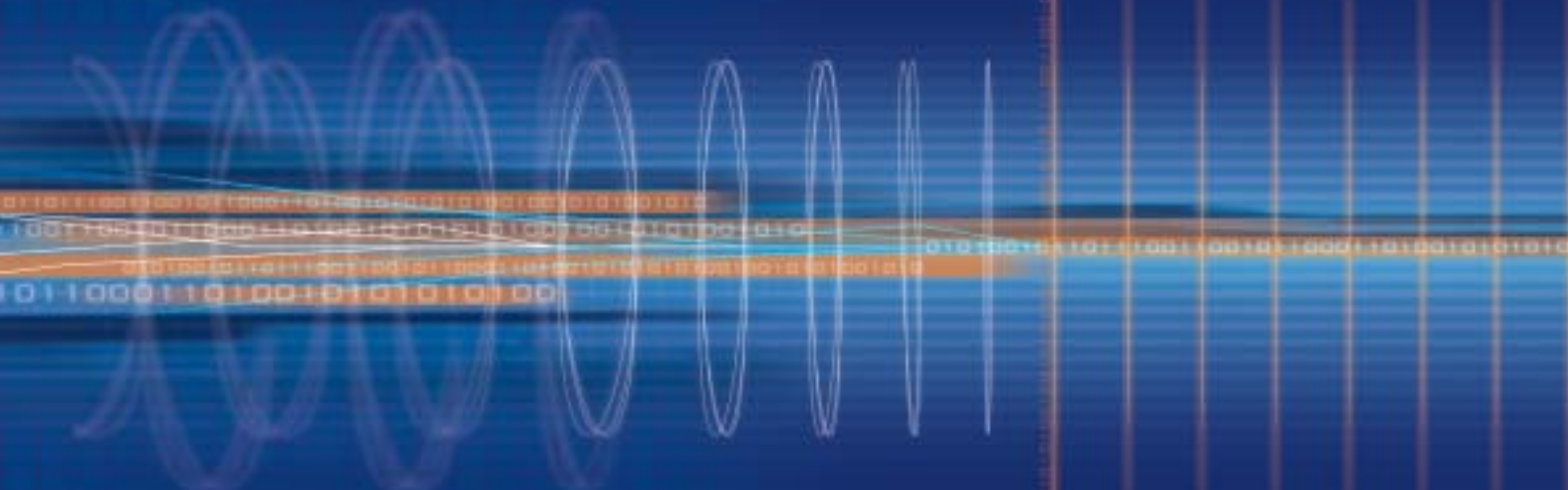


The leading partner  
for your synchronisation  
needs



# Preface

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**Oscilloquartz** was founded in 1949 in the picturesque city of Neuchâtel, Switzerland, situated in the heart of Europe's traditional watchmaking region.

From the beginning, Oscilloquartz has been at the forefront of time and frequency technologies, e.g. by supplying highly accurate clocks to Neuchâtel Observatory (since 1950) and Paris Observatory (since 1955). In 1958, Oscilloquartz developed and produced their first Hydrogen Maser, and in 1964 their first Cesium system was delivered to ESRO (predecessor of the European Space Agency). The year 1962 marked a successful introduction for Oscilloquartz in the telecommunication marketplace by standardizing its production of frequency re-generation and distribution equipment.



This heritage places Oscilloquartz as the world's leader in design and manufacture of high quality quartz crystal oscillators and allows the company to offer unrivalled experience in the development and manufacture of affordable synchronisation systems for the telecommunications industry.

To maintain leadership in the time and frequency domain, Oscilloquartz employs highly skilled engineers devoted to achieving the best of class performances in quartz and Cesium applications as well as in satellite-driven GPS receivers (Global Positioning System) and synchronisation regenerators. User-friendly local and/or remote management systems, entirely developed by

Oscilloquartz, ensure the smooth operation of the equipment.

Value is measured at Oscilloquartz by assuring the customer a dedication towards manufacturing capabilities with qualified personnel, committed to ensure that the company retains and continually enhances its core competences in R&D, production and final testing. This commitment enables Oscilloquartz to confirm its position as THE synchronisation supplier for today and tomorrow's telecommunication networks. Oscilloquartz is a participating member of the ITU and ETSI Synchronisation Committees through Swiss Information and Communications (SICTA) Technology Association, working closely with telecommunication manufacturers and operators in order to attain the highest standards.

