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TEST REPORT

LogTag Environmental Recorders

tested to

RTCA / DO-160G: 2010

Environmental Conditions and Test Procedures for Airborne Equipment

Section 21 – Emission of Radio Frequency Energy

for

LogTag Recorders Ltd

This Test Report is issued with the authority of:

Andrew Cutler

Andrew Cutler - General Manager

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Table of Contents

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1. STATEMENT OF COMPLIANCE

The **LogTag Environment Recorders** comply with RTCA / DO-160G: 2010 section 21 as a category M devices.

2. RESULTS SUMMARY

The results from testing carried out on the 13th March 2015 are summarised in the following table:

Test	Result
Conducted emissions 150 kHz – 152 MHz	Not tested. All devices are powered using internal batteries and have no external cables or ports.
Radiated emissions 100 – 6000 MHz	Complies. No emissions were detected from the devices under test.

3. INTRODUCTION

This report describes the tests and measurements performed for the purpose of determining compliance with the specification.

The client selected the test sample.

This report relates only to the sample tested.

This report contains no corrections or erasures.

Measurement uncertainties with statistical confidence intervals of 95% are shown below test results. Both Class A and Class B uncertainties have been accounted for, as well as influence uncertainties where appropriate.

All compliance statements have been made with respect of the specification limit with no reference to the measurement uncertainty.

4. CLIENT INFORMATION

Company Name	LogTag Recorders Ltd
Address	PO Box 362-95 Northcote
City	Auckland 0748
Country	New Zealand
Contact	Mr Carl Willis

5. DESCRIPTION OF TEST SAMPLE

Brand Name	LogTag
Product	Environmental Recorders
Manufacturer	Log Tag Recorders Ltd
Country of Origin	Not known
Model Numbers and	**Serial Numbers**
- SRIC-4	SN# 1030095644
- USRIC-8	SN# 4035001028
- TRIX-8	SN# 1000306654
- HAXO-8	SN# 1010048804
- TRID30-7R	SN# 1050011102
- TIC20	SN# 1080002002
- TICT	SN# 1090005571
- TRIL-8	SN# 1070007664

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6. TEST RESULTS

Radiated emissions (100 – 6000 MHz)

Radiated emissions testing was carried out over the frequency range of 100 MHz to 6000 MHz at the Laboratory's MacKelvie Street premises in a 5.6 m x 9.6 m x 4.1 m screened room.

As these devices have no external cables and are powered using an internal battery power supply only radiated emissions testing was carried out.

Pre-testing of small sample of these devices had shown that the likely radiated emission levels would be low.

Therefore as the devices are small eight similar devices were tested at the same time.

Each device was programmed by the client to operate continuously collected environmental data periodically.

Testing was carried out when the devices were placed the following orientations

- Laying on the test table flat with the LCD screen facing the roof of the screened room

- Standing upright with the LCD display facing the test antenna

- Standing upright with the right hand edge of the device facing the test antenna

Measurements were made at a distance of 0.9 metre from the table top ground plane in vertical and horizontal polarisations using the following antenna types:

- 100 – 300 MHz. Biconical antenna

- 300 – 1000 MHz. Log periodic antenna

- 1000 – 6000 MHz. Horn antenna

The test antennas were placed at least 30 cm above the testing ground plane.

The device under test was placed 0.1 metre from the front of the ground plane with the cable loom being placed between the device and the front of the ground plane.

Measurements were made using a peak detector with bandwidths of:

- 10 kHz between 100 and 300 MHz
-
- 100 kHz between 300 and 1000 MHz
-
- 1 MHz between 1000 – 6000 MHz

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Significant ambient emissions were observed as follows:

- FM broadcast stations between 88 – 108 MHz
-
- Cellphone emissions around 936 MHz.

Result: Complies

Measurement uncertainty with a confidence interval of 95% is:
- Radiated emission tests (100 - 6000 MHz) ± 4.1 dB

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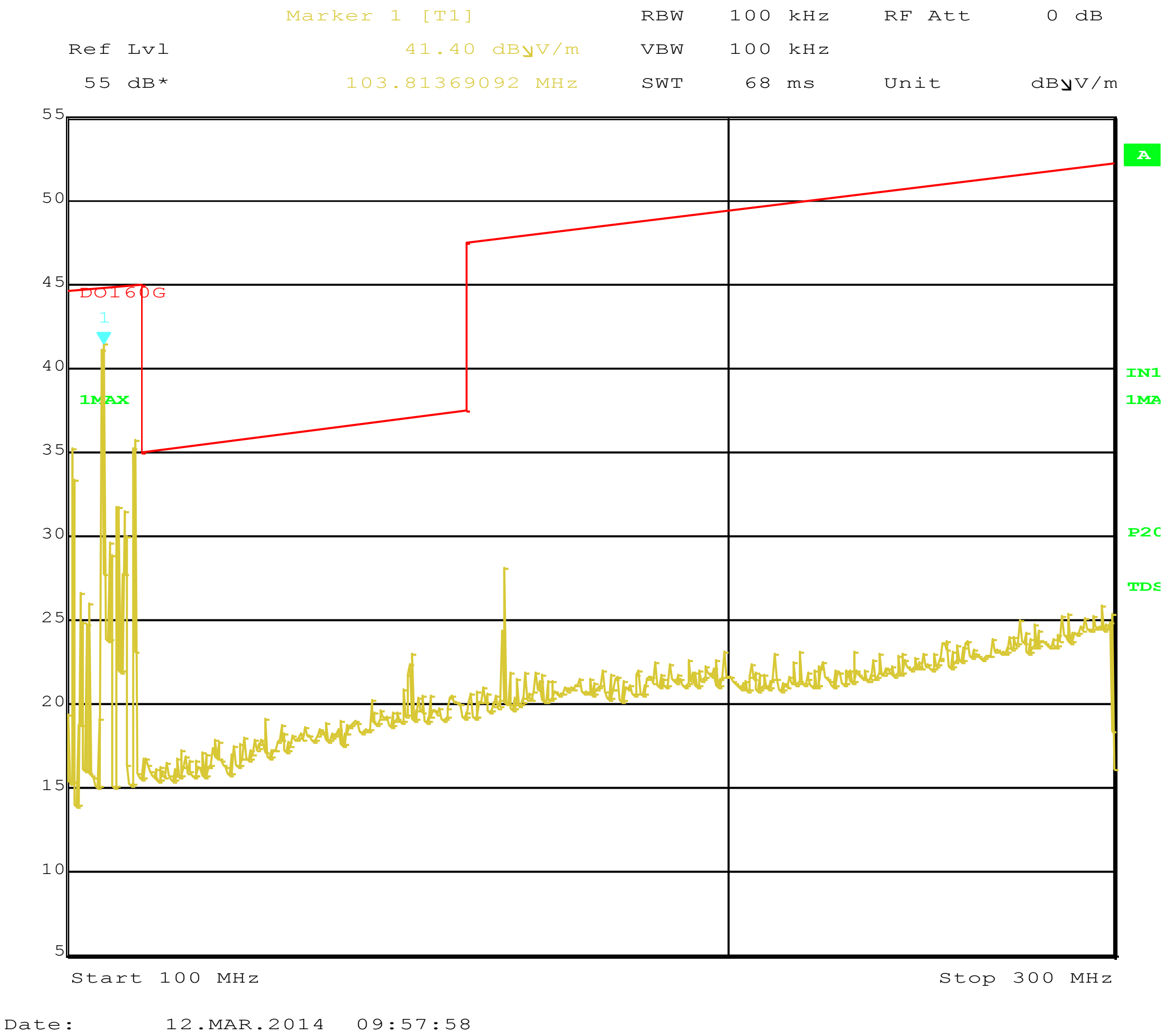
100 – 300 MHz Ambient sweep - Horizontal



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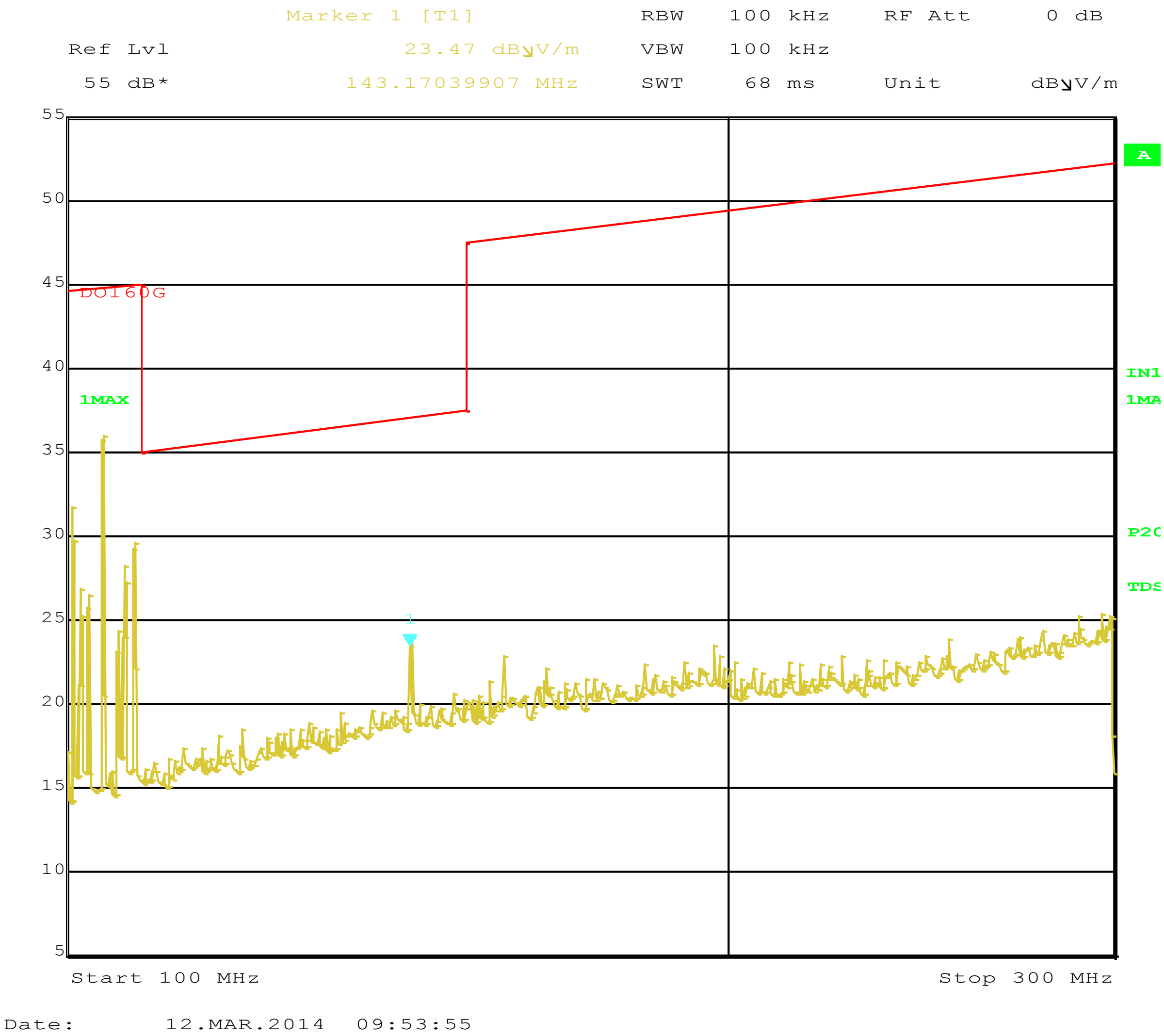
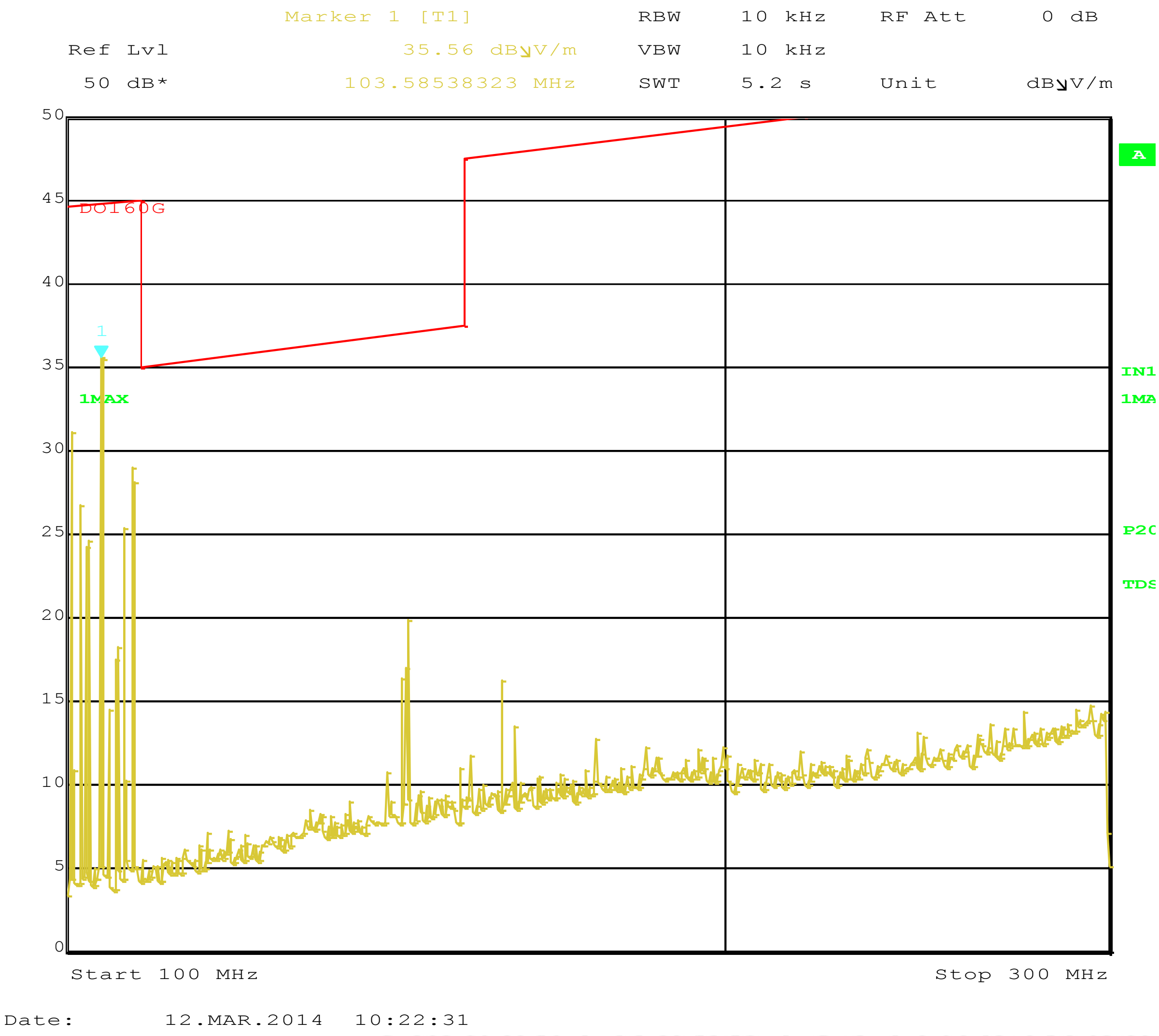
100 – 300 MHz Ambient sweep - Vertical



