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Report On

FCC and Industry Canada Testing of the Symbol Technologies Inc STB3578 Cradle In accordance with FCC CFR 47 Part 15C and Industry Canada RSS-210

COMMERCIAL-IN-CONFIDENCE

FCC ID: H9PSTB3578 IC ID: 1549D-STB3578

Document 75912884 Report 05 Issue 2

June 2011



TUV Product Service Ltd, Octagon House, Concorde Way, Segensworth North, Fareham, Hampshire, United Kingdom, PO15 5RL Tel: +44 (0) 1489 558100. Website: www.tuvps.co.uk

COMMERCIAL-IN-CONFIDENCE

REPORT ON FCC and Industry Canada Testing of the

Symbol Technologies Inc STB3578 Cradle In accordance with FCC CFR 47 Part 15C

and Industry Canada RSS-210

Document 75912884 Report 05 Issue 2

June 2011

Symbol Technologies Inc PREPARED FOR

One Motorola Plaza

Holtsville NY

11742-1300

USA

PREPARED BY

Project Manager

APPROVED BY

M Jenkins

Authorised Signatory

DATED 24 June 2011

This report has been up-issued to Issue 2 to include Conducted Emissions results.

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 15C and RSS-210. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);





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SECTION 1

REPORT SUMMARY

FCC and Industry Canada Testing of the Symbol Technologies Inc STB3578 Cradle In accordance with FCC CFR 47 Part 15C and Industry Canada RSS-210



1.1 INTRODUCTION

The information contained in this report is intended to show verification of Symbol Technologies Inc STB3578 Cradle to the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-210.

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 Symbol Technologies Inc

Manufacturing Description Cradle

Model Number(s) STB3578

Serial Number(s) MXA5GP13

MXA5GP07

Software Version Rev A

Hardware Version Rev A

Number of Samples Tested Two

Non Test Variant FLB3578

Test Specification/Issue/Date FCC CFR 47 Part 15C: 2010

Industry Canada RSS-210 Issue 8:2010 Industry Canada RSS-GEN Issue 3:2010

Incoming Release Application Form Date 08 June 2011

Disposal Held Pending Disposal

Reference Number
Date

Not Applicable
Not Applicable
Not Applicable
Not Applicable
Not Applicable
NP5308873
Date

19 October 2010
Start of Test

05 June 2011

Finish of Test 22 June 2011

Name of Engineer(s) G Lawler

D West

Related Document(s) ANSI C63.4: 2003



1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results for each configuration, in accordance with FCC CFR 47 Part 15C and Industry Canada RSS-210 and RSS-GEN is shown below.

Configura	Configuration 1: STB3578										
Section	Spec 0	Clause	Test Description	Mode	Mod State	Result	Base Standard				
Section	FCC	IC	Test Description	Wode	Wod State	Result	base Standard				
		RSS-		2402MHz Tx		N/A					
2.1	15.207	GEN	Conducted Emissions	2441MHz Tx	0	Pass	ANSI C63.4				
		7.2.2		2480MHz Tx		N/A					
		15.247 (b)(4) A8.4(4)			2402MHz Tx	0	Pass				
2.2					EIRP Peak Power	2441MHz Tx	0	Pass	ANSI C63.4		
	(=)(-)			2480MHz Tx	0	Pass					
				2402MHz Tx	0	Pass					
2.3	15.247(d)	A8.2 (a)	Radiated Emissions (Enclosure Port)	2441MHz Tx	0	Pass	ANSI C63.4				
				2480MHz Tx	0	Pass					
				2402MHz Tx	0	Pass					
2.4	15.247 (d)	A8.5, 2.2	Band Edge Measurements	2441MHz Tx		N/A	ANSI C63.4				
	(3)			2480MHz Tx	0	Pass					

N/A - Not Applicable



1.3 APPLICATION FORM

EQUIPMENT DESCRIPTION						
Model Name/Number	STB3578					
Part Number						
Technical Description (Please provide a brief description of the intended use of the equipment)	This device is a hand held bar code reader using a Bluetooth radio to communicate to the charging cradle. The device uses a Broadcom Bluetooth radio capable of EDR transfer rates. The Bluetooth profiles will include Cradle, SPP, HID, profiles.					

