



# **Precise** thinking

# NovAtel Inc. Model List

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# **ROHS Information**

NovAtel's OEMV products listed in this price list are compliant with the European Economic Union's *Restriction of Hazardous Substances* (*RoHS*) directive. The aim of this directive is to reduce the hazardous materials content in electronic products. Specifically, it bans electronic equipment from being sold in Europe after July 1, 2006 if it contains more than trace levels of lead, hexavalent chromium, cadmium, mercury or certain brominated flame-retardants.

NovAtel is in the process of converting other selected products to meet the RoHS directive; however, not all existing products will be converted. RoHS status of individual products is shown on the following pages.



#### **OEMV Receivers**

The OEMV family receivers are available in single, dual, or triple-frequency models and feature our patented PAC™ and Vision Correlator™ technologies. Included with each receiver are NovAtel's Windows®-based software utilities, CDU and Convert™, and product manuals. Upgrades to more feature-intensive models are available via telephone, fax, or e-mail.

All OEMV products are currently available with PAC Technology only. Vision Correlator Technology will be available in a future firmware release.

#### **OEMV-1 GPS Receiver OEM Card**

The OEMV-1™ is a 16-channel, single-frequency receiver in a 46 mm x 71 mm form-factor with low power consumption. All OEMV-1 cards offer position, velocity, and time (PVT) output up to 20Hz, real-time DGPS positioning (including SBAS, OmniSTAR, and CDGPS), support for RTCA and RTCM messages and three serial ports, one CAN bus port, and a USB port. The OEMV-1 is configurable as a rover or base station and is designed for embedded applications.

The OEMV-1 card is available in an RoHS-compliant Flexpak enclosure, and will be available in a Smart Antenna in the future.

All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each receiver requiring API capabilities.

A subscription is required for OmniSTAR HP/XP/VBS service, which may not be available in all areas.

CDGPS Corrections may not be available in all areas.

SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas.

#### Single-Frequency, 16-channel, L1 C/A code

RoHS Compliant: True	
OEMV-1-RT20	20 cm real-time kinematic positioning, outputs RT-20® corrections and raw data, real-time DGPS,
	OmniSTAR VBS, CDGPS, and SBAS, 20Hz
OEMV-1-L1-VBS	Outputs RT-20® corrections and raw data, real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
OEMV-1-VBS	Real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
OEMV-1-L1	Outputs RT-20® corrections and raw data, real-time DGPS, SBAS, 20Hz

## **OEMV-2 GPS + GLONASS Receiver OEM Card**

The OEMV-2™ is a parallel 72-channel, dual-frequency, or 36-channel, single-frequency, receiver featuring a 60 mm x 100 mm form-factor and low power consumption. All OEMV-2 cards feature GPS-only position, velocity, and time (PVT) output, real-time DGPS and SBAS positioning, support for RTCA and RTCM messages, GPS and GLONASS raw data output, two serial ports, one CAN bus port, and a USB port. The OEMV-2 is configurable as a rover or base station and is designed for embedded applications.

The OEMV-2 card is also available in an RoHS-compliant Flexpak enclosure.

All models can be enabled to provide GLONASS raw measurement output. Add \$1000 to the list price and "-G" to the part number for each receiver requiring GLONASS capabilities. All OEMV-2 cards will be firmware upgradeable to full GPS+GLONASS code and RTK positioning in the future.

All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each receiver requiring API capabilities.

SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas.

#### Dual-Frequency, 72-Channel, GPS L1 C/A code, L2 P(Y) code, GPS L2C code

RoHS Compliant: True			
OEMV-2-RT2	2 cm real-time kinematic positioning, outputs RT-2® corrections and raw data, real-time DGPS, SBAS, 20Hz		
OEMV-2-L1L2	Outputs RT-2® corrections and raw data, real-time DGPS, SBAS, 20Hz		

#### Single-Frequency, 36-Channel, GPS L1 C/A code

Fully Upgradeable to Dual-Frequency

RoHS Compl	iant:	True
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OEMV-2-RT20	20 cm real-time kinematic positioning, outputs RT-20® corrections and raw data, real-time DGPS, SBAS, 20Hz
OEMV-2-L1	Outputs RT-20® corrections and raw data, real-time DGPS, SBAS, 20Hz

#### **OEMV-3 GPS + GLONASS Receiver OEM Card**

The OEMV-3™ is a parallel 72-channel, dual-frequency, or 36-channel, single-frequency, receiver featuring an 85 mm x 125 mm form-factor and low power consumption. All OEMV-3 cards feature GPS-only position, velocity, and time (PVT) output, real-time DGPS positioning (including SBAS, OmniSTAR and CDGPS), support for RTCA and RTCM messages, GPS and GLONASS raw data output, three serial ports, 2 CAN bus ports, and a USB port. The OEMV-3 is configurable as a rover or base station and is designed for embedded applications.

The OEMV-3 is also available in a ProPak enclosure.

All models except HP and VBS can be enabled to provide GLONASS raw measurement output. Add \$1000 to the list price and "-G" to the part number for each receiver requiring GLONASS capabilities. All OEMV-3 cards will be firmware upgradeable to full GPS+GLONASS code and RTK positioning in the future.

All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each receiver requiring API capabilities.

OmniSTAR and CDGPS are not available once GLONASS is enabled.

A subscription is required for OmniSTAR HP/XP/VBS service, which may not be available in all areas.

CDGPS Corrections may not be available in all areas.

SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas.

## Dual-Frequency, 72-Channel, GPS L1 C/A code, L2 P(Y) code, GPS L2C code

#### RoHS Compliant: True

OEMV-3-RT2	2 cm real-time kinematic positioning, outputs RT-2® corrections and raw data, real-time DGPS, OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz
OEMV-3-L1L2	Outputs RT-2® corrections and raw data, DGPS, OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz
OEMV-3-HP	Real-time DGPS, OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz

#### Single-Frequency, 36-Channel, GPS+GLONASS L1 C/A code

Fully Upgradeable to Dual-Frequency

#### RoHS Compliant: True

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OEMV-3-RT20	20 cm real-time kinematic positioning, outputs RT-20® corrections and raw data, real-time DGPS,
	OmniSTAR VBS, CDGPS, and SBAS, 20Hz
OEMV-3-VBS	Real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
OEMV-3-L1	Outputs RT-20® corrections and raw data, real-time DGPS, and SBAS, 20Hz

#### **ProPak-V3 GPS Receiver Enclosure**

The ProPak®-V3 is a durable, high-performance receiver with advanced capabilities, including GLONASS measurements, integrated OmniSTAR and CDGPS and API support. Featuring NovAtel's latest high performance GNSS engine, the OEMV-3, it is available in an RS-232 configuration with three serial ports and USB 1.1 support. The ProPak-V3 also features optional support for an external IMU. It includes an automotive power adapter, a null-modem cable, a straight serial cable, a USB cable, an auxiliary I/O port cable, and a mounting kit. All ProPak-V3 receivers provide position output, real-time DGPS positioning, support for RTCA and RTCM messages and are configurable as a rover or base station.

All models except HP and VBS can be enabled to provide GLONASS raw measurement output. Add \$1000 to the list price and "-G" to the part number for each receiver requiring GLONASS capabilities. All OEMV-3 cards will be firmware upgradeable to full GPS+GLONASS code and RTK positioning in the future.

All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each receiver requiring API capabilities.

OmniSTAR and CDGPS are not available once GLONASS is enabled.

A subscription is required for OmniSTAR HP/XP/VBS service, which may not be available in all areas.

CDGPS Corrections may not be available in all areas.

SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas.

The RS-422 version provides COM1 and COM3 at RS-422 levels. COM2 remains at RS-232 levels.

#### **RS-232 Version**

## Dual-Frequency, 72-Channel, L1 C/A code, L2 P(Y) code, L2C

RoHS Compliant: True

PROPAK-V3-RT2	2 cm real-time kinematic positioning, outputs RT-2® corrections and raw data, L2 carrier phase, real-time DGPS, OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz
PROPAK-V3-L1L2	Outputs RT-2® corrections and raw data, DGPS,OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz
PROPAK-V3-HP	Real-time DGPS, OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz

#### Single-Frequency, 36-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

RoHS Compliant: True

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PROPAK-V3-RT20	20 cm real-time kinematic positioning, outputs RT-20® corrections and raw data, real-time DGPS,
	OmniSTAR VBS, CDGPS, and SBAS, 20Hz
PROPAK-V3-VBS	Real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
PROPAK-V3-L1	Outputs RT-20® corrections and raw data, real-time DGPS, and SBAS, 20Hz

#### **RS-422 Version**

## Dual-Frequency, 72-Channel, L1 C/A code, L2 P(Y) code, L2C

RoHS Compliant: True

PROPAK-V3-424-RT2	2 cm real-time kinematic positioning, outputs RT-2® corrections and raw data, L2 carrier phase, real-time DGPS, OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz
PROPAK-V3-424-L1L2	Outputs RT-2® corrections and raw data, DGPS,OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz
PROPAK-V3-424-HP	Real-time DGPS, OmniSTAR HP/XP/VBS, CDGPS, and SBAS, 20Hz

# Single-Frequency, 36-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

RoHS (	Comp	liant:	True
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PROPAK-V3-424-RT20	20 cm real-time kinematic positioning, outputs RT-20® corrections and raw data, real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
PROPAK-V3-424-VBS	Real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
PROPAK-V3-424-L1	Outputs RT-20® corrections and raw data, real-time DGPS, and SBAS, 20Hz

#### FlexPak-V1 GPS Receiver Enclosure

All capabilities of the OEMV-1 card are available in the FlexPak-V1 except that the external oscillator port and CAN are not available to enclosure users. See the OEMV-1 card specifications for more details.

