CML Microcircuits
COMMUNICATION SEMICONDUCTORS

Product Preview

PP/1000/1 September 2017

VDES1000

VHF Data Exchange System - Module

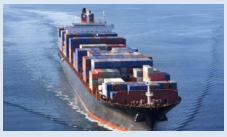
The VDES1000 module is a complete marine VHF Data Exchange System (VDES) Software Defined Radios (SDR) solution. Implemented using state-of-the-art technology, it provides a very tight integration, with industry-leading high performance and unsurpassed flexibility in a very small form factor.

Features

- Software Defined Radio (SDR) Solution
- Complete VDES solution
  - Fully compliant AIS Class A transceiver
  - Fully compliant VDES (ASM + VDE)
- Upgradeable and future proof
- OEM and ODM options available
  - Complete OEM module
  - ODM reference design (licence/Royalty business model)
- Output power: 12.5Wrms (25W peak)
- RF Range covered: 156.025 - 162.025 MHz
- Hardware interfaces:
  - 6 x isolated RS442
  - 1 x NC relay output
  - Ethernet, 1000 base-T
- Single supply: 24V
- Small volume solution (165mm x 100mm x 30mm)

Applications

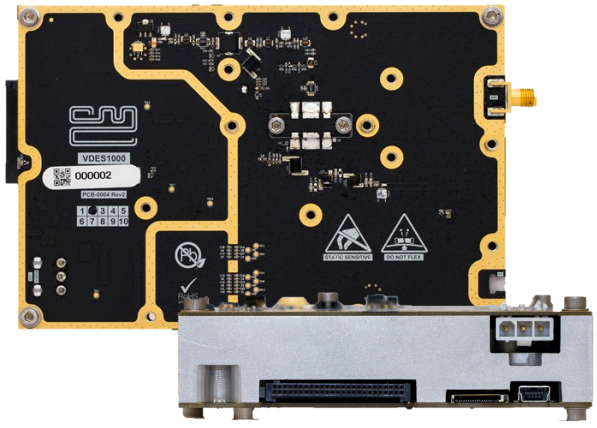
- Ship station (mobile) installation
- Coastal station (base station) installation
- AIS Class A transceiver
- ASM transceiver
- VDE transceiver
- Complete VDES Transceiver (AIS class A + ASM + VDE + GPS)



The VDES1000 is designed to realise a fully compliant multi-channel AIS Class A, ASM and VDE transceiver. The module integrates an isolated power supply, high Power Amplifier (PA), Low Noise Amplifier (LNA), digital baseband processing and protocol handler for AIS and VDE.

The VDES1000 module is designed to be easily incorporated into an existing housing, enabling a speedy development cycle to a manufacturer's end product.

SDR is at the heart of the VDS1000; all baseband processing is performed in software therefore; the module can be upgraded by means of a software update. This feature ensures that the VDES1000 can adapt to changes and evolving specifications without going through expensive development cycles.



VDES1000 Module

VDES1000 Advantage

- Ready-to-go VDES module
- State-of-the-art SDR approach
- Industry leading performance
- Future proof by design
- Easily installed in existing enclosures
- Design verified and certification ready

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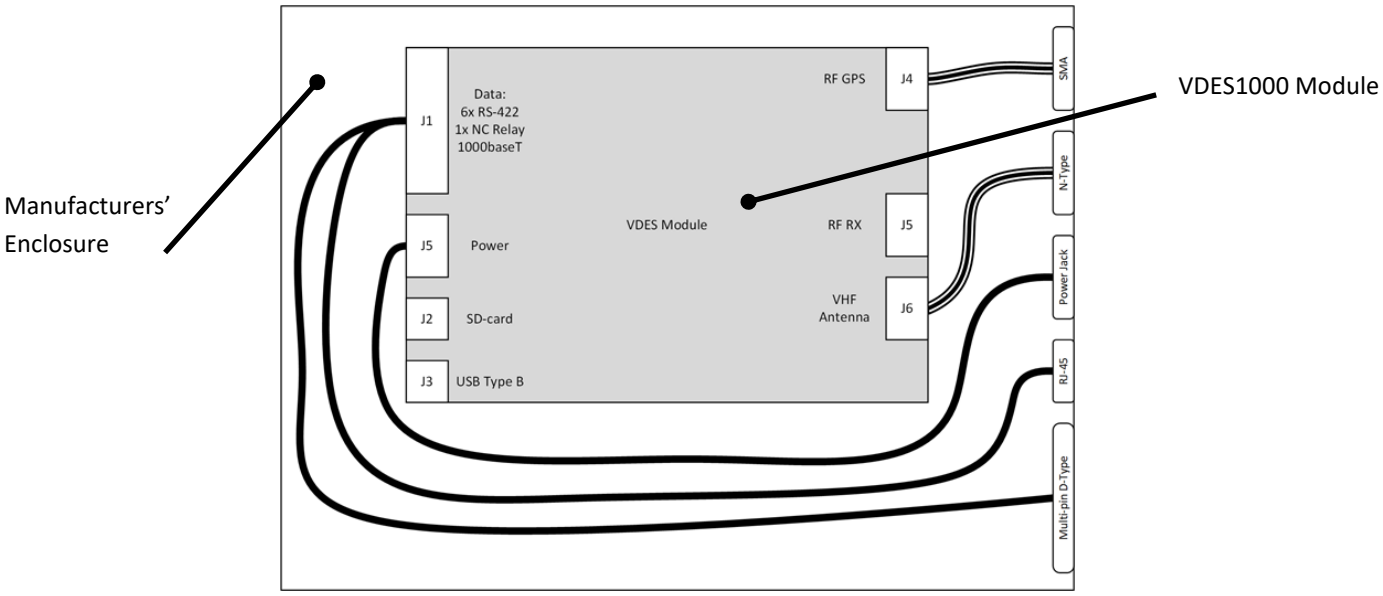
Applicable standards

