



## ANTENNA COMPANION MODULES

### APPLICATIONS:

- Telematics and toll collection
- Vehicle tracking and fleet management
- Asset monitoring and management
- Radio beacons
- Portable tracking and navigation

### THE PERFECT MATCH TO A TRIMBLE GPS RECEIVER.

Integrating a GPS receiver and antenna in a tough electrical environment while wringing out every last dB of positioning performance is a complex RF design problem. Tight space constraints often place the GPS antenna near strong transmitters, noisy power supplies and fast microprocessors. Tracking down a source of interference in the system can take months. Getting it right often takes multiple expensive iterations and, in the end, engineers are frequently forced to compromise performance for time-to-market considerations.

### TAKE ADVANTAGE OF TRIMBLE'S 30+ YEARS OF EXPERIENCE.

Trimble has been integrating GPS receivers and antennas in all manner of devices for over 30 years now and can help you bring your product to market faster and with less aggravation. Trimble's antenna companion modules (ACMs), including Silvana and Ana Paola, comprise a GPS receiver and a perfectly-matched antenna on an easily integrated module.

### SILVANA ACM

Compatible with Trimble's Copernicus II, Condor and Panda families of GPS solutions, Silvana allows you to choose the best solution for your application. In addition to its onboard antenna, Silvana sports a connector for an external antenna. An antenna detection circuit automatically switches to the external antenna, when connected. With Silvana, one flexible solution serves both internal and external antenna applications.

### ANA PAOLA ACM

Like Silvana, Ana Paola supports multiple GPS solutions, but relies on the integral matched antenna.

Contact Trimble to learn more about how an ACM can help you realize your product introduction in a timely fashion and improve the ROI of your development program.



Ana Paola

# ANTENNA COMPANION MODULES

## KEY FEATURES:

- Optimally matched and tuned onboard antenna brings high performance positioning to market faster.
- Multiple GPS solution options on Silvana and Ana Paola allow you to choose the best fit for your application.
- With its external antenna connector and auto-switch, Silvana enables a single flexible product to support multiple applications or installation options.

## GPS PERFORMANCE SPECIFICATIONS

See the relevant Copernicus II, Condor or Panda datasheet for Silvana and Ana Paola ACM GPS performance specifications.

## INTERFACE CHARACTERISTICS

### Silvana ACM and Ana Paola ACM

External Antenna Connector: . . . . . Female SMA (Silvana ACM only)  
 Interface Connector . . . . . 22-pin Socket, SAMTEC # CLP-111-02-G-D-TR  
 Mating Connectors . . . . . Straight Header, SAMTEC # FTSH-111-03-L-DV  
 90° Header, SAMTEC # FTSH-111-02-L-DH-RA

### Pin-Out Table:

PIN #	FUNCTION	DESCRIPTION
1	No Connect	
2	No Connect	
3	TxD UART	NMEA output @ TTL level
4	No Connect	
5	RxD UART	NMEA input @ TTL level
6	No Connect	
7	Vcc	Power supply (main and backup) @ 3.0 to 3.6 VDC Power consumption: ≤ 45mA @ 3.3 VDC Standby consumption: <10 µA typical @ 20 °C
8	Mode control input	Pull high = Run Pull low (GND) = Standby
9	Signal and power ground	Power and signal ground
10	No Connect	
11	No Connect	
12	External Antenna Status	Silvana ACM Only High = Normal with external antenna connected Low (GND) = External antenna short or open
13-22	No Connect	

## ENVIRONMENTAL SPECIFICATIONS

Temperature . . . . . Operating from -40 °C to +85 °C  
 Storage Temperature . . . . . -55 °C to +105 °C  
 Humidity: . . . . . Operating from 5% to 95% R.H.  
 non-condensing @ 60 °C  
 Vibration: 0.008 g<sup>2</sup>/Hz . . . . . 5 Hz to 20 Hz  
 0.05 g<sup>2</sup>/Hz . . . . . 20 Hz to 100 Hz  
 -3 dB/octave . . . . . 100 Hz to 900 Hz

## DIMENSIONS

### Silvana and Ana Paola

Dimensions . . . . . 35.56 mm W × 35.56 mm L × 8 mm H  
 (not including antenna connector)  
 Weight . . . . . 17 g (Silvana), 15 g (AnaPaola)

## ORDERING INFORMATION & ACCESSORIES

Silvana ACM and Ana Paola ACM support multiple GPS solutions: Condor, Copernicus II and Panda. Panda is a host-based solution requiring a software library running on the host processor. Since the library must be compiled for the specific host environment, Panda variants of the Silvana and Ana Paola must be custom ordered. Contact Trimble for order arrangements.

	CONDOR	COPERNICUS II	PANDA	STARTER KIT
Silvana ACM	68677-00	special order	special order	75976-00 (Condor)
Ana Paola ACM	68677-50	special order	special order	75976-00 (Condor)

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