The FlexPak-V1 has SBAS, VBS, and CDGPS capability to give you the extra precision you need in L1 applications. It supports OmniSTAR VBS corrections (subscription required) and the Canadian Differential GPS service (no subscription required). NovAtel's RT20 model is available for L1 carrier-phase positioning up to 20 Hz.

All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each receiver requiring API capabilities.

A subscription is required for OmniSTAR HP/XP/VBS service, which may not be available in all areas.

CDGPS Corrections may not be available in all areas.

SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas.

#### Single-Frequency, 16-channel, L1 C/A code

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RoHS (	Comp	ııant:	ırue

FLEXPAK-V1-RT20	20 cm real-time kinematic positioning, outputs RT-20® corrections and raw data, real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
FLEXPAK-V1-L1-VBS	Outputs RT-20® corrections and raw data, real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
FLEXPAK-V1-VBS	Real-time DGPS, OmniSTAR VBS, CDGPS, and SBAS, 20Hz
FLEXPAK-V1-L1	Outputs RT-20® corrections and raw data, real-time DGPS, SBAS, 20Hz

#### FlexPak-V2 GPS + GLONASS Receiver Enclosure

All capabilities of the OEMV-2 card are available in the FlexPak-V2 except that the external oscillator port is not available to enclosure users. See the OEMV-2 card specifications for more details.

NovAtel's FlexPak-V2 is capable of tracking the new L2C civilian signal. The L2C signal promises stronger signal tracking and better cross-correlation protection. The FlexPak-V2 also offers GLONASS measurement data which can be used in combination with GPS data to provide more satellites for positioning in challenging environments. Full position and real-time kinematic (RTK) capabilities will be available in the future with a simple firmware upgrade.

The FlexPak-V2 enclosure and cable set is RoHS-compliant and meets FCC and CE regulatory standards for emissions and safety. Ships with a USB cable, a power cable and two serial communication cables (RS-232 straight and RS-232 null modem). USB is available on either port and RS-422 is available on the COM2 port. A Flexpak-V2 Quickstart guide and OEMV Family Quickstart Guide is included.

All modules can be enabled to provide GLONASS raw measurement output. Add \$1000 to the list price and "-G" to the part number for each receiver requiring GLONASS capabilities. All FlexPak-V2 receivers will be firmware upgradeable to full GPS+GLONASS code and RTK positioning in the future.

All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each receiver requiring API capabilities.

SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas.

# Dual-Frequency, 72-Channel, GPS L1 C/A code, L2 P(Y) code, GPS L2C code

#### RoHS Compliant: True

FLEXPAK-V2-RT2	2 cm real-time kinematic positioning, outputs RT-2® corrections and raw data, real-time DGPS, SBAS, 20Hz
FLEXPAK-V2-L1L2	Outputs RT-2® corrections and raw data, real-time DGPS, SBAS, 20Hz

#### Single-Frequency, 36-Channel, GPS L1 C/A code

Fully Upgradeable to Dual-Frequency

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FLEXPAK-V2-RT20	20 cm real-time kinematic positioning, outputs RT-20® corrections and raw data, real-time DGPS, SBAS, 20Hz
FLEXPAK-V2-L1	Outputs RT-20® corrections and raw data, real-time DGPS, SBAS, 20Hz

# **Application Programming Interface (API) Development Kit**

The Application Programming Interface (API) development kit includes the API library, which provides the functions needed to develop a C/C++ application to run on the OEMV or OEM4 family of receivers. Also included in the purchase price is ten hours of technical support and upgrades to an API enabled model for five receivers. Use of an API application requires a receiver enabled with API capabilities.

RoHS Compliant: True

API-DEV-KIT API development kit



#### **OEM4 Receivers**

All OEM4 family receivers are available in dual-frequency or single-frequency models and feature our patented PAC™ technology. Included with each receiver are NovAtel's Windows®-based software utilities, GPSolution® and Convert™, and product manuals. Upgrades to more feature-intensive models are available via telephone, fax, or e-mail.

SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas.

#### OEM4-G2 GPS Receiver OEM Card

The OEM4-G2™ is a parallel 24-channel, dual-frequency or 12-channel, single-frequency receiver featuring an 85 mm x 125 mm (passport size) form-factor and low power consumption. All OEM4-G2 cards offer position output, real-time DGPS positioning, support for RTCA and RTCM messages, three serial ports, and a USB interface. The OEM4-G2 is configurable as a rover or base station and is designed for embedded applications or as a stand-alone unit in a ProPak-G2 enclosure.

All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-API" to the part number for each receiver requiring API capabilities.

#### Dual-Frequency, 24-Channel, L1 C/A code, L2 P(Y) code

#### RoHS Compliant: False

OEM4-G2-RT2	2 cm real-time kinematic positioning, real-time DGPS positioning, raw data output		
OEM4-G2-RT2W	2 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data output		
OEM4-G2-L1L2	Outputs RT-2® corrections, real-time DGPS positioning, raw data output		
OEM4-G2-L1L2W	Outputs RT-2® corrections, accepts SBAS corrections, real-time DGPS, raw data output		
OEM4-G2-EGNOS	Real-time DGPS positioning, accepts EGNOS corrections		
OEM4-G2-MSAS	Real-time DGPS positioning, accepts MSAS corrections		
OEM4-G2-WAAS	Real-time DGPS positioning, accepts WAAS corrections		

#### Single-Frequency, 12-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

## RoHS Compliant: False

OEM4-G2-RT20	20 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
OEM4-G2-RT20W	20 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data out
OEM4-G2-3151R	Outputs RT-20® corrections, real-time DGPS positioning, raw data output
OEM4-G2-3151W	Outputs RT-20® corrections, accepts SBAS corrections, real-time DGPS, raw data output
OEM4-G2-3111R	Real-time DGPS positioning
OEM4-G2-3111W	Accepts SBAS corrections, real-time DGPS positioning
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#### OEM4-G2L GPS Receiver OEM Card

The OEM4-G2L™ is a parallel 24-channel, dual-frequency or 12-channel, single-frequency receiver featuring a 60 mm x 100 mm form-factor and low power consumption. All OEM4-G2L cards feature position output, real-time DGPS positioning, support for RTCA and RTCM messages, two serial ports and a USB interface. The OEM4-G2L is configurable as a rover or base station and is designed for embedded applications.

All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-API" to the part number for each receiver requiring API capabilities.

#### Dual-Frequency, 24-Channel, L1 C/A code, L2 P(Y) code

#### RoHS Compliant: False

OEM4-G2L-RT2	2 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
OEM4-G2L-RT2W	2 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data output
OEM4-G2L-L1L2	Outputs RT-2® corrections, real-time DGPS positioning, raw data output
OEM4-G2L-L1L2W	Outputs RT-2® corrections, accepts SBAS corrections, real-time DGPS, raw data output

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OEM4-G2L-L1L2W	Outputs RT-2® corrections, accepts SBAS corrections, real-time DGPS, raw data output	
OEM4-G2L-EGNOS	Real-time DGPS positioning, accepts EGNOS corrections	
OEM4-G2L-MSAS	Real-time DGPS positioning, accepts MSAS corrections	
OEM4-G2L-WAAS	Real-time DGPS positioning, accepts WAAS corrections	

## Single-Frequency, 12-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

RoHS Compliant: False

OEM4-G2L-RT20	20 cm real-time kinematic positioning, real-time DGPS positioning, raw data output		
OEM4-G2L-RT20W	20 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data out		
OEM4-G2L-3151R	Outputs RT-20® corrections, real-time DGPS positioning, raw data output		
OEM4-G2L-3151W	Outputs RT-20® corrections, accepts SBAS corrections, real-time DGPS, raw data output		
OEM4-G2L-3111R	Real-time DGPS positioning		
OEM4-G2L-3111W	Accepts SBAS corrections, real-time DGPS positioning		

## **ProPak-G2plus GPS Receiver Enclosure**

The ProPak®-G2plus is a rugged, lightweight enclosure containing the OEM4-G2 receiver. It is available in RS-232 or RS-422 configurations with three serial ports and USB support. The ProPak-G2plus also features optional support for an external IMU. It includes an automotive power adapter, a null-modem cable, a straight serial cable, a USB cable, an auxiliary I/O port cable, and a mounting kit. All ProPak-G2plus receivers provide position output, real-time DGPS positioning, and support for RTCA and RTCM messages and are configurable as a rover or base station.

All models are also available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each enclosure requiring API capabilities.

The RS-422 version provides COM1 and COM3 at RS-422 levels. COM2 remains at RS-232 levels.

