

A1084-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 A1084-A GPS receiver supports with its second antenna pin and on board antenna switch, whilst the A1084-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.

- Benchmarking 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 mm²
- Antenna ■ Passive and active antenna supported
- Dual antenna support ■ RF switch on A1084-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



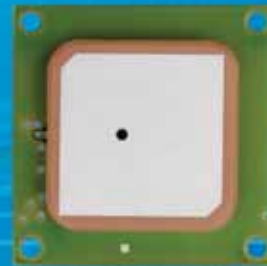
AI082-A



AI084-A/B



AI088-A



AI035-D

Smart Antenna Modules



AI035-E



AI035-H

| GPS Receivers | Supply voltage / V | Current draw @ 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 | ■ | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | 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 AI084-A/B

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⁾ | < 32 s |
| Cold start ³⁾ | < 35 s |

COMMUNICATION

| | |
|------------------------------|------------------------------|
| Standard GPS software | |
| NMEA message switchable | GGA, GSA, GSV, VTG, RMC, GLL |
| Baud rate | 4,800 (default) to 115,200 |
| Serial ports | 3.3 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

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

POWER

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

MECHANICAL

| | |
|-------------------|-----------------------------------|
| Dimensions | 15.2 x 15.2 x 2.4 mm ³ |
| | 0.6" x 0.6" x 0.1" |
| Weight | 1.2 g / 0.042 oz. |

YOUR PARTNER

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