	PC	WER S	OURCE
	.AC mains	State	voltage
AC sup	ply frequency (Hz)		
	VAC		
	Mex Current		
	Hz		
	Single phase		Three phase
And/O	r		
×	External DC supply		
	Nominal voltage	14 V	Max Current 1.5 A
	Extreme upper voltage		¥
	Extreme lower voltage		.Α
Battery			
	Nickel Cadmium		Lead acid (Vehicle regulated)
	Alkaline		Leclanche
	Elihium		Other Details:
	Vots nominal.		
Endpoi	int voltage as quoted by equipment manufacturer		5-14 V

	FDFOLIFIEW INFORMATION									
FREQUENCY INFORMATION										
Frequency Range	2400 to	2483.5	MHZ							
Channel Spacing (where applicable)										
Test Frequencies*	Bottom	2402	MHz	Channel Number (if applicable)		0				
	Middle	2441	MHz	Channel Number (if applicable)		39				
	Top	2480	MHz	Charinel Number (if applicable)		78				
	If alternate test modes are available resulting in different test frequencies please specify which mode is applicable:									
POWER CHARACTERISTICS										
Maximum TX power	0.1.	W								
Minimum TX power		W(if v	ariable)							
is transmitter intended for :										
Continuous duty					Yes		No			
Intermittent duty				×	Yes		No:			
ffintermittent state OUTY CYCLE										
Transmitter ON	9	seconds								
Transmitter OFF	4	seconds								



1.5

0

A

°C

	ANTENNA	CHARACT	ERISTICS				
	Antenna connector	įs	state impedance		Ohm		
\boxtimes	Temporary antenna connector	S	State impedance	50	Ohm		
×	Integral antenna	C	ain	2.5	dBi		
	MODULATIO	ON CHARA	CTERISTICS				
	Amplitude	×	Frequency				
	Phase		Other (please pr	ovide deta	ails):		
Can	the transmitter operate un-modulated?					Yes	No
ITU	CLASS C designation or Class of Emission:	OF EMISSIC	N USED				
		1					
	(if applicable	e) 2					
	(if applicable	e) 3					
If mo	ore than three classes of emission, list separately:						
	EXTRE	EME CONDI	TIONS				
Extr	eme test voltages (Max) 14 V	Extre	eme test voltages (I	Min)	5	V	

I hereby declare that I am entitled to sign on behalf of the applicant and that the information supplied is correct and complete.

DC Maximum Current

Minimum temperature

Signature: Name: Zhang Xin Jian

°C

Position held: Regulatory Manager Date: 2011-06-08

50

Nominal DC Voltage

Maximum temperature



1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Symbol Technologies Inc STB3578 Cradle. A full technical description can be found in the manufacturer's documentation.

1.4.2 Test Configuration

Configuration 1: STB3578

The EUT was configured in accordance with FCC CFR 47 Part 15 and Industry Canada RSS-210.

1.4.3 Modes of Operation

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

Mode 1 - 2402MHz Tx

Mode 2 - 2441MHz Tx

Mode 3 - 2480MHz Tx

Testing was performed in the worst case. The worst case was deemed as the packet type which produced the highest level of conducted average power. This packet type was 2DH5

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



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 or test laboratories as appropriate.

The EUT was powered from Symbol Technologies Inc AC Power Supply DCH4-050MV-0301 for all testing.

FCC Accreditation 90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation IC2932B-1 Octagon House, Fareham Test Laboratory

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.



SECTION 2

TEST DETAILS

FCC and Industry Canada Testing of the Symbol Technologies Inc STB3578 Cradle In accordance with FCC CFR 47 Part 15C and Industry Canada RSS-210



2.1 CONDUCTED EMISSIONS

2.1.1 Specification Reference

FCC CFR 47 Part 15C, Clause 15.207 Industry Canada RSS-GEN, Clause 7.2.2

2.1.2 Equipment Under Test

STB3578 Cradle, S/N: MXA5GP07

2.1.3 Date of Test and Modification State

22 June 2011 - 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 C63.4.

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

Configuration 1 - Mode 2

2.1.6 Environmental Conditions

22 June 2011

Ambient Temperature 20.3°C

Relative Humidity 52.6%



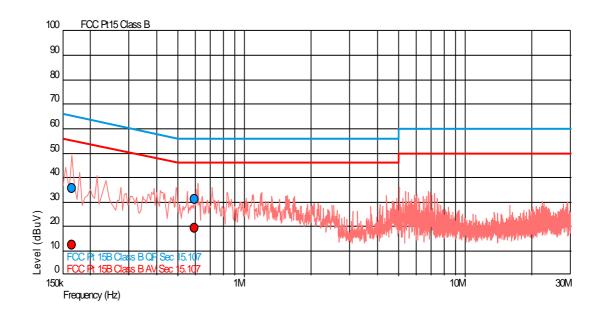
2.1.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-GEN for Conducted Emissions.

The test results are shown below.