#### **RS-232 Version**

## Dual-Frequency, 24-Channel, L1 C/A code, L2 P(Y) code

RoHS Compliant: False

2 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
2 cm RTK positioning, accepts SBAS corrections, real-time DGPS, raw data output
Outputs RT-2® corrections, real-time DGPS positioning, raw data output
Outputs RT-2® corrections, accepts SBAS corrections, real-time DGPS, raw data output
Real-time DGPS positioning, accepts EGNOS corrections
Real-time DGPS positioning, accepts MSAS corrections
Real-time DGPS positioning, accepts WAAS corrections

# Single-Frequency, 12-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

RoHS Compliant: False

PROPAK-G2+DB9-RT20	20 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
PROPAK-G2+DB9-RT20W	20 cm RTK positioning, accepts SBAS corrections, real-time DGPS, raw data output
PROPAK-G2+DB9-3151R	Outputs RT-20® corrections, real-time DGPS positioning, raw data output
PROPAK-G2+DB9-3151W	Outputs RT-20® corrections, accepts SBAS corrections, real-time DGPS, raw data output
PROPAK-G2+DB9-3111R	Real-time DGPS positioning
PROPAK-G2+DB9-3111W	Accepts SBAS corrections, real-time DGPS positioning

#### **RS-422 Version**

### Dual-Frequency, 24-Channel, L1 C/A code, L2 P(Y) code

RoHS		

PROPAK-G2+DB9-424-MSAS	Real-time DGPS positioning, accepts MSAS corrections
PROPAK-G2+DB9-424-EGNOS	Real-time DGPS positioning, accepts EGNOS corrections
PROPAK-G2+DB9-424-L1L2W	Outputs RT-2® corrections, accepts SBAS corrections, real-time DGPS, raw data output
PROPAK-G2+DB9-424-L1L2	Outputs RT-2® corrections, real-time DGPS positioning, raw data output
PROPAK-G2+DB9-424-RT2W	2 cm RTK positioning, accepts SBAS corrections, real-time DGPS, raw data output
PROPAK-G2+DB9-424-RT2	2 cm real-time kinematic positioning, real-time DGPS positioning, raw data output

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PROPAK-G2+DB9-424-MSAS	Real-time DGPS positioning, accepts MSAS corrections	

Real-time DGPS positioning, accepts WAAS corrections

#### Single-Frequency, 12-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

PROPAK-G2+DB9-424-WAAS

RoHS Compliant: False

PROPAK-G2+DB9-424-RT20	20 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
PROPAK-G2+DB9-424-RT20W	20 cm RTK positioning, accepts SBAS corrections, real-time DGPS, raw data output
PROPAK-G2+DB9-424-3151R	Outputs RT-20® corrections, real-time DGPS positioning, raw data output
PROPAK-G2+DB9-424-3151W	Outputs RT-20® corrections, accepts SBAS corrections, real-time DGPS, raw data output
PROPAK-G2+DB9-424-3111R	Real-time DGPS positioning
PROPAK-G2+DB9-424-3111W	Accepts SBAS corrections, real-time DGPS positioning

# **DL-4plus GPS Receiver Enclosure with Data Logging Capabilities**

The DL-4plus is a rugged, lightweight enclosure containing the OEM4-G2 receiver and featuring integrated memory, an LCD, and a keypad for data logging. It offers three serial ports, USB support, a configurable PPS output and mark input, and a variable frequency output. Available in RS-232 or RS-422 configuration, the DL-4plus also features optional support for an external IMU. Included with the enclosure are an automotive power adapter, a null-modem cable, a straight serial cable, an auxiliary I/O port cable, a USB cable, DL4Tool™ software, and a mounting kit. All DL-4plus enclosures provide position output, real-time DGPS positioning, and support for RTCA and RTCM messages and are configurable as a rover or base station. All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each enclosure requiring API capabilities.

The RS-422 version provides COM1 and COM3 at RS-422 levels. COM2 remains at RS-232 levels.

#### **RS-232 Version**

#### Dual-Frequency, 24-Channel, L1 C/A code, L2 P(Y) code

RoHS Compliant: False

DL-4+RT2	2 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
DL-4+RT2W	2 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data out
DL-4+L1L2	Outputs RT-2® corrections, real-time DGPS positioning, raw data output
DL-4+L1L2W	Outputs RT-2® corrections, accepts SBAS corrections, real-time DGPS, raw data output
DL-4+EGNOS	Real-time DGPS positioning, accepts EGNOS corrections
DL-4+MSAS	Real-time DGPS positioning, accepts MSAS corrections
DL-4+WAAS	Real-time DGPS positioning, accepts WAAS corrections

#### Single-Frequency, 12-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

RoHS Compliant: False

DL-4+RT20 20 cm real-time kinematic positioning, real-time DGPS posi DL-4+RT20W 20 cm real-time kinematic positioning, accepts SBAS correct	
DL-4+3151R Outputs RT-20® corrections, real-time DGPS positioning, ra	aw data output
DL-4+3151W Outputs RT-20® corrections, accepts SBAS corrections, rea	al-time DGPS, raw data output
DL-4+3111R Real-time DGPS positioning	
DL-4+3111W Accepts SBAS corrections, real-time DGPS positioning	

## **RS-422 Version**

# Dual-Frequency, 24-Channel, L1 C/A code, L2 P(Y) code

RoHS Compliant: False

DL-4+424-RT2	2 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
DL-4+424-RT2W	2 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data out
DL-4+424-L1L2	Outputs RT-2® corrections, real-time DGPS positioning, raw data output
DL-4+424-L1L2W	Outputs RT-2® corrections, accepts SBAS corrections, real-time DGPS, raw data output
DL-4+424-EGNOS	Real-time DGPS positioning, accepts EGNOS corrections
DL-4+424-MSAS	Real-time DGPS positioning, accepts MSAS corrections
DL-4+424-WAAS	Real-time DGPS positioning, accepts WAAS corrections

#### Single-Frequency, 12-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

RoHS Compliant: False

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DL-4+424-RT20	20 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
DL-4+424-RT20W	20 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data out
DL-4+424-3151R	Outputs RT-20® corrections, real-time DGPS positioning, raw data output
DL-4+424-3151W	Outputs RT-20® corrections, accepts SBAS corrections, real-time DGPS, raw data output
DL-4+424-3111R	Real-time DGPS positioning
DL-4+424-3111W	Accepts SBAS corrections, real-time DGPS positioning

## ProPak-LBplus OmniSTAR- and CDGPS-Enabled GPS Receiver Enclosure

The ProPak®-LBplus is a rugged, lightweight enclosure containing the OEM4-G2 receiver and support for OmniSTAR correction data (requires a subscription to the OmniSTAR service). It also provides support for the free CDGPS (Canada-wide Differential GPS) correction service, which is available across most of North America. It offers three RS-232 serial ports and a configurable PPS output and mark input. The ProPak-LBplus also features optional support for an external IMU. Included with the enclosure are an automotive power adapter, three serial cables, and a mounting kit. All ProPak-LBplus enclosures offer position output, real-time DGPS positioning, and support for RTCA and RTCM messages and are configurable as a rover or base station. All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each receiver requiring API capabilities.

A subscription is required for OmniSTAR HP/XP/VBS service, which may not be available in all areas. CDGPS Corrections may not be available in all areas.

#### Dual-Frequency, 24-Channel, L1 C/A code, L2 P(Y) code, CDGPS, and OmniSTAR HP/XP

RoHS Compliant: False

PROPAK-LB+HP-RT2	2 cm RTK, accepts OmniSTAR HP/XP, CDGPS, and SBAS corrections, raw data
PROPAK-LB+HP-L1L2	Outputs RT-2® corrections, OmniSTAR HP/XP, CDGPS, and SBAS corrections, raw data output
PROPAK-LB+HP	Accepts OmniSTAR HP/XP, CDGPS, and SBAS corrections

#### Single-Frequency, 12-Channel, L1 C/A code, CDGPS, and OmniSTAR VBS

Fully Upgradeable to Dual-Frequency

RoHS Compliant: False

PROPAK-LB+VBS-RT20	cm RTK positioning, accepts OmniSTAR VBS, CDGPS, and SBAS corrections, raw data	
PROPAK-LB+VBS-L1	Outputs RT-20® corrections, OmniSTAR VBS, CDGPS, and SBAS corrections, raw data output	
PROPAK-I R+VRS	Accents OmniSTAR VRS, CDGPS, and SRAS corrections	

## FlexPak-G2L GPS Receiver Enclosure

The FlexPak<sup>™</sup> -G2L is a rugged, waterproof enclosure containing the OEM4-G2L engine. All FlexPak-G2L receivers offer position output, real-time DGPS positioning, support for RTCA and RTCM messages, two serial ports, and a USB interface. Included with the enclosure are an automotive power adapter, two serial cables, a USB cable, Windows®-based software utilities, and manuals. All models are available with the API (Application Program Interface) option. Add \$750 to the list price and "-A" to the part number for each receiver requiring API capabilities.

## Dual-Frequency, 24-Channel, L1 C/A code, L2 P(Y) code

RoHS Compliant: False

FLEXPAK-G2L-RT2	2 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
FLEXPAK-G2L-RT2W	2 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data output
FLEXPAK-G2L-L1L2	Outputs RT-2® corrections, real-time DGPS positioning, raw data output
FLEXPAK-G2L-L1L2W	Outputs RT-2® corrections, accepts SBAS corrections, real-time DGPS, raw data output
FLEXPAK-G2L-EGNOS	Real-time DGPS positioning, accepts EGNOS corrections
FLEXPAK-G2L-MSAS	Real-time DGPS positioning, accepts MSAS corrections
FLEXPAK-G2L-WAAS	Real-time DGPS positioning, accepts WAAS corrections

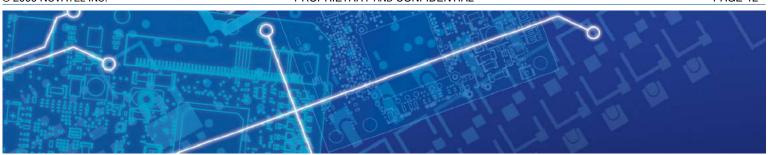
#### Single-Frequency, 12-Channel, L1 C/A code

Fully Upgradeable to Dual-Frequency

RoHS	Compliant:	False

FLEXPAK-G2L-RT20	20 cm real-time kinematic positioning, real-time DGPS positioning, raw data output
FLEXPAK-G2L-RT20W	20 cm real-time kinematic positioning, accepts SBAS corrections, real-time DGPS, raw data out
FLEXPAK-G2L-3151R	Outputs RT-20® corrections, real-time DGPS positioning, raw data output

