

# OSA 5230 GPS Receiver

## A compact, cost efficient, high quality GPS-based synchronisation solution for OEM & integrators

Oscilloquartz proudly announces the addition of a new compact 5230 GPS Receiver to its portfolio of cost-efficient synchronisation solutions for OEM and system integrators.

The 5230 GPS is specifically designed for the synchronisation of 2G, 2.5G and 3G mobile telecommunications networks, SDH/SONET transport networks as well as of transport ATM, LAN/WAN, utilities.

Digital broadcasting and mobile location services such as E911 can also take advantage of this compact and economical synchronisation solution.

The 5230 GPS integrates the same GPS engine already present in Oscilloquartz' highly successful top-of-the-line OSA 5581C GPS-SR and 453x GPS-SB series, into a 2U-high, 19" sub-rack format, complete with an integrated power supply(18-60V) and output module providing 8 output signals.

The new OSA 5230 GPS Receiver conforms to G.811-/Stratum 1 quality synchronisation reference while providing 8 individually configurable outputs at a fraction of the cost of currently available solutions.

The OSA 5230 GPS Receiver incorporates an integrated GPS receiver and a highly accurate oven-controlled oscillator, which filters the received signal and provides a holdover quality typical of an SSU/BITS during an eventual loss of GPS signal or antenna failure.

The OSA 5230 GPS Receiver is the natural choice as a synchronisation source for UMTS, WCDMA and CdmaOne, Cdma 2000, as well as GPRS, CDMA and TDMA base station and mobile switches.

### Management Software

The OSA 5230 GPS Receiver can be managed by any Windows based PC connected to the equipment via an



RS-232 connection and running the Configuration and Monitoring software (CM SW).

The CM SW application provides an intuitive, easy-to-use access for configuring the unit and examine its current status such as the visible GPS satellites, the unit's operational state, the status of the outputs, of the internal oscillator and so on.

The unit also provides an alarm relay contact allowing existing communication system to retrieve basic status information.

### \*Option BVA

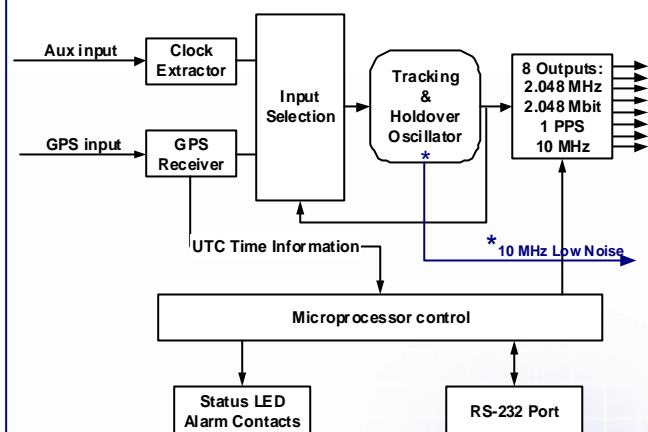
Provides 1 direct low noise frequency output and high accuracy hold over ( $\Delta f/f < 2 \times 10^{-11}$ day, MTIE  $< 1 \mu s/24h$ ).

For each individual output; the following output types may be selected, using a set of switches situated on the rear panel of the unit :

- 2.048 Mbit/s (E1) compliant with ITU-T G.703-9
- 2.048 MHz compliant with ITU-T G.703-13
- 1 PPS, phase-locked to UTC
- 10 MHz, phase-locked to UTC

OPTIONS: Following options can be provided upon request for quantity orders (please contact your OSA representative for availability and details):

- 8600 BVA oscillator
- Rubidium oscillator
- 1.544 Mbit/s (T1/DS1) outputs
- 64/8 KHz Composite Clock (CC) outputs
- Additional outputs
- Pure signal distributor (auxiliary input as a reference/no GPS input)
- Special connectors and/or impedances



OSA 5230 GPS Block Diagram

\*For BVA option only

The leading partner for your synchronisation needs

# Technical specifications 5230 GPS Receiver

## Typical Applications

- Cellular networks like UMTS, GPRS and CDMA
- Wireless and wireline telecom synchronisation
- State and federal communication systems simulcast
- Time and frequency reference for test equipment and instruments
- Specialised ATM and LAN/WAN synchronisation requirements
- Satellite ground stations equipment
- Time and frequency reference for power utilities and public services
- Any systems requesting highly accurate Time & Frequency references
- DAB and DVB broadcasting systems

