OSA 5565 STS

Wander Measurement Equipment for Telecom Applications

Synchronisation forms a vital part of any digital telecom network. A well maintained synchronisation backbone minimises network errors, thus increases network efficiency. The result is a higher quality of service and a greater use of capacity.

Synchronisation issues are quite often addressed reactively only when problems have occurred. The introduction of more stringent industry standards has led to the need for greater control of synchronisation . For network operators this involves proactively monitoring the performance of synchronisation signals to identify potential problems.

For equipment manufacturers, this means testing their equipment to ensure conformance with design objectives and with standards.
Traditionally, assessing the quality of synchronisation has been a tedious process because of the unavailability of appropriate test equipment.

The OSA 5565 STS Synchronisation Test Set is a fully portable equipment for accurate high-resolution measurement of telecom synchronisation signals. It is in full compliance with the ITU-T O.172 recommendation for wander measuring equipment.

The OSA 5565 STS is compact, lightweight and it is operational 15min. after power up.
Moreover, thanks to the internal high stability Rubidium oscillator, it can perform most measurements without the need of an external reference.

For higher precision measurements, the OSA 5565 STS can also be connected to an external reference source such as a Cesium clock or a high stability GPS receiver.

The WinSTS software is delivered with every OSA 5565 STS equipment. The WinSTS, which runs under Windows® '95 / '98 / NT/ 2000/XP, provides local control of the equipment. WinSTS also automatically computes the necessary calculations in order to display performance graphs like MTIE, TDEV, and MADEV. These graphs can be evaluated against relevant templates derived from standards (ITU, ETSI, Telcordia) or user-defined templates.

All WinSTS data can be stored locally. They can also be exported to other windows applications.

Main functions:
Displays measurements graphs even while the measurement takes place.

The OSA 5565 STS accepts a variety of input signals for reference and/or calibration. These are:
- Frequency input: range from 0.064 MHz to 16.384 MHz in steps of 8kHz
- 10 MHz (dedicated reference)
- E1 / 2.048 Mb/s
- T1 / 1.544 Mb/s

The reference signal from the Rubidium clock can be retrieved as an *output signal*. Available reference formats are:
- 2.048 MHz
- 10.000 MHz

Accessories:
The OSA 5565 STS is delivered with a set of accessories that enhances its measurement capabilities and enables connection with a wide range of signals. The following accessories are supplied as standards with the ***OSA 5565 STS*** equipment:
- Passive coupler for in-line measurements on traffic links
- Various connecting devices, attenuator and impedance adapter
- ***WinSTS*** Software
- Operating Manual in English
- Accessory kit containing AC cord and a set of fuses

OSA 5565 STS

A COMPANY OF THE SWATCH GROUP

The leading partner for your synchronisation needs

OSCILLOQUARTZ
SWATCH GROUP ELECTRONIC SYSTEMS

Oscilloquartz SA – Rue des Brévards 16 – CH-2002 Neuchâtel – Switzerland – Tel. : +41 32 722 55 55 – Fax : +41 32 722 55 56 – osa@oscilloquartz.com - www.oscilloquartz.com

Technical specification 5565

Application

Figure 1 below shows a typical application for the OSA 5565 STS, where the synchronisation output from a public switch equipment is tested against a known synchronisation reference. The calculations are carried out by the WinSTS software and the results are displayed as graphs which can be compared with relevant international standards. For more specific analysis of the result, all data from the OSA 5565 STS can be examined in table form.