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FLEXPAK-G2L-3151R	Outputs RT-20® corrections, real-time DGPS positioning, raw data output	
FLEXPAK-G2L-3151W	Outputs RT-20® corrections, accepts SBAS corrections, real-time DGPS, raw data output	
FLEXPAK-G2L-3111R	Real-time DGPS positioning	
FLEXPAK-G2L-3111W	Accepts SBAS corrections, real-time DGPS positioning	



# **Accessories for OEMV and OEM4 Receivers**

#### **Antennas**

# **Dual-Frequency Antennas**

RoHS Compliant: False

GPS-533	L1/L2, geodetic antenna with choke ring and protective radome	
GPS-702	L1/L2, kinematic, zero-offset antenna	
GPS-534	L1/L2/L-band, aircraft antenna	
GPS-532-C	L1/L2, aircraft-certified antenna with FAA airworthiness certificate	
GPS-532	L1/L2, aircraft antenna	
RoHS Compliant: True		
GPS-702L	L1/L2 and L-band, kinematic, zero-offset antenna	
GPS-702-GG	L1/L2 and GPS + GLONASS, kinematic, zero-offset antenna	

## **Single-Frequency Antennas**

RoHS Compliant: False

GPS-701	L1, kinematic, zero-offset antenna
GPS-511	L1, aircraft antenna
GPS-521	L1, automotive antenna
RoHS Compliant: True	
GPS-701-GG	L1, GPS + GLONASS kinematic, zero-offset antenna

# **Antenna Cables**

RoHS Compliant: False

GPS-C016	15 meter RF cable with straight TNC male plug connectors (for GPS-xxx antennas)
GPS-C006	5 meter RF cable with straight TNC male plug connectors (for GPS-xxx antennas)
01016772	22.5 cm RF cable with right-angle MMCX male plug and straight TNC bulkhead jack connectors
RoHS Compliant: True	
GPS-C032	30 meter, low-loss RF cable with straight TNC male plug connectors (for GPS-xxx antennas)

# **Power & Communication Cables**

## ProPak-V3

RoHS Compliant: True

01017663	Accessory Power Cable, 4-pin LEMO with automotive adapter, RoHS compliant
01017658	Null-modem cable with 2 female DB-9 connectors, RoHS compliant
01017659	Straight serial cable (extension) with male and female DB-9 connectors, RoHS compliant
01017660	I/O strobe port interface cable with DB-9 male connector and open wires, RoHS compliant
01017664	USB cable (Host Side) to DB-9 female connector, RoHS compliant

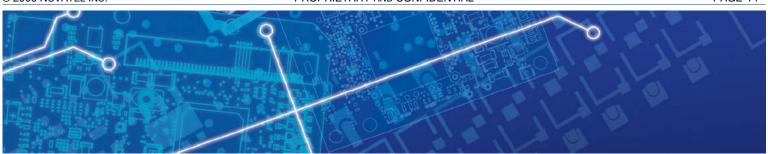
## FlexPak-V1 & FlexPak-V2

RoHS Compliant: True

01017823	Straight serial cable with Deutsch and male DB-9 connectors (included with FlexPak-V1 and FlexPak-V2)
01017822	Null-modem cable with Deutsch and female DB-9 connectors (included with FlexPak-V1 and FlexPak-V2)
01017821	Accessory Power Cable, 4-pin LEMO with automotive adaptor (included with FlexPak-V1 and FlexPak-V2)

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01017821	Accessory Power Cable, 4-pin LEMO with automotive adaptor (included with FlexPak-V1 and	FlexPak-V2)
01017820	USB cable (Host Side) to female 13-pin Deutsch circular connector (included with FlexPak-V1 FlexPak-V2)	and
ProPak-G2plus & DL-4plus		
RoHS Compliant: False		
01017474	Accessory Power Cable, 4-pin LEMO with automotive adapter (included with DL-4plus & ProP	ak-G2plus)
60723062	Serial cable with female DB-9 and 7-pin, female Switchcraft connectors (included with ProPak-	-LBplus)
01017408	USB cable (Host Side) to DB-9 female connector (included with DL-4plus & ProPak-G2plus)	
60323062	Null-modem cable with 2 female DB-9 connectors (included with DL-4plus & ProPak-G2plus)	
60723065	I/O strobe port interface cable with DB-9 male connector and open wires (included with DL-4pl ProPak-G2plus)	us &
60723066	Straight serial cable with male and female DB-9 connectors (included with DL-4plus & ProPak-	-G2plus)
FlexPak-G2L		
RoHS Compliant: False		
01017518	Straight serial cable with Deutsch and male DB-9 connectors (included with FlexPak-G2L)	
01017375	Null-modem cable with Deutsch and female DB-9 connectors (included with FlexPak-G2L & Fl	exPak-SSII)
01017374	Accessory Power Cable, 4-pin LEMO with automotive adapter (included with FlexPak-G2L & FlexPak-SSII)	
01017359	USB cable (Host Side) to female 13 pin Deutsch circular connector (included with FlexPak-G2	L)
ProPak-LBplus		
RoHS Compliant: False		
60723075	Accessory Power Cable, 4-pin LEMO with automotive adapter (included with ProPak-LBplus)	
60723062	Serial cable with female DB-9 and 7-pin, female Switchcraft connectors (included with ProPak-	LBplus)
60723061	Serial cable with female DB-9 and 6-pin, female Switchcraft connectors (included with ProPak-	LBplus)
60723063	Serial cable with female DB-9 and 8-pin, female Switchcraft connectors (included with ProPak-	-LBplus)
Other		
RoHS Compliant: False		
31324235	High capacity DL-4plus commercial temperature grade Compact Flash memory card (minimun	n 1 GB)
40023098	AC adapter with auto receptacle and IEC-320-C14 input inlet (removable IEC-320 to North Amincluded, requires addition of region-specific plug for use outside North America)	erican plug
RoHS Compliant: True		

40023098	AC adapter with auto receptacle and IEC-320-C14 input inlet (removable IEC-320 to North American plug included, requires addition of region-specific plug for use outside North America)
RoHS Compliant: True	
010-0-0026	DL-4plus industrial temperature grade Compact Flash memory card (minimum 16 MB)
40023106	RoHS compliant AC adapter with auto receptacle and IEC-320-C14 input inlet (removable IEC-320 to North American plug included, requires addition of region-specific plug for use outside North America)



# **SUPERSTAR II L1 Receivers**

Note that the non-SBAS variants of the 1CPT and 1CPT-19 models, 1CPN and 1CPN-19, do not provide precise timing.

# **SUPERSTAR II GPS Receiver OEM Card**

The SUPERSTAR II™ is a 12-channel, L1-only receiver just 46 mm x 71 mm. It features low power consumption, standard 1 Hz PVT output, real-time DGPS positioning, and accepts SBAS corrections. Available in 5 V and 3.3 V models, the SUPERSTAR II is designed for embedded applications but is also available as part of a SMART ANTENNA receiver/antenna combination or the FlexPak-SSII. A development kit is also offered, with the FlexPak-SSII enclosure, a magnetic mount antenna with integrated RF cable, an interface cable, and an AC adapter.

SBAS enabled models feature 10 GPS tracking channels and 2 GPS tracking channels. Non-SBAS enabled models are also available with 12 GPS tracking channels.

SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas.

#### **SUPERSTAR II OEM Card**

RoHS Compliant: False

SSII-3-BASE	3.3 V, DGPS base station operation, 1 Hz CP output, SBAS, default of 9,600 bps
SSII-3-BASEN	3.3 V, DGPS base station operation, 1 Hz CP output, default of 9,600 bps
SSII-3-5CP-19	3.3 V, 5 Hz carrier phase output, SBAS, default baud rate of 19,200 bps
SSII-3-5CPN-19	3.3 V, 5 Hz carrier phase output, default baud rate of 19,200 bps
SSII-3-5HZ	3.3 V, 5 Hz PVT output, SBAS, default baud rate of 9,600 bps
SSII-3-5HZN	3.3 V, 5 Hz PVT output, default baud rate of 9,600 bps
SSII-3-1CPN	3.3 V, 1 Hz carrier phase output, default baud rate of 9,600 bps
SSII-3-1CPN-19	3.3 V, 1 Hz carrier phase output, default baud rate of 19,200 bps
SSII-3-1CPT	3.3 V, 1 Hz carrier phase output, precise timing, SBAS, default baud rate of 9,600 bps
SSII-3-1CPT-19	3.3 V, 1 Hz carrier phase output, precise timing, SBAS, default baud rate of 19,200 bps
SSII-3-STD	3.3 V, SBAS, default baud rate of 9,600 bps
SSII-3-STDN	3.3 V, default baud rate of 9,600 bps
SSII-5-BASE	5 V, DGPS base station operation, 1 Hz CP output, SBAS, default baud rate of 9,600 bps
SSII-5-BASEN	5 V, DGPS base station operation, 1 Hz CP output, default baud rate of 9,600 bps
SSII-5-5CP-19	5 V, 5 Hz carrier phase output, SBAS, default baud rate of 19,200 bps
SSII-5-5CPN-19	5 V, 5 Hz carrier phase output, default baud rate of 19,200 bps
SSII-5-5HZ	5 V, 5 Hz PVT output, SBAS24, default baud rate of 9,600 bps
SSII-5-5HZN	5 V, 5 Hz PVT output, default baud rate of 9,600 bps
SSII-5-1CPN	5 V, 1 Hz carrier phase output, default baud rate of 9,600 bps
SSII-5-1CPN-19	5 V, 1 Hz carrier phase output, default baud rate of 19,200 bps
SSII-5-1CPT	5 V, 1 Hz carrier phase output, precise timing, SBAS, default baud rate of 9,600 bps
SSII-5-1CPT-19	5 V, 1 Hz carrier phase output, precise timing, SBAS, default baud rate of 19,200 bps
SSII-5-STD	5 V, SBAS, default baud rate of 9,600 bps
SSII-5-STDN	5 V, default baud rate of 9,600 bps