Laying Flat

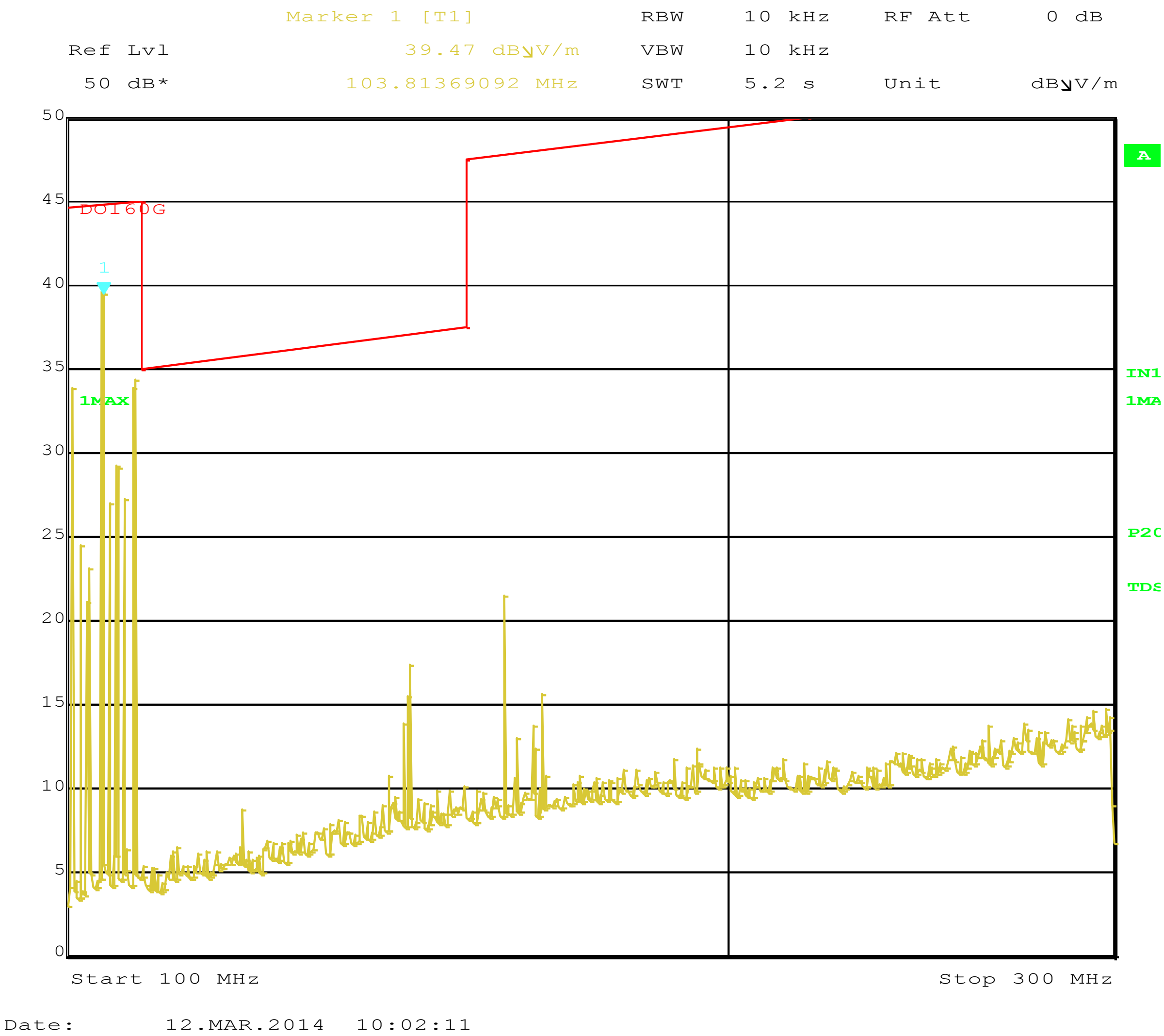
100 – 300 MHz vertical polarisation



This report may not be reproduced except in full.

Laying Flat

100 – 300 MHz horizontal polarisation



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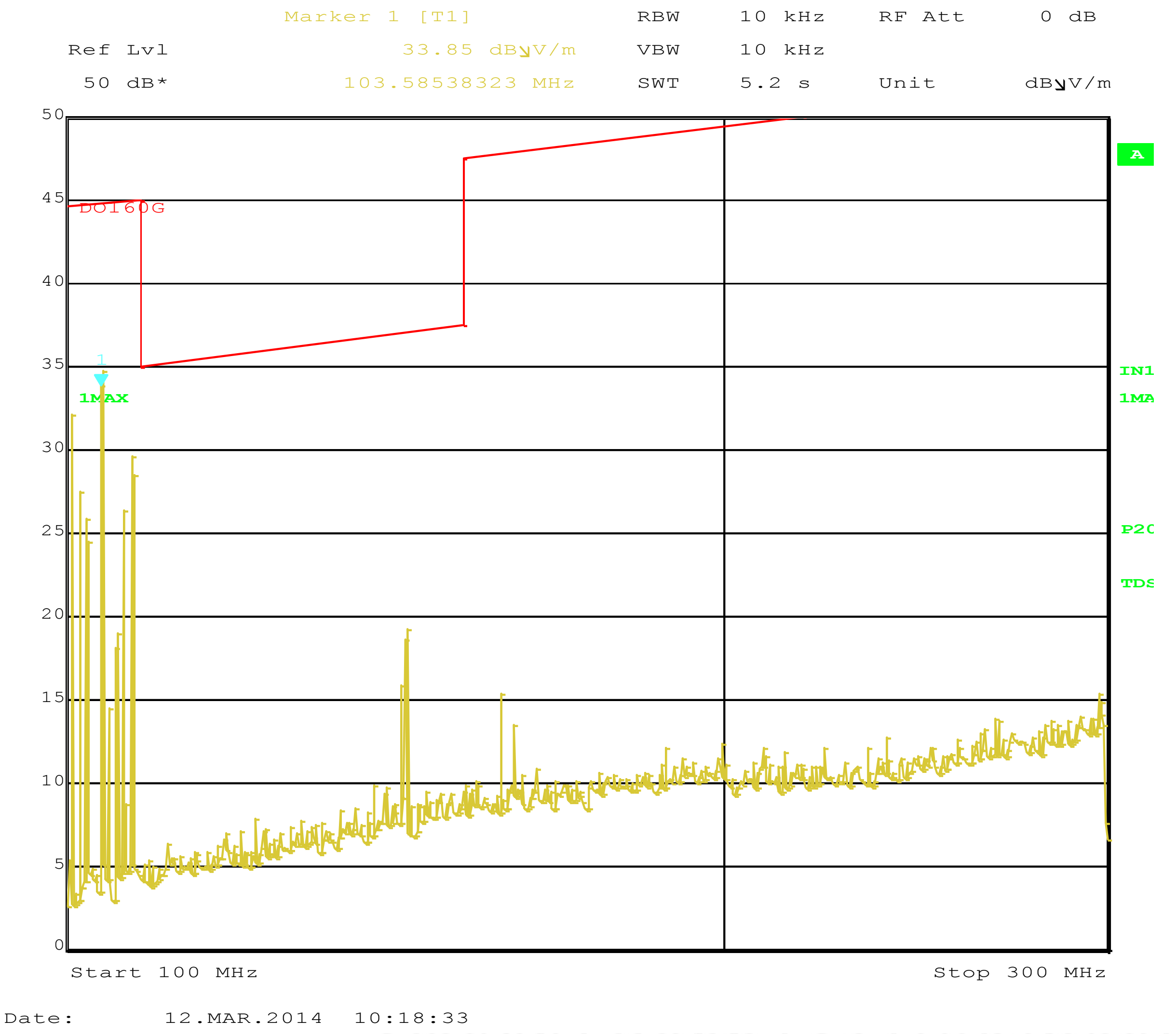
Front Face

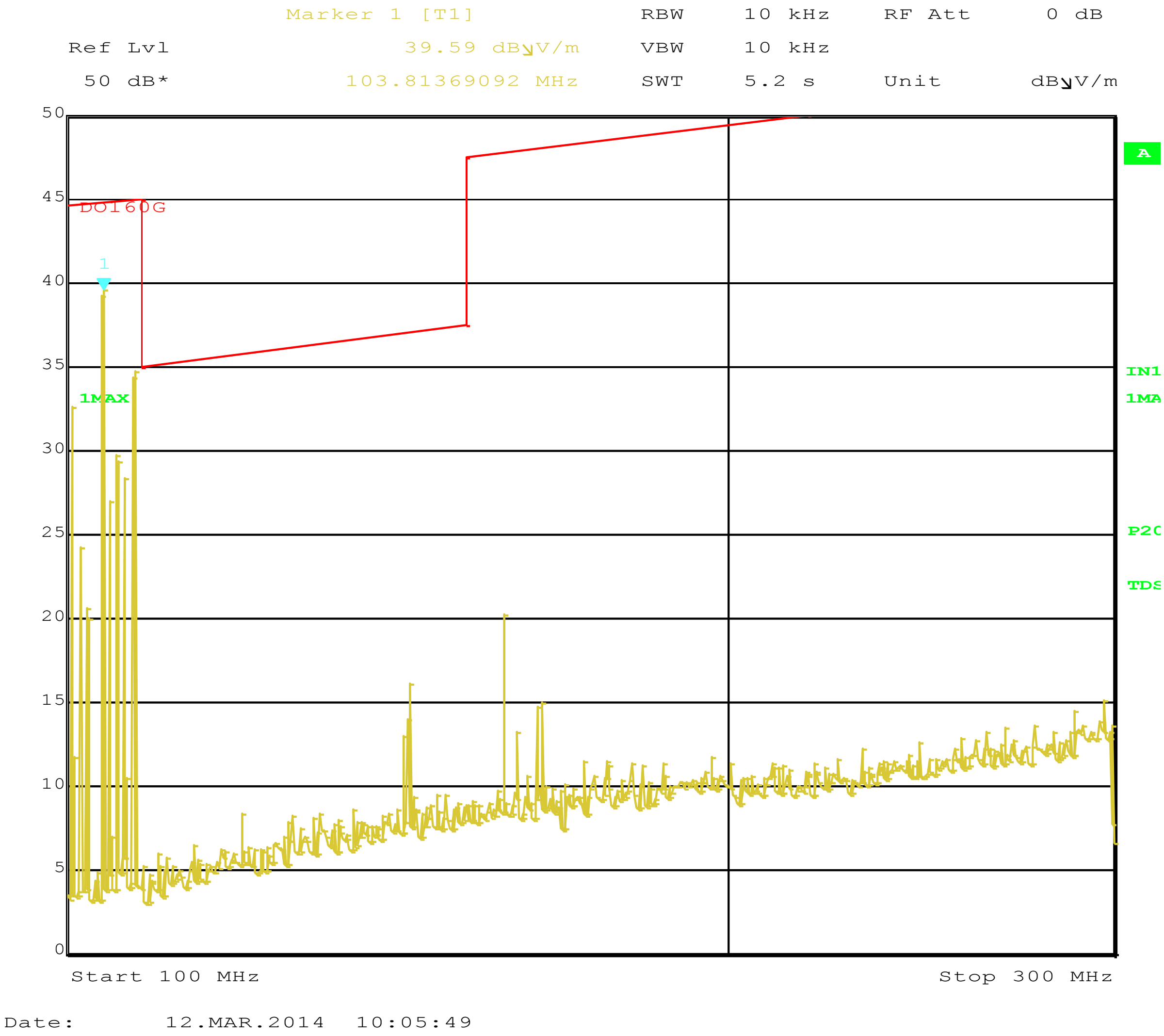
100 - 300 MHz vertical polarisation



This report may not be reproduced except in full.

