



AI082-A

Positioning Products



Complete GPS functionality – at 1.8 V

Miniaturized footprint and minimal power consumption, along with high-end performance, characterize Vincotech's new GPS module AI082-A - at only 1.8 V. Limited space is a typical constraint, especially for handheld devices. The AI082-A provides GPS position, velocity and time information by requiring only 14 x 12 mm² PCB area. Fastest start-up behavior and various power save modes extend the lifetime of battery-powered devices. The AI082-A – one of Vincotech's solutions for easy and fast integration of GPS based functionality into your application.

- Highly sensitive ■ -157 dBm tracking
- Fastest TTFF (Time To First Fix) ■ < 37 s under cold start condition (typical)
- Ultra small footprint ■ 14 x 12 mm²
- Ultra-low power consumption ■ 65 mW average in tracking mode
- Various power save modes

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 TSI 6949 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



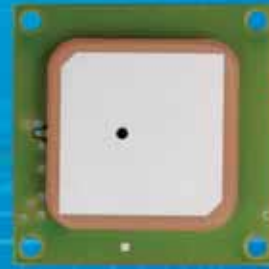
AI082-A



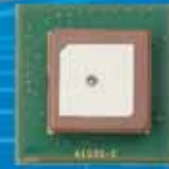
AI084-A



AI088-A



AI035-D



AI035-E



AI035-H

Smart Antenna Modules

GPS Receivers

	Supply voltage / V	Current draw @ I fix per sec / mA	Operating temperature / °C	Low Power Mode Trickle 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 ²
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 ²	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 AI082-A

PERFORMANCE

Channels	12 parallel tracking
Correlators	32,000 plus
Frequency	L1 - 1,575 MHz
Sensitivity	
Tracking	-157 dBm
Acquisition (cold start)	-142 dBm
Position accuracy (horizontal)	< 2.5 m CEP autonomous
Time To First Fix	
Hot start ¹⁾	< 1 s
Warm start ²⁾	< 35 s
Cold start ³⁾	< 37 s

COMMUNICATION

Standard GPS software	
NMEA message switchable	GGA, GSA, GSV, RMC, ZDA, GLL
Baud rate	19,200
Serial ports	1.8 V CMOS compatible
Tx0	NMEA output
Rx0	NMEA input

ENVIRONMENT

Temperature	
Operating	-30°C to +85°C
Storage	-40°C to +85°C
Humidity	Non-condensing

POWER

Input voltage	1.8 to 1.9 VDC
Current draw	
Tracking (trickle mode)	35 mA (typical)
Standby	16 µA (typical)

MECHANICAL

Dimensions	14.0 x 11.4 x 2.4 mm ³
	0.55" x 0.45" x 0.095"
Weight	1g / 0.035 oz.

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

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