# **Development Kit for SUPERSTAR II OEM Card**

## RoHS Compliant: False

DK-FLEXPAK-SSII-BASE	Development kit incl. FlexPak-SSII with DGPS base, 1 Hz CP output, SBAS, 9,600 bps
DK-FLEXPAK-SSII-BASEN	Development kit incl. FlexPak-SSII with DGPS base, 1 Hz CP output, 9,600 bps
DK-FLEXPAK-SSII-5CP-19	Development kit including FlexPak-SSII with 5 Hz CP output, SBAS, 19,200 bps default
DK-FLEXPAK-SSII-5CPN-19	Development kit including FlexPak-SSII with 5 Hz CP output, 19,200 bps default
DK-FLEXPAK-SSII-5HZ	Development kit including FlexPak-SSII with 5 Hz PVT output, SBAS, 9,600 bps default
DK-FLEXPAK-SSII-5HZN	Development kit including FlexPak-SSII with 5 Hz PVT output, 9,600 bps default

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DK-FLEXPAK-SSII-5HZN	Development kit including FlexPak-SSII with 5 Hz PVT output, 9,600 bps default	
DK-FLEXPAK-SSII-1CPN	Development kit incl. FlexPak-SSII with 1 Hz CP output, 9,600 bps	
DK-FLEXPAK-SSII-1CPN-19	Development kit incl. FlexPak-SSII with 1 Hz CP output, 19,200 bps	
DK-FLEXPAK-SSII-1CPT	Development kit incl. FlexPak-SSII with 1 Hz CP output, precise timing, SBAS, 9,600 bps	
DK-FLEXPAK-SSII-1CPT-19	Development kit incl. FlexPak-SSII with 1 Hz CP output, precise timing, SBAS, 19,200 bps	
DK-FLEXPAK-SSII-STD	Development kit including FlexPak-SSII with SBAS, default baud rate of 9,600 bps	

Development kit including FlexPak-SSII with default baud rate of 9,600 bps

#### FlexPak-SSII GPS Receiver Enclosure

The FlexPak<sup>™</sup> -SSII is a 12-channel, L1-only waterproof receiver enclosure offering standard 1 Hz PVT output, real-time DGPS positioning, and support for NMEA and RTCM messages and SBAS corrections. It features two serial ports up to 19,200 bps and optional 1 Hz or 5 Hz carrier phase output or 5 Hz PVT output. A serial cable and an automotive power adapter are included with the FlexPak-SSII. The development kit includes a magnetic mount antenna with integrated RF cable, an interface cable, and an AC adapter.

SBAS enabled models feature 10 GPS tracking channels and 2 GPS tracking channels. Non-SBAS enabled models are also available with 12 GPS tracking channels.

#### FlexPak-SSII GPS Enclosure

**DK-FLEXPAK-SSII-STDN** 

RoHS Compliant: False

FLEXPAK-SSII-BASE	DGPS base station operation, 1 Hz CP output, SBAS, default baud rate of 9,600 bps
FLEXPAK-SSII-BASEN	DGPS base station operation, 1 Hz CP output, default baud rate of 9,600 bps
FLEXPAK-SSII-5CP-19	5 Hz carrier phase output, SBAS, default baud rate of 19,200 bps
FLEXPAK-SSII-5CPN-19	5 Hz carrier phase output, default baud rate of 19,200 bps
FLEXPAK-SSII-5HZ	5 Hz PVT output, SBAS, default baud rate of 9,600 bps
FLEXPAK-SSII-5HZN	5 Hz PVT output, default baud rate of 9,600 bps
FLEXPAK-SSII-1CPN	1 Hz carrier phase output, default baud rate of 9,600 bps
FLEXPAK-SSII-1CPN-19	1 Hz carrier phase output, default baud rate of 19,200 bps
FLEXPAK-SSII-1CPT	1 Hz carrier phase output, precise timing, SBAS, default baud rate of 9,600 bps
FLEXPAK-SSII-1CPT-19	1 Hz carrier phase output, precise timing, SBAS, default baud rate of 19,200 bps
FLEXPAK-SSII-STD	SBAS, default baud rate of 9,600 bps
FLEXPAK-SSII-STDN	Default baud rate of 9,600 bps

#### **Development Kit for FlexPak-SSII Enclosure**

RoHS Compliant: False

DK-FLEXPAK-SSII-BASE	Development kit incl. FlexPak-SSII with DGPS base, 1 Hz CP output, SBAS, 9,600 bps
DK-FLEXPAK-SSII-BASEN	Development kit incl. FlexPak-SSII with DGPS base, 1 Hz CP output, 9,600 bps
DK-FLEXPAK-SSII-5CP-19	Development kit including FlexPak-SSII with 5 Hz CP output, SBAS, 19,200 bps default
DK-FLEXPAK-SSII-5CPN-19	Development kit including FlexPak-SSII with 5 Hz CP output, 19,200 bps default
DK-FLEXPAK-SSII-5HZ	Development kit including FlexPak-SSII with 5 Hz PVT output, SBAS, 9,600 bps default
DK-FLEXPAK-SSII-5HZN	Development kit including FlexPak-SSII with 5 Hz PVT output, 9,600 bps default
DK-FLEXPAK-SSII-1CPN	Development kit incl. FlexPak-SSII with 1 Hz CP output, 9,600 bps
DK-FLEXPAK-SSII-1CPN-19	Development kit incl. FlexPak-SSII with 1 Hz CP output, 19,200 bps
DK-FLEXPAK-SSII-1CPT	Development kit incl. FlexPak-SSII with 1 Hz CP output, precise timing, SBAS, 9,600 bps
DK-FLEXPAK-SSII-1CPT-19	Development kit incl. FlexPak-SSII with 1 Hz CP output, precise timing, SBAS, 19,200 bps
DK-FLEXPAK-SSII-STD	Development kit including FlexPak-SSII with SBAS, default baud rate of 9,600 bps
DK-FLEXPAK-SSII-STDN	Development kit including FlexPak-SSII with default baud rate of 9,600 bps

# SMART Antenna / SUPERSTAR II Receiver

The SMART ANTENNA™ is a 12-channel, L1-only integrated receiver and antenna with standard 1 Hz PVT output, SBAS support, and real-time DGPS positioning. It is available in a variety of configurations, including an RS-232 or RS-422 interface, and features a PPS output. Development kits are available and contain a SMART ANTENNA, a magnetic mount, an interface cable, and the Windows®-based STARVIEW software. Development kits for RS-422 SMART ANTENNAs also contain an RS-422 to RS-232 converter.

SBAS enabled models feature 10 GPS tracking channels and 2 GPS tracking channels. Non-SBAS enabled models are also available with 12 GPS tracking channels.

#### **RS-232 Version**

## **SMART Antenna with SUPERSTAR II**

RoHS Compliant: False

SA-232-06G-5CP-19	Green, 6-pin metal standard connector, 5 Hz CP output, SBAS, 19,200 bps default
SA-232-06G-5CPN-19	Green, 6-pin metal standard connector, 5 Hz CP output, 19,200 bps default
SA-232-06G-5HZ	Green, 6-pin metal standard connector, 5 Hz PVT output, SBAS, 9,600 bps default
SA-232-06G-5HZN	Green, 6-pin metal standard connector, 5 Hz PVT output, 9,600 bps default
SA-232-06G-1CPN	Green, 6-pin metal standard connector, 1 Hz CP output, 9,600 bps default30
SA-232-06G-1CPN-19	Green, 6-pin metal standard conn, 1 Hz CP output, 19,200 bps default30
SA-232-06G-1CPT	Green, 6-pin metal standard connector, 1 Hz CP output, precise timing, SBAS, 9,600 bps default
SA-232-06G-1CPT-19	Green, 6-pin metal standard conn, 1 Hz CP output, precise timing, SBAS, 19,200 bps default
SA-232-06G-STD	Green, 6-pin metal standard connector, SBAS, default baud rate of 9,600 bps
SA-232-06G-STDN	Green, 6-pin metal standard connector, default baud rate of 9,600 bps
SA-232-07W-5CP-19	White, 7-pin plastic standard connector, 5 Hz CP output, SBAS, 19,200 bps default
SA-232-07W-5CPN-19	White, 7-pin plastic standard connector, 5 Hz CP output, 19,200 bps default
SA-232-07W-5HZ	White, 7-pin plastic standard connector, 5 Hz PVT output, SBAS, 9,600 bps default
SA-232-07W-5HZN	White, 7-pin plastic standard connector, 5 Hz PVT output, 9,600 bps default
SA-232-07W-1CPN	White, 7-pin plastic standard conn, 1 Hz CP output, 9,600 bps default30
SA-232-07W-1CPN-19	White, 7-pin plastic standard conn, 1 Hz CP output, 19,200 bps default30
SA-232-07W-1CPT	White, 7-pin plastic standard conn, 1 Hz CP output, precise timing, SBAS, 9,600 bps default
SA-232-07W-1CPT-19	White, 7-pin plastic standard conn, 1 Hz CP output, precise timing, SBAS, 19,200 bps default
SA-232-07W-STD	White, 7-pin plastic standard connector, SBAS, default baud rate of 9,600 bps
SA-232-07W-STDN	White, 7-pin plastic standard connector, default baud rate of 9,600 bps

