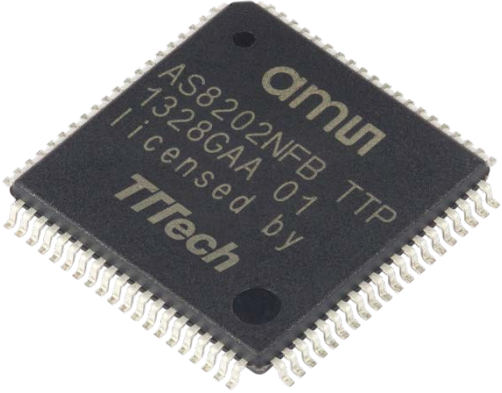


AS8202B

TTP-C2NF Communication Controller Lead-Free



Key Benefits

- ✓ Lead-free TTP communication controller chip with support for redundant channels
- ✓ Synchronous data rate: 20 Mbit/s
- ✓ Asynchronous data rate up to 4 Mbit/s
- ✓ Temperature range -40°C to +125°C
- ✓ 80 pin LQFP80 package
- ✓ Bus guardian support
- ✓ 16 KB x 16 SRAM for status, control and scheduling information
- ✓ DO-254 Lev A certification artifacts available

The AS8202B communication controller is an integrated device supporting serial communication according to the TTP® specification 2.05. It performs all communication tasks such as reception and transmission of messages in a TTP cluster without interaction of the host CPU. AS8202B is available as a standard product from ams and TTTech. The product is compatible in fit form and function with AS8202NF.

Deployment in Distributed Real-Time Systems

TTP provides mechanisms that allow deployment in highly dependable distributed real-time systems. It provides the following services:

- Predictable transmission of messages with minimal jitter
- Fault-tolerant distributed clock synchronization
- Consistent membership service with small delay
- Masking of single faults

The CNI (Communication Network Interface) forms a temporal firewall. It decouples the controller network from the host subsystem by use of an internal dual ported RAM. This prevents the propagation of control errors.

Benefits

AS8202B provides support for fault-tolerant, high-speed bus systems in a single device. The communication controller is qualified for the full temperature range required for automotive applications and is certifiable according to RTCA standards. It offers superior reliability and supports data transfer rates of synchronous 20 Mbit/s and asynchronous 4 Mbit/s. AS8202B is the first TTP controller to support both MFM and Manchester coding. The latter is important for DC-free data transmission, which allows the use of transformers in the data stream. AS8202B is pin-compatible with its predecessor, AS8202NF.



Application Fields

- Technology Evaluation
- Product Testing
- Architecture Development

Application Domain

TTP mechanisms are suitable for highly-dependable distributed real-time systems. TTP is applied in several industrial areas: the railway, robotics and aerospace domain. DO-254 level A certification artifacts are available.

General Product Features	<p>Dedicated controller supporting two independent TTP channels Suited for dependable, distributed real-time systems with guaranteed response time Application fields: automotive (by-wire breaking, steering, vehicle dynamics control, drive train control), aerospace (aircraft electronic systems), industrial systems, railway systems Asynchronous data rate up to 4 Mbit/s (MFM/Manchester) Synchronous data rate 20 Mbit/s Bus interface (speed, encoding) for each channel selectable independently 40 MHz main clock with support for 40 MHz oscillator 16 MHz bus guardian clock with support for 16 MHz crystal or 16 MHz oscillator 16 k x 16 SRAM for message, status, control area (communication network interface) and for scheduling information (MEDL) 4 k x 16 (plus parity) instruction code RAM for protocol execution code Data sheet conforms to protocol revision 1.02 16 k x 16 instruction code ROM containing startup execution code 16 Bit non-multiplexed asynchronous host CPU interface 16 Bit RISC architecture for standalone fault-tolerant communication and protocol processing Software tools, design support, development boards available (www.tttech.com)</p>
Environmental Operating Ranges	Temperature range -40°C to +125°C
Power Requirements	Single power supply 3.3 V, 0.35 µm CMOS process
Form Factor	80 pin LQFP80 lead-free package
Order Number	C02.01.2 Engineering samples (for prototyping) C03.01.2 Commercial products
Packing Units	C02.01.2 min. 10 pcs. in drypack (other quantities on request) C03.01.2 90 pcs. for production purposes



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