



# Get your Position!

# A1029-D Easy plug-in GPS Module

The A1029-D is the plug-in version of Tyco Electronics' fully equipped and flexible GPS receiver A1029-C. The A1029-D allows an easy plug-in to motherboards, shows durability towards shock and vibration, and provides comfortable antenna connection via cable and a standard SMA connector. Beyond NMEA information the module also provides an accurate one pulse per second (1PPS) signal synchronized to Universal Time (UTC). It supports WAAS/EGNOS/MSAS for even higher position accuracy and is capable of interpreting assisted GPS data. 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).



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**

Channels	12 parallel tracking
Frequency	L1 - 1575 MHz
Sensitivity	
Tracking	-156 dBm
Acquisition	-138 dBm
Position accuracy (horizontal)	3 m CEP
Stand alone	3 m CEP
Differential <sup>1)</sup>	< 1 m CEP
Time to first fix	
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

- 1) Assumes a benign multipath environment and differential corrections once
- 2) The receiver's calibrated clock is not stopped, thus it knows precise time (to the us level).
- 3) The receiver has estimates of time/date/position and valid almanac and ephemeris

#### **Power**

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

- 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	3.3V CMOS compatible
TxO	NMEA output
Rx0	NMEA input
Tx2	Test report output
Rx2	RTCM input (DGPS)

# **Connectors**

Data power	Standard 1.27 mm (0.05") double row low profile socket with 36 pins
Antenna	SMA female bulk-head

# **Environment**

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

# **Mechanicals**

Dimensions	33 mm x 45.7 mm x 4.5 mm
	1.3" x 1.8" x 0.18"
Cable length	~ 100 mm, 4"
Weight	11 g, 0.5 oz

	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) 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																					•			

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