	Held Pending Disposal Not Applicable
Date	Not Applicable
Order Number	5158262 & 5158263
Date	07 January 2013
Start of Test	09 February 2013
Finish of Test	13 February 2013
Name of Engineer(s)	G Steele (under supervision of D West)
Related Document(s)	ANSI 63.4: 2009



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1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results in accordance with FCC CFR 47 Part 15B is shown below.

Configuration 1 - Normal						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
2.1	15.107	Conducted Emissions (AC Power Port)	Normal	0	Pass	ANSI 63.4
2.2	15.109	Radiated Emissions (Enclosure Port)	Normal	0	Pass	ANSI 63.4

N/A – Not Applicable



1.3 DECLARATION OF BUILD STATUS

MAIN EUT	
MANUFACTURING DESCRIPTION	High Definition PVR with MOCA
MANUFACTURER	Pace
TYPE	PX001BNT
PART NUMBER	D6671001900
SERIAL NUMBER	From test report
HARDWARE VERSION	D6671001900 Rev AJ
SOFTWARE VERSION	Spartacus Platform + ABL V1.0 (DV)
TRANSMITTER OPERATING RANGE	2400MHz to 2485MHz
RECEIVER OPERATING RANGE	
COUNTRY OF ORIGIN	China
INTERMEDIATE FREQUENCIES	
EMISSION DESIGNATOR(S): (i.e. G1D, GXW)	
MODULATION TYPES: (i.e. GMSK, QPSK)	O-QPSK
HIGHEST INTERNALLY GENERATED FREQUENCY	2.4Ghz (RF4CE)
OUTPUT POWER (W or dBm)	0.002W
FCC ID	NQ8PX001BNT
INDUSTRY CANADA ID	
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	High Definition PVR with MOCA
BATTERY/POWER SUPPLY	
MANUFACTURING DESCRIPTION	External PSU – 12V 3A
MANUFACTURER	Acbel
TYPE	Switching
PART NUMBER	ADSA017
VOLTAGE	100-240V AC I/P 12V DC O/P
COUNTRY OF ORIGIN	China

Signature

Date

29/MAR/2013

Note: This document has been prepared to enable manufacturers with no mechanism for producing their own Declaration of Build Status, to declare the build state of the equipment submitted for test.

No responsibility will be accepted by TÜV SÜD Product Service as to the accuracy of the information declared in this document by the manufacturer.



1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Pace Plc, PX001BNT. A full technical description can be found in the manufacturer's documentation.

1.4.2 Test Configuration

The set top box was set up with it's ports fully loaded with the relevant cables. A TV was connected to the box and a picture was streamed via a laptop

Configuration 1: Normal

The EUT was configured in accordance with FCC CFR 47 Part 15B.

1.4.3 EUT Cable / Port Identification

Port	Max Cable Length specified	Usage	Type	Screened
AC Power	1.8m	Mains Lead	2 core	No

1.4.4 Modes of Operation

Modes of operation of each EUT during testing were as follows:

Mode 1 - Normal

Information on the specific test modes utilised are detailed in the test procedure for each individual test.



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1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure, test laboratories or an open test area as appropriate.

The EUT was powered from a 110Vac supply.

FCC Accreditation for Bearley Laboratory:

667968

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.7 MODIFICATION RECORD

No modifications were made to the EUT during testing.



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SECTION 2

TEST DETAILS

FCC Testing of the
Pace Plc
PX001BNT



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2.1 CONDUCTED EMISSIONS (AC POWER PORT)**2.1.1 Specification Reference**

FCC CFR 47 Part 15B

2.1.2 Equipment Under Test

PX001BNT, S/N: See Declaration of Build Status

2.1.3 Date of Test and Modification State

09 February 2013 - Modification State 0

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of ANSI 63.4.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1

