



iRDC

intelligent Remote Data Concentrator



The intelligent Remote Data Concentrator (iRDC) is a small, lightweight, conduction cooled embedded computer unit. It is suitable for aircraft installation or demonstrators and provides analog, ARINC-664/AFDX®, discrete and field bus interfaces. The iRDC is based on the AcQ International LpDAS technology, which enables flexible I/O configurations. The iRDC software contains a configurable I/O router, autonomous system monitoring and health reporting. Furthermore, the unit can host user applications which add custom functionality to the platform. An ARINC-653 API is available for user applications, which makes it easy to write and port software to the iRDC, including SCADE® applications.

Configuration by means of XML-files makes the iRDC a flexible platform and a readily available solution to challenging protocol conversion, monitoring, data logging and control problems.

Architecture

At the heart of the iRDC, a user programmable PowerPC® processor runs the software application and controls the various interfaces and avionics data buses. Hardware interfaces are integrated into an FPGA in order to make full use of the processor capabilities for software applications. Furthermore, the iRDC integrates an Analog to Digital Converter card (including frequency measurement) and an AFDX® End System card.

Software

PikeOS, a real-time operating system, is available on the iRDC platform. PikeOS supports ARINC-653 system partitioning and scheduling. The user applications are separated from the platform software by means of partitioning. They interface to the platform software via the ARINC-653 part 4 API.

Features:

- > Configuration via XML files
- > Full AFDX® E/S
- > CAN bus support
- > Analog and discrete I/O
- > Hosting user created ARINC-653 applications (e.g. SCADE® applications)
- > Conduction cooled

Architecture

Cards inside iRDC:

- * Power supply card
- * Processor card
- * ADC PMC card
- * AFDX® E/S PMC card
- * Backplane
- * Signal conditioning board
- * Connector board
- * 2 Push buttons
- * 4 Character display

Dimensions: approx. 217x104x182mm (lxwxh) excl. connectors and mounting frame.
Weight: approx. 3.4kg

Power Supply Card

Characteristics:

- * Input voltage 28VDC (nominal)
- * Output voltages short circuit protected
- * Output ±15VDC, 15W galvanic isolated
- * Output ±12VDC, 15W
- * Output ±5VDC, 30W
- * Output ±3.3VDC, 15W
- * Power input surge voltage protection
- * EMI filter
- * Power interrupt protection: >50ms at typical load of approx. 25W
- * Temperature monitoring
- * Input and output voltage monitoring
- * Cold/warm power-on detection

Processor Card

Characteristics:

- * PrPMC520
- * MPC5200 CPU, 400MHz core frequency
- * 256MByte SDRAM
- * 128MByte Flash
- * 64kb EEPROM
- * RTC
- * Ethernet
- * RS232 serial interface
- * Temperature sensor
- * PCI v2.2 interface

Interfaces

Analog I/O

- * 14 x Analog in 0 to +10V, -10 to +10V or Frequency
- * 8 x Analog out 0 to +10mA, 0 to +40mA or 0 to +175mA

Discrete I/O

- * 12x Discrete in
- * 4x Discrete out GND/OPEN 250mA
- * 4x Discrete out GND/OPEN 1.5A
- * 4x Discrete out 28V/OPEN 250mA
- * 4x Discrete out 28V/OPEN 1.5A

Fieldbus

- * AFDX® E/S
- * CAN bus

Instrumentation

- * RS-232
- * Ethernet

Other interfaces on request.

Software and Environmental

Software

- * PikeOS with ARINC 653 API partitioning
- * Other Operating Systems on request

Partitions

- * 1x I/O Processing
- * 1x Monitor process
- * 1x Fast-loop application
- * 1x BITE
- * 1x Maintenance

Environmental

- * Temperature range -40..+85°C
- * RTCA DO-160 compliant

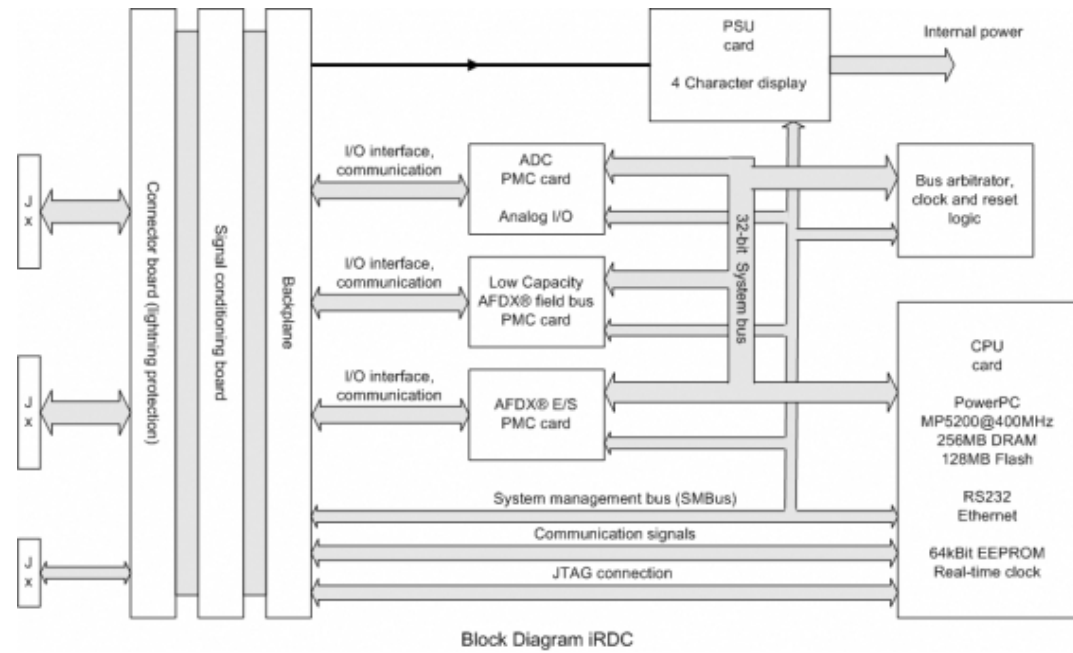
Ordering Information

iRDC intelligent Remote Data Concentrator.

Optionally, we can build the **iRDC** with other kind of interfaces, I/O and networking.

Also, we can deliver the **iRDC** with a different Operating System.

Please contact us for configuration, customization and ordering information.



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