Front Face

100 - 300 MHz horizontal polarisation



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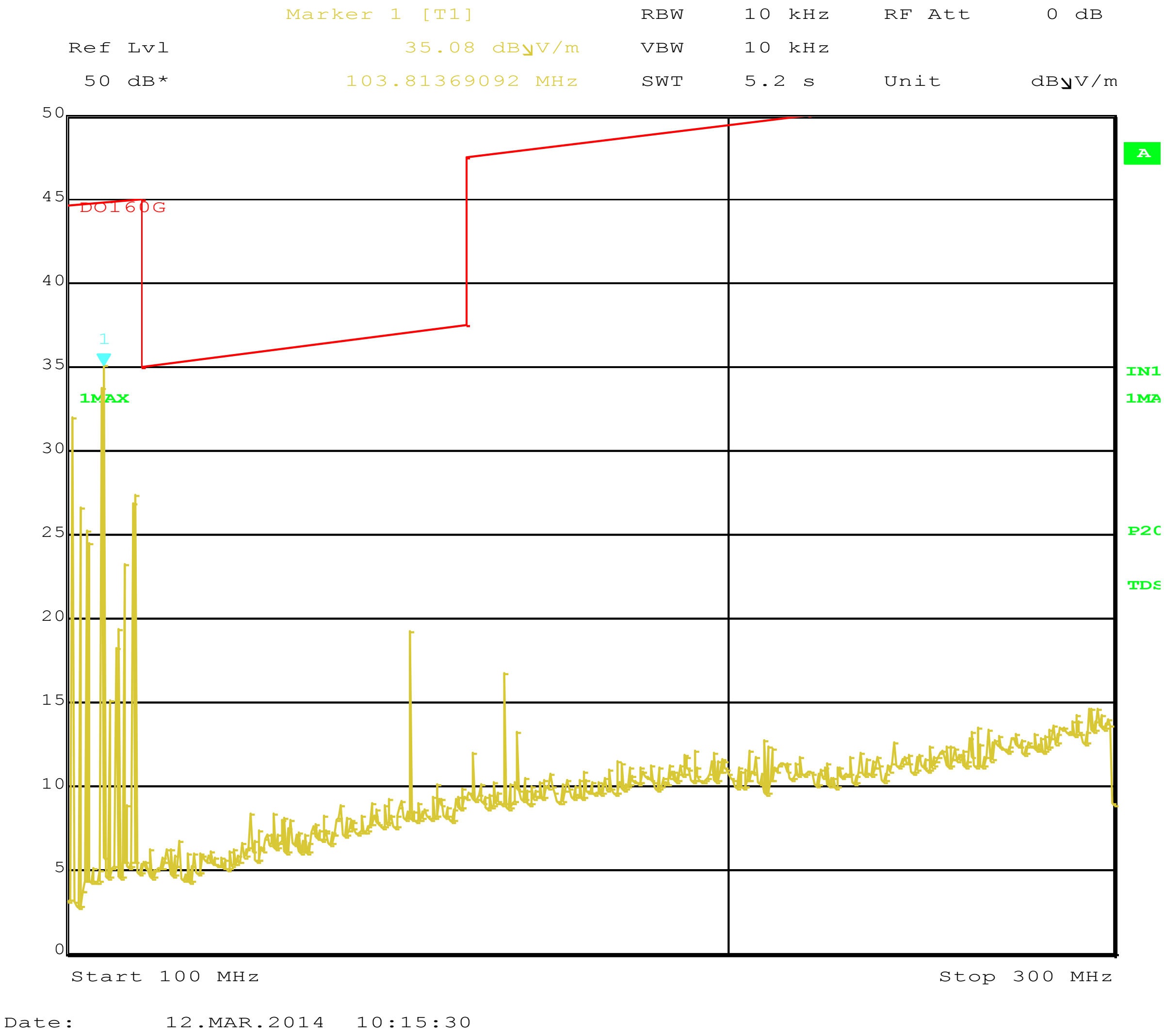
On edge

100 - 300 MHz vertical polarisation



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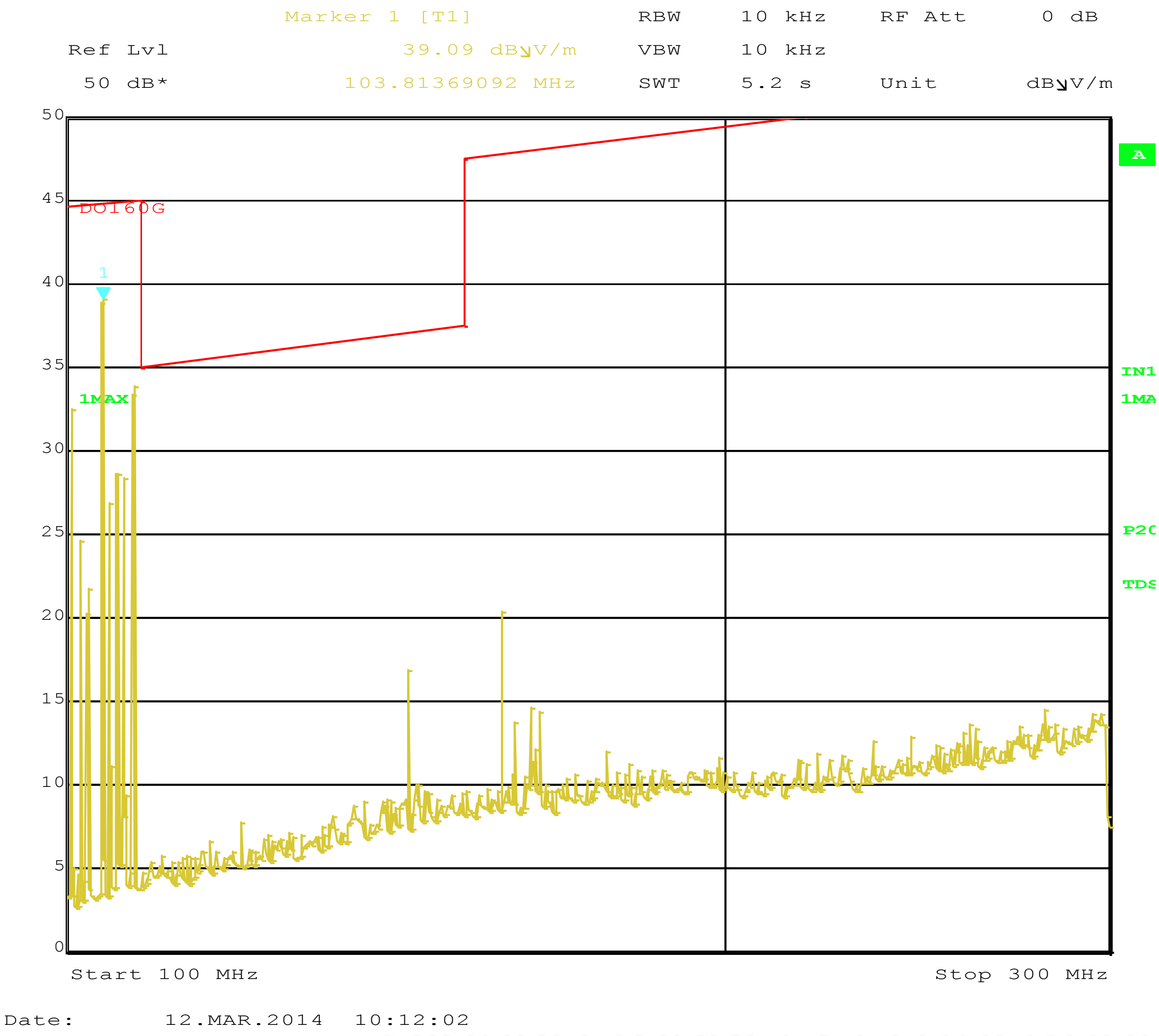
On edge

