

## DATA SHEET

Operating Modes	Real Time Post Processing
Supported GNSS Systems	GPS
Supported GNSS augmentations	magicSBAS SBAS (EGNOS, WAAS)
Supported Standards	RTCA/DO-208 (GPS MOPS) RTCA/DO-229C (SBAS MOPS)
Supported Flight Phases (PBN specifications)	Intermediate and final segments of the approach (RNP APCH down to LP and LPV minima)
System Components	Ground transmitter Onboard rack Pilot display
Guidance Display	CDI/VDI
Engineering Displays	Visible Satellites Dilution of Precision Navigation solution Protection Levels Flight Technical Error Histograms

## CHECK ALSO

Product info website at:

<http://www.gmv.com/en/Products/magicLPV/>

## CONTACT

[magicLPV@gmv.com](mailto:magicLPV@gmv.com)



## For more info:

<http://www.gmv.com/en/Products/magicLPV/>

[magicLPV@gmv.com](mailto:magicLPV@gmv.com)

# magicLPV

A product by



[www.gmv.com](http://www.gmv.com)

[www.facebook.com/infoGMV](https://www.facebook.com/infoGMV)  
[@infoGMV](https://twitter.com/infoGMV)

© GMV, 2016

## THE LPV APPROACH DEMONSTRATOR

# FLY SBAS EVERYWHERE



## WHAT IS magicLPV?

**magicLPV** has been developed to allow test pilots to fly SBAS augmented GPS APV approach procedures, down to LPV minima, using the navigation signal generated **magicSBAS**, the operational SBAS test-bed developed by GMV.

The combination of **magicSBAS**+**magicLPV** allows to fly experimental SBAS procedures virtually in any region of the world, and demonstrate the operational benefits of GPS and Satellite Based Augmentation (SBAS) to air users, service providers, airport authorities and regulators.

**magicLPV** is able to provide real-time horizontal and vertical guidance to the pilot during the intermediate and final segments of the approach.

**magicLPV** transmits the SBAS corrections and integrity data generated by **magicSBAS** via a ground transmitter located in the airfield operating in the free UHF band. The augmentation message is received and processed onboard in a portable rack that includes a GPS receiver. Real-time flight guidance in accordance to the pre-loaded flight procedure is then generated and presented in a pilot display.



## KEY ADVANTAGES

The key advantages of **magicLPV** are:

- GPS/SBAS experimental approach procedures are enabled in places where a SBAS service is not available
- Easy installation and configuration, both on ground and onboard the aircraft
- Realistic flight guidance in accordance with a pre-loaded flight procedure is provided to the pilot, emulating a real CDI/VDI display

## SYSTEM DESCRIPTION

**magicLPV** is a turn-key modular system that comprises the following elements:

- A ground transmitter, which receives the **magicSBAS** augmentation message from Internet and retransmits it to the aircraft via the UHF radio modem.
- An onboard rack, which is an autonomous computer, powered by batteries, that includes a GPS receiver and a UHF radio modem.
- A pilot display, based on a tablet-PC, which receives the GPS raw measurements and SBAS messages from the onboard processing rack, calculates the position and generates flight guidance to the pilot in accordance to the pre-loaded flight procedure emulating a real CDI/VDI display. The pilot display is connected to the onboard rack through a wireless connection to avoid any cabling in the cabin.

In addition to real-time guidance, the pilot display can generate a number of additional plots showing in real-time the SBAS system status and performance.



## MAIN FEATURES

**magicLPV** main features are:

- Modular system that enables GPS/SBAS APV approach procedures down to LPV minima in areas where a SBAS service does not currently exist.
- CDI/VDI display for pilot guidance generated in a tablet-PC.
- Easy configuration of intended GPS/SBAS APV approach procedures.
- Easy transportation, configuration and installation.
- Wireless installation onboard, no cabling required in the cabin.
- On-board rack powered by batteries providing +7 hours of uninterrupted operation not requiring an external power source.
- Onboard GPS receiver included.
- UHF data link operating in a free band (869.4 - 869.65 MHz). Ground transmitted and onboard modem included.
- Compatible with **magicSBAS**, can be also used with real SBAS signals (if available). SBAS processing fully compliant with RTCA/DO-229D and ICAO SARPs in GPS-only, single-frequency augmentation mode (L1 legacy).
- Includes support tools for SBAS signal and overall performance analysis.