Configuration 1 - Mode 1

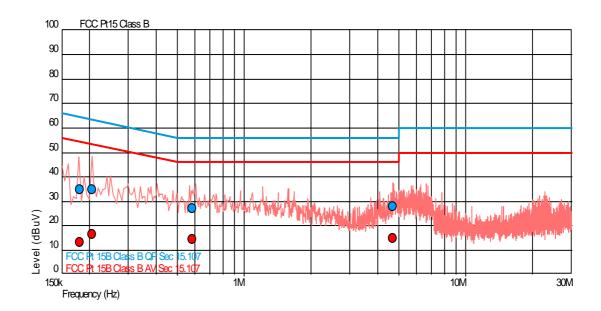
Live Line



Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.165	35.4	65.2	-29.8	12.4	55.2	-42.8
0.594	31.2	56.0	-24.8	19.3	46.0	-26.7



Neutral Line



Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.180	34.6	64.5	-29.8	13.1	54.5	-41.4
0.205	34.6	63.4	-28.8	16.5	53.4	-36.9
0.582	26.9	56.0	-29.1	14.6	46.0	-31.4
4.693	27.9	56.0	-28.1	15.0	46.0	-31.0



2.2 EIRP PEAK POWER

2.2.1 Specification Reference

FCC CFR 47 Part 15C, Clause 15.247 (b)(4) Industry Canada RSS-210, Clause A8.4 (4)

2.2.2 Equipment Under Test

STB3578 Cradle, S/N: MXA5GP13

2.2.3 Date of Test and Modification State

05 June 2011 - 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 C63.4.

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

Configuration 1 - Mode 1

- Mode 2

- Mode 3

2.2.6 Environmental Conditions

05 June 2011

Ambient Temperature 20.0°C Relative Humidity 47.0%



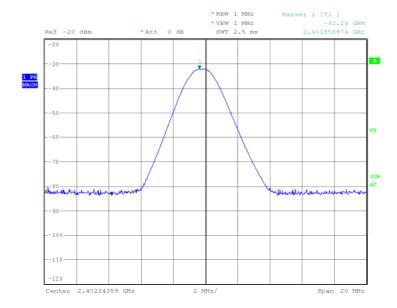
2.2.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-210 for EIRP Peak Power.

The test results are shown below.

Configuration 1 - Mode 1

Freq GHz	Result EIRP dBm	Limit EIRP dBm	Result EIRP mW	Limit EIRP mW
2.402	9.9	36.0	9.772	4000

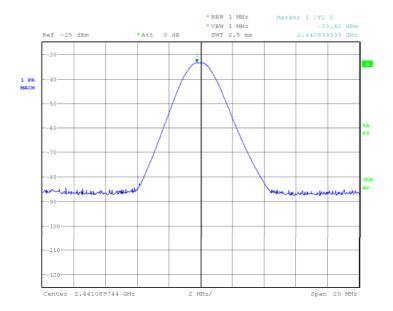


Date: 5.JUN.2011 07:36:57



Configuration 1 - Mode 2

Freq GHz	Result EIRP dBm	Limit EIRP dBm	Result EIRP mW	Limit EIRP mW
2.441	8.5	36.0	7.079	4000

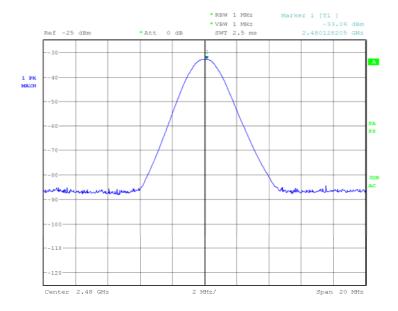


Date: 5.JUN.2011 08:40:42



Configuration 1 - Mode 3

Freq GHz	Result EIRP dBm	Limit EIRP dBm	Result EIRP mW	Limit EIRP mW
2.480	8.1	36.0	6.457	4000



Date: 5.JUN.2011 08:49:06



2.3 RADIATED EMISSIONS (ENCLOSURE PORT)

2.3.1 Specification Reference

FCC CFR 47 Part 15C, Clause 15.247 (d) Industry Canada RSS-210, Clause A8.2 (a)

2.3.2 Equipment Under Test

STB3578 Cradle, S/N: MXA5GP13

2.3.3 Date of Test and Modification State

05 June 2011 - Modification State 0

2.3.4 Test Equipment Used

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

2.3.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of ANSI C63.4.

A preliminary profile of the Spurious Radiated Emissions was obtained by operating the EUT on a remotely controlled turntable within a semi-anechoic chamber. Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarisations. The profiling produced a list of the worst-case emissions together with the EUT azimuth and antenna polarisation.

Using the information from the preliminary profiling of the EUT, the list of emissions was then confirmed or updated under Alternative Open Site conditions. Emission levels were maximised by adjusting the antenna height, antenna polarisation and turntable azimuth.

Emissions within the restricted bands defined in 15.205 were measured in accordance with 15.209. Emissions measured below 1GHz employed a quasi peak detector, in accordance with 15.35(a). Emissions measured above 1GHz employed an average detector as defined in 15.35(b). The peak level of the emission was also measured to ensure that a difference of 20dB from the average level was not exceeded, as defined in 15.35(b). Emissions identified within the range 30MHz – 1GHz were then formally measured using a CISPR Quasi-Peak detector. Other emissions from 30MHz to 25GHz excluding the restricted bands were measured using a peak detector.