100 - 300 MHz horizontal polarisation



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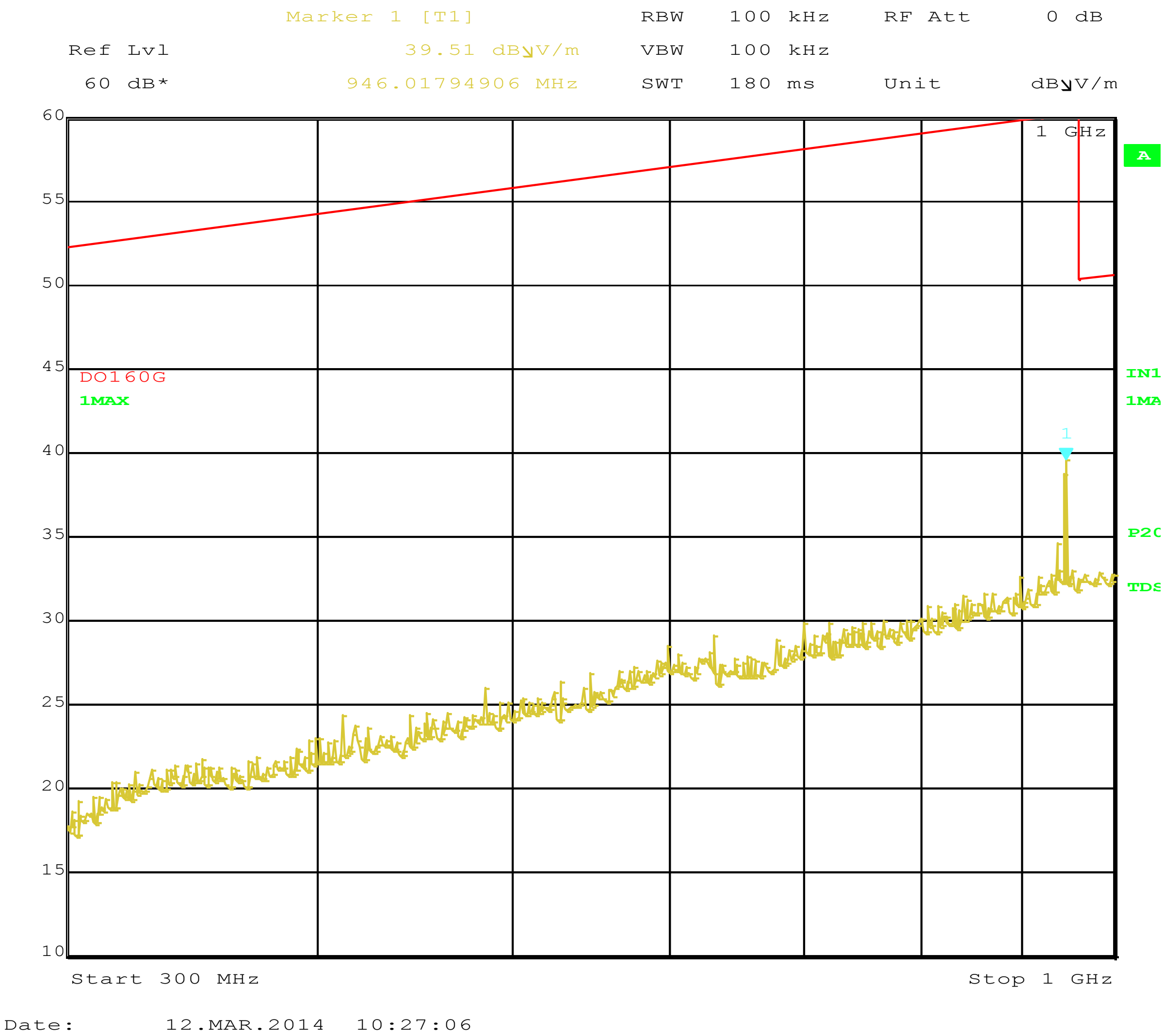
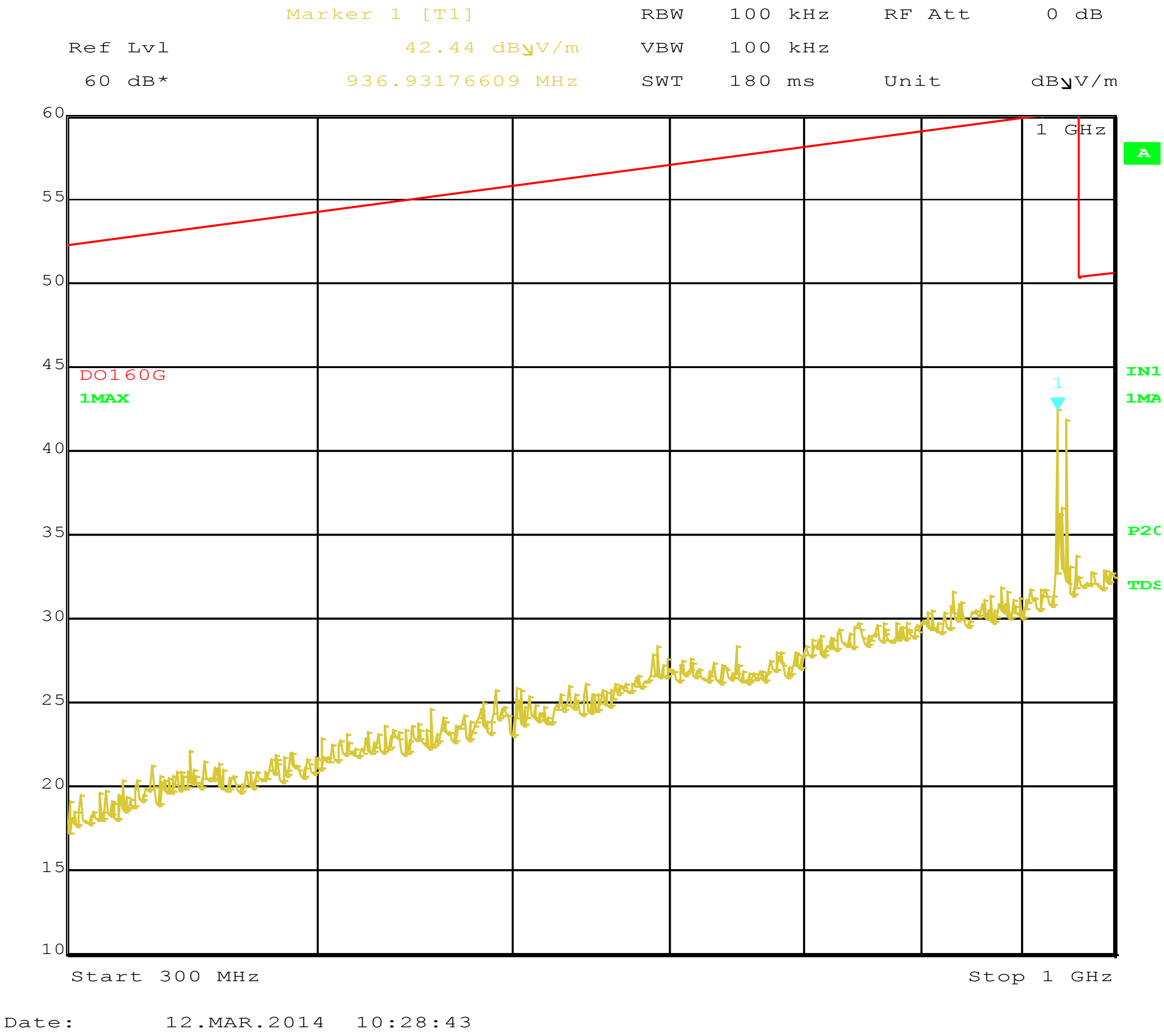
Ambient emissions

300 – 1000 MHz vertical polarisation



Ambient emissions

300 - 1000 MHz horizontal polarisation



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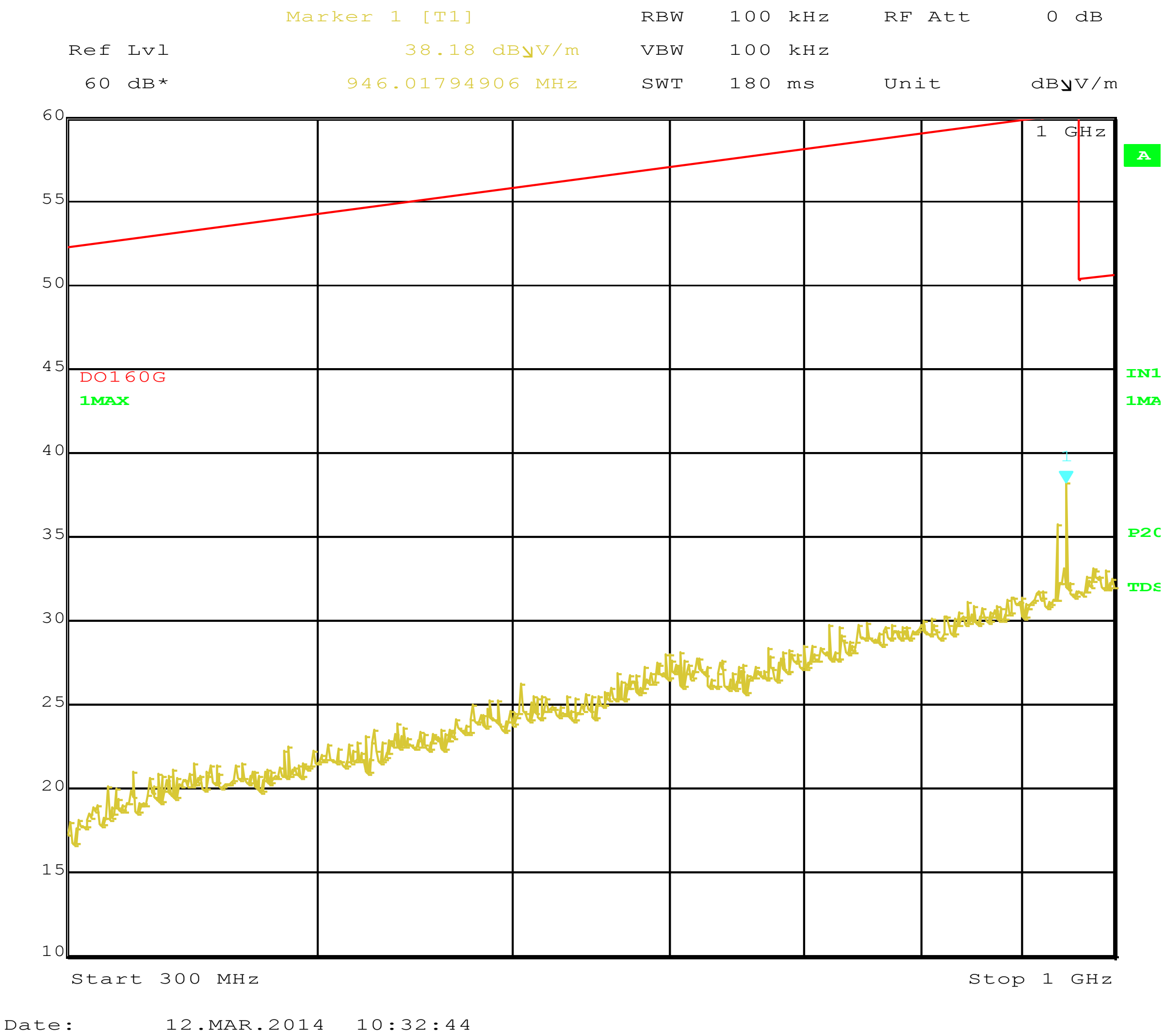
Laying flat

300 - 1000 MHz vertical polarisation



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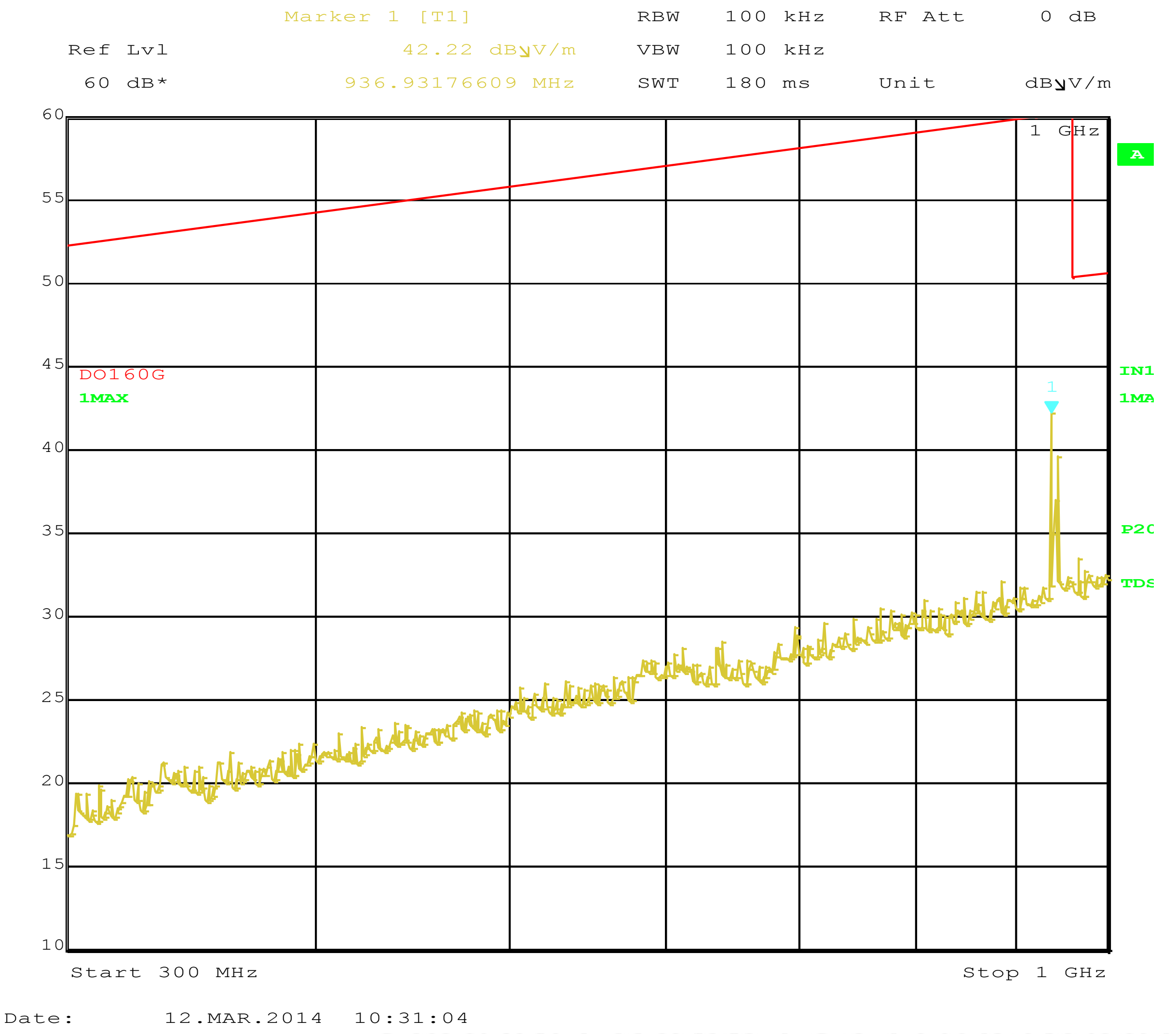
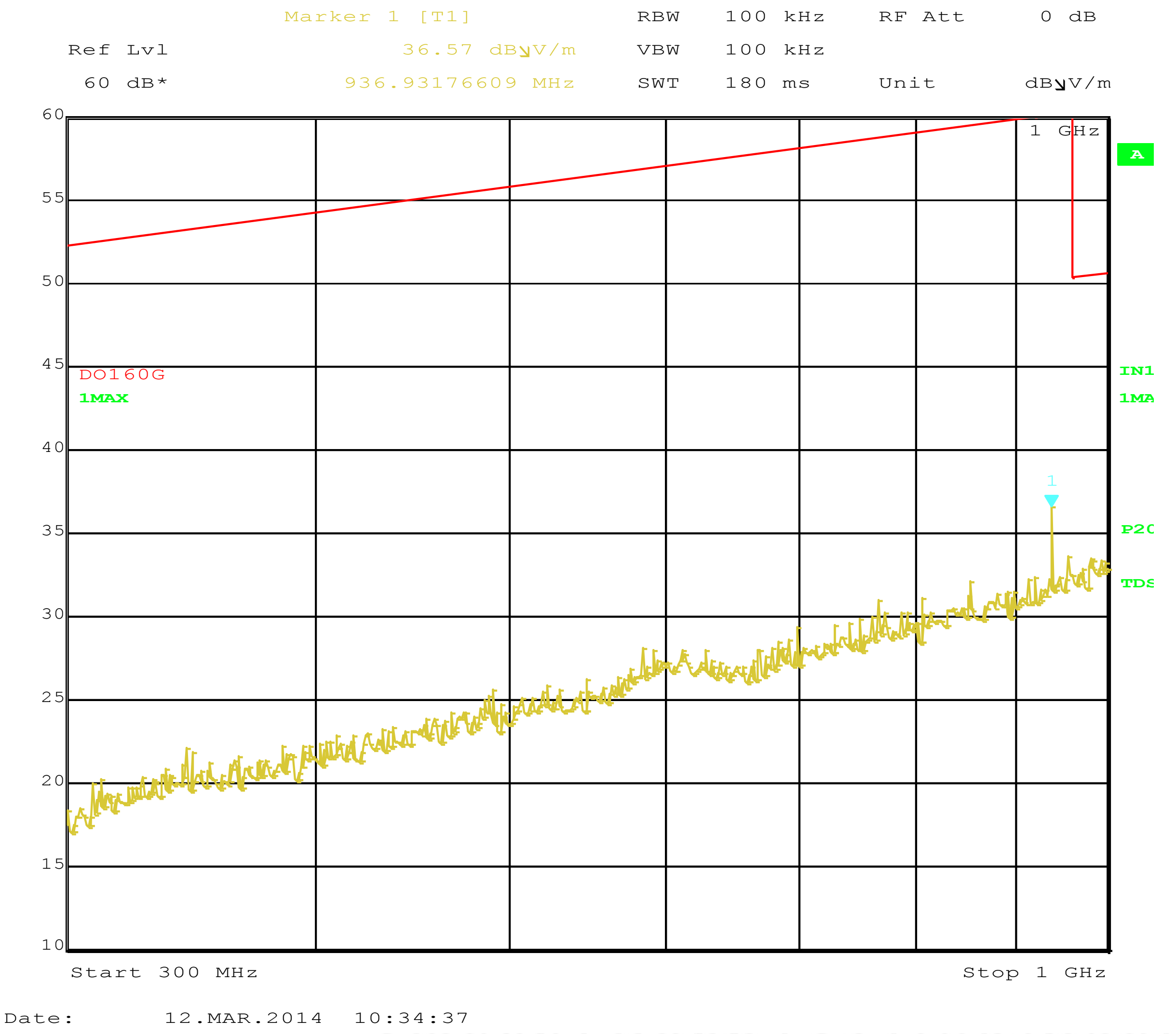
Laying Flat