# Development Kit for SMART Antenna with SUPERSTAR II

RoHS Compliant: False

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DK-SA-232-06G-5CP-19	Dev kit with green, 6-pin metal connector, 5 Hz CP output, SBAS, 19,200 bps default
DK-SA-232-06G-5CPN-19	Dev kit with green, 6-pin metal connector, 5 Hz CP output, 19,200 bps default
DK-SA-232-06G-5HZ	Dev kit with green, 6-pin metal connector, 5 Hz PVT output, SBAS, 9,600 bps default
DK-SA-232-06G-5HZN	Dev kit with green, 6-pin metal connector, 5 Hz PVT output, 9,600 bps default
DK-SA-232-06G-1CPN	Dev kit with green, 6-pin metal connector, 1 Hz CP output, 9,600 bps
DK-SA-232-06G-1CPN-19	Dev kit with green, 6-pin metal connector, 1 Hz CP output, 19,200 bps
DK-SA-232-06G-1CPT	Dev kit with green, 6-pin metal connector, 1 Hz CP output, precise timing, SBAS, 9,600 bps
DK-SA-232-06G-1CPT-19	Dev kit with green, 6-pin metal connector, 1 Hz CP output, precise timing, SBAS, 19,200 bps
DK-SA-232-06G-STD	Dev kit with green, 6-pin metal connector, SBAS, default baud rate of 9,600 bps
DK-SA-232-06G-STDN	Dev kit with green, 6-pin metal connector, default baud rate of 9,600 bps
DK-SA-232-07W-5CP-19	Dev kit with white, 7-pin plastic connector, 5 Hz CP output, SBAS, 19,200 bps default
DK-SA-232-07W-5CPN-19	Dev kit with white, 7-pin plastic connector, 5 Hz CP output, 19,200 bps default
DK-SA-232-07W-5HZ	Dev kit with white, 7-pin plastic connector, 5 Hz PVT output, SBAS, 9,600 bps default
DK-SA-232-07W-5HZN	Dev kit with white, 7-pin plastic connector, 5 Hz PVT output, 9,600 bps default
DK-SA-232-07W-1CPN	Dev kit with white, 7-pin plastic connector, 1 Hz CP output, 9,600 bps
DK-SA-232-07W-1CPN-19	Dev kit with white, 7-pin plastic connector, 1 Hz CP output, 19,200 bps
DK-SA-232-07W-1CPT	Dev kit with white, 7-pin plastic connector, 1 Hz CP output, precise timing, SBAS, 9,600 bps
DK-SA-232-07W-1CPT-19	Dev kit with white, 7-pin plastic connector, 1 Hz CP output, precise timing, SBAS, 19,200 bps
DK-SA-232-07W-STD	Dev kit with white, 7-pin plastic connector, SBAS, default baud rate of 9,600 bps
DK-SA-232-07W-STDN	Dev kit with white, 7-pin plastic connector, default baud rate of 9,600 bps

## **RS-422 Version**

## **SMART Antenna with SUPERSTAR II**

RoHS Compliant: False

SA-422-12W-BASE	White, 12-pin plastic standard conn, DGPS base, 1 Hz CP output, SBAS, 9,600 bps default
SA-422-12W-BASEN	White, 12-pin plastic standard conn, DGPS base, 1 Hz CP output, 9,600 bps default
SA-422-12W-5CP-19	White, 12-pin plastic standard connector, 5 Hz CP output, SBAS, 19,200 bps default
SA-422-12W-5CPN-19	White, 12-pin plastic standard connector, 5 Hz CP output, 19,200 bps default
SA-422-12W-5HZ	White, 12-pin plastic standard connector, 5 Hz PVT output, SBAS, 9,600 bps default
SA-422-12W-5HZN	White, 12-pin plastic standard connector, 5 Hz PVT output, 9,600 bps default

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SA-422-12W-5HZN	White, 12-pin plastic standard connector, 5 Hz PVT output, 9,600 bps default	
SA-422-12W-1CPN	White, 12-pin plastic standard conn, 1 Hz CP output, 9,600 bps default30	
SA-422-12W-1CPN-19	White, 12-pin plastic standard conn, 1 Hz CP output, 19,200 bps default	
SA-422-12W-1CPT	White, 12-pin plastic standard conn, 1 Hz CP output, precise timing, SBAS, 9,600 bps default	
SA-422-12W-1CPT-19	White, 12-pin plastic standard conn, 1 Hz CP output, precise timing, SBAS, 19,200 bps default	
SA-422-12W-STD	White, 12-pin plastic standard connector, SBAS, default baud rate of 9,600 bps	
SA-422-12W-STDN	White, 12-pin plastic standard connector, default baud rate of 9,600 bps	
SA-422-CMW-BASE	White, 12-pin plastic cable mount conn, DGPS base, 1 Hz CP output, SBAS, 9,600 bps default	
SA-422-CMW-BASEN	White, 12-pin plastic cable mount conn, DGPS base, 1 Hz CP output, 9,600 bps default	
SA-422-CMW-5CP-19	White, 12-pin plastic cable mount connector, 5 Hz CP output, SBAS, 19,200 bps default	
SA-422-CMW-5CPN-19	White, 12-pin plastic cable mount connector, 5 Hz CP output, 19,200 bps default	
SA-422-CMW-5HZ	White, 12-pin plastic cable mount connector, 5 Hz PVT output, SBAS, 9,600 bps default	
SA-422-CMW-5HZN	White, 12-pin plastic cable mount connector, 5 Hz PVT output, 9,600 bps default	
SA-422-CMW-1CPN	White, 12-pin plastic cable mount conn, 1 Hz CP output, 9,600 bps default30	
SA-422-CMW-1CPN-19	White, 12-pin plastic cable mount conn, 1 Hz CP output, 19,200 bps default	
SA-422-CMW-1CPT	White, 12-pin plastic cable mount conn, 1 Hz CP output, precise timing, SBAS, 9,600 bps defau	lt
SA-422-CMW-1CPT-19	White, 12-pin plastic cable mount conn, 1 Hz CP output, precise timing, SBAS, 19,200 bps defa	ult30
SA-422-CMW-STD	White, 12-pin plastic cable mount connector, SBAS, default baud rate of 9,600 bps	

# Development Kit for SMART Antenna with SUPERSTAR II

<b>RoHS</b>	Com	nliant·	False
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SA-422-CMW-STDN

DK-SA-422-12W-BASE	Dev kit with white, 12-pin standard connector, DGPS base, 1 Hz CP output, SBAS, 9,600 bps
DK-SA-422-12W-BASEN	Dev kit with white, 12-pin standard connector, DGPS base, 1 Hz CP output, 9,600 bps
DK-SA-422-12W-5CP-19	Dev kit with white, 12-pin standard connector, 5 Hz CP output, SBAS, 19,200 bps default
DK-SA-422-12W-5CPN-19	Dev kit with white, 12-pin standard connector, 5 Hz CP output, 19,200 bps default
DK-SA-422-12W-5HZ	Dev kit with white, 12-pin standard connector, 5 Hz PVT output, SBAS, 9,600 bps default
DK-SA-422-12W-5HZN	Dev kit with white, 12-pin standard connector, 5 Hz PVT output, 9,600 bps default
DK-SA-422-12W-1CPN	Dev kit with white, 12-pin std connector, 1 Hz CP output, 9,600 bps default
DK-SA-422-12W-1CPN-19	Dev kit with white, 12-pin std connector, 1 Hz CP output, 19,200 bps
DK-SA-422-12W-1CPT	Dev kit with white, 12-pin std connector, 1 Hz CP output, precise timing, SBAS, 9,600 bps default
DK-SA-422-12W-1CPT-19	Dev kit with white, 12-pin std connector, 1 Hz CP output, precise timing, SBAS, 19,200 bps
DK-SA-422-12W-STD	Dev kit with white, 12-pin standard connector, SBAS, default baud rate of 9,600 bps
DK-SA-422-12W-STDN	Dev kit with white, 12-pin standard connector, default baud rate of 9,600 bps

White, 12-pin plastic cable mount connector, default baud rate of 9,600 bps

## **Software Upgrades for SUPERSTAR II-Based Products**

To increase the functionality and features of your SUPERSTAR II-based receiver, software model upgrades are available for purchase. Upgrades can be completed in the field using a software utility provided by NovAtel. Note that only one model can be loaded on the SUPERSTAR II receiver at any given time and, thus, model upgrades will replace the current model with the desired new model. As a result, any features found only in the current model will no longer be available after the upgrade. Upgrades can be completed between non-equivalent models (e.g. upgrade from STD to 1CPT-19), or between equivalent models to disable or enable SBAS tracking (e.g. upgrade from 5HZ to 5HZN).

