

## AI084-A/B

Positioning Products



## Miniaturized GPS receiver for passive and active antennas

Many GPS applications, such as portable devices or telematics units, require a built-in antenna. However, an external antenna connector is often desired for GPS performance or reliability reasons. This is what the new AI084-A GPS receiver supports with its second antenna pin and on board antenna switch, whilst the AI084-B supports both passive and active antennas on a single antenna pin. This very compact SiRFStar III based GPS receiver comes completely shielded with a lid and with benchmark-setting GPS performance on a very small footprint.

- Bench marking sensitivity ■ -159 dBm tracking
- Fastest TTFF (Time To First Fix) ■ < 35 s under cold start conditions (typical)
- Ultra-low power consumption ■ 86 mW average in tracking mode
- Smallest footprint ■ 15 x 15 mm<sup>2</sup>
- Antenna ■ Passive and active antenna supported
- Dual antenna support ■ RF switch on AI084-A

# Positioning Receiver Portfolio

With the mission to support our customers in implementing GPS functionality into their systems, Vincotech is offering a large product portfolio to cover almost all integration possibilities in an easy way. A dedicated R&D team located in the Munich region, Germany, develops sensitive positioning solutions based on state of the art technologies. All GPS products are manufactured in our ISO9001 and TS16949 certified factory in the EU. Our modules comply to the RoHS standard and are 100% electrically and functionally tested prior to packaging. This way we constantly guarantee high quality products.

## PRODUCTS SHOWN IN ACTUAL SIZE

### GPS Receivers



AI080-A



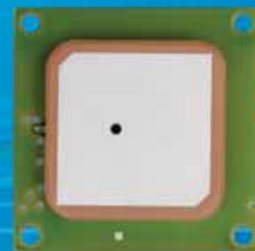
AI082-A



AI084-A/B



AI088-A



AI035-D

### Smart Antenna Modules



AI035-E



AI035-H

#### GPS Receivers

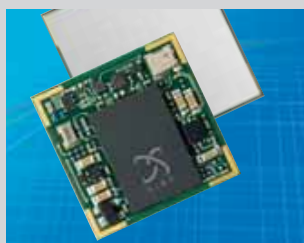
	Supply voltage / V	Current draw @ fix per sec / mA	Operating temperature / °C	Low Power Mode Tickle Power	Low Power Mode Push-To-Fix	Low Power Mode Keep Ephemeris Alive	AGPS Ephemeris Push	Active antenna	Passive antenna	2nd antenna input	Antenna switch	Internal antenna supply	Firmware update (Flash)	ROM	SBAS support	Back-up battery option	Shielding lid	AEC-Q compliant components	Size / mm <sup>2</sup>
AI080-A	3.3	23	-30/85	■	■		■	■				■	■		■	■			19x16
AI080-B	3.3	23	-40/85	■	■		■	■				■	■		■	■			19x16
AI082-A	1.8	35	-30/85			■		■						■		*			14x12
AI084-A	3.3	26	-30/85	■	■		■	■	■	■	■	■	■		■	■	■	■	15x15
AI084-B	3.3	26	-30/85	■	■		■	■	■	■	■	■	■		■	■	■	■	15x15
AI088-A	3.3	30	-40/85	■	■		■	■				■	■		■	■	■	■	28x19

\*SRAM backup possible with Enable pin

#### Smart Antenna Modules

	Antenna type	Circular polarisation	Linear polarisation	Plug-in module	SMD solderable	External antenna pin	Shielding lid	Size / mm <sup>2</sup>	Based on GPS receiver
AI035-D	patch	■		■			■	35x35	AI080-A
AI035-E	patch	■		■				21x21	AI082-A
AI035-H	patch	■			■	■		30x17	AI084-A
AI085-A**	chip		■		■	■	■	31x17	AI080-A
AI086-A**	meander		■		■	■	t.b.d.	25x15	AI084-A
AI086-B**	meander		■		■	■	t.b.d.	25x15	AI084-A

\*\*product planned



## Technical Details AI084-A/B

#### PERFORMANCE

<b>Channels</b>	20 parallel tracking
<b>Correlators</b>	200,000 plus
<b>Frequency</b>	L1 – 1,575 MHz
<b>Sensitivity</b>	
Tracking	-159 dBm
Acquisition (cold start)	-142 dBm
<b>Position accuracy (horizontal)</b>	< 2.5 m CEP autonomous < 2.0 m CEP SBAS
<b>Time To First Fix</b>	
Hot start <sup>1)</sup>	< 1 s
Warm start <sup>2)</sup>	< 32 s
Cold start <sup>3)</sup>	< 35 s

#### COMMUNICATION

<b>Standard GPS software</b>	
NMEA message switchable	GGA, GSA, GSV, VTG, RMC, GLL
Baud rate	4,800 (default) to 115,200
<b>Serial ports</b>	3.3 V CMOS compatible
Tx0	NMEA output
Rx0	NMEA input

- 1) The receiver has estimates of time/date/position and valid almanac and ephemeris data.
- 2) The receiver has estimates of time/date/position and almanac
- 3) The receiver has no estimate of time/date/position, and no recent almanac
- 4) An external current limiter is suggested to avoid damage in fault conditions

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#### ENVIRONMENT

<b>Temperature</b>	
Operating	-30° to +85°C
Storage	-40° to +85°C
<b>Humidity</b>	Non condensing

#### POWER

<b>Supply voltage</b>	3.0 to 3.6 VDC
<b>Current draw</b>	
Acquisition	31 mA (typical)
Tracking	26 mA (typical)
Standby	20 µA (typical)
<b>Antenna supply via VANT</b>	
Voltage range	up to 5.0V
Max. allowed current <sup>4)</sup>	50 mA

#### MECHANICAL

<b>Dimensions</b>	15.2 x 15.2 x 2.4 mm <sup>3</sup>
<b>Weight</b>	0.6" x 0.6" x 0.1" 1.2 g / 0.042 oz.

#### YOUR PARTNER

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