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

Configuration 1 - Mode 1

- Mode 2

- Mode 3



2.3.6 Environmental Conditions

05 June 2011

Ambient Temperature 20.0°C Relative Humidity 47.0%

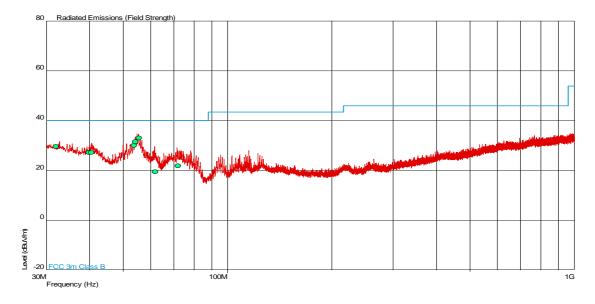
2.3.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-210 for Radiated Emissions (Enclosure Port).

The test results are shown below.

Configuration 1 - Mode 1

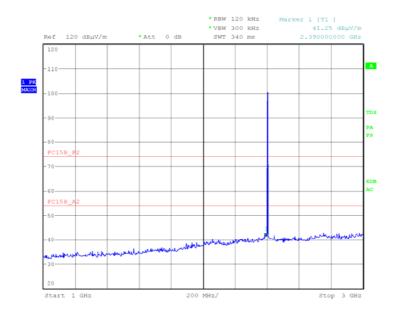
30MHz to 1GHz



Frequency (MHz)	QP Level (dBµV/m)	QP Level (μV/m)	QP Limit (dBµV/m)	QP Limit (μV/m)	QP Margin (dBµV/m)	QP Margin (μV/m)	Angle (Deg)	Height (m)	Polarity
32.043	29.7	30.5	40.0	100	-10.3	69.5	76	1.69	Vertical
39.872	27.2	22.9	40.0	100	-12.8	77.1	360	1.00	Vertical
40.468	27.3	23.2	40.0	100	-12.7	76.8	131	1.00	Vertical
53.734	30.0	31.6	40.0	100	-10.0	68.4	26	1.00	Vertical
54.347	31.6	38.0	40.0	100	-8.4	62.0	360	1.00	Vertical
55.549	33.1	45.2	40.0	100	-6.9	54.8	292	1.00	Vertical
61.797	19.4	9.3	40.0	100	-20.6	90.7	99	2.52	Vertical
71.892	21.9	12.4	40.0	100	-18.1	87.6	240	1.00	Vertical