## Upgrades to enable or disable SBAS tracking between equivalent models

#### RoHS Compliant: True

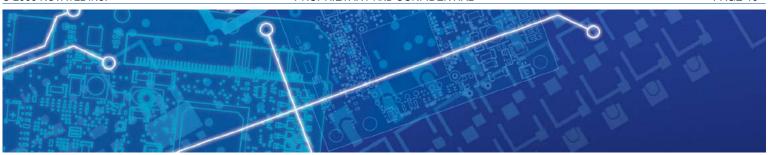
SW-UG-SBAS	Upgrade to replace current model with equivalent SBAS enabled model
SW-UG-NSBAS	Upgrade to replace current model with equivalent non-SBAS enabled model

## Upgrades between non-equivalent models

## RoHS Compliant: True

SW-UG-BASE	Upgrade to replace current model with DGPS base station, 1 Hz CP output, SBAS, 9,600 bps default
SW-UG-BASEN	Upgrade to replace current model with DGPS base station, 1 Hz CP output, 9,600 bps default
SW-UG-5CP-19	Upgrade to replace current model with 5 Hz carrier phase output, SBAS, default of 19,200 bps
SW-UG-5CPN-19	Upgrade to replace current model with 5 Hz carrier phase output, default of 19,200 bps
SW-UG-5HZ	Upgrade to replace current model with 5 Hz PVT output, SBAS, default of 19,200 bps
SW-UG-5HZN	Upgrade to replace current model with 5 Hz PVT output, default of 19,200 bps
SW-UG-1CPN	Upgrade to replace current model with 1 Hz carrier phase output, default of 9,600 bps

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SW-UG-1CPN	Upgrade to replace current model with 1 Hz carrier phase output, default of 9,600 bps	
SW-UG-1CPN-19	Upgrade to replace current model with 1 Hz carrier phase output, default of 19,200 bps	
SW-UG-1CPT	Upgrade to replace current model with 1 Hz carrier phase output, precise timing, SBAS, 9,600 bp	S
SW-UG-1CPT-19	Upgrade to replace current model with 1 Hz carrier phase output, precise timing, SBAS, 19,200 b	ns



# **Accessories for SSII L1 receivers**

#### **Antennas**

#### **Antenna**

RoHS Compliant: False

201-990147-606	L1, geodetic antenna with +26 dB gain, TNC connector, built-in ground plane, 1"-14 thread mounting
201-990148-152	L1, AVL antenna with +12 dB gain, 20 ft cable with TNC connector, removable magnet
201-990146-716	L1, AVL antenna with +12 dB gain, 20 ft cable with MCX connector, removable magnet
201-990147-432	L1, AVL antenna with +12 dB gain, TNC connector, 5/8"-11 thread mounting

#### **Antenna Accessories**

RoHS Compliant: False

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270-990146-890	Magnetic mount for 1"-14 thread mounting antenna
530-990300-203	Bushing adapter, 5/8"-11 to 1"-14 thread

#### **Power & Communication Cables**

#### FlexPak-SSII

RoHS Compliant: False

01017518	Straight serial cable with Deutsch and male DB-9 connectors (included with FlexPak-G2L)
01017375	Null-modem cable with Deutsch and female DB-9 connectors (included with FlexPak-G2L & FlexPak-SSII)
01017374	Accessory Power Cable, 4-pin LEMO with automotive adapter (included with FlexPak-G2L & FlexPak-SSII)

## **RS-232 Version**

# SMART ANTENNA with 7-pin plastic connector

RoHS Compliant: False

217-601742-003	5 meter interface cable with 7-pin plastic connector and DB-9 and automotive adapter
217-0017 <del>4</del> 2-003	3 HIGIGI IHIGHACE CADIE WILH 7-DIH DIASIIC COHHECIOI AHU DD-3 AHU AUIOHOIIVE AUADIGI

## **SMART ANTENNA with 6-pin metal connector**

RoHS Compliant: False

217-601798-004	15 meter interface cable with 6-pin metal connector and DB-9 and automotive adapter
217-601798-003	5 meter interface cable with 6-pin metal connector and DB-9 and automotive adapter

## **RS-422 Version**

#### **SMART ANTENNA**

RoHS Compliant: False

morro compilariti i arec	
217-601764-002	30 meter interface cable with 12-pin connector and open wires
217-601764-003	15 meter interface cable with 12-pin connector and open wires

# Other

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40023100	RS-422 to RS-232 converter with DB-9 connector
40023098	AC adapter with auto receptacle and IEC-320-C14 input inlet (removable IEC-320 to North American plug
	included, requires addition of region-specific plug for use outside North America)

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40023098	AC adapter with auto receptacle and IEC-320-C14 input inlet (removable IEC-320 to North American pl	
	included, requires addition of region-specific plug for use outside North America)	
RoHS Compliant: True		
40023106	RoHS compliant AC adapter with auto receptacle and IEC-320-C14 input inlet (removable	e IEC-320 to
	North American plug included, requires addition of region-specific plug for use outside No	orth America)



# **SPAN Technology**

#### IMU-LN200

The IMU-LN200 houses the LN200 IMU and an interface card in a enclosure that is compatible with the OEMV-3 and the PROPAK-V3 when loaded with the INS firmware models.

RoHS Compliant: False

IMU-LN200	Enclosure with LG200 IMU for use with PROPAK-V3
IMU-LN-000	Enclosure without IMU for use with PROPAK-V3

#### **IMU-FSAS**

The IMU-FSAS is an enclosed IMU that is compatible with the PROPAK-V3-424 when loaded with the RT2J firmware model.

#### **RS-422 Version**

RoHS Compliant: False

IMU-FSAS-EI	Enclosure with FSAS-EI-SN IMU with internal magnetic sensor interface for use with ProPak-V3-424

# IMU-G2

The IMU-G2 adds inertial capabilities to your GPS receiver for position and attitude data and continuous positioning. The IMU-G2 is compatible with IMU capable models of the DL-4plus, ProPak-G2plus, or ProPak-LBplus and includes an IMU to receiver interface cable.

Part number IMU-xx-H58 is formerly IMU-xx-H11, while part IMU-xx-H62 is formerly IMU-xx-H17. The change in part numbers is to accommodate a change in part numbers from the manufacturer.

# For ProPak-G2plus or DL-4plus

### RoHS Compliant: False

IMU-G2-H58	IMU-G2 enclosure with 1 degree per hour IMU for use with ProPak-G2plus or DL-4plus
IMU-G2-H62	IMU-G2 enclosure with 5 degree per hour IMU for use with ProPak-G2plus or DL-4plus
IMU-G2-000	IMU-G2 enclosure without IMU for use with ProPak-G2plus or DL-4plus

## For ProPak-LBplus

RoHS Compliant: False

IMU-LB-H58	IMU-G2 enclosure with 1 degree per hour IMU for use with ProPak-LBplus
IMU-LB-H62	IMU-G2 enclosure with 5 degree per hour IMU for use with ProPak-LBplus
IMU-LB-000	IMU-G2 enclosure without IMU for use with ProPak-LBplus

#### **SPAN GPS Receiver Card**

RoHS Compliant: False

OEMV-3-RT2j	IMU support, 2 cm RTK, accepts OmniSTAR HP/XP, CDGPS, and SBAS corrections, raw data

## **SPAN GPS Receiver Enclosures**

A subscription is required for OmniSTAR HP/XP/VBS service, which may not be available in all areas. SBAS Corrections including WAAS, MSAS and EGNOS may not be available in all areas. CDGPS Corrections may not be available in all areas.

# **RS-232 Version**

RoHS Com	oliant:	False
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PROPAK-V3-RT2j	IMU support, 2 cm RTK, accepts OmniSTAR HP/XP, CDGPS, and SBAS corrections, raw data	

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PROPAK-V3-RT2j	IMU support, 2 cm RTK, accepts OmniSTAR HP/XP, CDGPS, and SBAS corrections, raw data	
DL-4+RT2Wi	IMU support, 2 cm RTK positioning, accepts SBAS corrections, real-time DGPS, raw data out	
PROPAK-LB+HP-RT2Wi	IMU support, 2 cm RTK, accepts OmniSTAR HP/XP, CDGPS, and SBAS corrections, raw data	
PROPAK-G2+DB9-RT2Wi	IMU support, 2 cm RTK positioning, accepts SBAS corrections,real-time DGPS, raw data	

#### **RS-422 Version**

RoHS Compliant: False

PROPAK-V3-424-RT2j	IMU support, 2 cm RTK, accepts OmniSTAR HP/XP, CDGPS, and SBAS corrections, raw data
DL-4+424-RT2Wi	IMU support, 2 cm RTK positioning, accepts SBAS corrections, real-time DGPS, raw data out
PROPAK-G2+DB9-424-RT2Wi	IMU support, 2 cm RTK positioning, accepts SBAS corrections, real-time DGPS, raw data

## **Accessories for IMU**

#### For IMU-LN200

RoHS Compliant: False

01017375	Null-modem cable with Deutsch and female DB-9 connectors (included with FlexPak-G2L & FlexPak-SSII)
01017374	Accessory Power Cable, 4-pin LEMO with automotive adapter (included with FlexPak-G2L &
	FlexPak-SSII)

#### For IMU-FSAS

RoHS Compliant: False

01017818	Interface card assembly for IMU-LN200
80023521	iMWS magnetic strip, 3 m, for IMU-FSAS-EI-M
60723086	Cable assembly for IMU-FSAS and PROPAK-V3, 2 m
60723089	Cable assembly for IMU-FSAS and PROPAK-V3, 1 m
14323111	Transportation case for IMU-FSAS, water resistant, plastic
80023520	iMWS magnetic strip, 2 m, for IMU-FSAS-EI-M
80023519	iMWS wheel sensor for IMU-FSAS-EI-M

#### For IMU-G2

RoHS Compliant: False

01017393	Interface cable for IMU-G2 and ProPak-LBplus (included with IMU-LB-xxx)
01017384	Interface cable for IMU-G2 and ProPak-G2plus or DL-4plus (included with IMU-G2-xxx)

#### **Post-Processing Software**

NovAtel offers a complete selection of Waypoint post-processing software, including Inertial Explorer for use with NovAtel's SPAN Technology system. Please note that the part numbers by default indicate a USB security key, with a –U suffix. A Parallel security key (-P) must be specifically ordered if desired. Please contact NovAtel for information on software updates.

#### Post Processing (Win98/2000/XP)

Software updates are free for one year after purchase. Technical support by phone, fax and email is free for one year after date of purchase. After one year from date of purchase, updates are sold at the listed prices and will include one year of free updates and technical phone, fax or email support. Date of purchase is verified by your four-digit software key serial number. Support may be denied if payment is delinquent.

