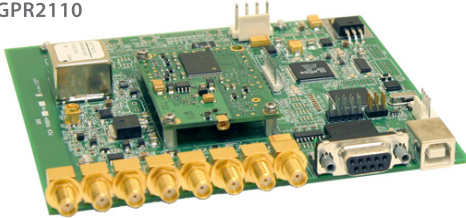


## GPS Receiver

Models: GPR2100, GPR2110, GPR2120, GPR1100

GPR2110



GPR1100



GPR2120



### Available Models

*GPR2100 - OEM board with BNC connectors*

*GPR2110 - OEM board with SMA connectors*

*GPR2120 - Enclosed OEM board*

*GPR1100 - 1RU unit with display and keypad, Ethernet and SNMP*

### Product Features

- Up to eight 10 MHz Outputs
- Up to eight 1pps Outputs
- Optional RS232 TOD output for CMMB applications
- High performance design, utilizing an ovenized quartz oscillator
- Antenna cable length compensation
- Serial port for local console interface
- PC GUI control software available for GPR2100, GPR2110 and GPR2120
- WEB GUI and SNMP control over Ethernet for GPR1100

### Description and Application

Based on a M12MT receiver module, the UBS GPS receiver is a compact, cost effective, GPS locked timing reference.

Designed for applications where 10MHz/1pps clock sources are required to synchronize multiple transmission devices, this module provides an accurate high quality signal set. Multiple outputs enable all base station/site equipment to share a single accurate and stable reference source.

Optionally, UBS GPS receivers provide TOD information via a serial RS232 port, compliant with CMMB standard requirements.

UBS GPS receivers are available in three basic models: OEM board (GPR2100 and 2110), enclosed OEM board (GPR2120) and 1U unit (GPR1100), equipped with LCD display, keypad and Ethernet connection.

The GPS receiver unit includes a GPS receiver, as well as a 10 MHz and 1pps distribution system.

GPR1100 also includes a controller module, supporting WEB GUI and SNMP interfaces over an Ethernet connection.