2.1.6 Environmental Conditions

09 February 2013

Ambient Temperature 18.7°C

Relative Humidity 32.4%

Atmospheric Pressure 1010mbar



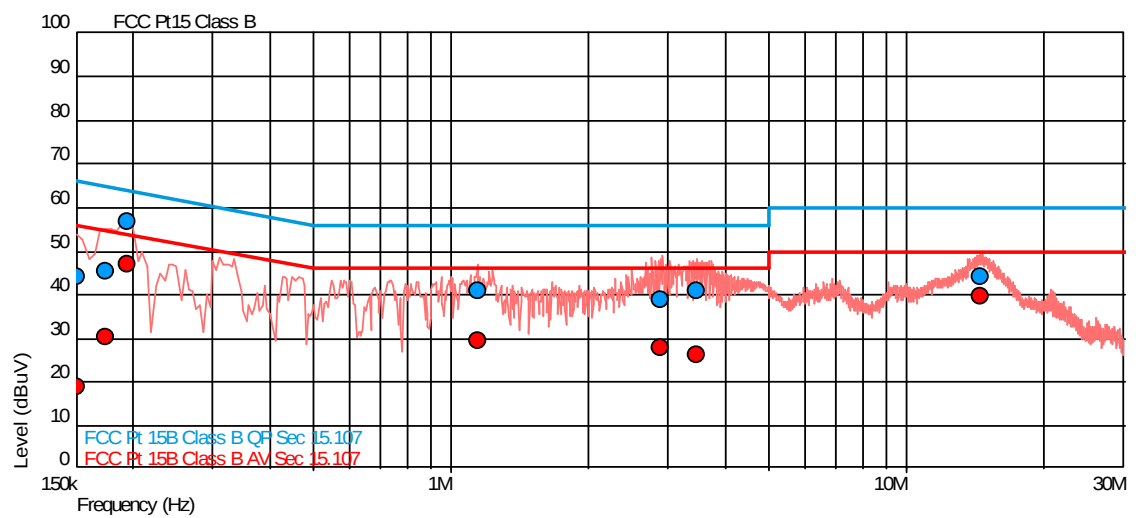
2.1.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15B for Conducted Emissions (AC Power Port).

The test results are shown below.

