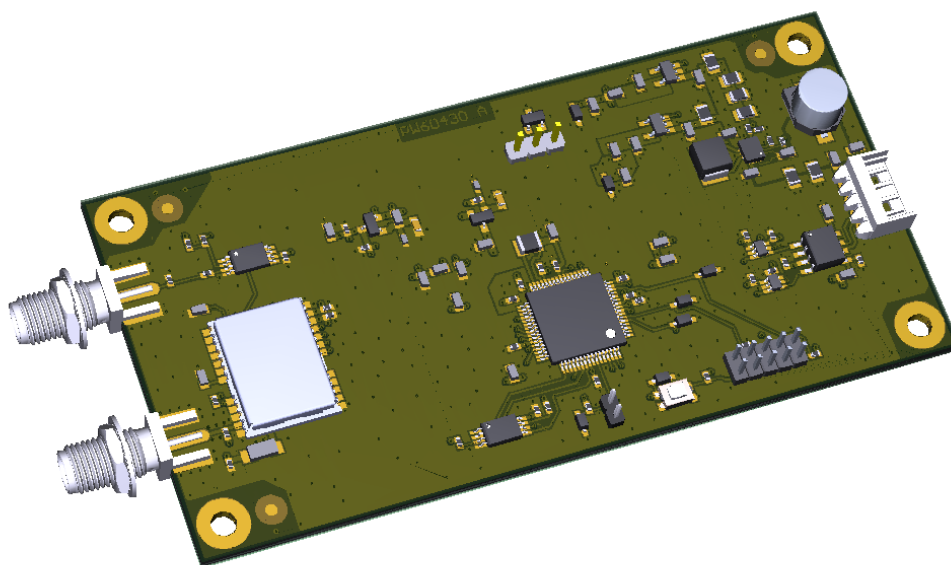


Avalon AE6043 CANbus GNSS Board

- Robust, metre-level GNSS positioning performance
- Concurrent reception of GPS, Galileo, BeiDou & GLONASS constellations
- Configurable time-pulse output
- Positioning accuracy: down to 2.0m CEP
- 0.3-degree dynamic heading accuracy
- 0.05m/s velocity accuracy
- 24 to 42 sec cold-start acquisition
- 2 sec hot-start acquisition
- CAN bus connectivity



AE6043 CANbus GNSS board
(Image for representation purposes only – subject to change)

Overview

The Avalon AE6043 is a GNSS receiver module which can receive and track multiple GNSS systems. The module can be configured for concurrent GPS, GLONASS, Galileo and BeiDou, plus SBAS and QZSS reception. If power consumption is a key factor, then the receiver can be configured for a subset of GNSS constellations.

Control of, or communication with, the Avalon AE6043 is achieved using a CANopen-compatible protocol over a standard, 120-ohm differential CAN bus connection.

GNSS Feature Description

- Assisted GNSS: AssistNow Live Orbits, AssistNow Predictive Orbits and AssistNow Autonomous
- Backup modes: Hardware backup mode, software backup mode
- Data batching: Autonomous tracking up to 5 min.
- Geofencing: Up to 4 circular areas
- Power-save modes: on/off, cyclic
- Odometer: Measure travelled distance - with support for different user profiles
- Anti-jamming: RF interference and jamming detection and reporting; Active GNSS in-band filtering
- Anti-spoofing: Spoofing detection and reporting

TECHNICAL SPECIFICATIONS

Supported GNSS Constellations

GPS / QZSS	GLONASS	Galileo	BeiDou
L1C/A (1575.42MHz)	L1OF (1602 MHz + k*562.5 kHz, k = -7,..., 5, 6)	E1-B/C (1575.42 MHz) B1I (1561.098 MHz)	E1-B/C (1575.42 MHz) B1I (1561.098 MHz)

GNSS Assistance Services

AssistNow™ Live Orbits	AssistNow™ Predictive Orbits	AssistNow™ Autonomous
Supported	Supported	Supported, enabled by default

Supported Augmentation Systems

SBAS	QZSS	IMES	Differential GNSS
EGNOS, GAGAN, MSAS and WAAS supported	L1S supported	Not supported	RTCM 3.3

TECHNICAL SPECIFICATIONS

Specifications, continued

	Minimum	Typical	Maximum	Notes
DC supply voltage	2.5V		15V	
Supply current (Acquisition)			60mA	Depends on input voltage. All 4 constellations enabled. Current may peak to 110mA
Supply current (Continuous tracking mode)			45mA	Depends on input voltage. All 4 constellations enabled.
Number of RF Channels		1		
Antenna connector		SMA		
Antenna connection impedance		50 ohms		
Timestamp	0.25Hz		10MHz	Configurable
Control	CANopen-compatible control and data transfer. User to attach twisted pair cable of choice			
Operating temperature range	-40°C to +85°C			
Storage temperature range	-40°C to +85°C			
Dimensions	PCB size: 100mm x 50mm. Length, including connectors: 112.4mm Overall, maximum height: 10.8mm			
Weight	TBC			

Technical drawing of the PCB layout showing top and side views with dimensions.

Top View Dimensions:

- Overall width: 100mm
- Overall height: 50mm
- Left side mounting holes: 2 x 6.19mm
- Left side mounting holes: 36mm
- Left side mounting holes: 15.6mm
- Bottom left mounting hole: 4mm
- Bottom right mounting hole: 4mm
- Bottom right mounting hole: 96mm
- Bottom right mounting hole: 27mm
- Bottom right mounting hole: 17mm
- Bottom right mounting hole: Ø3.2mm

Side View Dimensions:

- Top view: 1.94mm
- Bottom view: 1.16mm
- Right side view: 3.72mm