



## OPANIEL OPX-SX GPS Family

### Compact size, high efficient, low power 12 channel GPS receiver

- Single-board 12 parallel channel GPS receiver
- Integrated TCXO
- SiRFstarII - low power chipset
- Superior TTFF acquisition rate
- 3 different power modes
- Very compact size
- 2 different OPX-SX modules



The OPANIEL OPX-SX is the perfect device for very compact, low-power, high-volume, low cost OEM navigation, security and monitoring solutions.

### The OPANIEL OPX-SX

The OPANIEL OPX-SX is a new key-featured GPS receiver with an integrated TXCO (temperature compensated crystal oscillator). The higher stability of frequency offers a higher improved performance. It is possible to run SiRFTracII firmware for GPS tracking on the module. This SiRFTracII firmware is able to track the GPS signals on an extremely small level by 16 dBHz.

In addition, the higher sensitivity enables more flexibility with design, like placement and the selection of the kind of the antenna. The device is handled like a SMD component and can be soldered to the target motherboard of the embedded application using standard SMT technology.

The highly integrated digital receiver uses the SiRFstarII-Low Power chipset. In conjunction with 3 available power modes (continuous, trickle and push-to-fix) it is possible to adjust the power consumption on the respective application. The internal GPS software completes the package providing flexible system architecture for standalone GPS based products.

In order to save space on the application platform, the OPANIEL OPX-SX family comes as an extremely thin and compact module.

These properties make it ideally suited for a broad range of mobile computing devices and particularly offers easy integration with smart phones, PDAs, and other handhelds. OPANIEL offers 2 versions of the OPX-SX module:

- OPX-ST as standard module,
- OPX-SH like OPX-ST plus XTrac software for higher sensitivity

Hard- and software designers are supported by a complete evaluation kit that contains all relevant reference design information.



## technical specifications

<b>GPS features</b>		<b>Acquisition rate</b>	
OEM single board 12 channel GPS receiver		Snap start : < 3 sec., average	
C/A code: 1.023 MHz chip		Hot start : < 8 sec., average	
SiRFstarII - low power chip set		Warm start : < 38 sec., average	
TCXO (temperature compensated crystal oscillator)		Cold start : < 45 sec., average	
Casing: fully shielded			
Memory: 8 Mbit Flash memory		<b>Physical characteristics</b>	
		Dimensions: (L x W x H)	
		OPX-ST/SH: 25.4 mm x 25.4 mm x 3 mm	
<b>Accuracy</b>		Temperature range: -40 to +85°C	
Position 10 m CEP without SA			
Velocity 0.1 m/s without SA			
Time 1 microsecond synchronized to GPS time		<b>Electrical characteristics</b>	
		Operating voltage: +3.3 V DC $\pm$ 5 %	
<b>DGPS accuracy</b>		Power consumption: 220 mW (continuous mode)	
Position 1 to 5 m typical			
Velocity 0.05 m/s typical		<b>Trickle power mode</b>	
		Power consumption: depending on mode settings	
<b>Time to first position*</b>		OnTime and OffTime adjustable via software,	
Hot start: < 4 sec., average		e.g.: OnTime 200 ms each 10 s > 15 mW	
Warm start: < 35 sec., average			
Cold start: < 45 sec., average		<b>Dynamic conditions</b>	
		Altitude: 18.000 m (60.000 feet) max.	
<b>Sensitivity**</b>		Velocity: < 515 m/s (1000 knots) max.	
Tracking: 16 dBHz		Acceleration: 4g, max.	
Hot start : 23 dBHz			
Warm start : 28 dBHz		<b>Datum</b>	
Cold start : 16 dBHz		WGS-84	

\* The values listed above are available by using the SiRFxTracII firmware, only.

\*\* The sensitivity value is specified at the correlator on a JP7-T Evaluation Receiver using SiRFxTracII firmware with the supplied antenna, 32 dBHz is equivalent to -142 dBm or -172 dBW. Other board and antenna characteristics can vary.