Configuration 1 - Mode 1

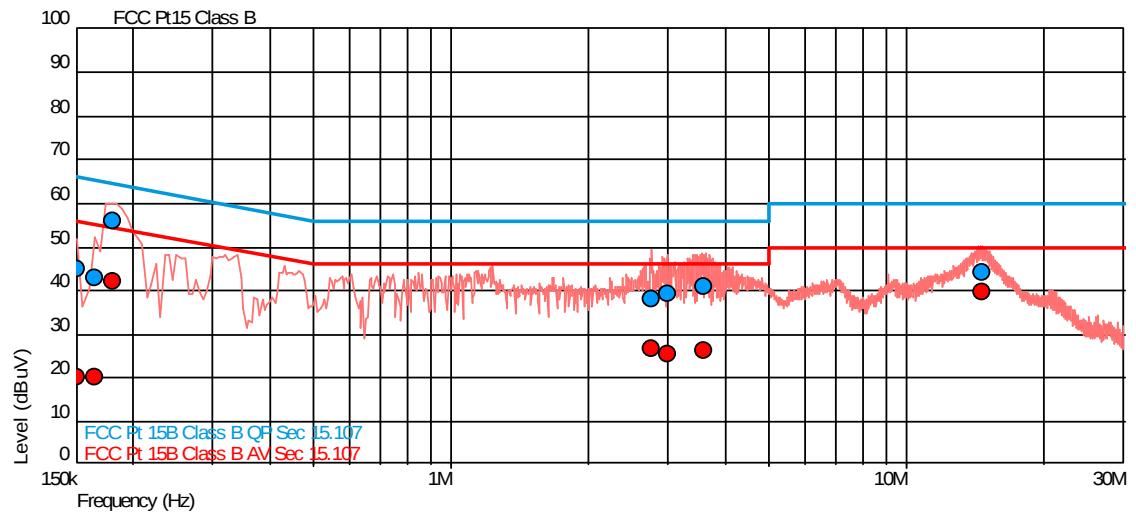
Live



Frequency (MHz)	QP Level (dBUV)	QP Limit (dBUV)	QP Margin (dBUV)	AV Level (dBUV)	AV Limit (dBUV)	AV Margin (dBUV)
0.150	44.2	66.0	-21.7	18.9	56.0	-37.1
0.175	45.2	64.7	-19.5	30.2	54.7	-24.5
0.195	56.9	63.8	-7.0	47.0	53.8	-6.8
1.142	40.7	56.0	-15.3	29.6	46.0	-16.4
2.889	38.8	56.0	-17.2	28.0	46.0	-18.0
3.451	40.8	56.0	-15.2	26.4	46.0	-19.6
14.545	44.2	60.0	-15.8	39.5	50.0	-10.5



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Neutral

Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.150	44.8	66.0	-21.2	20.1	56.0	-35.9
0.165	43.0	65.2	-22.2	20.1	55.2	-35.1
0.180	56.0	64.5	-8.5	42.2	54.5	-12.3
2.757	38.1	56.0	-17.9	26.5	46.0	-19.5
2.976	39.1	56.0	-16.9	25.6	46.0	-20.4
3.586	41.0	56.0	-15.0	26.1	46.0	-19.9
14.651	44.3	60.0	-15.7	39.6	50.0	-10.4



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2.2 RADIATED EMISSIONS (ENCLOSURE PORT)

2.2.1 Specification Reference

FCC CFR 47 Part 15B

2.2.2 Equipment Under Test

PX001BNT, S/N: See Declaration of Build Status

2.2.3 Date of Test and Modification State

13 February 2013 - Modification State 0

2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of ANSI 63.4.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1

2.2.6 Environmental Conditions

13 February 2013

Ambient Temperature 18.7°C

Relative Humidity 32.4%

Atmospheric Pressure 1010mbar

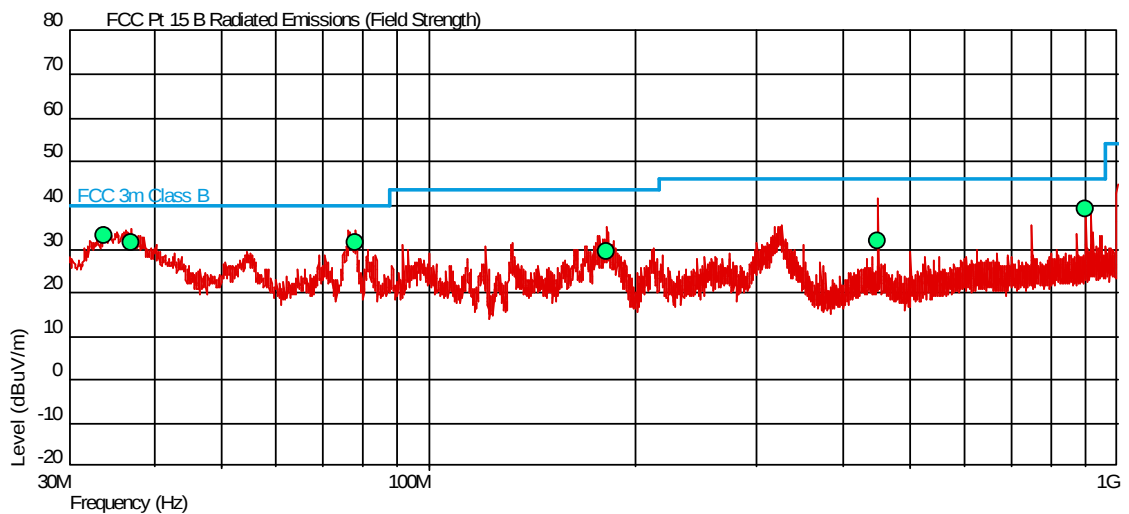


2.2.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15B for Radiated Emissions (Enclosure Port).

The test results are shown below.

