

# Get your Position!

## A1029-C Miniaturized GPS Module

Providing accurate PVT (Position, Velocity and Time) information and fully equipped with almost countless functions and features, the A1029-C is the flexible GPS receiver module from Tyco Electronics. WAAS/EGNOS/MSAS is supported in order to improve position accuracy and assisted GPS data is received via serial interface to cut down start up times. In situations where the satellite signals are blocked, sensor signals that are connected to the module with a minimum of effort will help to further calculate positions (Dead Reckoning). Furthermore, the A1029-C offers an accurate one pulse per second (1PPS) signal synchronized to Universal Time (UTC).



- Highly sensitive ■ -156 dBm tracking
- Accurate positioning ■ 3 m CEP
- Fast TTFF (Time To First Fix) ■ < 60 s under cold start condition (typical)
- Temperature fluctuations compensated ■ TCXO technology
- SBAS support ■ WAAS, EGNOS, MSAS
- A-GPS support ■ Almanac, Ephemeris, Position, Time

### Performance

<b>Channels</b>	12 parallel tracking
<b>Frequency</b>	L1 - 1575 MHz
<b>Sensitivity</b>	
Tracking	-156 dBm
Acquisition	-138 dBm
<b>Position accuracy (horizontal)</b>	
Stand alone	3 m CEP
Differential <sup>1)</sup>	< 1 m CEP
<b>Time to first fix</b>	
Obscuration recovery <sup>2)</sup>	1 s
Hot start <sup>3)</sup>	< 3 s
Warm start <sup>4)</sup>	< 32 s
Cold <sup>5)</sup>	< 45 s

### Mechanicals

<b>Dimensions</b>	22 mm x 28 mm x 3.2 mm 0.87" x 1.10" x 0.12"
<b>Weight</b>	2 g, < 0.1 oz

### Power

<b>Input voltage</b>	3.0 to 3.6 VDC
<b>Current draw</b>	
Operational (1 fix/s)	< 50 mA (typical)
Standby	< 30 $\mu$ A (typical)
<b>Antenna supply via VANT</b>	
Voltage range	up to 5.2 V
Max. allowed current <sup>6)</sup>	50 mA
<b>Antenna current monitor</b>	
ANSTANT high	9 mA < $I_{ant}$ < 16 mA (typical)
ANSTANT low	$I_{ant}$ out of above specified range

### Environment

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

- 1) Assumes a benign multipath environment and differential corrections once per second.
- 2) The receiver's calibrated clock is not stopped, thus it knows precise time (to the  $\mu$ s level).
- 3) The receiver has estimates of time/date/position and valid almanac and ephemeris data.
- 4) The receiver has estimates of time/date/position and almanac.
- 5) The receiver has no estimate of time/date/position, and no recent almanac.
- 6) An external current limiter is suggested to avoid damage in fault conditions.

## Communications

Standard GPS Software	
NMEA message switchable	GGA, GSA, GSV, VTG, RMC
Baudrate (in baud)	4800 (default) to 57600
Geodetic datum	WGS84 standard and 258 map datums
Projection	UTM
Boot loader	Easy firmware update through serial port

Serial Ports	
Tx0	3.3V CMOS compatible NMEA output
Rx0	NMEA input
Tx2	Test report output
Rx2	RTCM input (DGPS)

Products shown in actual size



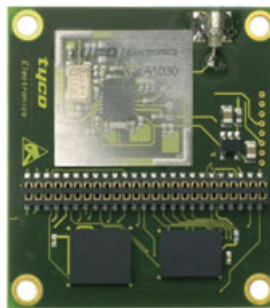
A1037-A



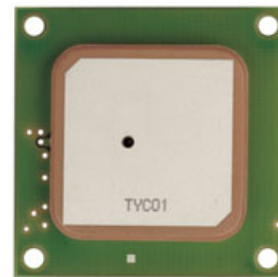
A1029-A/-C



A1080-A



A1030-A



A1035-C/-D

	1 PPS	Antenna active	Antenna passive	Antenna patch onboard	Antenna status detection	Assisted GPS	Connection plug-in	Connection solderable	Data logging	Dead reckoning	Differential GPS RTCM input	Flash, programmable	GPIO	GPS/UTC raw data	I2C interface	Memory free flash (byte)	Memory free SRAM (byte)	Processor: available power	ROM	SBAS support	SPI interface	TCXO	UART NMEA	USB interface	UTM projection
A1037-A	●	●				●		●											●	●		●	●		
A1029-A	●	●	●		●	●		●		●	●	●	●	●	●	80k/16k	3 MIPS		●	●		●	●		●
A1029-B	●	●	●		●	●	●			●	●	●	●	●	●	80k/16k	3 MIPS		●	●		●	●		●
A1029-C	●	●	●		●	●		●		●	●	●	●	●	●	80k/16k	3 MIPS		●	●		●	●		●
A1029-D	●	●	●		●	●	●			●	●	●	●	●	●	80k/16k	3 MIPS		●	●		●	●		●
A1080-A	●	●				●		●						●					●	●		●	●		
A1030-A	●	●	●		●	●	●		●	●	●	●	●	●	●	4M/2M	3 MIPS		●	●		●	●	●	●
A1035-C		●		●		●	●					●		●		80k/16k	3 MIPS		●	●		●	●		●
A1035-D	●	●		●		●	●						●						●	●		●	●		

● Standard firmware: revision 1xx      ● Standard firmware: revision 2xx      ● With custom firmware support

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**Headquarters EMEA:**  
**Tyco Electronics**  
**Power Systems**  
 Finsinger Feld 1  
 85521 Ottobrunn, Germany

Tel.: +49 (0)89 6089-838  
 Fax: +49 (0)89 6089-835

gps@tycoelectronics.com  
 www.tycoelectronics.com/gps

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