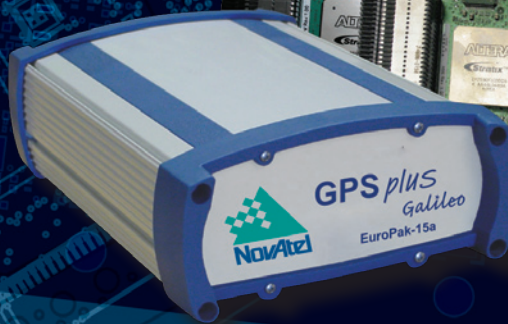


# EuroPak™- 15a & 15ab Receivers



Precise thinking



Tracks and decodes GPS L1 and L5, SBAS L1 and L5 and Galileo L1, E5a and E5b

Digital Pulse Blanking on GPS L1 and L5 and Galileo L1, E5a and E5b for radar and pulsed DME interference mitigation

Includes L1 GPS RFI improvements as developed for the US WAAS reference receivers

External OCXO input and enclosure option (EuroPak-15a only) with internal OCXO

**NovAtel's EuroPak-15a receiver offers superior 16 channel tracking of GPS L1/L5, Galileo L1/E5a and SBAS signals, in a Euro form-factor card, packaged in the popular EuroPak enclosure. The EuroPak-15ab version adds 16 additional channels and E5b tracking capabilities.**

## Receiver Configurations

GPS L1 and L5 capability is available, alongside full access to SBAS L1 and L5 signals. Galileo configurations require the inclusion of GPS for precise timing until a usable Galileo constellation is available. The following receiver configurations are selectable by the user:

	GPS L1 Channels	GPS L5 Channels	GEO L1 Channels	GEO L5 Channels	Galileo L1 Channels	Galileo E5a Channels	Galileo E5b Channels
Config 1	8		4	4			
Config 2	6	6	2	2			
Config 3	8	8					
Config 4	6				5	5	
Config 5					8	8	
Config 6	8				8	8	8

These configurations have been selected to allow the user maximum flexibility for each of the anticipated applications. GPS L1 position or L5 position (user selectable) is available with SBAS GEO tracking on L1 and L5. Sufficient GPS L1 and L5 channel capacity is available as the L5 constellation grows and for simulation testing in the interim. GPS position provides timing for initial Galileo satellite signal tracking until a usable constellation is available. The GIOVE-A test signal is tracked on its data signal using configurations 4 and 6.

## Superior Tracking

NovAtel's Narrow Correlator® technology enhances the reception of satellite data for highly accurate range measurements. A NovAtel proprietary algorithm is used to detect and eliminate side-peak tracking for the Galileo Binary Offset Carrier (BOC) signal on L1. On L5 GPS and Galileo channels the receiver tracks the dataless pilot signal and extracts the navigation message from the data signal. Pseudorange and carrier phase measurements are computed using the pilot signal.

## Full Range of Data

The data provided by the EuroPak-15a and EuroPak-15ab receiver includes satellite range information, raw frame data with parity checks, automatic gain control (AGC) information, and receiver configuration and status details. A versatile ASCII or binary interface provides access to data over two high speed RS-232 serial ports capable of 230,400 bits/second.

**PRELIMINARY**  
ALL SPECIFICATIONS SUBJECT TO CHANGE

# EuroPak-15a and EuroPak-15ab Receivers

## Performance<sup>1</sup>

### Frequency

L1	1575.42 MHz
L5/E5a	1176.45 MHz
E5b <sup>2</sup>	1207.14 MHz

### Tracking Channels

Default Configuration	6 L1/L5 GPS + 2 L1/L5 SBAS
Default Configuration	8 L1 GPS + 8 L/E5a/E5b <sup>2</sup>

### Pseudorange Measurement Accuracy

Galileo L1	7 cm at 44 dB-Hz, 0.05 Hz DLL BW
Galileo E5a	4 cm at 44 dB-Hz, 0.05 Hz DLL BW
Galileo E5b	4 cm at 44 dB-Hz, 0.05 Hz DLL BW
GPS L1	10 cm at 44 dB-Hz, 0.05 Hz DLL BW
GPS L5	4 cm at 44 dB-Hz, 0.05 Hz DLL BW

### Signal Channel Phase Accuracy

Galileo L1	3 mm at 44 dB-Hz, 3 Hz PLL BW
Galileo E5a	3 mm at 44 dB-Hz, 3 Hz PLL BW
Galileo E5b	3 mm at 44 dB-Hz, 3 Hz PLL BW
GPS L1	3 mm at 44 dB-Hz, 3 Hz PLL BW
GPS L5	3 mm at 44 dB-Hz, 3 Hz PLL BW

### Data Rate

Raw Measurements	1 Hz
SQM Measurements (GPS L1 only)	1 Hz
Status Data	1 Hz

Altitude	3,000 m
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## EuroPak Enclosure

Size	235 x 154 x 71 mm
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Weight	1.2 kg
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### Power

Input Voltage	+9 to +18 VDC
Power Consumption	
EuroPak 15a	6 W (typical)
EuroPak 15a with OCXO	13 W (typical)
EuroPak 15ab	17 W (typical)

### Antenna LNA Power Output

Output Voltage	+5 VDC
Maximum Current	100 mA

### External Oscillator Input<sup>3</sup>

Input Frequency	5 or 10 MHz
Signal Level	0 to +13 dBm

### Communication Ports

- 2 RS-232 serial ports capable of 9,600 to 230,400 bps

### Input/Output Connectors

Power	4-pin LEMO
Antenna Input	TNC female
Oscillator	BNC female
COM 1	DB-9 male
COM 2	DB-9 male
I/O	DB-9 female

### Environmental

Temperature	
Operating	0°C to +40°C
Storage	-45°C to +95°C
Humidity	95% non-condensing

<sup>1</sup> Typical values. Performance specifications subject to GPS and Galileo system characteristics, system operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects, and the presence of intentional or unintentional interference sources.

<sup>2</sup> EuroPak-15ab only.

<sup>3</sup> Not available for OCXO models.



**Note: The EuroPak-15a and EuroPak-15ab receivers have not undergone qualification testing and should be considered prototype standard equipment for experimental evaluation only.**

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