

## **Temperature Stability Test Report:**

### **Altistar Proxima AWS-3 LTE iRRH**

FCC ID: NXP-4438E400

**SC\_TR\_238\_A**

Prepared for:

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## 1 Revision History

Revision	Originator	Date	Comment
A	C Blackham	22/11/2016	1 <sup>st</sup> release

## 2 Purpose

This document details the Altiostar Proxima AWS-3 LTE iRRH (intelligent Remote Radio Head), model number iRU4438E400D-1, designed to transmit in the 2110-2180 MHz band.

## 3 Reference Documents

[Ref 1]	47CFR2	Title 47 Code of Federal Regulations Part 2: frequency allocations and radio treaty matters; general rules and regulations
[Ref 2]	47 CRF27	Title 47 Code of Federal Regulations Part 27: Miscellaneous Communications Services
[Ref 3]	TIA-603-D	Land Mobile FM or PM – Communications Equipment – Measurement and Performance Standards

## 4 Test configuration

Proxima was configured to transmit a E-TM3.1 waveform at 2145 MHz and the EVM and frequency error of the signal was measured using the Analyser.

In order for the Analyser to be able to accurately measure the EVM, it was locked to a reference signal from the Proxima unit. The transmit Frequency of Proxima is locked to GPS in typical install and 0.016 ppm was added to the EVM frequency error as that represents the worst case baseband card frequency stability.

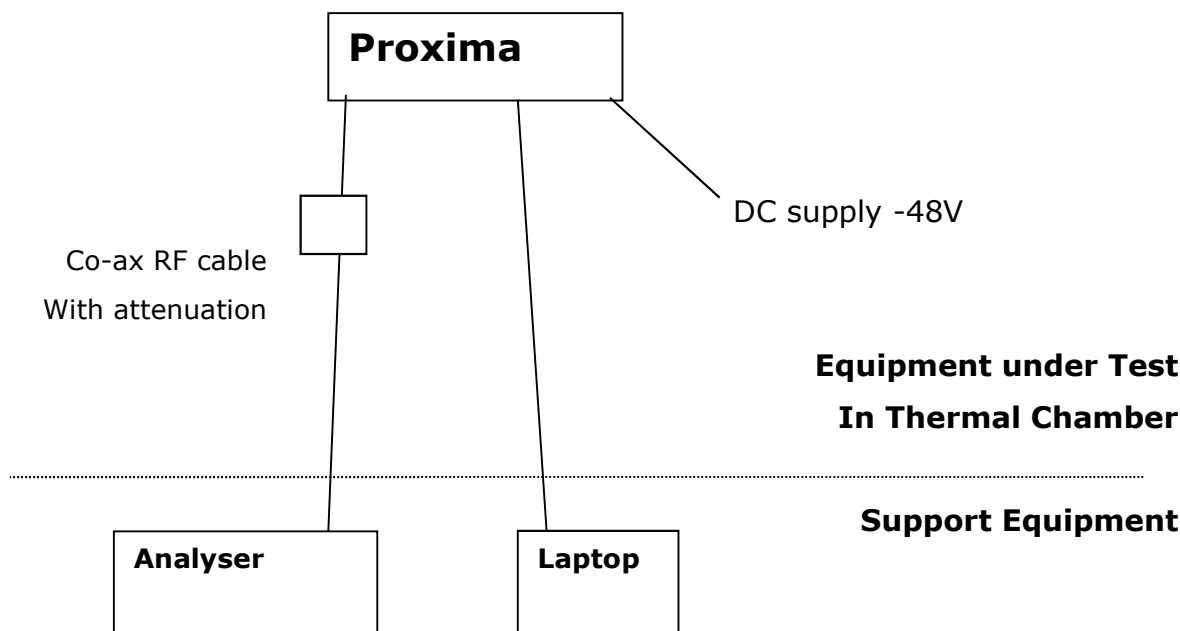


Figure 1: Test Configuration

### 4.1 Test sample and Operating mode

The equipment under test (EUT) was:

Manufacturer	Name	Model Number	Serial Number
Altistar	Proxima P4	iRU4438E400D-1	TEW36160012

Table 1: Equipment under test

### 4.2 Support equipment

The support equipment was:

Description	Manufacturer	Name	Serial Number
Laptop	HP	250	Dvt-mobile altistar

Table 2: Support Equipment

## 5 Test Results

Temp (°C)	System Freq Error (ppm)
60.0	0.020
50.0	0.066
40.0	0.019
30.0	0.019
20.0	0.020
10.0	0.020
0.0	0.022
-10.0	0.021
-20.0	0.020
-30.0	0.023
-40.0	0.021

**Table 3: Test results**

Note : Varying DC input voltage in the range -40.5V to -57V did not have any effect on the DC voltage output from the mains power supply nor on voltage rails within the product and the frequency error at 20°C is unchanged for variations in supply voltage.

The reported value is the worst case frequency error from 100 EVM measurements at each stabilised frequency +0.016ppm.

## 6 Test equipment and location

Testing was performed between 18<sup>th</sup> and 22<sup>nd</sup> November 2016 at:

AltioStar Networks UK Ltd

No 1 the Heights

Brooklands

Weybridge

KT13 0NY

Description	Manufacturer	Name	Serial Number	Calibration certificate
EXA Signal Analyser	Keysight	N9010A	MY52221223	1-8209750245-1
Attenuator	Fairview Microwave	SA18N25WA-30	None	N/A for frequency measurements
RF cable	Times Microwave	SLU18-SMNM-01.75m	3716	

**Table 4: Test Equipment**