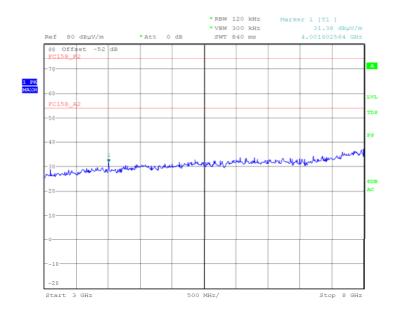


1GHz to 3GHz



Date: 5.JUN.2011 08:09:00

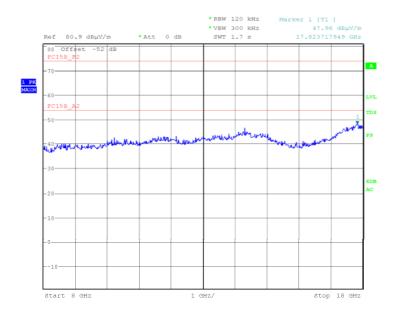
3GHz to 8GHz



Date: 5.JUN.2011 10:08:25

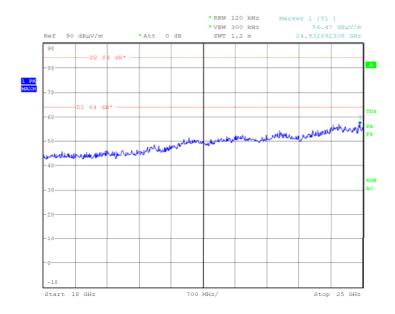


8GHz to 18GHz



Date: 5.JUN.2011 11:56:58

18GHz to 25GHz

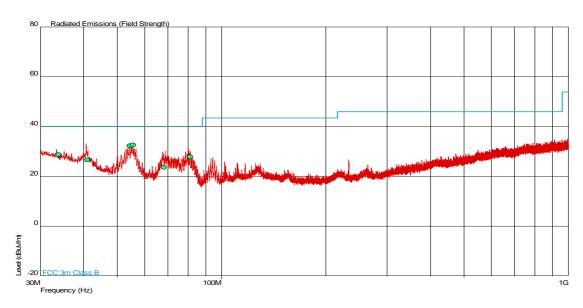


Date: 5.JUN.2011 12:26:41



Configuration 1 - Mode 2

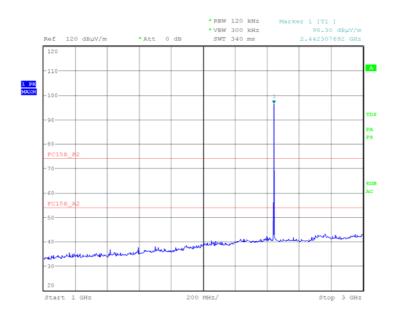
30MHz to 1GHz



Frequency (MHz)	QP Level (dBµV/m)	QP Level (μV/m)	QP Limit (dBµV/m)	QP Limit (μV/m)	QP Margin (dBµV/m)	QP Margin (μV/m)	Angle (Deg)	Height (m)	Polarity
33.859	28.8	27.5	40.0	100	-11.2	72.5	360	1.00	Horizontal
41.011	26.6	21.4	40.0	100	-13.4	78.6	152	1.00	Vertical
54.371	32.4	41.7	40.0	100	-7.6	58.3	328	1.00	Vertical
55.574	32.5	42.2	40.0	100	-7.5	57.8	33	1.00	Vertical
68.160	23.6	15.1	40.0	100	-16.4	84.9	219	1.00	Vertical
81.275	27.8	24.5	40.0	100	-12.2	75.5	277	1.00	Vertical

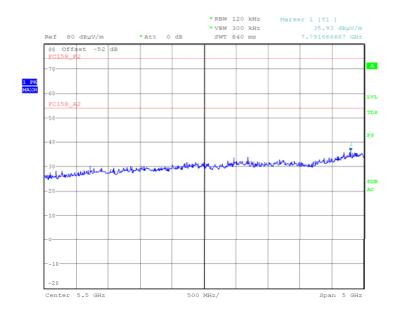


1GHz to 3GHz



Date: 5.JUN.2011 08:31:39

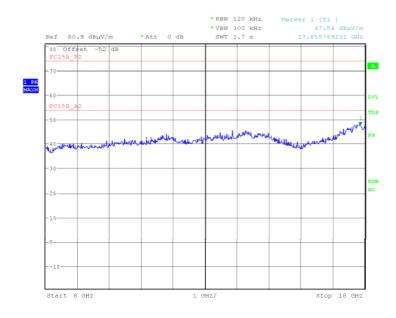
3GHz to 8GHz



Date: 5.JUN.2011 10:16:54

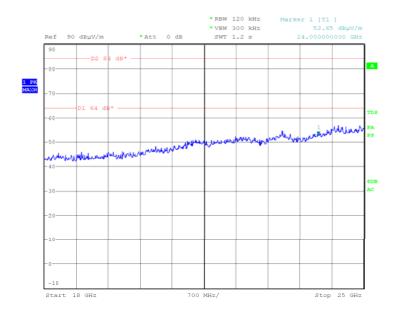


8GHz to 18GHz



Date: 5.JUN.2011 11:30:09

18GHz to 25GHz

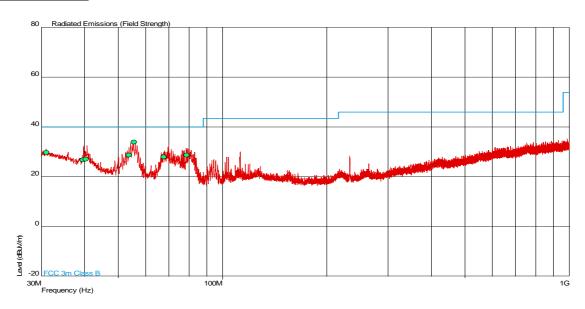


Date: 5.JUN.2011 12:36:09



Configuration 1 - Mode 3

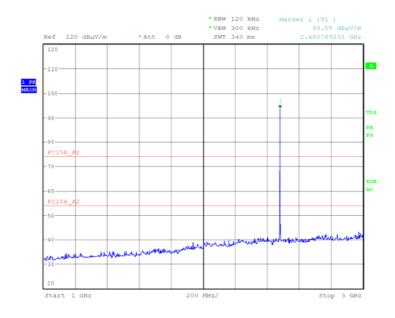
30MHz to 1GHz



Frequency (MHz)	QP Level (dBµV/m)	QP Level (µV/m)	QP Limit (dBµV/m)	QP Limit (μV/m)	QP Margin (dBµV/m)	QP Margin (μV/m)	Angle (Deg)	Height (m)	Polarity
31.040	29.8	30.9	40.0	100	-10.2	69.1	83	1.00	Horizontal
39.604	26.8	21.9	40.0	100	-13.2	78.1	106	1.00	Vertical
40.394	27.0	22.4	40.0	100	-13.0	77.6	71	1.00	Vertical
53.812	28.7	27.2	40.0	100	-11.3	72.8	101	1.00	Vertical
55.587	34.0	50.1	40.0	100	-6.0	49.9	329	1.00	Vertical
67.757	27.9	24.8	40.0	100	-12.1	75.2	0	1.00	Vertical
78.926	28.8	27.5	40.0	100	-11.2	72.5	258	1.00	Vertical