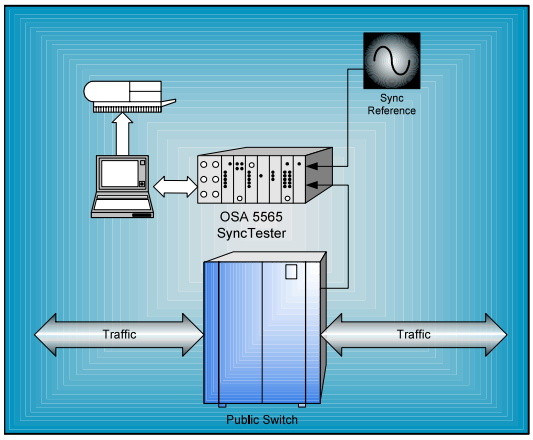

Figure 1: Typical application for the OSA 5565

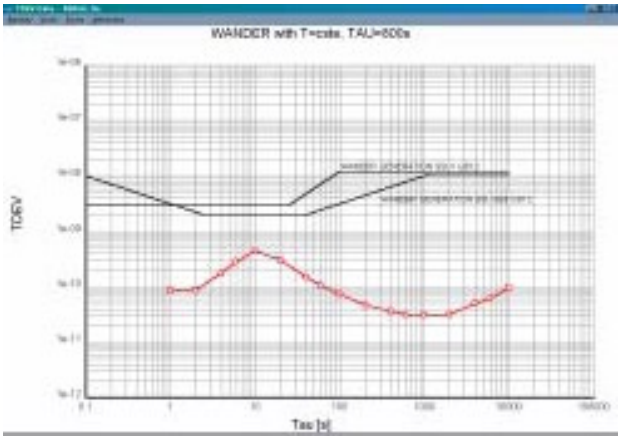

Figure 2 : Example of graph window from the WinSTS software while measuring the OSA 5533C SDU.

Internal reference:

- Type : Rubidium
- Frequency : 10 MHz
- Reference Freq. adj. : range $5x10^{-9}$ ± 20%, res. $1.22x10^{-12}$
- Stability, Long term : $4x10^{-11}$ /Month
- Stability, Short term : $3x10^{-11}$ at 1 second
$1x10^{-11}$ at 10 seconds
$3x10^{-12}$ at 100 seconds
- Stability vs. temp. : $2x10^{-10}$ (±0° to ±60°C)
- Retrace : $<2x10^{-11}$ 48 hours off and 1 hour on

External reference input:

- Frequency : 10 MHz
- Connector : BNC

Measurement :

- Minimum Sampling period τ_0 : 12.5 ms
- Max. measurement period T : limited by RAM installed on PC.
- Resolution : 100 ps
- Max. measurement range : ± 100 µs (with recycling)

Environment :

- Magnetic field sensibility:X & Y axis : < $2x10^{-11}$ /Gauss,
Z axis: < $1x10^{-10}$ /Gauss
- Operational Temp : 0°C to +45°C
- Storage Temp : -20°C to +50°C
- Humidity : < 95% non-condensing
- EMC : Meets EN50081-1, EN50082-1.
- Safety : Meets EN 61010-1 (1993)/A2 (1995).

Input signals:

- 1xVarious frequencies: (64kHz-16.384MHz, steps of 8kHz)
- 1x(2.048Mb/s or 1.544Mb/s)

Output signals:

- 1x10 MHz,
- 2x 2.048 MHz
(some signals require amplifier modules, please refer to Oscilloquartz for details)

Technical:

- Voltage : 115 VAC ± 15% 60 Hz or 230 VAC ± 15% 50 Hz
- Power consumption:40W (50W during Warm-up: 15 min.)
- Dimension : 145x275x400mm (HxWxD)
- Weight : 7.5 kg

PC hardware requirement (Minimum):

- Processor : Intel Pentium (100 MHz)
- RAM : 16Mb
- HD : 6Mb
- Storage : @1 Mb for 1s. sampling rate measurement during 15 hours.
- Drivers : CD-Rom drive
- Display : VGA
- Ports : 1xSerial port (RS-232C)
- Operating system : MS-Windows 95/98/NT/2000/XP

Associated software, WinSTS:

Calculates MTIE, Δf/f, ADEV, MADEV, and TDEV. Displays measurement graphs against templates.
Contains templates derived from relevant ITU, ETSI, Bellcore as well as user-defined

Version 06/May 2005/ORIS

Oscilloquartz SA – Rue des Brévards 16 – CH-2002 Neuchâtel – Switzerland – Tel. : +41 32 722 55 55 – Fax : +41 32 722 55 56 – osa@oscilloquartz.com - www.oscilloquartz.com