As an ISO 9001 and ISO 14001 certified company, Oscilloquartz conforms to world-class quality assurance standards with regards to its production, management and environmental processes. In addition, the company is certified as an accredited Calibration Centre for Time and Frequency by METAS (Metrology and Accreditation Switzerland).

Finally, as a total solution provider, Oscilloquartz offers a range of special services during the whole life cycle of its systems. These are generically referred to as "SyncServices".

# Crystal oscillators

**Stable** frequency sources are crucial to the effective transmission of digital signals. Since the beginning, Oscilloquartz has specialised in frequency technology and developed quartz crystal oscillators to the highest level of technical achievement.

The result is a wide selection of crystal oscillators for use in switching and transmission systems, test equipment and a host of other applications. The oscillators are also used extensively within Oscilloquartz synchronisation systems. The oscillator portfolio covers a broad range of frequencies and stabilities between 1E-7 and 1E-12 with a very comprehensive range of Oven-Controlled Crystal Oscillators (OCXO) including Ultra-Stable Oscillators (USO).

In addition to specialising in conventional oscillator technology, Oscilloquartz, as an innovator of new technologies, is capable of exploiting novel ideas all the way from the drawing board to commercially available products.

The BVA oscillator is just such a product. The stability among other features of the BVA is unequalled by any other quartz crystal device.

This oscillator achieves ageing characteristics typically down to 1E-11 per day without use of any mathematical algorithms.



## OCXO Selection Chart

MODEL	FREQUENCY RANGE (MHz)								Xtal	POWER SUPPLY			OPERATING TEMP RANGE						ALL INCLUSIVE STABILITY (including 1 year aging; scale 1E-8)					PACKAGE LxWxH (mm)			
	4.096	5	8.192	10	13	16.384	26	40		* DO/SO	24	12	5	-40	-30	-20	0	60	70	0.5	1.0	1.5	2.5		5	10	50
8607	■	■	■	■					BVA-SC/DO	■				■	■	■	■	■	■	■							138x73x88
8600	■	■	■	■					BVA-AT/DO	■				■	■	■	■	■	■	■							138x73x88
8863									SC-3rd/DO																	NEW 51x41x19	
8683/2	■	■	■	■	■	■	■	■	SC-3rd/DO	■					■	■	■	■	■	■						50.8x50.8x25	
8663/2	■	■	■	■	■	■	■	■	SC-3rd/DO	■					■	■	■	■	■	■						51.1x41.1x25	
8666/5		■	■	■	■	■	■	■	AT-5th/DO	■					■	■	■	■	■	■						51.1x41.1x31	
8676/5		■	■	■	■	■	■	■	AT-5th/DO	■					■	■	■	■	■	■						67x60x40.6	
8671/0		■	■	■	■	■	■	■	AT-3rd/DO	■					■	■	■	■	■	■						67x60x40.6	
8661/0		■	■	■	■	■	■	■	AT-3rd/DO	■					■	■	■	■	■	■						51.1x41.1x31	
8743/2			■	■	■	■	■	■	SC-3rd/SO	■					■	■	■	■	■	■						40x30x19	
8712	■	■	■	■	■	■	■	■	SC-3rd/SO			■	■	■	■	■	■	■	■	■						36x27x19.4	
8711	■	■	■	■	■	■	■	■	SC-3rd/SO			■	■	■	■	■	■	■	■	■						36x27x19.4	
8788		■	■	■	■	■	■	■	SC-3rd/SO	■					■	■	■	■	■	■						51x41x19	
8789		■	■	■	■	■	■	■	SC-3rd/SO	■					■	■	■	■	■	■						51.1x51.1x19	
8711 spe	■	■	■	■	■	■	■	■	SC-F/SO			■	■	■	■	■	■	■	■	■						37x27x19.4	
8741	■	■	■	■	■	■	■	■	SC-F/SO			■	■	■	■	■	■	■	■	■						40x30x20	
8620/1				■	■	■	■	■	AT-F/SO						■	■	■	■	■	■						20.3x13.2x7.62	
8625/6				■	■	■	■	■	AT-F/SO						■	■	■	■	■	■						20.3x13.2x7.62	

NEW DEVELOPMENT FROM OSCILLOQUARTZ

\*DO Double oven controlled oscillator, SO single oven controlled oscillator

# Primary Reference Clock

**Oscilloquartz** delivers the master reference to telecom networks throughout the world. The OSA 6500B PRC offers Cesium and GPS technologies to provide greater flexibility and advanced performance for even the most demanding networks. The system exceeds the requirement of ITU-T.