Designed with compliance in mind, the VDES1000 module sets the standard.

Function	Standard	VDES1000
RF Transmitter	ITU-R M.1371-4/Annex 2-2 IEC 61993-2	✓ ✓
RF Receiver	ITU-R M.1371-4/Annex 2-2 IEC 61993-2	✓ ✓
Hardware environmental specifications	ITU-R M.1371-4/Annex 2-2 IEC 60945 (category b, Protected) IEC 61993-2	✓ ✓ ✓
Hardware EMC specifications	ITU-R M.1371-4/Annex 2-2 IEC 60945	✓ ✓
AIS PHY layer	ITU-R M.1371-4/Annex 2-2 IEC 61993-2	✓ ✓
AIS MAC layer	ITU-R M.1371-4/Annex 2-3.1 IEC 61993-2	✓ ✓
VDE modulation (PHY)	ITU-R M.2092-0	✓
Advanced diagnostics	Alarms, Events, Statistics, Logs	✓
M2M interface	Configuration, Control and Diagnostics	✓
Data interface	IEC 61162-1 IEC 61162-2 IEC 61162-450 NMEA 0183 version 4	✓ ✓ ✓ ✓ ✓
GNSS	GPS IEC 61108-1	✓
Security	Device software protection including secure upgrade capability	✓

Typical Application

This small compact module can be easily installed into existing enclosures.



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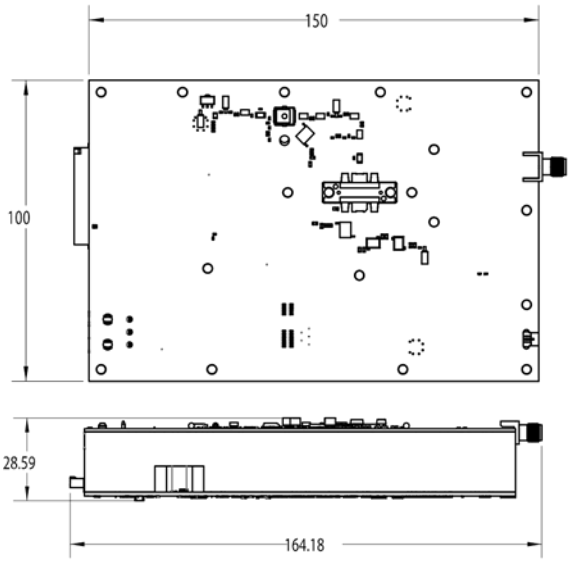
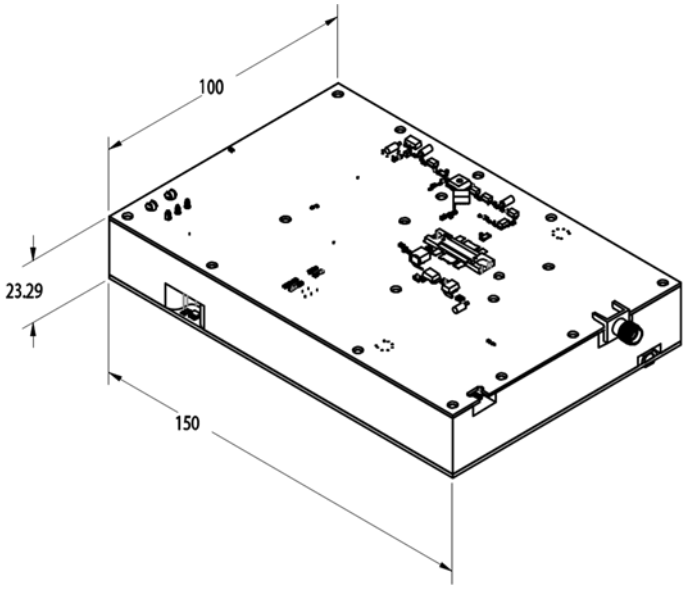
Dimensions





Documentation

Website

- Product Preview

Technical Portal (Contact CML for access)

- Datasheet/User manual
- Evaluation/demonstration software support tools
- Software updates

Ordering Information

- VDES1000 - Contact CML now

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