300 - 1000 MHz horizontal polarisation



Front Face

300 - 1000 MHz vertical polarisation



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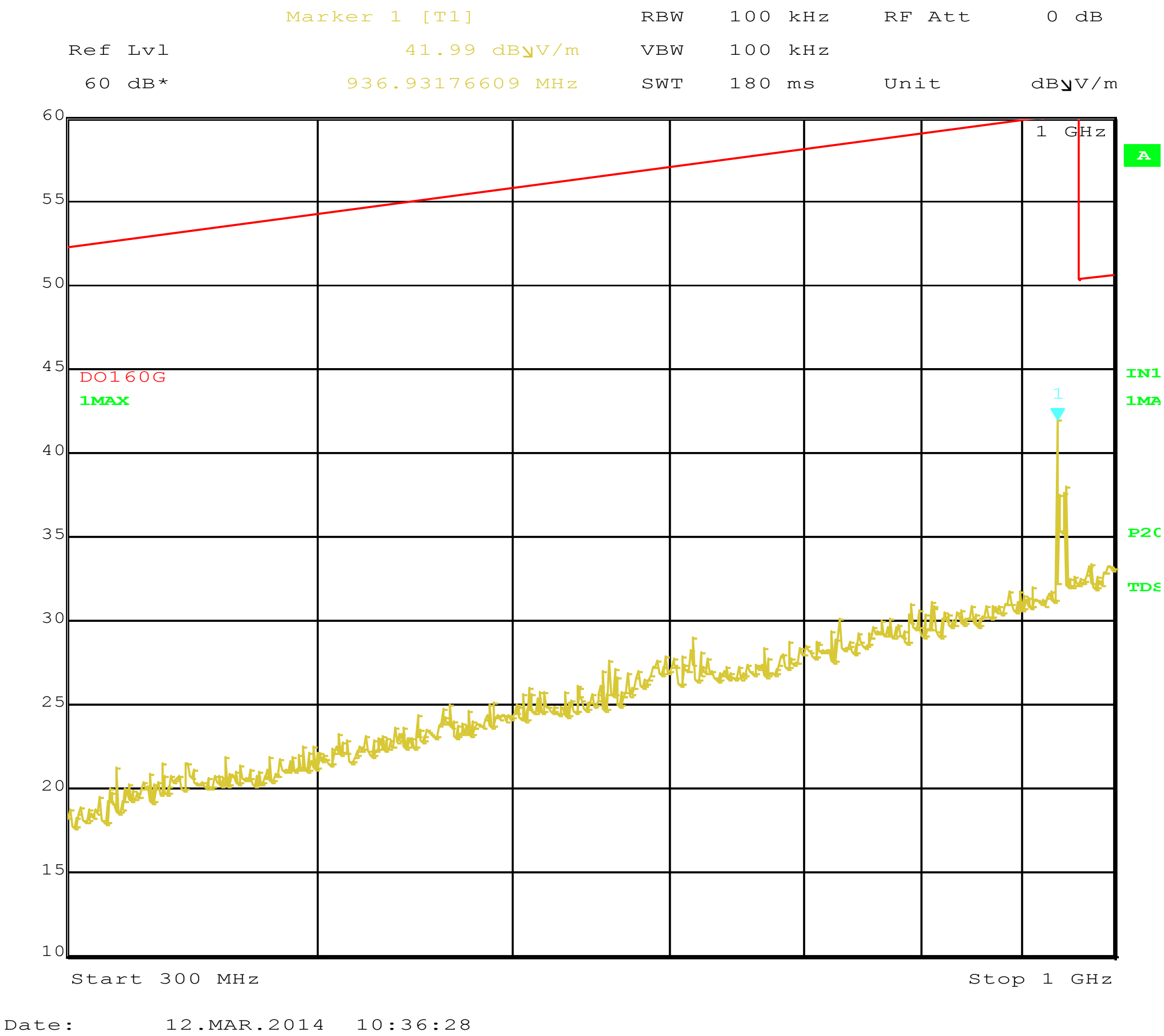
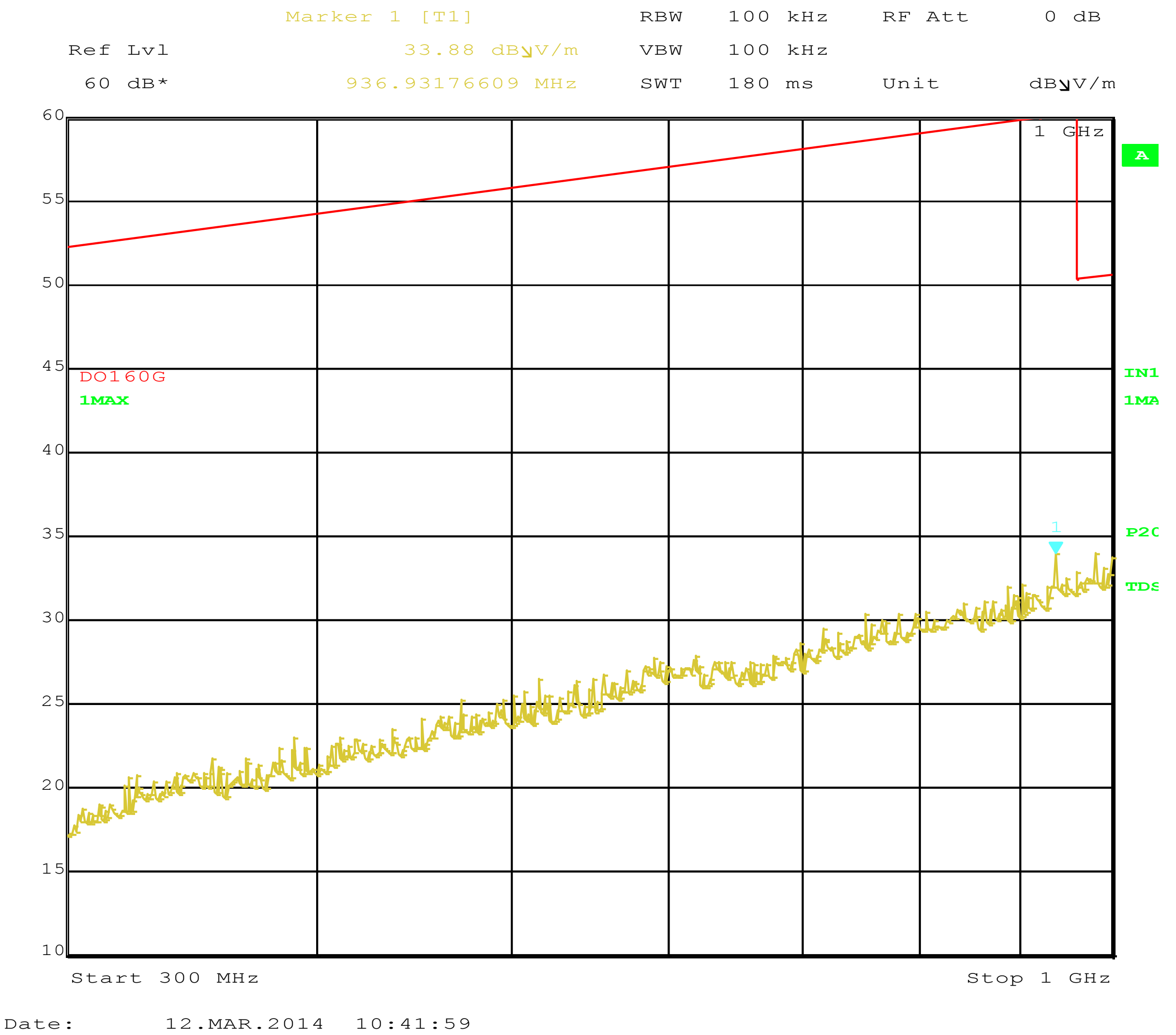
Front Face