Additionally, OSA 6500B PRC is a SyncView manageable solution that supports single or distributed configurations, it offers field-

proven reliability, automatic fault recovery and an easily and flexibly upgradable architecture.

## Features :

- > Multiple Cesium and GPS references
- > Fully compliant with ITU-T G.811
- > Manageable via SyncView
- > Input monitoring with MTIE, TDEV and Frequency graphs

- > E1/T1 SSM generation and handling
- > Expandable to several hundred output signals
- > Supplied in ETSI or 19" cabinet
- > Master-Slave configuration possible



6500B PRC



5548B SASE



5581C GPS

# Synchronisation Supply Units

**OSA 5548B SASE** provides a powerful integrated solution for synchronisation of PDH, SDH, SONET and ATM telecommunications networks.

Designed for maximum reliability, the flexibility of the OSA 5548B SASE enables it to adapt to the needs of any telecommunication network.

## Features :

- > Fully integrated, managed solution
- > Single or dual GPS Receiver plug-ins

- > Choice of ITU-T G.812 type I & II clocks
- > Local and/or SyncView remote management
- > Input monitoring with MTIE, TDEV and Frequency graphs
- > E1 / T1 SSM handling
- > Redundant configuration with hitless changeover
- > G.811 holdover for up to 24 hours with BVA
- > Up to 112 outputs, expandable with external equipment
- > Conditional and programmable individual output squelching
- > Local and/ or remote management



5548B SASE

# Synchronisation sources

**Oscilloquartz** offers a range of Cesium and GPS based synchronisation sources. The Cesium based sources include oscillators for OEM applications and complete systems for the generation of G.811 reference clock signals in telecom networks. The Cesium system OSA 5585 Primary Reference Source forms the core of the OSA 6500B PRC system. The Global Positioning System (GPS) is a worldwide broadcasting system for positioning and time information. Telecom operators can take advantage of this system for synchronisation of their networks. Oscilloquartz's portfolio of GPS-based products covers the various synchronisation applications in telecommunication networks.

