



Power Meter Monitor

Business and Mission-

Critical Solutions Provider

GPS ANTENNA TO RS485 CONVERTERS

Data Sheet



Model: PMM0507

Document: Data Sheet

Document version: 1.0

Date: August 2021

KEY FEATURES

- Industrial standard GPS antenna with extremely high sensitivity: -161dBm
- 2x RS485 interface
- High-precision TCXO of KDS 0.5PPM
- Built-in SQL flash to set the parameters as required
- Optional frequency of data refreshing: 1Hz-10Hz
- Supports A-GPS service: Assist Now Online and Assist Now Offline
- Baud rate 9600bps(default) [supports:4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600] TTL
- Hybrid engine: GPS, GALILEO, SBAS (WAAS, EGNOS, MSAS, GAGAN)
- Compacted size
- IP65 Protection level
- -40 to 80 °C Operating temperature
- 5% to 90% Non-condensing Relative Humidity

DESCRIPTION

PMM0705 is an innovative, and simple to set up GPS Antenna to RS485 Converters. PMM0705 can detect longitude, latitude, altitude, speed, orientation with high accuracy due to his extremely high sensitivity, it has the ability to communicate with up to 32 devices on bus over RS485 port.

It is especially designed to meet all power substations and PV plants requirements. Furthermore, it covers all field standards of power, reliability, easy configuration and long-lasting life.

TECHNICAL SPECIFICATIONS

Technical Parameters

Chip	UBX-M8030-KT
C/A (Data Rate)	1.023MHz
Receiving Frequency	L 1 [1575.42MHz]
Receiving Channel	56
S11 SWR	≤ 1.3
S21 Log Mag	$\geq 20\text{db}$
S11 Smith	$50\Omega \pm 5\%$

Positioning Properties

Horizontal Position	Autonomous <2.5m on average, SBAS < 2.0m on average
Speed	<0.1 m/s
Timing Accuracy	30ns
Coordinate System	WGS-84
Max Speed	500m/s
Accelerate	$\leq 4\text{G}$

Electrical Properties

Sensitivity	Tracking: -162dBm, capturing: -160dBm, Cold Start: -148dBm
A-GPS	3 seconds
Optional data baud	9600bps (by default) [optional: 1200,2400,4800, 19200, 38400, 57600, 115200, 230400,460800,921600]
Optional output code	NMEA 0183 V3.0(GGA, GSA, GSV, RMC, VTG, GLL)
Working Environment	-40°C to 85°C

RS485 interface

Supports baud rate	Tracking: -162dBm Capturing: -160dBm Cold Start: -148dBm
Transmittance distances	3 seconds
Operating temperature	-40 to 800C
terminal resistors	120 Ohm
Support multi-machine communication	Allowing access for up to 32 devices on bus

Power Parameters

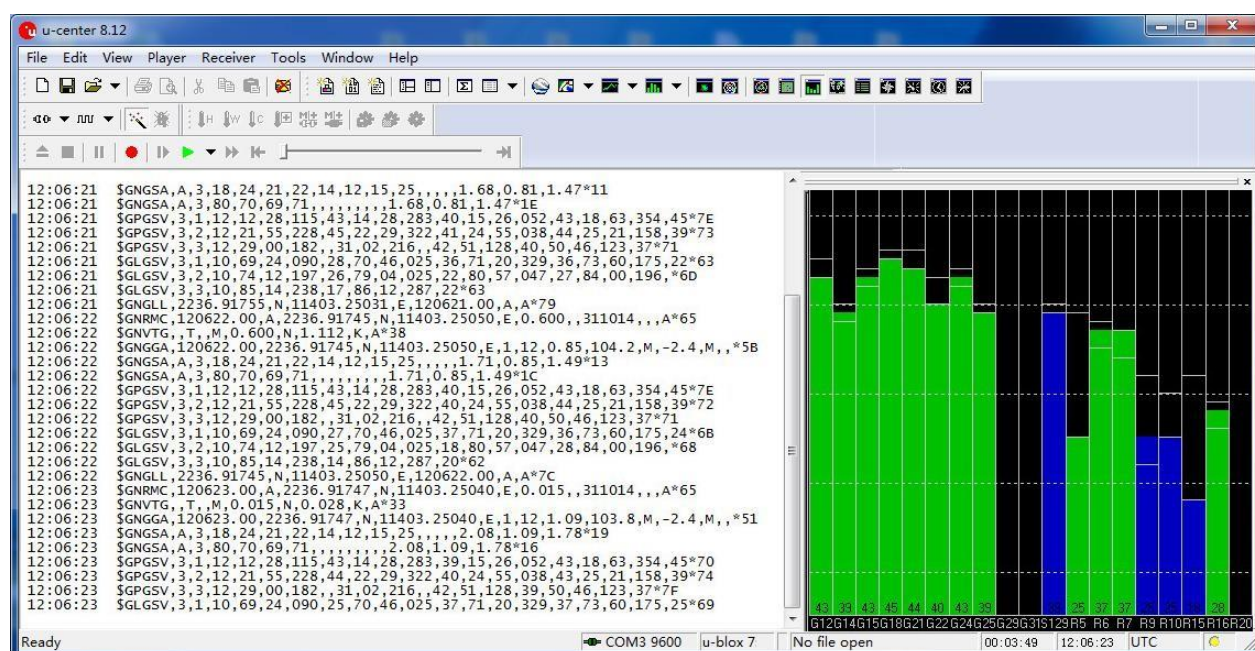
Power Supply Options	9-56 VDC
----------------------	----------

