

SMCS116SpW / SMCSlite-SpW

Scalable Multi-channel Communication

Subsystem for SpaceWire



The SMCS116SpW or SMCSlite-SpW comprises one SpaceWire link with up to 200 Mbit/s data transmit rate. The device was developed for nodes which need a small communication controller.

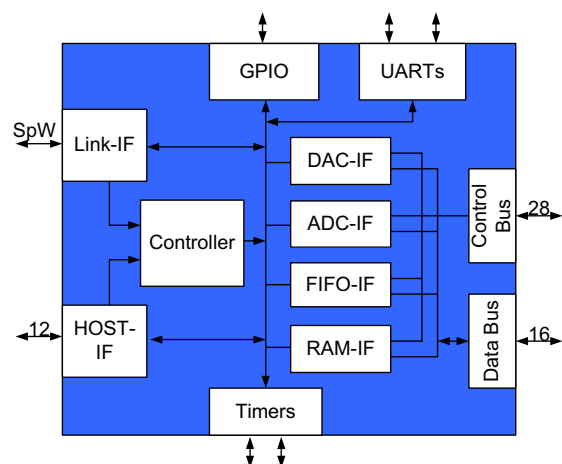
- parallel interfaces can be configured to 8 or 16 bits
- checksum can be generated or checked at packet level
- additional interfaces for data communication
- new protocol (STUP: Serial Transfer Universal Protocol)

SMCS116SpW Main Features:

- Compatible to the SMCS116
- Compliant to SpaceWire ECSS-E-50-12A
- Known anomalies of SMCS116 corrected
- Almost pin compatible to existing SMCS116
- Works with STUP SpaceWire protocol

Features due to SpaceWire Interface:

- Being 'hot' plug able
- Transmission / Reception of Time Code characters
- Resistance against simultaneous switching on the data and strobe inputs



Interfaces:

- bidirectional **SpaceWire link**, comprising the SpaceWire cell, receive and transmit sections
- **Host Control Interface (HOST-IF)** gives read and write access to the SMCS116SpW configuration registers and to transmit and receive data via SpaceWire
- **ADC/DAC IF:** allows the read from an external ADC or write to an external DAC
- **RAM IF:** 4 banks (each 64K) of memory are addressable
- **FIFO IF:** small internal FIFO (passive mode), interface to external FIFO (active mode)
- **GPIO:** General Purpose Interface, up to 24 I/Os
- **UART:** 2 independent UARTs
- **Timers**
- **JTAG Test Interface**

Technology: Atmel MG2 RT (SEU hardened cell library)
Package: 100 pin ceramic quad flat pack (MQFP) unformed leads

Supply Voltage: 3.3 V or 5 V
Power Consumption: max 0.7 W (at 5 V) **TBC**

Link speed: 3.3 V: 100 MBit/s full duplex communication rate in each direction
 5 V: 200 MBit/s full duplex communication rate in each direction

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