## OSA 5581C GPS

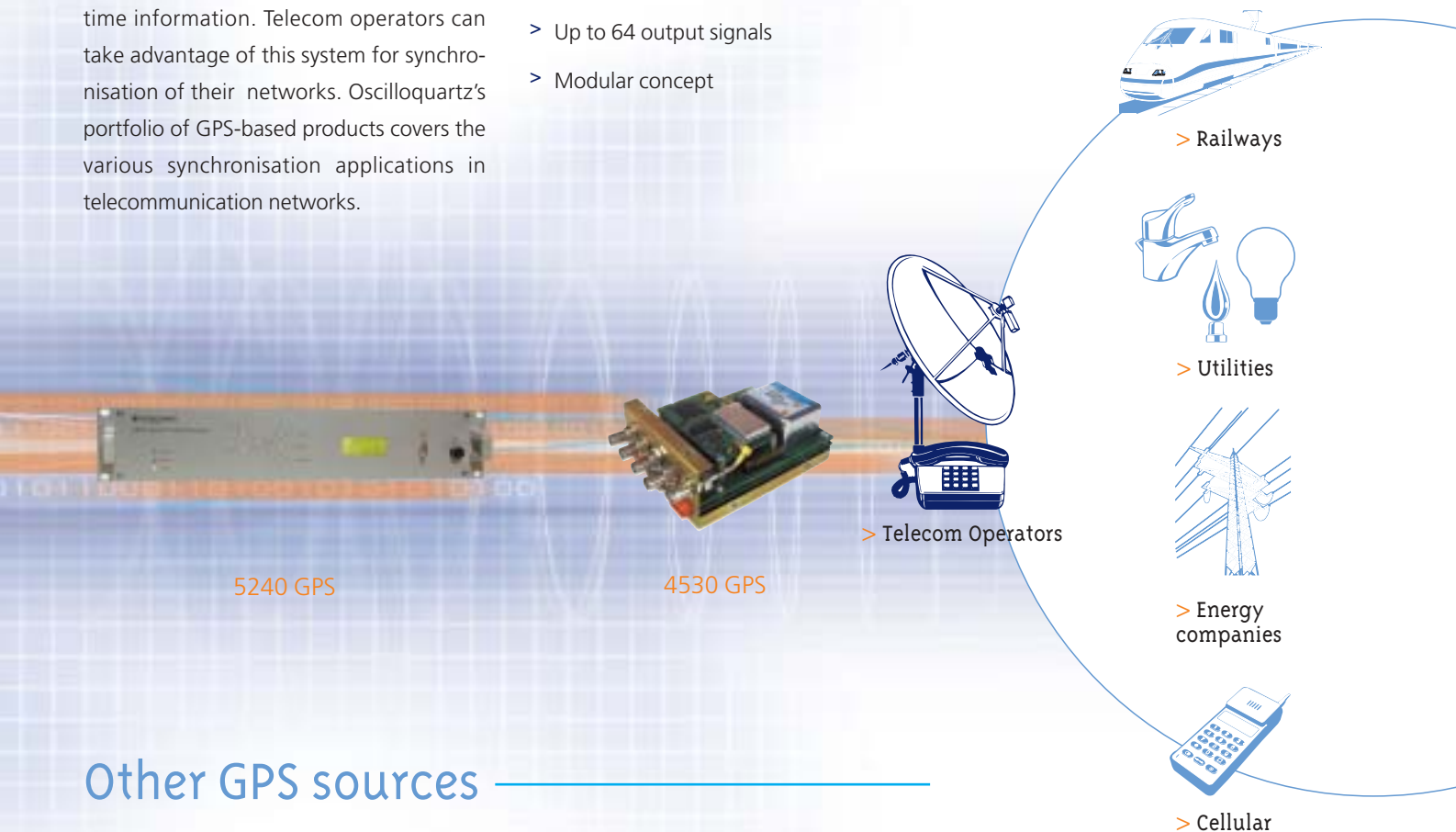
### Features

- > Single or protected GPS modules
- > High quality holdover: OCXO 8663 or Rubidium
- > Wide range of telecom and time code outputs
- > Optional re-timing functionality Local and/or SyncView remote management
- > Up to 64 output signals
- > Modular concept

## OSA 5585 PRS

### Features

- > Digital Cesium primary reference technology with automatic microprocessor control loops
- > Modular concept
- > 8 years warranty tube as standard
- > Field exchangeable Cesium module



# Other GPS sources

## OSA 5230 GPS new product

### Features

- > Compact Stand Alone GPS Receiver
- > 8 Individually selectable outputs
- > High stability internal clock, < 1E-10 / day
- > Local and/or remote management through RAM software
- > Optional auxiliary input, E1, T1 or 2.048 MHz

## OSA 5240 GPS new product

### Features

- > 19" 2U high sub-rack format
- > Fully compliant to ITU-T G.811 / Stratum 1 when locked to GPS
- > Integrated high stability holdover functionality < 1 \* 10<sup>-10</sup> / day compliant ITU-T G812 type I, V, VI or Rubidium < 5 \* 10<sup>-11</sup>/month compliant G.812 type II
- > Up to 16 outputs individually configurable among 10MHz, 1PPS, 2.048MHz, E1
- > 8 or 16 re-timing E1 / DS1 functionality
- > Time output NTP or IRIG-B
- > Roof or Wall / Windows antenna
- > Full local (RS232) / remote (TCP/IP) management interface and software

## OSA 4500 GPS

### Features

- > Reliable, economical and compact GPS receivers for OEM applications
- > Ideal for use in CDMA, UMTS, GSM and DECT systems
- > Integrated high-stability holdover: OSA 8663 OCXO: < 1E-10 / day RMO Rubidium: < 5E-11 / month
- > Holdover compliant: ITU-T G.812 type I, II, V, VI
- > Optional auxiliary input: E1, T1 or 2.048MHz

# Synchronisation Distribution Units

**Very** often, extra output capacity is required at the network nodes to synchronise all its elements and it is thus necessary to implement expansion equipment.