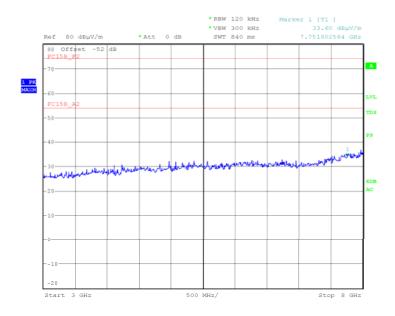


1GHz to 3GHz



Date: 5.JUN.2011 09:05:36

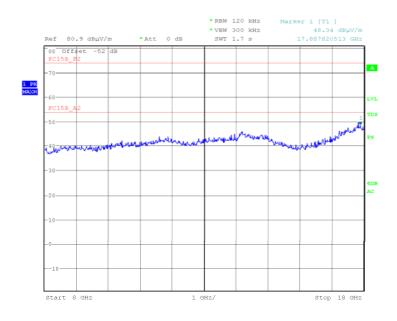
3GHz to 8GHz



Date: 5.JUN.2011 10:26:04

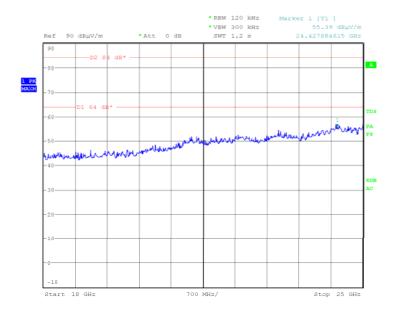


8GHz to 18GHz



Date: 5.JUN.2011 11:09:16

18GHz to 25GHz



Date: 5.JUN.2011 12:43:06



2.4 BAND EDGE EMISSIONS

2.4.1 Specification Reference

FCC CFR 47 Part 15C, Clause 15.247 (d) Industry Canada RSS-210, Clause A8.5, 2.2

2.4.2 Equipment Under Test

STB3578 Cradle, S/N: MXA5GP13

2.4.3 Date of Test and Modification State

05 June 2011 - Modification State 0

2.4.4 Test Equipment Used

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

2.4.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of ANSI C63.4.

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

Configuration 1 - Mode 1

- Mode 3

2.4.6 Environmental Conditions

05 June 2011

Ambient Temperature 20.0°C

Relative Humidity 47.0%



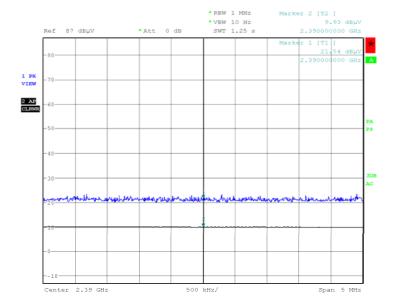
2.4.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15C and Industry Canada RSS-210 for Band Edge Emissions.

The test results are shown below.

Configuration 1 - Mode 1

Freq in GHz	Polarisation	Final Peak dBµV/m	Peak Limit dBµV/m	Final Average dBµV/m	Average Limit dBµV/m
2.402	Horizontal	47.0	74.0	23.2	54.0

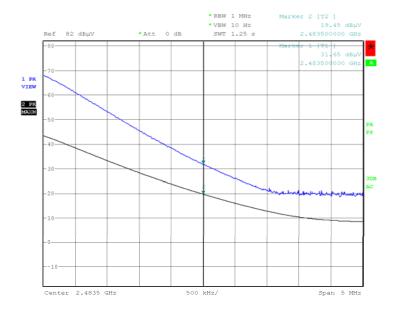


Date: 5.JUN.2011 07:44:38



Configuration 1 - Mode 3

Freq in GHz	Polarisation	Final Peak dBµV/m	Peak Limit dBµV/m	Final Average dBµV/m	Average Limit dBµV/m
2.480	Horizontal	45.5	74.0	20.4	54.0



Date: 5.JUN.2011 08:55:51



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	Calibration	Calibration		
			No.	Period	Due		
				(months)			
Section 2.1 - Conducted Emissions							
Single Phase LISN	Rohde & Schwarz	ESH3-Z5	1674	12	10-Sep-2011		
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	1777	12	19-Nov-2011		
LISN	Rohde & Schwarz	ESH3-Z5	1820	12	5-May-2011		
EMI Test Receiver	Rohde & Schwarz	ESIB26	2028	12	17-Sep-2011		
Section 2.2, 2.3 and 2.4 - I	EIRP Peak Power, Ra	diated Emissions (En	closure P	ort) and Ban	d Edge		
Emissions							
Antenna (Double Ridge	EMCO	3115	235	12	12-Nov-2011		
Guide, 1GHz-18GHz)							
Antenna (Bilog)	Schaffner	CBL6143	287	24	19-Jan-2012		
DRG	EMCO	3115	793	12	14-Aug-2011		
Antenna (Double Ridge	Q-Par Angus Ltd	QSH 180K	1511	24	2-Aug-2012		
Guide)							
Pre-Amplifier	Phase One	PS04-0086	1533	12	15-Sep-2011		
Pre-Amplifier	Phase One	PSO4-0087	1534	12	22-Sep-2011		
Mast Controller	Inn-Co GmbH	CO 1000	1606	-	TU		
Turntable/Mast Controller	EMCO	2090	1607	-	TU		
4GHz HPF	Sematron	F-100-4000-5-R	2245	-	TU		
Amplifier (1 - 8GHz)	Phase One	PS06-0060	3175	12	2-Jul-2011		
Signal Generator: 10MHz	Rohde & Schwarz	SMR20	3475	12	20-Dec-2011		
to 20GHz							
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	9-Sep-2011		