300 - 1000 MHz horizontal polarisation



On Edge

300 - 1000 MHz vertical polarisation



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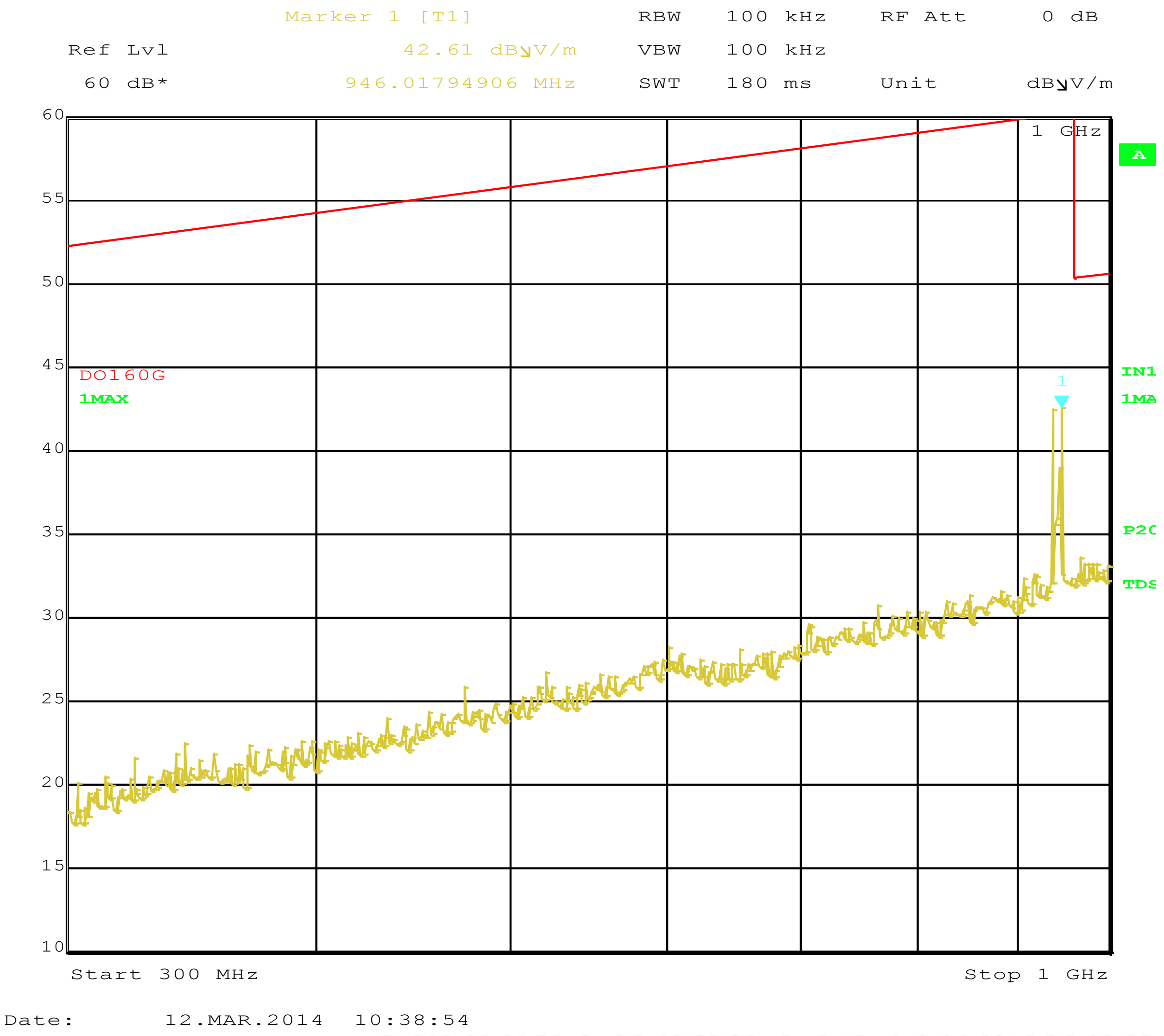
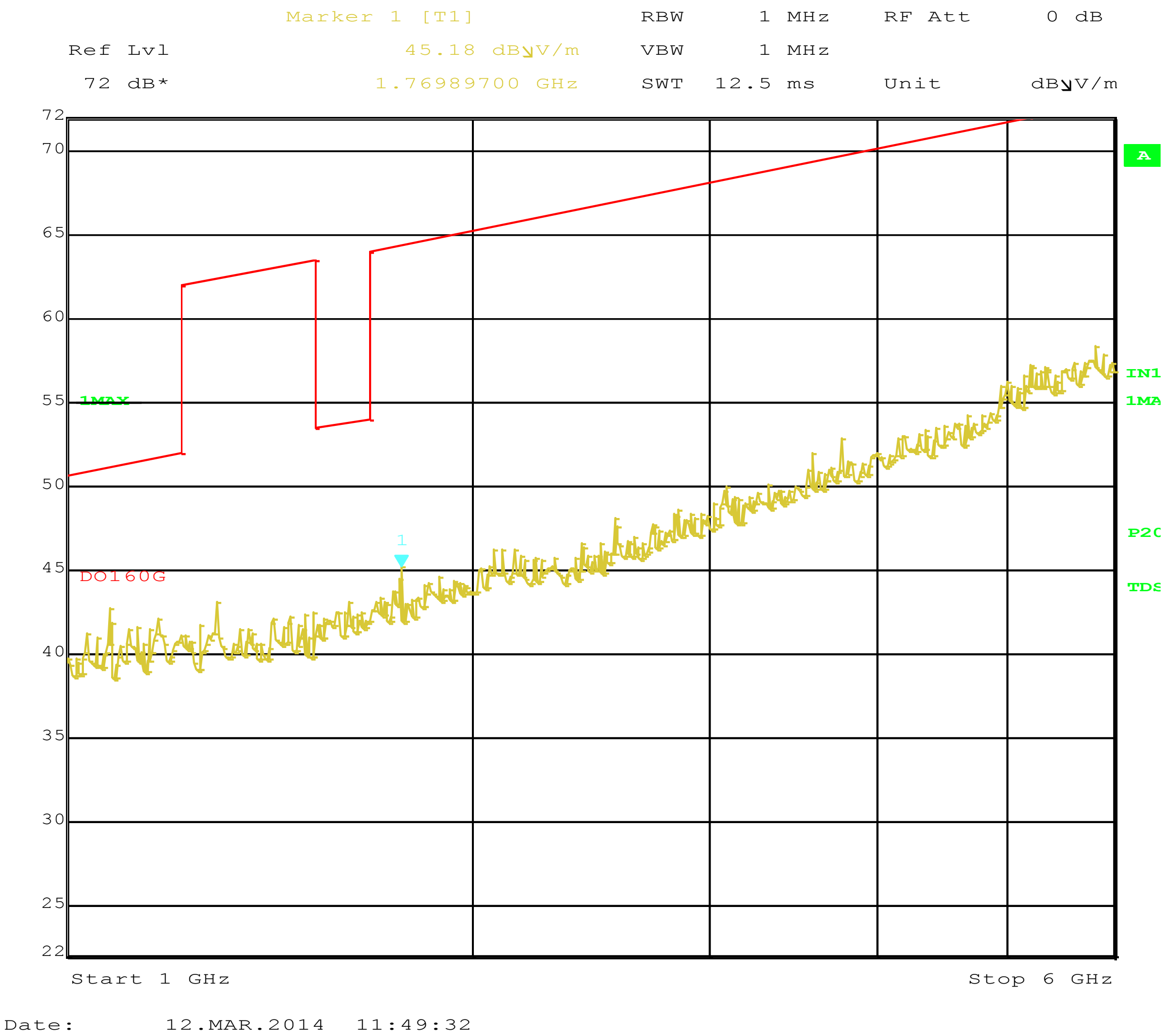
On Edge

300 - 1000 MHz horizontal polarisation



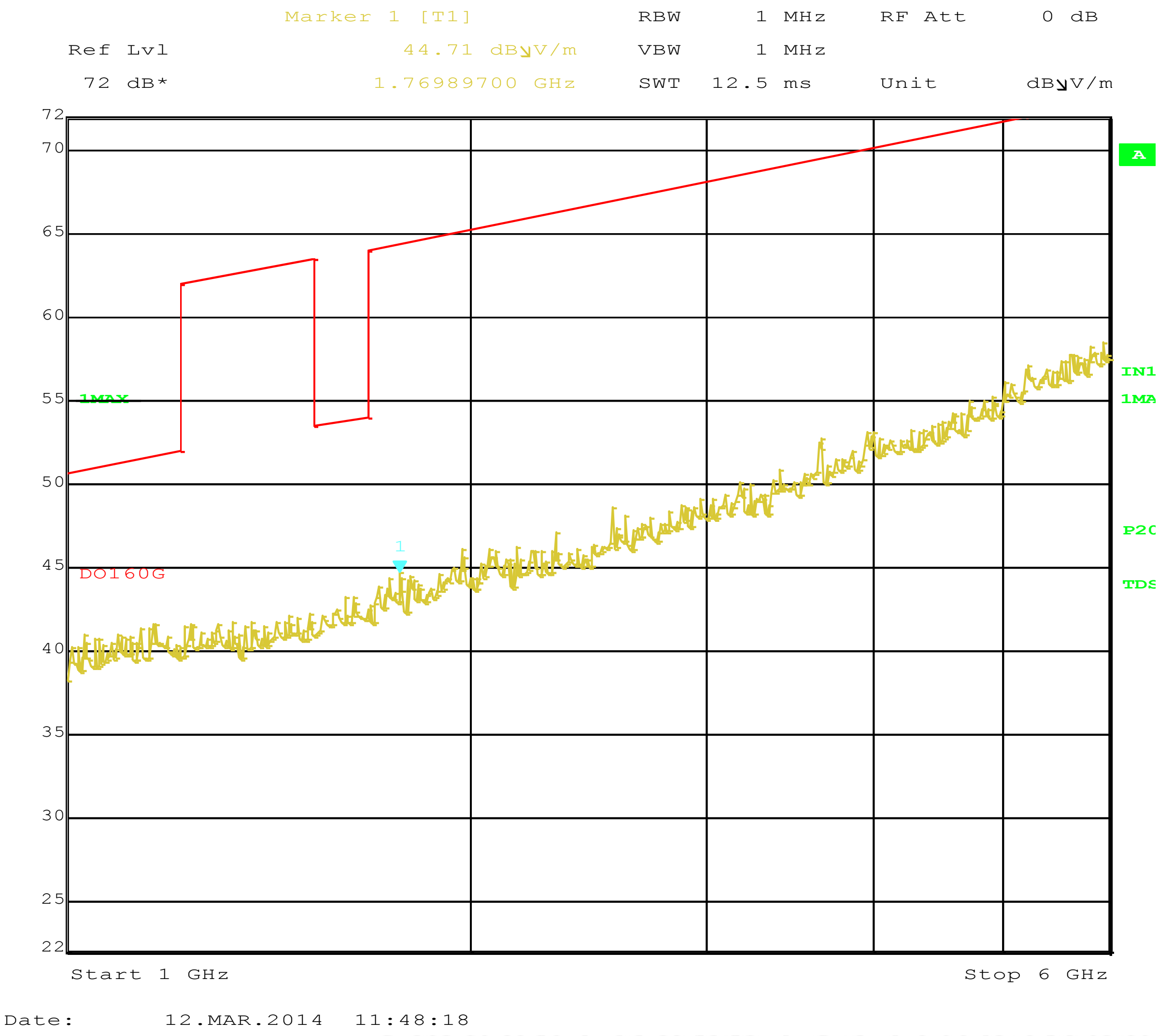
Ambient emissions

1000 - 6000 MHz vertical polarisation



Ambient emissions

1000 - 6000 MHz horizontal polarisation



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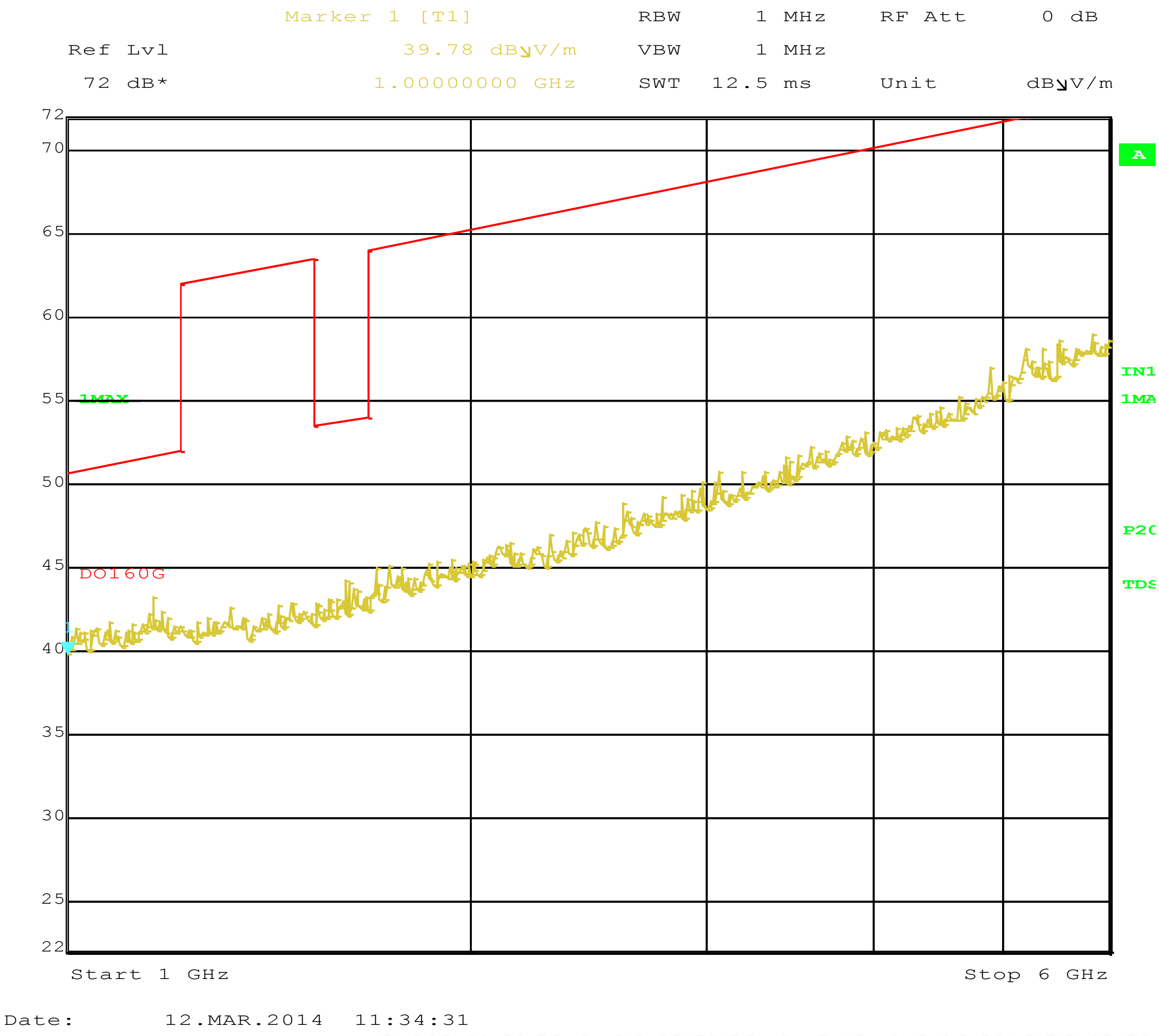
Laying Flat

