VA10800
High Temperature Data Acquisition
Evaluation and Reference Design Kit
HT-DAB-1

MCU-based high temperature data acquisition system using 32-bit ARM®
Cortex®-M0 processor. Suitable for rapid prototyping or as a reference design.
Specified for 200°C operation.

BOARD FEATURES
- Evaluation Board comprising of PCB and Board Support Package
  - All components and PCB rated and tested for 200°C operation
  - PCB aspect ratio suitable for downhole vessels
  - PCB dimensions – 1.0” x 11.5”
  - Micro D 15-S and D 21-S connectors
  - Three AD7981 16-bit, 600 ksp ADCs (one of the ADCs is multiplexed with eight input channels)
  - ADG798 multiplexer and ADR225 voltage reference
  - TTL UART communications
  - Boot flash, system clock and power supplies
  - 85dB SINAD using 2.5 V reference with no missing codes
  - ADC conversions down to 2.3μS for non-multiplexed channels and 10μS for multiplexed channels
  - 16 kbytes conversion result buffer
  - IDC header connector to facilitate easy probing
  - JTAG debug connector for MCU firmware programming

SOFTWARE
- Board Support Package (BSP)
  - Example software to demonstrate all peripherals
  - CMSIS compliant
- VA10800 supported by Keil™ MDK-ARM microcontroller software kit, IAR Systems Embedded Workbench, iSYSTEM winIDEA.
- Firmware built upon FreeRTOS operating system for simple incorporation of tasks

KEY MCU FEATURES
- VA10800 32-bit ARM® Cortex®-M0 MCU
  - Manufactured with HARDSIL® technology
  - Clock rate up to 50MHz
  - 32KB on-chip data SRAM
  - 128KB on-chip program memory SRAM
  - 24 general purpose counter / timers
  - 56 Dedicated general purpose I/O (GPIO) pins
  - 2 x UARTs
  - 3 SPIs (two master / slave, one master only)
  - 2 x I2Cs

REFERENCE DESIGN SUPPORT
- PCB layout files
- VA10800 firmware source code
- PC data logging and display software (open source)
- Schematic diagram
- Bill of materials

For more information, contact below or visit our web site at www.voragotech.com

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Rev 0.4
DEVELOPMENT BOARD ORDERING INFORMATION

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<th>Description</th>
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<th>Features</th>
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<tbody>
<tr>
<td>Development</td>
<td>HT-DAB-1</td>
<td>VA10800 microcontroller based precision multi-channel analog sensor data</td>
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<tr>
<td>Board</td>
<td></td>
<td>acquisition and control system rated to 200 °C</td>
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HT-DAB-1 DEVELOPMENT BOARD BLOCK DIAGRAM

Vp - Can be 3.3V for single supply operation or up to 5V.

Vm - Can be GND for single supply operation (will limit input signal headroom) or down to -5V.