THEO-P173

Standard | Professional | Automotive

SHORT RANGE

Host-based V2X transceiver module

Highlights

- V2X transceiver module for infrastructure and vehicles
- Compliance with WAVE and ETSI ITS G5 for US and Europe operation
- Single-channel 802.11p diversity
- Multi-channel operation
- Communication range of more than 1 km

THEO-P173
30.0 x 40.0 x 4.0 mm

Product description

THEO-P173 is a compact, embedded transceiver module that facilitates development of electronics for Vehicle-to-Everything (V2X) communication systems. This module is for applications such as traffic safety, intelligent traffic management and entertainment. It provides superior performance in comparison with V2X systems based on consumer-grade Wi-Fi chipsets (COTS), especially at high vehicle speeds and in non-line-of-sight conditions.

THEO-P173 includes an integrated MAC/LLC/Baseband processor and the required RF front-end components. It is connected to a host processor through the USB interface.

Key features

- Compliance with V2X both in Europe and US
- Best performance radio
- Multiple operating modes with single-channel and multiple channels
- Transmit mask meeting IEEE 802.11p Class C (5 GHz band)
- Integrated security acceleration

Product selector

Model	Radio			Interfaces				Power	Features		Grade		
	802.11p	Max output power at antenna pin	Antenna type	USB 2.0	GPIO	1PPS	SPI[1]	Power supply: 3.3 V and 5 V	Single channel with antenna diversity	Multi-channel operation	Standard	Professional	Automotive
THEO-P173	•	23 dBm	2p	•	1	•	•	•	•	•			

2p = Two pins for separate external antennas

[1] SPI available in version 02A

Features

Standards conformance	IEEE 802.11p - 2010 ETSI ES 202 663 IEEE 1609.4 - 2010
Frequency band	5.9 GHz
Antenna	2 antenna pins for external 5 GHz antennas
Output power	-10 to +23 dBm
Receive sensitivity	-97 dBm
Data rates	3 to 54 Mbps

Software features

Operating modes: Single radio
- Single channel
- Multiple channels

Radio channel measurements
- Channel utilization
- Channel active ratio
- Per-channel statistics
- Received signal and noise power levels

Electrical data

Power supply	3.3 V and 5 V
Power consumption	4 W (max)

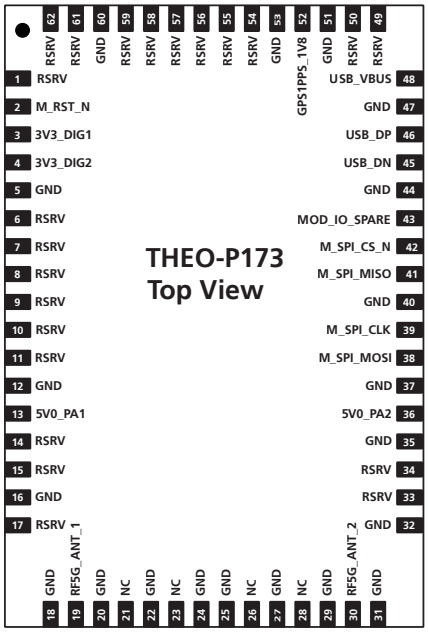
Interfaces

Host interfaces	USB 2.0 and SPI[1]
Other interfaces	GPIO and 1PPS

[1] SPI Available in version 02A

Package

Dimensions	30.0 x 40.0 x 4.0 mm
Pin-out	62 pin LCC (Leadless Chip Carrier)



Environmental data, quality & reliability

Operating temperature –40 °C to +85 °C

According to Baseband/radio AEC-Q100 and ISO 16750-4

Certifications and approvals

FCC

Support products

The THEO-P173 evaluation kit includes an evaluation board with full access to the module interfaces. The board has SMA connectors for connecting external antennas.

EVK-THEO-P173	Evaluation kit for THEO-P173

Product variants

THEO-P173	Professional grade

Note: THEO-P173 was formerly known as Cohda MK5.

Further information

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

For more product details and ordering information, see the product data sheet.