1000 - 6000 MHz vertical polarisation



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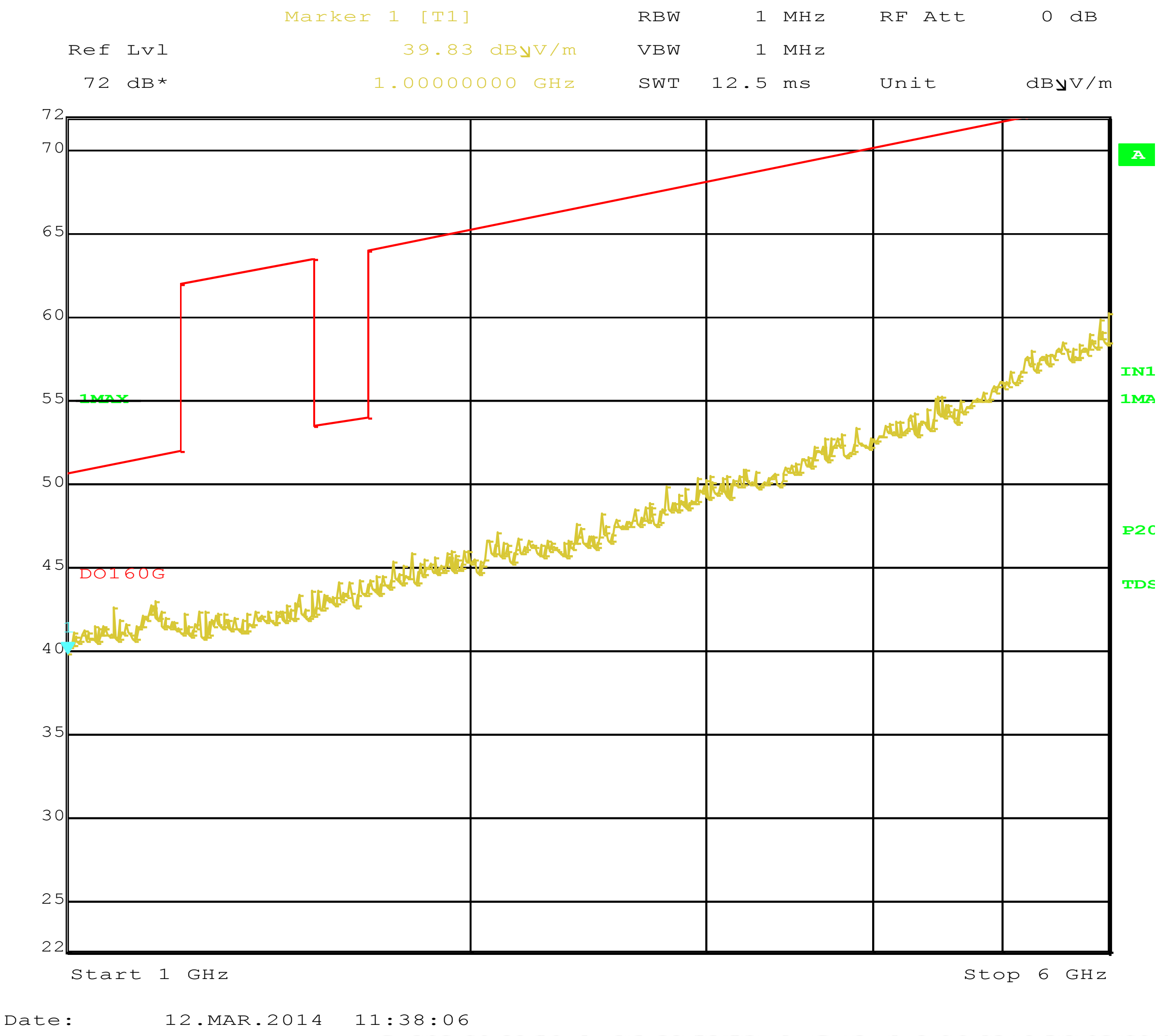
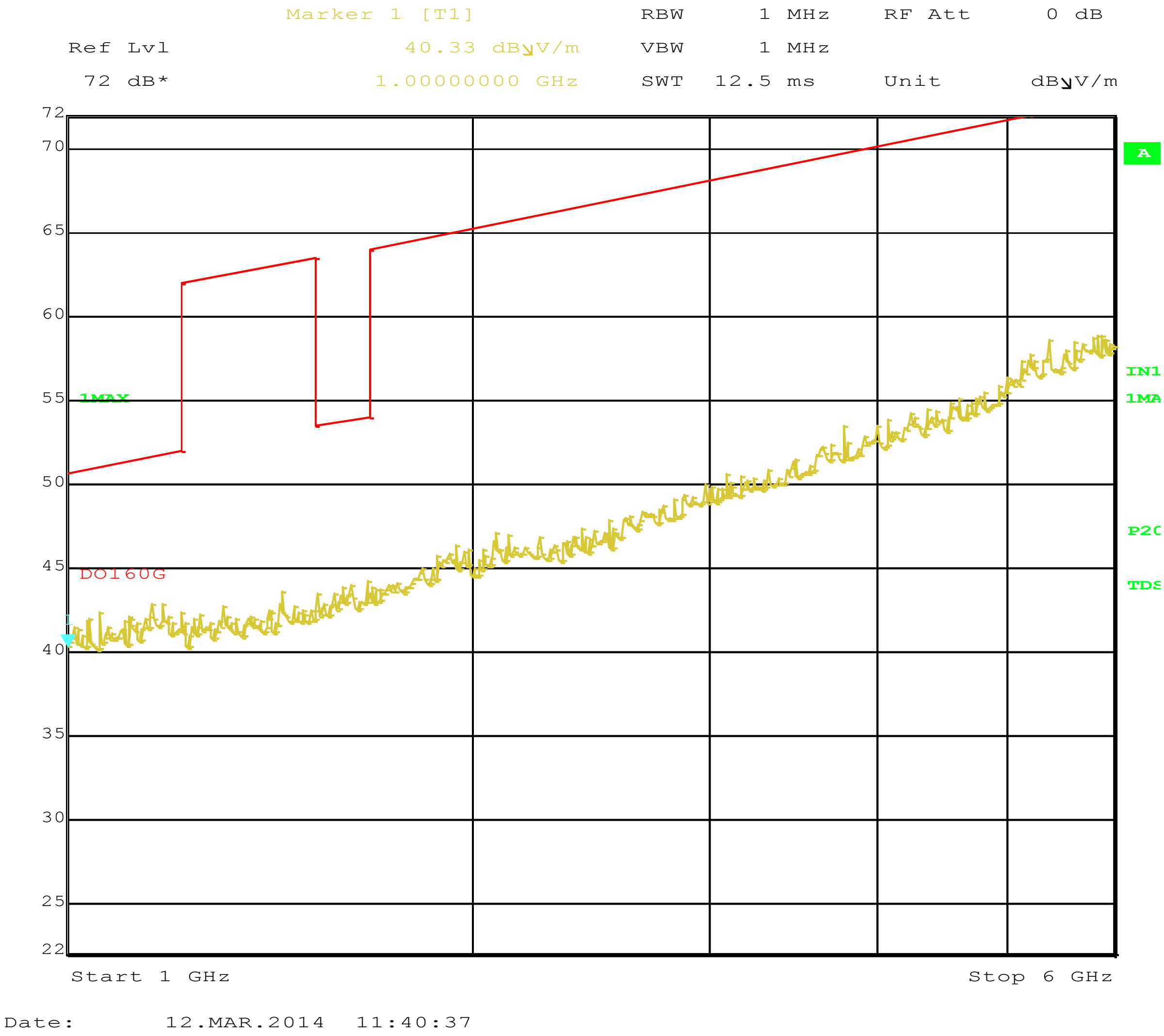
Laying Flat

1000 - 6000 MHz horizontal polarisation



Front Face

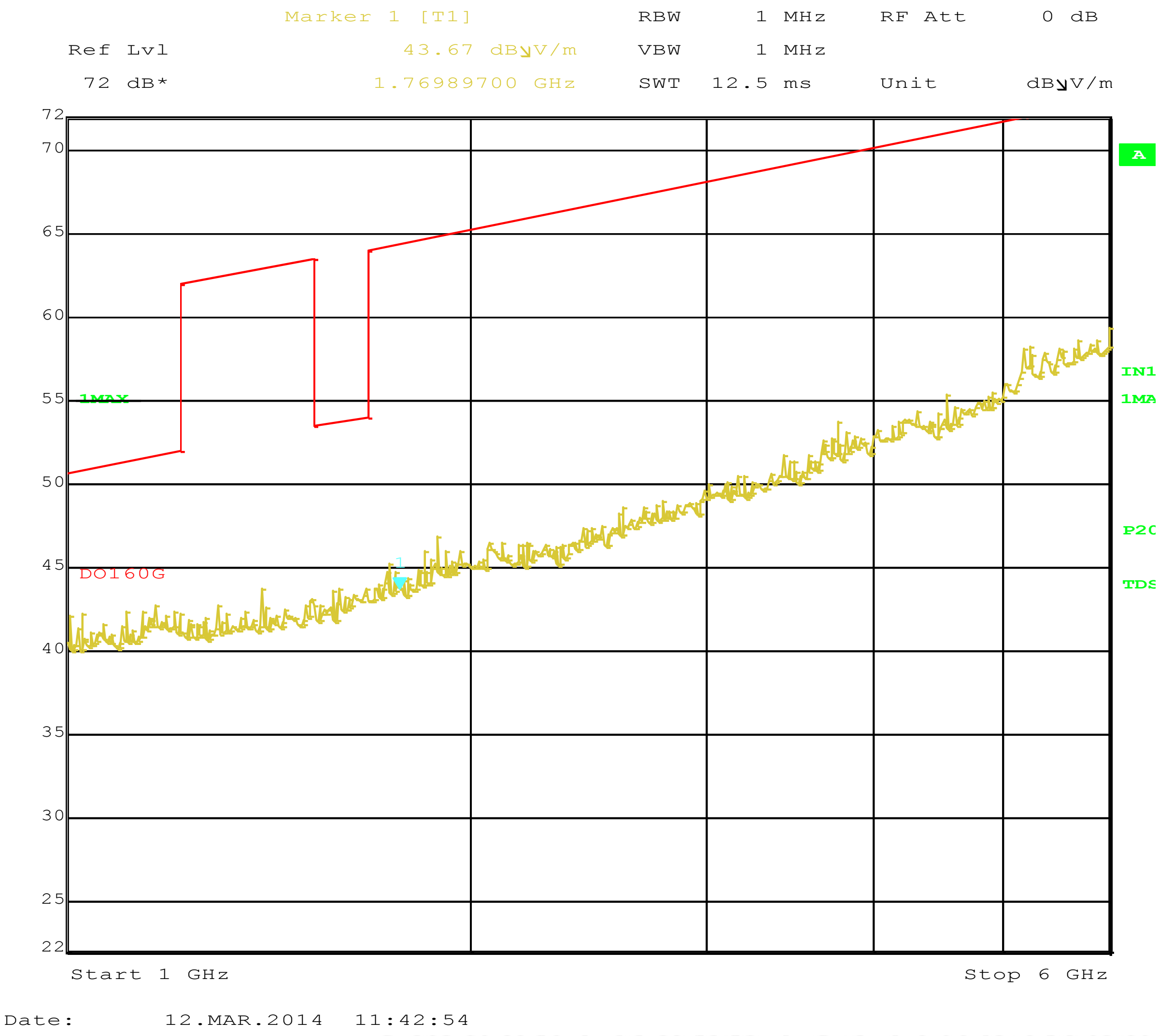
1000 - 6000 MHz vertical polarisation



This report may not be reproduced except in full.

