

AI035-D

Positioning Products



No compromises - just the best GPS performance

With superb sensitivity and fast Time To First Fix, the AI035-D is the high performance GPS antenna solution for many applications. Featuring the SiRFStar III low power chip optimally merged with a patch antenna, one can integrate this module in the easiest way without in-depth RF know-how. With its own ground plane it optimizes sensitivity and independency of the surrounding electronics. Via a board-to-board connector, power is supplied and information is transmitted on an UART CMOS level interface. With the outstanding performance of the SiRFStar III chipset, obtaining your position is now easier than ever.

- Bench marking sensitivity ■ -159 dBm tracking
- Fastest TTFF (Time To First Fix) ■ < 35 s under cold start condition (typical)
- Ultra-low power consumption ■ 92 mW average in tracking mode
- Most accurate position ■ 2 m CEP with SBAS support
- Field replaceable ■ Standard power I/O connector

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.

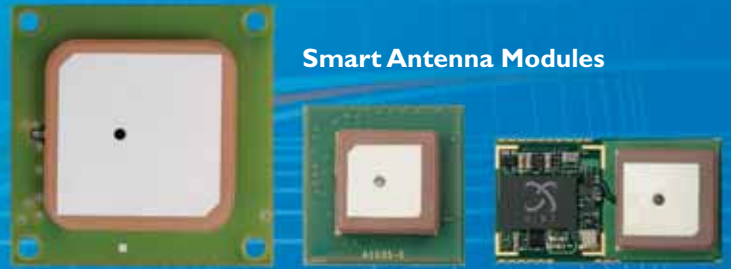
PRODUCTS SHOWN IN ACTUAL SIZE

GPS Receivers



AI080-A AI082-A AI084-A AI088-A

Smart Antenna Modules



AI035-D AI035-E AI035-H

GPS Receivers	Supply voltage / V	Current draw @ 1 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	■	■		■	■			■	■	■	■		
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

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
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 AI035-D

PERFORMANCE

Channels	20 parallel tracking
Correlators	200,000 plus
Frequency	L1 - 1,575 MHz
Sensitivity	
Tracking	-159 dBm
Acquisition (cold start)	-142 dBm
Position accuracy (horizontal)	< 2.5 m CEP autonomous < 2.0 m CEP SBAS
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, VTG, RMC, GLL
Baud rate	4,800 (default) to 115,200
Serial ports	3.3V 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.

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ENVIRONMENT

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

POWER

Input voltage	3.0 to 3.6 VDC
Current draw	
Acquisition	33 mA (typical)
Tracking	28 mA (typical)
Standby	20 µA (typical)

CONNECTOR

Data & power	Standard 1.27 mm (0.05") double row, low profile socket with 22 pins
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MECHANICAL

Dimensions	35.6 x 35.6 x 8.0 mm ³
	1.4" x 1.4" x 0.315"
Weight	12 g / 0.42 oz.

YOUR PARTNER

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