<b>Performance when locked to GPS-signal (w/out SA):</b> <ul style="list-style-type: none"> <li>➤ 1 PPS accuracy: 50 ns to UTC</li> <li>➤ 1 PPS stability:</li> <li>➤ &lt; 100 ns pp (@ constant temperature)</li> <li>➤ &lt; 150 ns pp (fluctuating temp., -5°C to +55°C)</li> <li>➤ ADEV &lt; 10<sup>-12</sup> (20'000 seconds)</li> </ul>	<b>Output signals:</b> <ul style="list-style-type: none"> <li>➤ 1 PPS: 200 ms width, rise time ≤ 20 ns, AC-MOS, 50 ohms</li> <li>➤ 10 MHz, 1 Vrms sine, 50 ohms</li> <li>➤ 2.048 MHz compliant to G.703-13, 75 ohms unbalanced</li> <li>➤ 2.048 Mbps (E1) compliant to G.703-9, 75 ohms unbalanced</li> </ul>
<b>Power supply:</b> <ul style="list-style-type: none"> <li>➤ 18-60 VDC</li> <li>➤ Consumption: &lt; 11W during warm-up, &lt; 7W steady state 25°C</li> </ul>	<b>Management:</b> <ul style="list-style-type: none"> <li>➤ RS-232C connector</li> <li>➤ 1 x Relay contact</li> <li>➤ TOD (Time-Of-Day) output compliant to NMEA0183, on RS-232C connector</li> </ul>
<b>Configuration and Monitoring software:</b> <ul style="list-style-type: none"> <li>➤ Runs on any IBM-compatible PC with Windows 98/NT/2000/XP</li> </ul>	<b>Environmental characteristics:</b> <ul style="list-style-type: none"> <li>➤ Operational: -5°C to +60°C</li> <li>➤ Storage: -40°C to +85°C</li> <li>➤ Humidity: 95% non-condensing</li> </ul>
<b>Holdover performance:</b> <ul style="list-style-type: none"> <li>➤ Long term stability: 1x10<sup>-10</sup>/day, 2x10<sup>-8</sup>/year</li> <li>➤ Frequency stability: 6x10<sup>-10</sup> pp (-5°C to +55°C)</li> <li>➤ PPS accuracy: &lt; 7µs after 24 hours, at constant temperature</li> <li>➤ PPS accuracy: &lt; 7µs after 8 hours, at variable temperature</li> </ul>	<b>Antenna Cables (connectors included):</b> <ul style="list-style-type: none"> <li>➤ 10 meters (LMR 400)</li> <li>➤ 20 meters (LMR 400)</li> <li>➤ 60 meters (LMR 400)</li> <li>➤ 120 meters (LMR 400 with active line amplifier)</li> <li>➤ up to 300 meters: CellFlex cable</li> </ul>
<b>Antenna Data (other active antennas possible):</b> <ul style="list-style-type: none"> <li>➤ Frequency: L1 (1'575 MHz)</li> <li>➤ Polarization: Right-Hand Circular</li> <li>➤ Polarization VSWR: 2:1</li> <li>➤ Gain: 35 dB (nominal)</li> <li>➤ Noise: 2.75 dB (nominal)</li> <li>➤ Pass-band width: 50 MHz</li> <li>➤ Azimuth: 360° (omni-directional)</li> <li>➤ Elevation: 0° to 90° (hemispherical)</li> <li>➤ Power supply: +5V DC (±10%)</li> <li>➤ Consumption: 22 mA (nominal)</li> </ul>	<b>Physical dimensions (antenna):</b> <ul style="list-style-type: none"> <li>➤ Æ77.3 mm (3.04"), H: 74.6 mm (2.94")</li> <li>➤ Weight: 100 grams</li> </ul> <b>Environmental characteristics (antenna):</b> <ul style="list-style-type: none"> <li>➤ Operational: -40°C to +85°C</li> <li>➤ Storage: -55°C to +100°C</li> <li>➤ Vibration: 0.04 g2/Hz (10 Hz to 500 Hz)</li> <li>➤ 0.03 g2/Hz (501 Hz to 850 Hz)</li> <li>➤ 0.02 g2/Hz (851 Hz to 1'200 Hz)</li> <li>➤ Shock: 40 gram</li> <li>➤ Humidity: 95% non-condensing</li> <li>➤ Salt Fog: Mil. Std. 202F, Method 101D Cond. B</li> <li>➤ Waterproof: Submersion to 1 meter</li> </ul>
<b>Highlights:</b> <ul style="list-style-type: none"> <li>➤ Reliable, low cost, compact GPS receiver</li> <li>➤ 8 outputs individually configurable by switches</li> <li>➤ Optional auxiliary input: E1 or frequency</li> <li>➤ G.703 compliant E1 and 2.048 MHz outputs</li> <li>➤ UTC locked 1 PPS and 10 MHz outputs</li> <li>➤ BNC connectors for all inputs and outputs</li> </ul>	<ul style="list-style-type: none"> <li>➤ TOD compliant to NMEA0183</li> <li>➤ Simultaneous tracking of up to 8 satellites</li> <li>➤ Integrated high stability holdover functionality : ITU-T G.811 / Stratum 1 compliant when locked to GPS</li> <li>➤ ITU-T G.812 (I, V, VI) compliant holdover</li> <li>➤ ITU-T G.812 (I, V, VI) filtering of auxiliary input</li> </ul>
<ul style="list-style-type: none"> <li>➤ Phase noise: 1Hz: -115 dBc</li> <li>➤ Holdover mode 10Hz: -135 dBc</li> <li>➤ or 100Hz: -145 dBc</li> <li>➤ Locked on 1kHz: -145 dBc</li> <li>➤ OSA 5585B PRS 10kHz: -145 dBc</li> <li>➤ 100kHz: -145 dBc</li> </ul>	<ul style="list-style-type: none"> <li>➤ Harmonics: -40dB</li> <li>➤ Non-Harmonics: -70dB</li> <li>➤ Output : 1x10MHz at 50Ω</li> <li>➤ Amplitude: 7dBm at ±1dBm</li> <li>➤ Phase-time (holdover): 1µ/day</li> <li>➤ Frequency Holdover: 2x10<sup>-11</sup>/day</li> <li>➤ Temperature sensitivity (frequency): 2x10<sup>-10</sup> (-5°C to +55°C)</li> </ul>
<b>Physical dimensions:</b> H x W x D (mm) : 89x483x280mm (3.5"x19"x11")	

Ed.07/Mars 2007/ORIS

Oscilloquartz SA reserves the right to change all specifications contained herein at any time without prior notice.

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 **OSCILLOQUARTZ**  
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