Front Face

1000 - 6000 MHz horizontal polarisation



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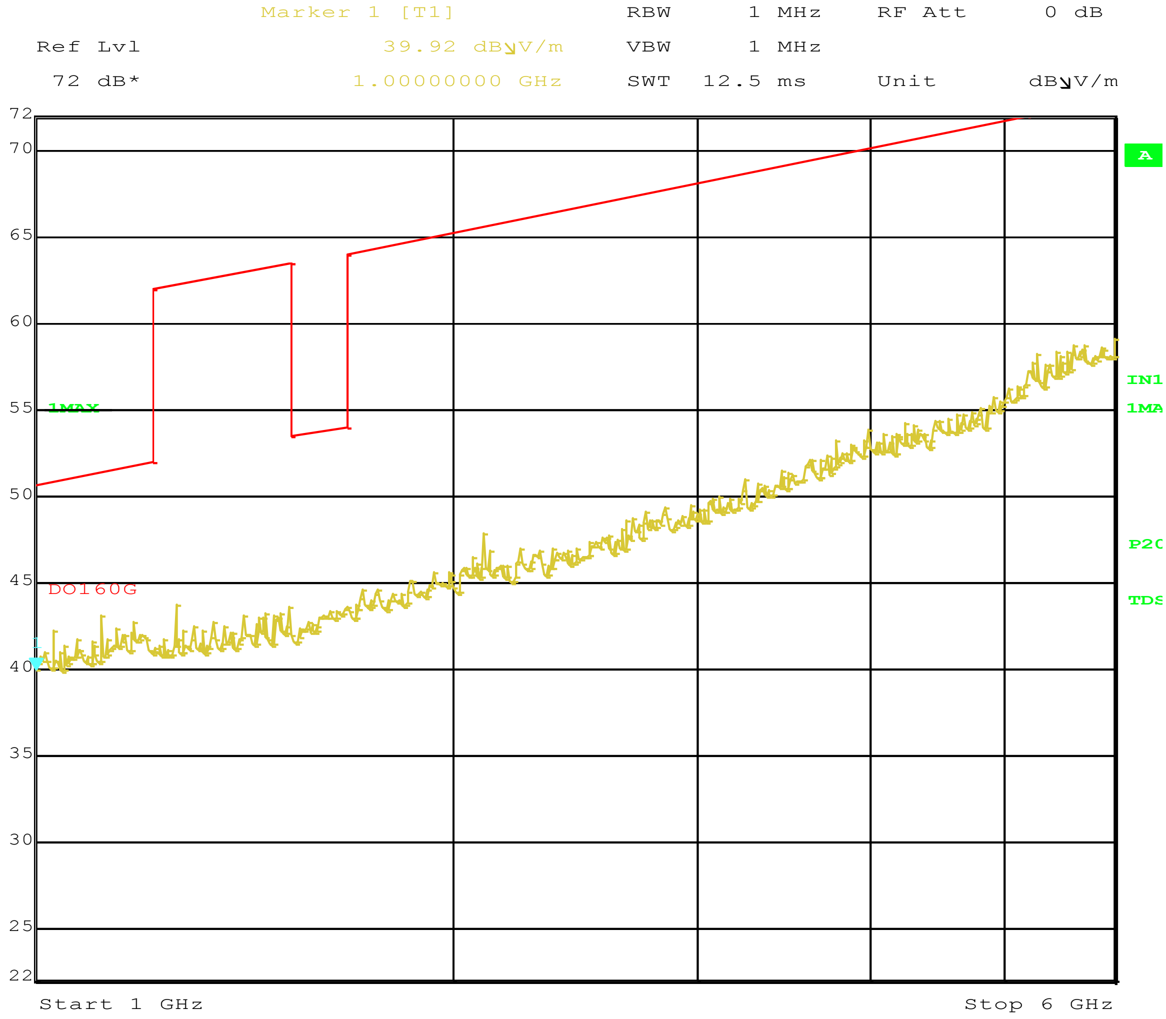
On Edge

1000 - 6000 MHz vertical polarisation



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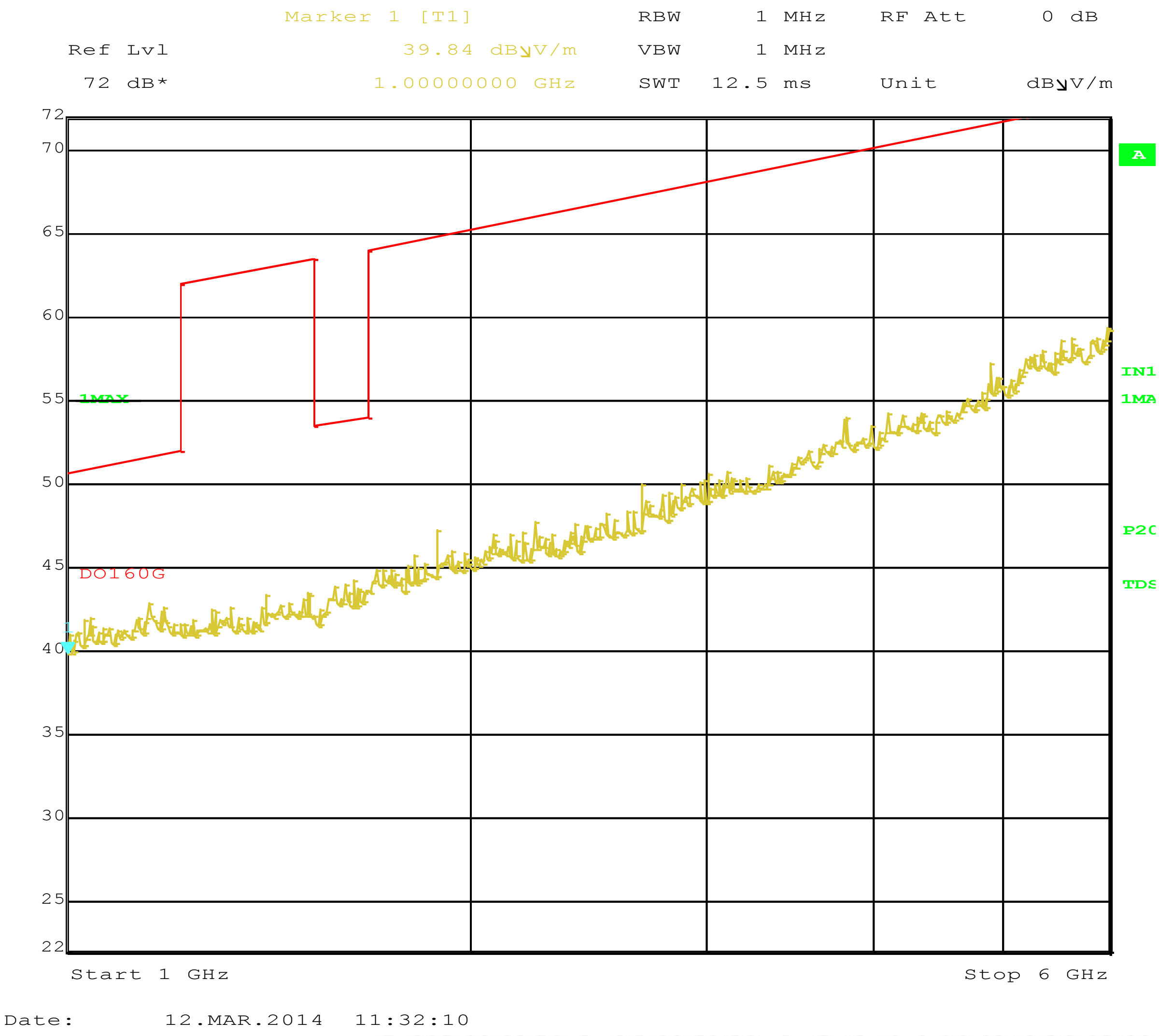
On Edge

1000 - 6000 MHz horizontal polarisation



7. TEST EQUIPMENT

Instrument	Manufacturer	Model	Serial No	Asset Ref
Biconical Antenna	Schwarzbeck	BBA 9106	-	RFS 3612
Horn Antenna	EMCO	3115	9511-4629	E1526
Log Periodic	Schwarzbeck	UHALP 9107	-	3702
Receiver	R & S	ESIB 40	100171	R-27-1
VHF Balun	Schwarzbeck	VHA 9103	-	RFS 3603

All test equipment was within calibration at the time of testing.

8. ACCREDITATIONS

EMC Technologies (NZ) Ltd is **NOT** accredited by International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025 to test to this standard.

It is accredited by International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025 to test to standards that are very similar to this standard.

All measurement equipment has been calibrated in accordance with the terms of the EMC Technologies (NZ) Ltd International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025.

International Accreditation New Zealand has Mutual Recognition Arrangements for testing and calibration with various accreditation bodies in a number of economies. This includes NATA (Australia), UKAS (UK), SANAS (South Africa), NVLAP (USA), A2LA (USA), SWEDAC (Sweden). Further details can be supplied on request.

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9. PHOTOGRAPHS

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LogTag
www.logtagrecorders.com
S/N:1050011102
MODEL : TRID30-7R
MAX TEMP 65°C/149°F
OPERATING RANGE
MADE IN CHINA
LogTag
www.logtagrecorders.com
Press START/MARK button until indicators blink to start logging or to record inspection mark in logger's memory.
S/N:1070007664
MODEL : TRIL-8
MAX TEMP 70°C/158°F
MEASURING RANGE
MADE IN CHINA
LogTag
www.logtagrecorders.com
Press START/MARK button until indicators blink to start logging or to record inspection mark in logger's memory.
S/N:1000306654
MODEL : TRIX-8
MAX TEMP 85°C/185°F
EN12830:1999
MEASURING RANGE
MADE IN CHINA
LogTag
www.logtagrecorders.com
Press START/MARK button until indicators blink to start logging or to record inspection mark in logger's memory.
S/N:1010048804
MODEL : HAX0-8
MAX TEMP 85°C/185°F
MADE IN CHINA

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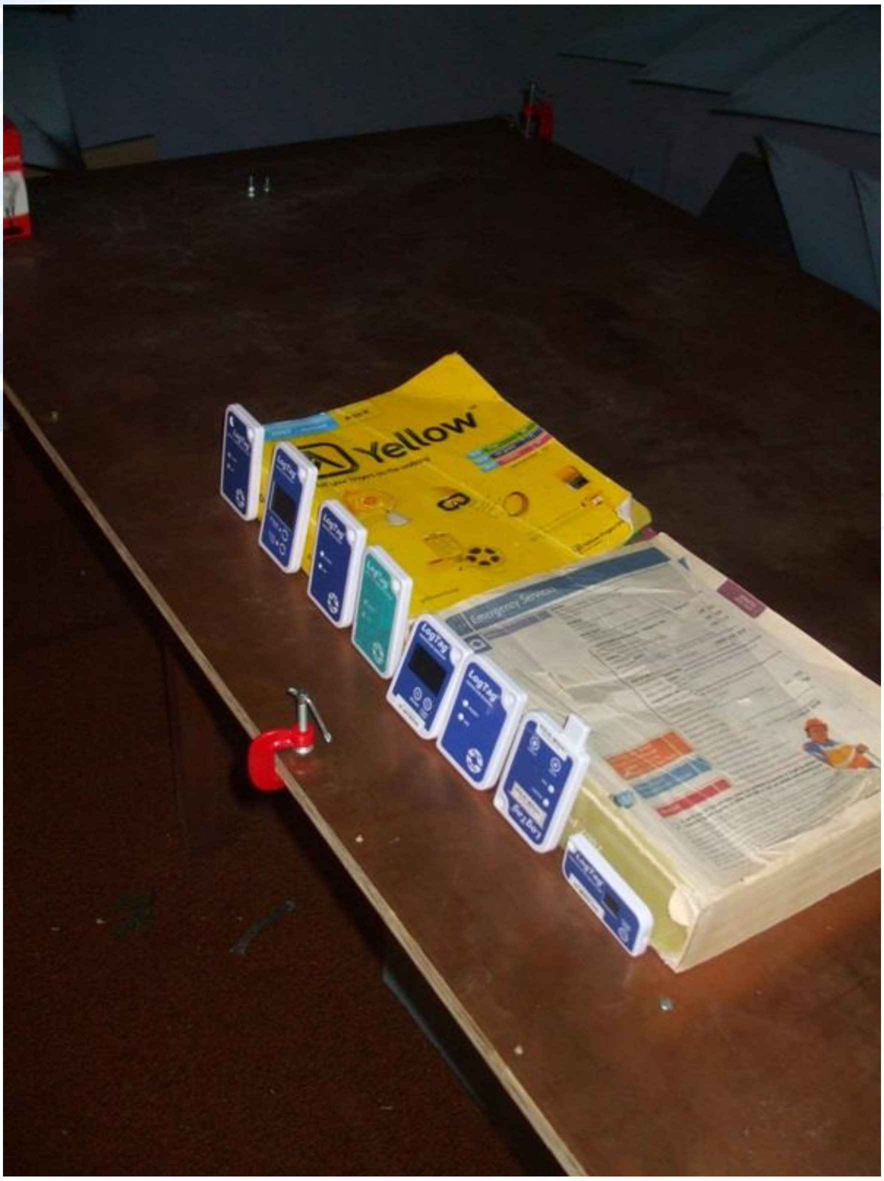
Standing Upright



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Laying Flat

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On edge