TU – Traceability Unscheduled

O/P Mon – Output monitored using calibrated equipment.



3.2 MEASUREMENT UNCERTAINTY

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

Radiated Emissions, Bilog Antenna, AOATS Radiated Emissions, Horn Antenna, AOATS Radiated Emissions, Horn Antenna, AOATS Conducted Emissions, LISN 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* Radiated E-Field Susceptibility 10MHz to 6GHz Test Amplitude 2.0dB† Conducted Susceptibility RF Conducted Susceptibility RF CON Method of Test CON Method of Test BCI Clamp Method of Test 1.2dB* Conducted Susceptibility LF DC to 150kHz Conducted Susceptibility LF DC to 150kHz Conducted Susceptibility LF DC to 150kHz Direct Injection Method of Test 1.2dB* Magnetic Emissions 9kHz to 30MHz Amplitude 0.45% Magnetic Emissions 9kHz to 30MHz Amplitude 3.4dB* Magnetic Field/Flux iaw EN 50366 10Hz to 400kHz 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Test Discipline	Frequency / Parameter	MU
Conducted Emissions, LISN 150kHz to 30MHz Amplitude 2.1dB Substitution Antenna, Radiated Field Discontinuous Interference 150kHz to 30MHz 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 CDN Method of Test BCI Clamp Method of Test Direct Injection Method of Test 1.2dB• Conducted Susceptibility LF DC to 150kHz DC to 150kHz Magnetic Emissions 9kHz to 30MHz Amplitude EM Clamp Method of Test 1.2dB• Conducted Susceptibility LF DC to 150kHz 1.0%† Power Frequency Magnetic Field 50Hz/60Hz Amplitude 3.4dB* Magnetic Field/Flux iaw EN 50366 10Hz to 400kHz The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 Fast Transient Burst 150kHz to 30MHz Amplitude 3.2dB* 2.6d% The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1dB*
Conducted Emissions, ISN 150kHz to 30MHz 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 EM Clamp Method of Test CDN Method of Test BCI Clamp Method of Test Direct Injection Method of Test 1.2dB* Conducted Susceptibility LF DC to 150kHz Doewer Frequency Magnetic Field Magnetic Emissions 9kHz to 30MHz Amplitude EM Clamp Method of Test 1.0%† Power Frequency Magnetic Field Magnetic Emissions 9kHz to 30MHz Amplitude 50Hz/60Hz Amplitude 9kHz to 30MHz Amplitude 9kHz to 400kHz 9kHz to 400k	Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3dB*
Substitution Antenna, Radiated Field 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 50kHz to 1000MHz Amplitude EM Clamp Method of Test CDN Method of Test CDN Method of Test BCI Clamp Method of Test 1.2dB* Conducted Susceptibility LF DC to 150kHz Direct Injection Method of Test 1.0%† Power Frequency Magnetic Field Magnetic Emissions 9kHz to 30MHz Amplitude 50Hz/60Hz Amplitude 0.45% Magnetic Field/Flux iaw EN 50366 10Hz to 400kHz The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 Fast Transient Burst 3.0dB* 3.0dB* 3.0dB* 3.0dB* 3.0dB* 3.0dB* 3.0dB* 3.0dB* 3.1dB* CDN Method of Test CDN Method of Test 1.2dB* 1	Conducted Emissions, LISN	150kHz to 30MHz Amplitude	3.2dB*
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† SokHz to 1000MHz Amplitude EM Clamp Method of Test 3.1dB* Conducted Susceptibility RF CDN Method of Test 1.2dB* BCI Clamp Method of Test 1.1dB* Direct Injection 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% The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Conducted Emissions, ISN	150kHz to 30MHz Amplitude	2.1dB
Interference Power Radiated E-Field Susceptibility 10MHz to 6GHz Test Amplitude 2.0dB† 50kHz to 1000MHz Amplitude EM Clamp Method of Test CON Method of Test BCI Clamp Method of Test Direct Injection Method of Test 1.2dB• Conducted Susceptibility LF DC to 150kHz 1.0%† Power Frequency Magnetic Field Magnetic Emissions 9kHz to 30MHz Amplitude 0.45% Magnetic Field/Flux iaw EN 50366 10Hz to 400kHz The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 Fast Transient Burst 3.0dB* 3.0dB* 3.0dB* 3.1dB• Conducted Susceptibility RF DC to 1000MHz Amplitude 1.2dB•	Substitution Antenna, Radiated Field	30MHz to 18GHz Amplitude	2.6dB
Radiated E-Field Susceptibility 10MHz to 6GHz Test Amplitude 50kHz to 1000MHz Amplitude EM Clamp Method of Test CDN Method of Test BCI Clamp Method of Test Direct Injection Method of Test 1.2dB Conducted Susceptibility LF DC to 150kHz Dot to 150kHz Dot to 150kHz Dot to 150kHz Magnetic Emissions 9kHz to 30MHz Amplitude 3.4dB* Magnetic Field/Flux iaw EN 50366 10Hz to 400kHz The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Discontinuous Interference	150kHz to 30MHz Amplitude	3.0dB*
