

OSA IIU GPS-12

On-board GPS-receiver for OSA 5548B SASE equipment

Integrated GPS-receiver module

The Oscilloquartz *IIU GPS-12* is an integrated GPS Receiver that provides a highly reliable and cost effective synchronisation signal source virtually anywhere and at any time.

The module is ideal for back-up synchronisation references in telecommunication networks or as a primary synchronisation reference in an isolated node where there is no connection to a Primary Reference Clock.

The compact modular format of the *IIU GPS-12* (8 TE wide) can be integrated into Oscilloquartz OSA 5548B SASE (SSU) to provide a reliable ITU-T G.811 compliant GPS reference. The module tracks eight satellites with its fully automatic satellite acquisition system.

Coupled with high-performance oscillators inside the OSA 5548B SASE (SSU), the *IIU GPS-12* maximises the GPS performances and minimises negative effects caused by activities such as atmospheric interference.

The BVA oscillator is ideally suited for this purpose as it offers excellent stability characteristics and is less sensitive to temperature changes than most oscillators such as Rubidium. This combination provides excellent stability performance available for all synchronisation requirements in the telecom world.

The *IIU GPS-12*, when locked to the Global Positioning System and BVA ensemble, is exceeding the requirements of ITU-T G.811, even under ETSI class 3,2 temperature

conditions.

Antenna and lightning protection

The standard *IIU GPS-12* module comes with an active antenna and 10 meters of interconnection cable. For installations requiring a longer cable length, Oscilloquartz offers standard lengths of 20, 60 or 120 meters. The CellFlex cable option allows antenna cable lengths up to 300 meters.

To protect the equipment against possible lightning damage, a lightning protection kit is included with the antenna accessories. For spare part proposes the *IIU GPS-12* and the lighting protection kit can be ordered as separate items.

Please contact Oscilloquartz for further details.

Highlights:

- Compact and reliable GPS receiver
- Simultaneous tracking of up to 8 satellites
- Fully manageable via the OSA 5548B Management software
- ITU-T G.811 compliant when locked to GPS
- Board integration into the OSA 5548B SASE
- Provides UTC locked 1 PPS output



IIU GPS-12 module

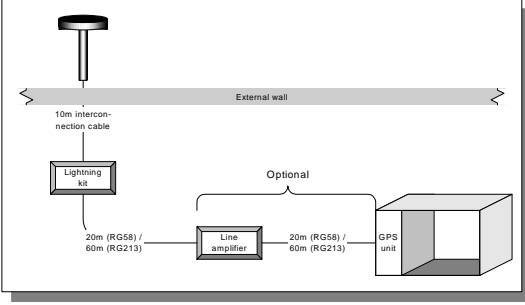
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Technical specifications GPS-I2

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| <p>GPS receiver engine:</p> <ul style="list-style-type: none"> ➤ L1 1575.42 MHz internal frequency ➤ 8 parallel channels architecture ➤ 8 simultaneous satellite tracking ➤ External gain : 11dB to 33 dB | <p>Environmental characteristics (module):</p> <ul style="list-style-type: none"> ➤ Operational Temp. : -5C⁰ to +55C⁰ ➤ Storage Temp. : -20C⁰ to +50C⁰ ➤ Humidity : 95 % non condensing ➤ Altitude (max.) : 18 km (60'000 ft) |
| <p>Timing outputs :</p> <ul style="list-style-type: none"> ➤ Accuracy : < 150 ns ➤ 1PPS : Rising edge, 200 ms wide, ACMOS, 50 ➤ 2.048 MHz : Square, 2.5V (pp), 50 | <p>Jamming immunity :</p> <ul style="list-style-type: none"> ➤ -50 dBm @ 1570 MHz ➤ -79 dBm @ 1575.42 MHz ➤ -56 dBm @ 1580 MHz |
| <p>Physical dimension (module) :</p> <ul style="list-style-type: none"> ➤ Height : 100 mm (3.9466) ➤ Weight : 61 mm (2.4066) ➤ Depth : 172 mm (6.7766) ➤ Weight : 380 grams ➤ Uses two IIU slots in OSA 5548B SASE | <p>Antenna Cables (connectors included) :</p> <ul style="list-style-type: none"> ➤ 10 meter interconnection (included), ➤ 20 meter (RG58) ➤ 60 meter (RG213) ➤ 120 meter (2x 60m RG213, active line amplifier) ➤ CellFlex (up to 300 meters) |
| <p>Acquisition time, time to first fix (typical)</p> <ul style="list-style-type: none"> ➤ < 900 s | <p>Physical dimensions (antenna)</p> <ul style="list-style-type: none"> ➤ Dimensions: Φ: 77.3 mm (30.4>), H: 74.6 mm (2.94>) ➤ Weight : 100 grams |
| <p>Retrieved information (from Management system):</p> <ul style="list-style-type: none"> ➤ General information (user settable): <ul style="list-style-type: none"> PPS Cable Offset, PPS User Offset, GMT Offset (hour, minute, positive / negative) ➤ Satellite information: <ul style="list-style-type: none"> ID, Mode, Carrier to noise density ratio, Doppler, Azimute, Elevation and Status. ➤ Antenna / Module information: <ul style="list-style-type: none"> No. of satellites, No. of used satellites, Latitude, Longitude, Altitude, Date, Time | <p>Antenna data :</p> <ul style="list-style-type: none"> ➤ Frequency : L1 (1575 MHz) ➤ Polarization : Right-Hand Circular Polarization ➤ VSWR : 2:1 ➤ Gain : 35 dB (nominal) ➤ Noise : 2.75 dB (nominal) ➤ Pass-band Width : 50 MHz ➤ Azimuth : 360° (omni-directional) ➤ Elevation : 0° to 90° (hemispherical) ➤ Power supply : +5V DC (10%) ➤ Consumption : 22 mA nominal) |
|  | <p>Environmental characteristics (antenna):</p> <ul style="list-style-type: none"> ➤ Operational: -40C⁰ to +85C⁰ ➤ Storage: -55C⁰ to + 100C⁰ ➤ Vibration: <ul style="list-style-type: none"> 0.04 g²/Hz (10 Hz to 500 Hz) 0.03 g²/Hz (501 Hz to 850 Hz) 0.02 g²/Hz (851 Hz to 1200 Hz) ➤ Shock: 40 grams ➤ Humidity: 95% noncondensing ➤ Salt, Fog: Mil. Std. 202F, Method 101D Cond. B ➤ Water resistance: Submersion to 1 meter |

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

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