AQT_GNSS PATCH MODULE

User Guide V1.0

Abstract

Easy Integration manual for the GPS with Patch antenna module

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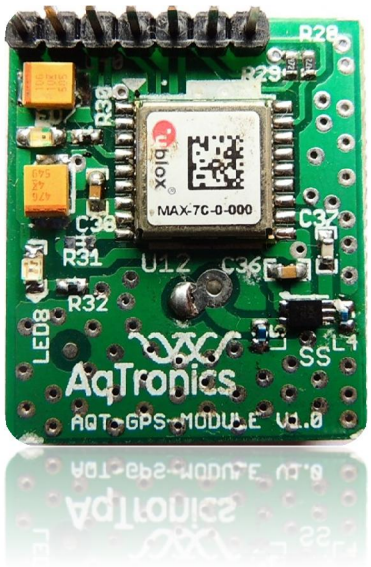
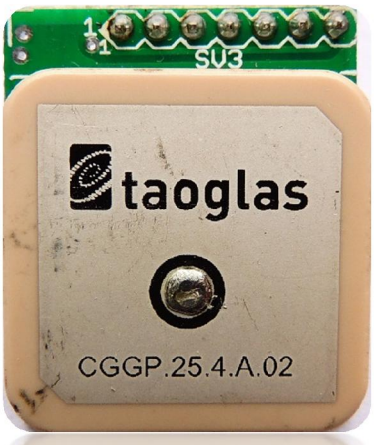
Overview





- ✓ *Plug and Play based solution*
- ✓ *U-Blox based GPS engine for highly accurate positioning.*
- ✓ *Easy integration with U-Blox Wireless modules using Dedicated DDC Channel*
- ✓ *GPS,GLONASS & QZSS hardware ready solution.*
- ✓ *Small footprint with a practical dimension 25X30X7.5mm*

GPS Unit: U-Blox MAX 7C

MAX-7 series:
9.7 x 10.1 x 2.5 mm

- ✓ Small and low power multi-GNSS modules
- ✓ Ultra compact MAX form factor (9.7 x 10.1 x 2.5 mm)
- ✓ Sophisticated RF-architecture and interference suppression ensure maximum performance even in GPS-hostile environments.
- ✓ The DDC (I2C compliant) interface provides connectivity and enables synergies with U-Blox SARA wireless modules.
- ✓ U-Blox 7 modules use GPS/GNSS 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”. MAX-7 complies with green/halogen free standards.

Antenna **Taoglas CGGP.25.4.A.02**

- ✓ This miniaturized ceramic GPS patch antenna is based on smart XtremeGain™ technology.
- ✓ It is mounted via pin and double-sided adhesive and has been selected as optimal solution for the customer device environment.

- ✓ 4mm thick GPS/GLONASS Patch Antenna, 1575-1610MHz operational frequencies.

- ✓ Structural Ceramic Dimension 25.1 x 25.1 x 4mm with a operational Temperature -40°C to 105°C at a Humidity Non-condensing 65°C 95% RH.

ELECTRICAL	
Center Frequency	1600MHz ± 3MHz
Bandwidth	15 MHz min Return Loss <-10dB
VSWR	1.5 max
Gain at Zenith	+5.0 dBic typ.
Gain at 10° Elevation	-1.0 dBic typ.
Axial ratio	3dB Max
Polarization	RHCP
Impedance	50 ohms

DC adapter specification (For Board):

The following specification are recommended,

Voltage Spec - 3V (@100mA)

VOLTAGE AND CURRENT SPECIFICATIONS OF MAX 7C Module

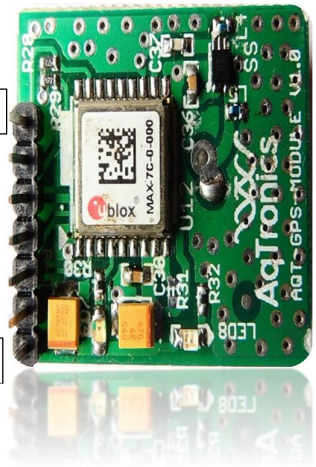
Power Supply	1.65 to 3.6V
Digital I/O voltage level	1.65 to 3.6V
Power Consumption	47mW @ 1.8V (Continuous)
	51mW @ 3V (Continuous)
	14mW @ 1.8V (Power Save Mode (1 Hz))
Backup Supply	1.4 to 3.6V

Antenna Specification (Electrical)

Center Frequency	: 1600MHz ± 3MHz
Bandwidth	: 15 MHz min Return Loss <-10dB
VSWR	: 1.5 max
Gain at Zenith	: +5.0 dBic typ.
Gain at 10° Elevation	: 1.0 dBic typ.
Axial ratio	: 3dB Max
Polarization	: RHCP
Impedance	: 50 ohms

HARDWARE CONNECTIONS:

MAX 7C Module Pin	Pin Description	SV3 Pin Number
GPS_SCL	DDC Channel SCL	Pin 1
GPS_SDA	DDC Channel SDA	Pin 2
V_Backup	3V Battery Input	Pin 3
GPS_RXD	TTL Logic Input	Pin 4
GPS_TXD	TTL Logic Output	Pin 5
GPS_GND	Common Ground	Pin 6
GPS_Vcc	3.3V @ 100mA	Pin 7



Bibliography

U-Blox MAX 7:

DATASHEET:

http://www.u-blox.com/images/downloads/Product_Docs/MAX-7_DataSheet_(GPS.G7-HW12012).pdf

HARDWARE INTEGRATION MANUAL:

http://www.u-blox.com/images/downloads/Product_Docs/MAX-7_NEO-7_LEA-7_HardwareIntegrationManual_%28GPS.G7-HW-11006%29.pdf

RECIEVER DESCRIPTION:

http://www.u-blox.com/images/downloads/Product_Docs/u-blox7-V14_ReceiverDescriptionProtocolSpec_Public_%28GPS.G7-SW-12001%29.pdf

Taoglas Antenna datasheet:

DATASHEET:

http://www.taoglas.com/images/product_images/original_images/CGGP.1600.25.4.A.02%20GPS%20GLONASS%20Patch.pdf