

**Frequency Stability Measurements**  
**For**  
**Airspan Communications Ltd**  
**Airsynergy base stations**

**SC\_TR\_85\_A**

June 2013

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## 1 Revision History

Revision	Originator	Date	Comment
A	C Blackham	09 Jun 2013	First Issue

## 2 Associated Documents

- [1] 47CFR2 Title 47 of FCC Rules Part 2
- [2] ANSI / TIA-603-C-2004 TIA Standard: Land Mobile FM or PM – Communications Equipment – Measurement and Performance Standards

## 3 Products Covered

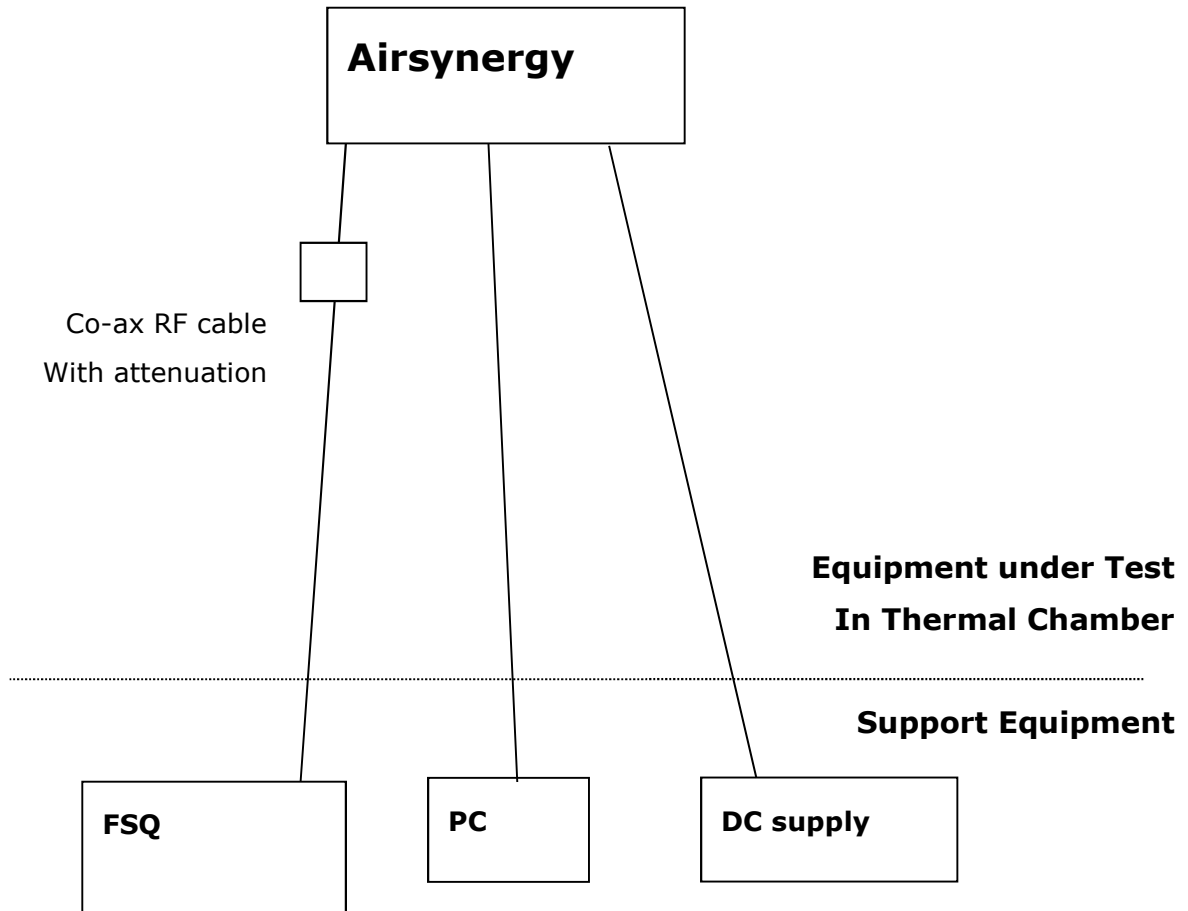
Document revision	Product Description	Part Number
A	4.9 GHz AirSynergy Basestation	SYN-3N-00-0A49-000

**Table 1: Products covered by this report**

These products all show the same frequency determining circuitry

## 4 Test Configuration

The unit shall be connected in a real-life representative manner as follows:



**Figure 1: Test Configuration**

<b>Item</b>	<b>Part Number</b>	<b>Serial Number</b>
Airsynergy	SYN-3N-00-0A49-000	6BEAD5FFFEFA8

**Table 2: Equipment under test**

#### **4.1 Measurement method**

- The EUT was placed into the thermal chamber and connected to a DC supply and FSQ measuring receiver outside the chamber
- The EUT was placed into commissioning mode and set to transmit a test waveform at 4950.0 MHz.
- The FSQ is fitted with the WiMAX 802.16e option and was set to reported frequency error in Hz relative to expected frequency of 4950.0 MHz
- The Temperature of the chamber was varied between -45°C and +60°C in 10°C steps and the EUT temperature allowed to stabilise for one hour at each. Measurements were recorded using ATE software
- Supply voltage was also varied when chamber was at 25°C.
- Frequency error was measured by the FSQ and the results shown in section 4.

## 5 Test Results

<b>Voltage V)</b>	<b>Temp (°C)</b>	<b>Freq Error (Hz)</b>	<b>Freq Error (ppm)</b>
48.0	-45	-2014.87	-0.40704
48.0	-35	-2266.89	-0.45796
48.0	-25	-1516.82	-0.30643
48.0	-15	892.41	0.180285
48.0	-5	2142.46	0.43282
48.0	5	2268.03	0.458188
48.0	15	2264.09	0.457392
40.8	25	2024.07	0.408903
48.0	25	2218.07	0.448095
55.2	25	2244.91	0.453517
48.0	35	2300.77	0.464802
48.0	45	2352.16	0.475184
48.0	55	2382.26	0.481265
48.0	60	4409.10	0.890727

**Table 3: Test results**

## 6 Test Location and Equipment

Testing was performed at:

Airspan Communication Ltd:  
Capital Point,  
33 Bath Road  
Slough,  
SL1 3UF  
UK

By Parimal Modeshia of Airspan Communications Ltd and Charlie Blackham of Sulis Consultants Ltd

<b>Item</b>	<b>Serial Number</b>	<b>Calibration Due</b>
R&S FSQ 26	100409	2014-07-03

**Table 4: Test Equipment**