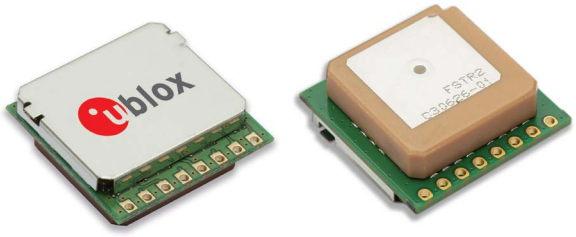
PAM-7Q

u-blox 7 GPS antenna module

Highlights

- Embedded GPS antenna
- Excellent antenna performance
- Low power consumption
- Form-factor compatible with UP501
- Easy integration into design



Bottom view
(shield side)

Top view
(patch antenna side)

PAM-7Q:
22 x 22 x 8 mm

Product description

The u-blox PAM-7Q patch antenna module has the exceptional performance of the u-blox 7 GNSS engine and delivers high sensitivity and minimal acquisition times in an industry proven form factor.

Incorporating the PAM-7Q into customer designs is simple and straightforward, thanks to the embedded antenna, low power consumption, simple interface, and sophisticated interference suppression that ensures maximum performance even in GPS-hostile environments.

The 18 x 18 mm patch antenna of PAM-7Q provides RHCP polarization, which is not achievable with smaller patch antenna elements. The simple design and easy interfacing keeps installation costs to a minimum.

PAM-7Q targets industrial and consumer applications that require small and cost efficient smart antenna solutions. It is form factor compatible with UP501 module, allowing the upgrade of existing designs with minimal effort.

PAM-7Q modules use GPS chips qualified according to AEC-Q100 and are manufactured in ISO/TS 16949 certified sites. Qualification tests are performed as stipulated in the ISO16750 standard: “Road vehicles – Environmental conditions and testing for electrical and electronic equipment”. PAM-7Q complies with green / halogen-free standards.

Product selector

Model	Type								Supply		Interfaces				Features										
	GPS / QZSS	GLONASS	Galileo	BeiDou	Timing	Dead Reckoning	Precise Point Positioning	Raw Data	2.7 V – 3.6 V	3.0 V – 4.2 V	UART	USB	SPI	DDC (I²C compliant)	Programmable (Flash)	Data logging	Additional LNA	Additional SAW filter	RTC crystal	Internal oscillator	Antenna supply	Antenna short circuit detection / protection	Antenna open circuit detection pin	Timepulse output	External interrupt / Wakeup
PAM-7Q	•								•		•			•			++	++	•	T				•	
UP501	•									•	•				•		++	++	•	T				•	

T = TCXO

++ = optimized for performance

Features

Receiver type	56-channel u-blox 7 engine GPS/ QZSS L1 C/A SBAS: WAAS, EGNOS, MSAS	
Navigation update rate	up to 10 Hz	
Accuracy	Position SBAS	2.5 m CEP 2.0 m CEP
Acquisition	Cold starts: Aided starts: Reacquisition:	29 s 5 s 1 s
Sensitivity	Tracking: Cold starts: Warm starts:	–161 dBm –147 dBm –147 dBm
Assistance	AssistNow Online AssistNow Offline AssistNow Autonomous OMA SUPL & 3GPP compliant	
Oscillator	TCXO	
RTC crystal	Built-In	
Anti jamming	Active CW detection and removal, onboard SAW band pass filter	
Memory	Onboard ROM	

Electrical data

Supply voltage	2.7 V to 3.6 V
Digital I/O voltage level	2.7 V to 3.6 V
Power Consumption	22 mA @ 3 V (Continuous)
Backup Supply	1.4 V to 3.6 V

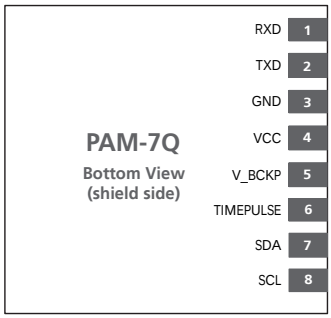
Interfaces

Serial interfaces	1 UART, 1 DDC (I²C compliant)
Digital I/O	Configurable timepulse
Timepulse	Configurable 0.25 Hz to 1 kHz
Protocols	NMEA, UBX binary, RTCM

Package

8 pin contact header: 22 x 22 x 8 mm, 9 g

Pinout



Environmental data, quality & reliability

Operating temp.	–40° C to 85° C
Storage temp.	–40° C to 85° C

RoHS compliant (lead-free)

Green (halogen free)

Qualification according to ISO16750

Manufactured in ISO/TS 16949 certified production site

Uses u-blox 7 chips qualified according to AEC-Q100

Support products

u-blox 7 Evaluation Kits:

Easy-to-use kits to get familiar with u-blox 7 positioning technology, evaluate functionality, and visualize GPS performance.

EVK-7PAM:	u-blox 7 GPS Evaluation Kit, supports PAM-7Q

Ordering information

PAM-7Q-0	u-blox GPS Antenna Module, TCXO, SAW, LNA, 22 x 22 mm, 50 pcs/tray

Available as samples on trays.

Contact us

For contact information, see www.u-blox.com/contact-us.