## GPS Receiver

Models: GPR2100, GPR2110, GPR2120, GPR1100



### Product Specifications (specifications are subject to change without notice)

|                                      |                                                                              |                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General Characteristics</b>       | <b>Receiver Architecture</b>                                                 | L1 1575.42 MHz<br>C/A code (1.023 MHz chip rate)<br>Code plus carrier tracking (carrier aided tracking)                                                                                                                                                                                                               |
|                                      | <b>12 parallel channels</b>                                                  |                                                                                                                                                                                                                                                                                                                       |
| <b>Performance Characteristics</b>   | <b>Tracking Capability</b>                                                   | 12 simultaneous satellite vehicles                                                                                                                                                                                                                                                                                    |
|                                      | <b>Acquisition Time (Time To First Fix, TTFF) (Tested at -40°C to +85°C)</b> | < 15 s typical TTFF-hot (with current almanac, position, time and ephemeris)<br>< 40 s typical TTFF-warm (with current almanac, position, time)<br>< 150 s typical TTFF-cold (No stored information)                                                                                                                  |
|                                      | <b>Positioning Accuracy</b>                                                  | < 5 m, 1-sigma<br>< 10 m, 2-sigma                                                                                                                                                                                                                                                                                     |
|                                      | <b>Timing Accuracy</b>                                                       | < 2 ns, 1-sigma<br>< 6 ns, 6-sigma                                                                                                                                                                                                                                                                                    |
|                                      | <b>1 PPS + 10 MHz</b>                                                        |                                                                                                                                                                                                                                                                                                                       |
|                                      | <b>Holdover Time</b>                                                         | ±1 µsec during 2 hours                                                                                                                                                                                                                                                                                                |
| <b>Antenna</b>                       | <b>Antenna Requirements</b>                                                  | Active antenna module powered by receiver module (80mA max)<br>10 dB to 50 dB external antenna gain measured at receiver input<br>5 Vdc antenna power provided via header connector (3 Vdc can be provided on demand)<br>Recommended 5 Vdc antenna: Bullet III GPS antenna - Trimble model no. 57860-10 or equivalent |
|                                      | <b>Connector</b>                                                             | SMA (F), 50 Ω (F-type optional) - models GPR2120, GPR1100<br>MMCX RF - models GPR2100, 2110                                                                                                                                                                                                                           |
| <b>Serial Communication</b>          | <b>Output Messages</b>                                                       | Motorola Binary Protocol<br>UBS Proprietary Protocol - Binary protocol 9600, 8,N,1                                                                                                                                                                                                                                    |
| <b>Electrical Characteristics</b>    | <b>Output Signal: 10MHz</b>                                                  | 10 dBm +/-2.5 dBm, Sinewave<br>Harmonic Level: -40 dBc max<br>Phase Noise: 1 Hz: -85 dBc/Hz<br>10 Hz: -120 dBc/Hz<br>100 Hz: -140 dBc/Hz<br>1 kHz: -150 dBc/Hz<br>10 kHz: -160 dBc/Hz<br>100 kHz: -160 dBc/Hz<br>Connector: BNC (F), 50 Ω (SMA optional), up to 8 outputs                                             |
|                                      | <b>Output Signal: 1PPS</b>                                                   | 1PPS, TTL<br>Connector: BNC (F), 50 Ω (SMA optional)                                                                                                                                                                                                                                                                  |
|                                      | <b>Serial TOD (optional):</b>                                                | TOD information on RS232 port - for CMMB applications<br>Connector: DB9 (F)                                                                                                                                                                                                                                           |
|                                      | <b>Control Interfaces</b>                                                    | 1 x RS232 - all models, 1 x RS485 - all models, 1 x USB1.1 - GPR2100, GPR2110, GPR2120 only<br>Ethernet 10/100 Base-T on RJ45 - GPR1100 only                                                                                                                                                                          |
|                                      | <b>Alarm Relay</b>                                                           | Dry Contact Alarm Relay available on RS485 connector - GPR1100 only                                                                                                                                                                                                                                                   |
|                                      | <b>External Power Supply</b>                                                 | 12 Vdc; 50 mVp-p ripple (max); max 600 mA                                                                                                                                                                                                                                                                             |
|                                      | <b>Models GPR2100, 2110, 2120</b>                                            |                                                                                                                                                                                                                                                                                                                       |
|                                      | <b>AC Power – Model GPR1100</b>                                              | 100 - 240 VAC, 50 - 60 Hz; max 60 VA                                                                                                                                                                                                                                                                                  |
|                                      | <b>Operating Temperature</b>                                                 | 0°C to +55°C (32°F to +131°F)                                                                                                                                                                                                                                                                                         |
|                                      | <b>Storage Temperature</b>                                                   | -40°C to +85°C (-40°F to +185°F)                                                                                                                                                                                                                                                                                      |
| <b>Environmental Characteristics</b> | <b>Relative Humidity</b>                                                     | max. 95%, non-condensing                                                                                                                                                                                                                                                                                              |
|                                      | <b>Altitude</b>                                                              | 3,048 m (10,000 ft.) maximum                                                                                                                                                                                                                                                                                          |
|                                      | <b>Dimensions (W x H x D)</b>                                                | 483 mm x 44mm x 330mm (19" x 1.8" x 13") - GPR1100<br>140mm x 25.5mm x 140mm (5.5" x 1" approximately x 5.5") - GPR2100, GPR2110<br>170mm x 30.5mm x 150mm (6.7" x 1.2" x 5.9") - GPR2120                                                                                                                             |
| <b>Mechanical</b>                    | <b>Weight</b>                                                                | GPR1100 -3 kg (6 lbs.), GPR2120 - 0.8kg (1 lb. and 12 oz)                                                                                                                                                                                                                                                             |