To meet this requirement, Oscilloquartz has introduced two synchronisation distribution units (SDU), models OSA 5533C SDU and OSA 5530B SDU.

## OSA 5533C SDU

The OSA 5533C SDU is a cost-effective solution providing up to 64 outputs from one or two inputs. It is ideally suited to stand-alone clock distribution requirements in SDH or SONET nodes. A highly functional Holdover ensures that the OSA 5533C SDU

continues to deliver output references even when all inputs are lost.

### Features

- > Single or dual inputs
- > Up to 64 outputs
- > E1 / T1 SSM handling
- > Holdover typically < 5E-10 / day, exceeds ITU-T G.812 type III SSU
- > Noise generation to ITU-T G.812 type I
- > Optional re-timing of up to 24 channels
- > Jitter attenuation
- > Local and/or SyncView, remote management

## OSA 5530B SDU

The OSA 5530B SDU is designed primarily to extend the output capacity of other Oscilloquartz systems.

It provides up to 96 1+1 protected or unprotected synchronisation outputs.

### Features

- > Two 2.048MHz inputs
- > Up to 96 1+1 protected outputs
- > Local and/or SyncView, management through SASE

# TELECOM Selection Table

PRODUCT G.811		G.812 (SSU/TSG)						No. OF		INTERNAL		Re-timing	SSM	MANAGEMENT	
	(PRC)	I	II	III	IV	V	VI	INPUT	OUTPUT	GPS	NTP			E1/T1	LM
6500	✓								352	✓		✓	✓	✓	✓
5585	✓								16					✓	(✓)
5581C	✓*	✓	(✓)			✓	✓	2	64	✓	✓	✓	✓	✓	✓
5548B	✓**	✓	✓			✓	✓	6	112	✓		✓	✓	✓	✓
5533C				✓	✓	✓	✓	2	64			✓	✓	✓	✓
5530B								2	96					✓	(✓)
5220									1	✓	✓			✓	
5230	✓*	✓	(✓)			✓	✓	1	8	✓				✓	✓
5240	✓*	✓	(✓)			✓	✓	1	16	✓	✓	✓		✓	
453x	✓*	✓				✓	✓	1	3	✓		✓		✓	
4520	✓*	✓				✓	✓	1	3	✓				✓	
4510 <sup>1</sup>	✓*	✓				✓	✓	1	3	✓					
5565								2	3					(✓)	

\* When locked to GPS

\*\* When GPS Installed & locked

1 OEM module

 Cesium  
 SSU

 SDU  
 GPS-SSU

 GPS-Receiver  
 Telecom Test eq.

# SyncServices — SyncTester

Oscilloquartz believes the key to achieving total customer satisfaction lies in the services it provides before, during and after delivery of the equipment.

The services ensure successful project implementation and long-life operation, including:

- > Network synchronisation audit concept, planning, coaching and configuration
- > Extensive product training courses
- > Specialised synchronisation seminars
- > Turn-key installation and commissioning
- > Support and maintenance agreements

The OSA 5565 STS is a compact and portable solution for measuring synchronisation performance in networks.

The internal high stability Rubidium reference makes it ideal for field testing.

Its measurement software greatly simplifies test procedures, verification methods and report generation.

## Features

- > Accurate, high-resolution measurements as specified by ETSI and ITU
- > Portable and compact
- > Automatic computation and generation of TIE, MRTIE, TDEV, Fractional Frequency

- > Easy-to-use graphical interfaces
- > Internal Rubidium reference
- > Rubidium reference output
- > ITU-T O.172 compliant



## SyncView®

**SyncView®** is a powerful Network Synchronisation Management System that allows operators to manage Oscilloquartz elements from a single site. Furthermore, it also enables control at regional levels. SyncView, provides, stores and processes information such as event logs, configuration events and performance data.

## Features

- > Manages the synchronisation network in real time
- > Fault, Configuration, Performance, Security and Operational Management
- > Network manager, Regional manager and Clients
- > X.25 or TCP/IP  
Q3 or SNMP interface options

This brochure is intended as a general guide for our range of products and services. For details, technical specification, please contact us or consult the internet.

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