SokHz to 1000MHz Amplitude EM Clamp Method of Test 3.1dB 1.2dB 1.2dB 1.1dB EVA E	Interference Power	30MHz to 300MHz Amplitude	3.0dB*
EM Clamp Method of Test CDN Method of Test BCI Clamp Method of Test BCI Clamp Method of Test Direct Injection Method of Test 1.1dB 1.1dB 1.2dB 1	Radiated E-Field Susceptibility	10MHz to 6GHz Test Amplitude	2.0dB†
Conducted Susceptibility RF CDN Method of Test BCI Clamp Method of Test Direct Injection Method of Test 1.1dB 1.2dB 1.2		• • • • • • • • • • • • • • • • • • •	
BCI Clamp Method of Test Direct Injection Method of Test 1.2dB Conducted Susceptibility LF DC to 150kHz 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4		EM Clamp Method of Test	3.1dB•
Direct Injection 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% The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Conducted Susceptibility RF	CDN Method of Test	1.2dB•
Conducted Susceptibility LF 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4		BCI Clamp Method of Test	1.1dB•
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% The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4		Direct Injection Method of Test	1.2dB•
Magnetic Emissions 9kHz to 30MHz Amplitude 3.4dB* Magnetic Field/Flux iaw EN 50366 10Hz to 400kHz 2.64% 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 —	Conducted Susceptibility LF	DC to 150kHz	1.0%†
Magnetic Field/Flux iaw EN 50366 10Hz to 400kHz 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 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Power Frequency Magnetic Field	50Hz/60Hz Amplitude	0.45%
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 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Magnetic Emissions	9kHz to 30MHz Amplitude	3.4dB*
Harmonics and Flicker meets the requirements of EN 61000-3-2 and EN 61000-3-3 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Magnetic Field/Flux iaw EN 50366	10Hz to 400kHz	2.64%
61000-3-3 Mains Voltage Variations and Interrupts The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4 —		The test was applied using proprietary equipment that	
Mains Voltage Variations and Interrupts The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4 —	Harmonics and Flicker	meets the requirements of EN 61000-3-2 and EN	_
Fast Transient Burst meets the requirements of EN 61000-4-11 meets the requirements of EN 61000-4-4 meets the requirements of EN 61000-4-4		61000-3-3	
Fast Transient Burst The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11 The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	Mains Voltage Variations and Interrupts	The test was applied using proprietary equipment that	
rast Transient Burst meets the requirements of EN 61000-4-4	Mains voltage variations and interrupts	meets the requirements of EN 61000-4-11	
meets the requirements of EN 61000-4-4	Fact Transient Buret	The test was applied using proprietary equipment that	_
	rast fransient burst	•	_
Electrostatic Discharge The test was applied using proprietary equipment that ——————————————————————————————————	Electrostatic Discharge	The test was applied using proprietary equipment that	_
meets the requirements of EN 61000-4-2	Liectiostatic Discharge	·	
Surge The test was applied using proprietary equipment that	Surge		
meets the requirements of EN 61000-4-5	Surge		
Vehicle Transients The test was applied using proprietary equipment that	Vehicle Transients		_
meets the requirements of ISO 7637-1 and 2		·	
Compass Safe Distance Azimuth Accuracy 0.10°	Compass Safe Distance	Azimuth Accuracy	0.10°
Channel Occupancy/Separation 19.1kHz N/A	Channel Occupancy/Separation	19.1kHz	N/A
Maximum Output Power Not Applicable ±0.5dB	Maximum Output Power	Not Applicable	±0.5dB
Number of Channels Not Applicable N/A	Number of Channels	Not Applicable	N/A
20dB Bandwidth 19.1kHz ±0.5dB	20dB Bandwidth		±0.5dB

Worst case error for both Time and Frequency measurement 12 parts in 10⁶.

- * In accordance with CISPR 16-4-2
- † In accordance with UKAS Lab 34
- In accordance with EN61000-4-6



SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



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

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