Physical Characteristics

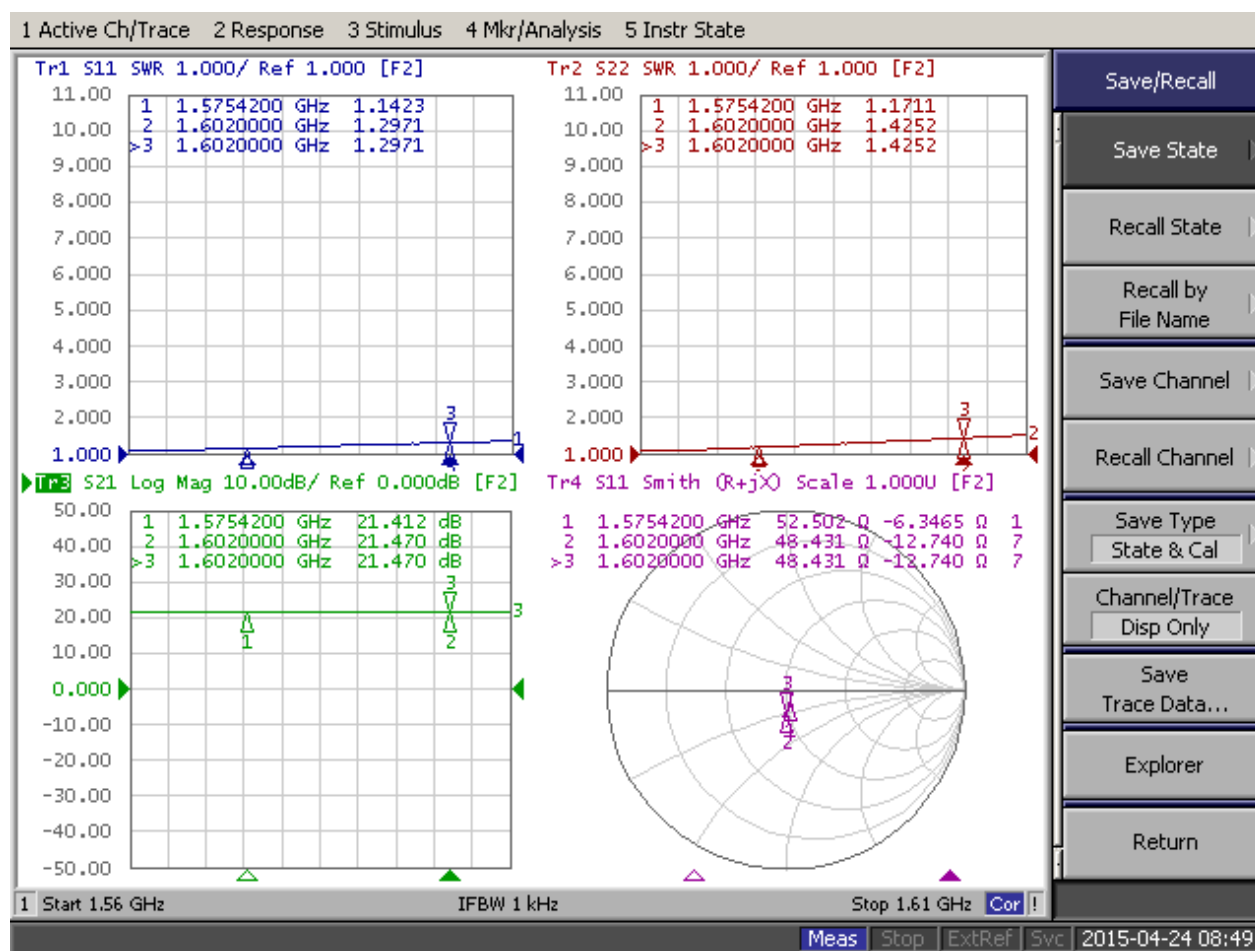
Housing	Plastic
Degree of protection	IP165
Dimensions	105 x 105 x 65 mm (4.1 x 4.1 x 2.56 inch)
Certifications	RoHS, CE and FCC

Signal Testing and RF Property

• GPS Signal Testing



• RF Property



NMEA0183 Protocols

- NMEA 0183 output

GGA: time, position, position

typeGLL: latitude, longitude, UTC

GSA: GPS receiver operating mod, satellites for positioning, DOP

valueGSV: Available GPS satellites information, azimuth, elevation,

SNR RMC: time, date, position, speed

VTG: the speed information on ground

MSS: signal strength

Note: the output information and frequency are determined by your setting.

- Examples

\$GPGGA,060556.00,2236.91418,N,11403.24669,E,2,08,1.02,115.1,M,-2.4,M,,0000*43

\$GPGLL, 2236.91418, N, 11403.24669, E, 060556.00, A, D*64

\$GPGSA,A,3,24,22,14,12,15,25,18,42,,,,,2.20,1.02,1.95*00

\$GPGSV,3,1,11,12,31,118,39,14,30,289,44,15,20,059,41,18,68,007,43*75

\$GPGSV,3,2,11,21,48,208,,22,39,325,46,24,46,036,44,25,23,160,31*73

\$GPGSV,3,3,11,31,03,218,,42,51,128,35,50,46,122,36*4F

\$GPRMC,060556.00,A,2236.91418,N,11403.24669,E,0.13, 309.62,130214,,,D*7F

\$GPVTG, 309.62, T, M, 0.13, N, 0.2, K*6E