

## iC-MCW

# BiSS Watchdog for RS422 with SPI

### Description

iC-MCW is a BiSS C communication monitoring device including RS422-receivers. With iC-MCW it is possible to implement any additional safety features to extend a standard BiSS drive for example.

BiSS clock and BiSS data lines are connected to the iC-MCW. The BiSS sensor and control communication is observed and sampled at maximum transmission rates of 10 MBit/s. The end of a received BiSS frame triggers an interrupt request to notify the microcontroller about new BiSS communication status and frame data.

The microcontroller is connected to the SPI interface of iC-MCW and imports the BiSS frame data without disrupting the transmission between BiSS master and BiSS slave. The internal frame counter and detailed status and error information are available. Due to built-in clock generation, the chip does not need any external oscillators.

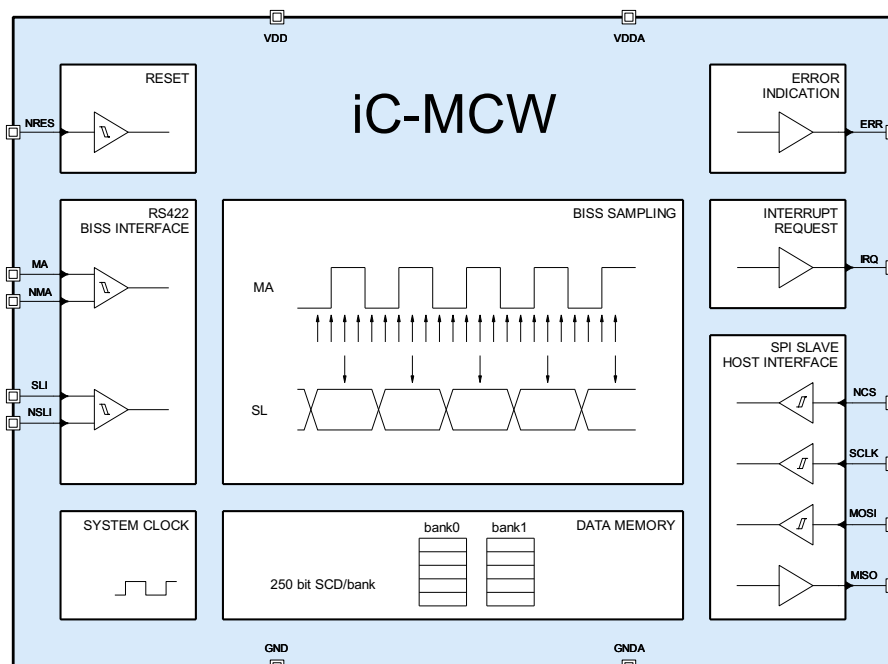
### Applications

- BiSS Communication Monitoring
- BiSS Safety Extension of BiSS Standard Drives

### Features

- Acquisition of BiSS Single Cycle Data
- Acquisition of BiSS Control Data
- Monitoring of BiSS Communication Status
- Error Diagnostics for Debugging
- Pin for Simple Error Indication
- Auto Compensation of Line Delay and Conversion Times
- Internal 14-bit BiSS Frame Counter
- Built-In RS422 Receiver for Direct BiSS Interfacing
- Support of BiSS Data Transfer Rates of up to 10 MBit/s
- Serial Controller Communication via SPITM Slave Interface
- Support of Interrupt-Output
- Built-In System and High Speed Sample Clock Generation
- Built-In Power On Reset
- 3.3 to 5V Supply (+/-10%)
- Operational Temperature -40 to +125 °C

### Block Diagram



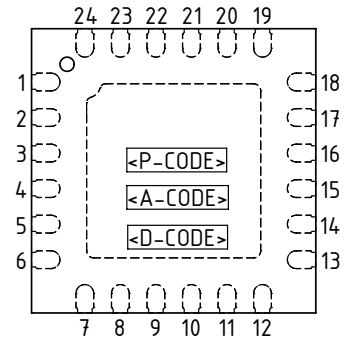
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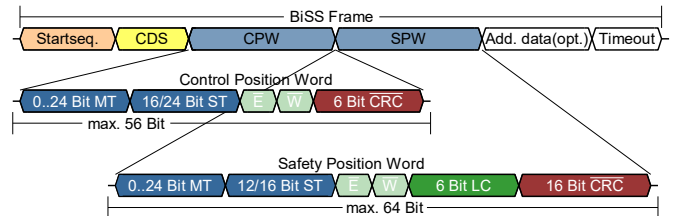
### Pin Functions

No.	Name	Function
1	T0	Test Pin
2	n.c.	not connected
3	VDDA	VDDA 3.3 to 5V Analog Supply Voltage
4	n.c.	not connected
5	GNDA	Analog Ground
6 to 8	n.c.	not connected
9	SLI	BiSS Data Line Input
10	NSLI	BiSS Data Line Input (inverted)
11	MA	BiSS Clock Line Input
12	NMA	BiSS Clock Line Input (inverted)
13	n.c.	not connected
14	IRQ	Interrupt Request Output
15	GND	Digital Ground
16	T1	Test Pin
17	NRES	Reset Signal Input (low active)
18	ERR	Error Output
19	MOSI	SPI Serial Data Input
20	MISO	SPI Serial Data Output
21	NCS	SPI Chip Select Input
22	SCLK	SPI Clock Input
23	VDD	3.3 to 5V Digital Supply Voltage
24	T2	Test Pin
	BP	Backside Paddle

### Pin Configuration QFN24-4x4



### BiSS Safety Communication Format



**BiSS SAFETY**



Functional Safety

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ID 060000000

### System Setup