All part numbers are followed with a "-U" for a USB key as default. A Parallel key "-P" is supplied by specific request only.

RoHS Compliant: True

SW-PP-GPSIMU-U	Inertial Explorer post-processing software for GPS/INS applications
SW-PP-GMOV-U	GrafMov post-processing software (GrafNav/GrafNet with moving baseline option)
SW-PP-GNVT-U	GrafNav/GrafNet post-processing software
SW-PP-GNST-U	GrafNav/GrafNet Static post-processing software (no kinematic processing)
SW-PP-LGNV-U	GrafNav Lite post-processing software (1 Hz, L1 only)
SW-PP-UTIL-U	GrafNav Utilities software (data conversion, download, data logging, and coordinate conversion)

#### **Post Processing Version Updates**

Version updates for multi-license users is 50% of first upgrade for the 2nd and each additional copy.

Version updates for software older than version 7.00 will be subject to a 50% surcharge.

Version updates purchased within one month after a free-upgrade period are eligible for a 25% discount.

Version updates do not require a new software key. Key exchange cost is zero if an update or upgrade is purchased.

RoHS Compliant: True

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SW-UD-PP-GPSIMU	Update to latest version of Inertial Explorer	
SW-UD-PP-GMOV	Update to latest version of GrafMov	
SW-UD-PP-GNVT	Update to latest version of GrafNav/GrafNet	
SW-UD-PP-GNST	Update to latest version of GrafNav/GrafNet - Static Only	
SW-UD-PP-LGNV	Update to latest version of GrafNav Lite	

## **Post Processing Product Upgrades**

SW-UD-PP-UTIL

Version updates for multi-license users is 50% of first upgrade for the 2nd and each additional copy.

Version updates for software older than version 7.00 will be subject to a 50% surcharge.

Version updates purchased within one month after a free-upgrade period are eligible for a 25% discount.

Version updates do not require a new software key. Key exchange cost is zero if an update or upgrade is purchased.

Update to latest version of GrafNav Utilities

If the customer requests a key exchange, the part number should be followed by either "-U" (USB) or "-P" (Parallel Port). The serial number of existing key must be provided. Call NovAtel/Waypoint Products Group for exchange procedure.

Product upgrades do not require a new software key.

For a new key and a version update, the full product price will be charged, and the difference credited upon old key return.

The product upgrade price is the difference between product list prices.

#### RoHS Compliant: True

SW-UG-PP-GPSIMU	Upgrade to Inertial Explorer
SW-UG-PP-GMOV	Upgrade to GrafMov
SW-UG-PP-GNVT	Upgrade to GrafNav/GrafNet
SW-UG-PP-GNST	Upgrade to GrafNav/GrafNet (Static Only)

## **Post Processing Key Exchanges**

#### RoHS Compliant: True

SW-PP-EXCH-GPSIMU	Exchange Parallel key for USB for Inertial Explorer
SW-PP-EXCH-GMOV	Exchange Parallel key for USB for GrafMov
SW-PP-EXCH-GNVT	Exchange Parallel key for USB for GrafNav/GrafNet
SW-PP-EXCH-GNST	Exchange Parallel key for USB for GrafNav/GrafNet (Static Only)
SW-PP-EXCH-LGNV	Exchange Parallel key for USB for GrafNav Lite
SW-PP-EXCH-UTIL	Exchange Parallel key for USB for GrafNav Utilities

### Real Time Kinematic (2000/XP)

#### RoHS Compliant: True

SW-RT-R20-U	RTKNav 1-20 Remotes. Full RTK capabilities + Moving Baseline	
SW-RT-R6-U	RTKNav 1-6 Remotes. Full RTK capabilities + Moving Baseline	
SW-RT-R3-U	RTKNav 1-3 Remotes. Full RTK capabilities + Moving Baseline	
SW-RT-MV-U	RTKNav 1 Remote. Full RTK capabilities + Moving Baseline + Heading	
SW-RT-R1-U	RTKNav 1 Remote. Full RTK capabilities	
SW-RT-AZ-U	Azimuth Determination Only	

#### Real Time Kinematic (2000/XP) Updates

## RoHS Compliant: True

SW-UD-RT-R20	Update to latest version of RT-R20	
SW-UD-RT-R6	Update to latest version of RT-R6	
SW-UD-RT-R3	Update to latest version of RT-R3	
SW-UD-RT-MV	Update to latest version of RT-MV	
SW-UD-RT-R1	Update to latest version of RT-R1	
SW-UD-RT-AZ	Update to latest version of RT-AZ	

## Real Time Kinematic (2000/XP) Upgrades

## RoHS Compliant: True

SW-UG-RT-R20	Upgrade to RT-R20	
SW-UG-RT-R6	Upgrade to RT-R6	
SW-UG-RT-R3	Upgrade to RT-R3	
SW-UG-RT-MV	Upgrade to RT-MV	

<sup>\*\*</sup> The product upgrade price is the difference between product list prices.

<sup>\*\*</sup>The product upgrade price is the difference between product list prices.

# **Real Time Kinematic Key Exchanges**

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SW-RT-EXCH-R20	Exchange Parallel key for USB for RT-R20
SW-RT-EXCH-R6	Exchange Parallel key for USB for RT-R6
SW-RT-EXCH-R3	Exchange Parallel key for USB for RT-R3
SW-RT-EXCH-MV	Exchange Parallel key for USB for RT-MV
SW-RT-EXCH-R1	Exchange Parallel key for USB for RT-R1
SW-RT-EXCH-AZ	Exchange Parallel key for USB RT-AZ

# **Development Options**

# RoHS Compliant: True

SW-RT-DEV-U	RtDLL/SIOGPS DLL Developer's Kit for processing and interface (one time cost and must be purchased
	with one of the above RTKNav licenses)
SW-RT-STC-U	RtStatic Module (sold only in addition to RTKNav, R3, R6, R20)

# Manuals

# RoHS Compliant: True

OM-20000097	GrafNav/GrafNet Manual
OM-20000098	Inertial Explorer Manual
OM-20000099	RTKNav Manual



# **Specialty Products**

AC adapter 40023098 is recommended for use with the EuroPak enclosures.

# **Euro-3M GPS Receiver OEM Card**

The Euro-3M™ features Signal Quality Monitoring (SQM) and the patent-pending SafeTrak cross-correlation verification algorithm. The standard version includes 14 channels for L1/L2 tracking and 4 channels for L1 GEO tracking. Alternately, the Euro-3M is offered with MEDLL multipath reduction technology combined with 8 L1/L2 channels and 1 L1 GEO channel. An enclosure for the Euro-3M card is also available with an optional high-stability internal oscillator.

The commands and logs for these products are based on NovAtel's WAAS and GUS Reference Receivers and may have significant differences when compared to the standard NovAtel commercial receiver products.

RoHS Compliant: False

EUROPAK-3MT-MEDLLT	Enclosed Euro-3M-MEDLL receiver with internal oscillator
EUROPAK-3M-MEDLL	Enclosed Euro-3M-MEDLL receiver
EUROPAK-3MT-L1L2GEOT	Enclosed Euro-3M receiver with internal oscillator
EURO-3M-MEDLL	8-channel L1/L2 tracking and 1-channel L1 GEO tracking with MEDLL
EUROPAK-3M-L1L2GEO	Enclosed Euro-3M receiver
EURO-3M-L1L2GEO	14-channel L1/L2 tracking and 4-channel L1 GEO tracking

#### **EUROPAK-15a Receiver**

The EuroPak-15a, NovAtel's L1L5E5a 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. Tracks and decodes GPS L1 and L5, SBAS L1 and L5 and Galileo L1 and E5a. Digital Pulse Blanking is included on GPS L1 and L5 and Galileo L1 and E5a for radar and pulsed DME interference mitigation. The EuroPak-15a enclosure includes L1 GPS RFI improvements as developed for the US WAAS reference receivers. It also has an external OCXO input or enclosure option with internal OCXO.

The -15a receiver has not undergone qualification testing and should be considered prototype equipment for experimental evaluation only. Galileo functionality can only be supplied as an update when authorized by ESA/GJU/GSA.

RoHS Compliant: False

EUROPAK-15A	GPS L1/L5 & Galileo L1/E5a receiver in EuroPak Enclosure
EUROPAK-15AT	GPS L1/L5 & Galileo L1/E5a receiver in EuroPak Enclosure with internal oscillator

## **Multipath Tools**

NovAtel offers a wide range of products for managing multipath.

RoHS Compliant: False

PORTABLE MEDLL RECEIVER	including Multipath Meter Software
MEDLL RECEIVER LEASE	Portable MEDLL Receiver Lease (per month with a minimum of one month)
MAT	Multipath Assessment Tool (MAT)
40023090	Portable MEDLL AC adapter (+24 VDC @ 3 A)

# **WAAS**

The WAAS Receiver includes Multipath Estimating Delay Lock Loop (MEDLL®) and Narrow Correlator® technologies. Units are available for lease.

RoHS	Compl	liant:	False
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WAAS RECEIVER LEASE	per month with a minimum of one month	

## L1/L5 Rack-Mount Receiver

The L1/L5 receiver features L5 tracking with 2-channel digital pulse blanking and 10-channel L1 GPS tracking. It includes three serial ports in a 19" rack-mount metal enclosure.

RoHS Compliant: False

L1/L5 RECEIVER Rack-mount L1/L5 receiver

#### **Antennas**

# Wideband, Passive Antenna

Requires External LNA. Please refer to the NovAtel User Guide for the GPS-704X Antenna.

RoHS Compliant: True

GPS-704X Suitable for receiving GPS L1/L2/L5, Galileo L1/E5a/b, E6, and GLONASS L1/L2.