Configuration 1 - Mode 1



Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	Angle(Deg)	Height(m)	Polarity
33.704	33.0	40.0	-7.0	80.00	1.00	Vertical
36.900	31.4	40.0	-8.6	0.00	1.00	Vertical
78.301	31.6	40.0	-8.4	0.00	1.00	Vertical
181.348	29.3	43.5	-14.2	0.00	1.00	Horizontal
450.005	31.8	46.0	-14.2	200.00	1.00	Vertical
899.969	39.3	46.0	-6.7	0.00	1.00	Horizontal



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Above 1GHz

Freq. GHz	Ant Pol V/H	Ant Hgt Cm	EUT Arc Deg	Raw Peak dBμV/m	Raw Average dBμV/m	Ant Factor dB	Cable Loss dB	Amp Gain dB	Result Peak dBμV/m	Result Average dBμV/m	Peak Limit dBμV/m	Average Limit dBμV/m	Result
1.134	V	100	0	22.95	2.92	24.1	5.5	N/A	52.55	32.52	74.0	54.0	Pass



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SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.1 EMC - Conducted Emissions					
Single Phase LISN	Rohde & Schwarz	ESH3-Z5	1674	12	17-Sep-2013
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	1777	12	27-Jul-2013
EMI Test Receiver	Rohde & Schwarz	ESIB26	3763	12	12-Mar-2013
EMC 3m Semi Anechoic Chamber	Rainford	Hybrid	4160	12	22-Sep-2013
Section 2.2 EMC - Radiated Emissions					
Turntable Controller	Various	RH253	1708	-	TU
Antenna (Double Ridge Guide)	EMCO	3115	1711	12	11-Dec-2013
Bilog Antenna	Schaffner	CBL6143	1858	24	5-Sep-2014
Signal Generator, 9kHz to 6GHz	Rohde & Schwarz	SMB 100A	3501	12	1-May-2013
EMI Test Receiver	Rohde & Schwarz	ESIB26	3763	12	12-Mar-2013
EMC 3m Semi Anechoic Chamber	Rainford	Hybrid	4160	12	22-Sep-2013

TU – Traceability Unscheduled



3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	Frequency / Parameter	MU
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.2dB*
Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3dB*
Conducted Emissions, LISN	150kHz to 30MHz Amplitude	3.2dB*
Conducted Emissions, ISN	150kHz to 30MHz Amplitude	2.1dB
Substitution Antenna, Radiated Field	30MHz to 18GHz Amplitude	2.6dB
Discontinuous Interference	150kHz to 30MHz Amplitude	3.0dB*
Interference Power	30MHz to 300MHz Amplitude	3.0dB*
Radiated E-Field Susceptibility	10MHz to 6GHz Test Amplitude	2.0dB†
Conducted Susceptibility RF	50kHz to 1000MHz Amplitude	3.1dB•
	EM Clamp Method of Test	1.2dB•
	CDN Method of Test	1.1dB•
	BCI Clamp Method of Test	1.2dB•
Conducted Susceptibility LF	DC to 150kHz	1.0%†
Power Frequency Magnetic Field	50Hz/60Hz Amplitude	0.45%
Magnetic Emissions	9kHz to 30MHz Amplitude	3.4dB*
Magnetic Field/Flux iaw EN 50366	10Hz to 400kHz	2.64%
Harmonics and Flicker	The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3	—
Mains Voltage Variations and Interrupts	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11	—
Fast Transient Burst	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	—
Electrostatic Discharge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-2	—
Surge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-5	—
Vehicle Transients	The test was applied using proprietary equipment that meets the requirements of ISO 7637-1 and 2	—
Compass Safe Distance	Azimuth Accuracy	0.10°

Worst case error for both Time and Frequency measurement 12 parts in 10^6 .

- * In accordance with CISPR 16-4-2
- † In accordance with UKAS Lab 34
- In accordance with EN 61000-4-6: 2009



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SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



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4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA
(Not UKAS Accredited).

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