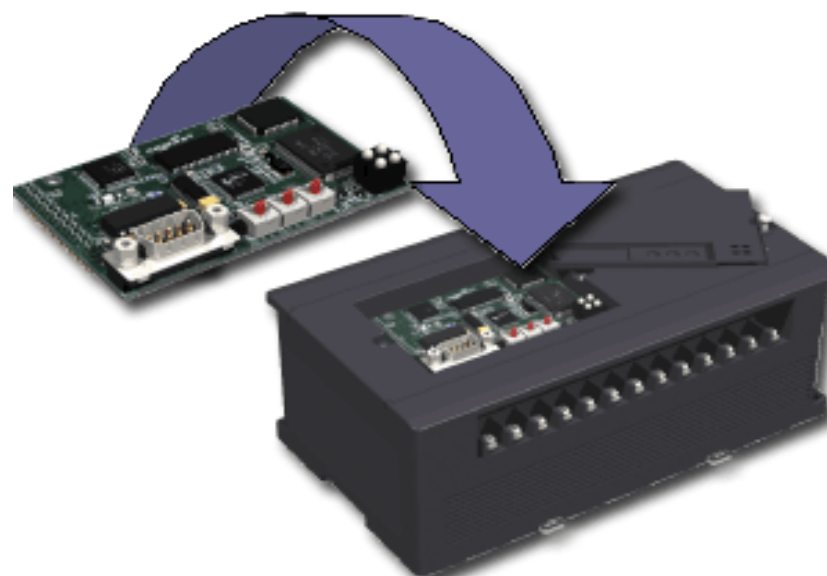# Anybus-S(M) & ABIC

Embedded Interface cards

Product Overview

Embedded AnyBus-S

The Anybus-S range consists 16 credit card sized Master/Slave interfaces for all major fieldbus networks.
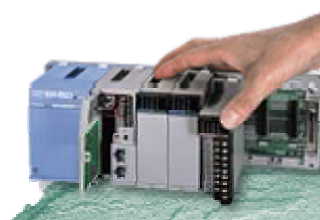
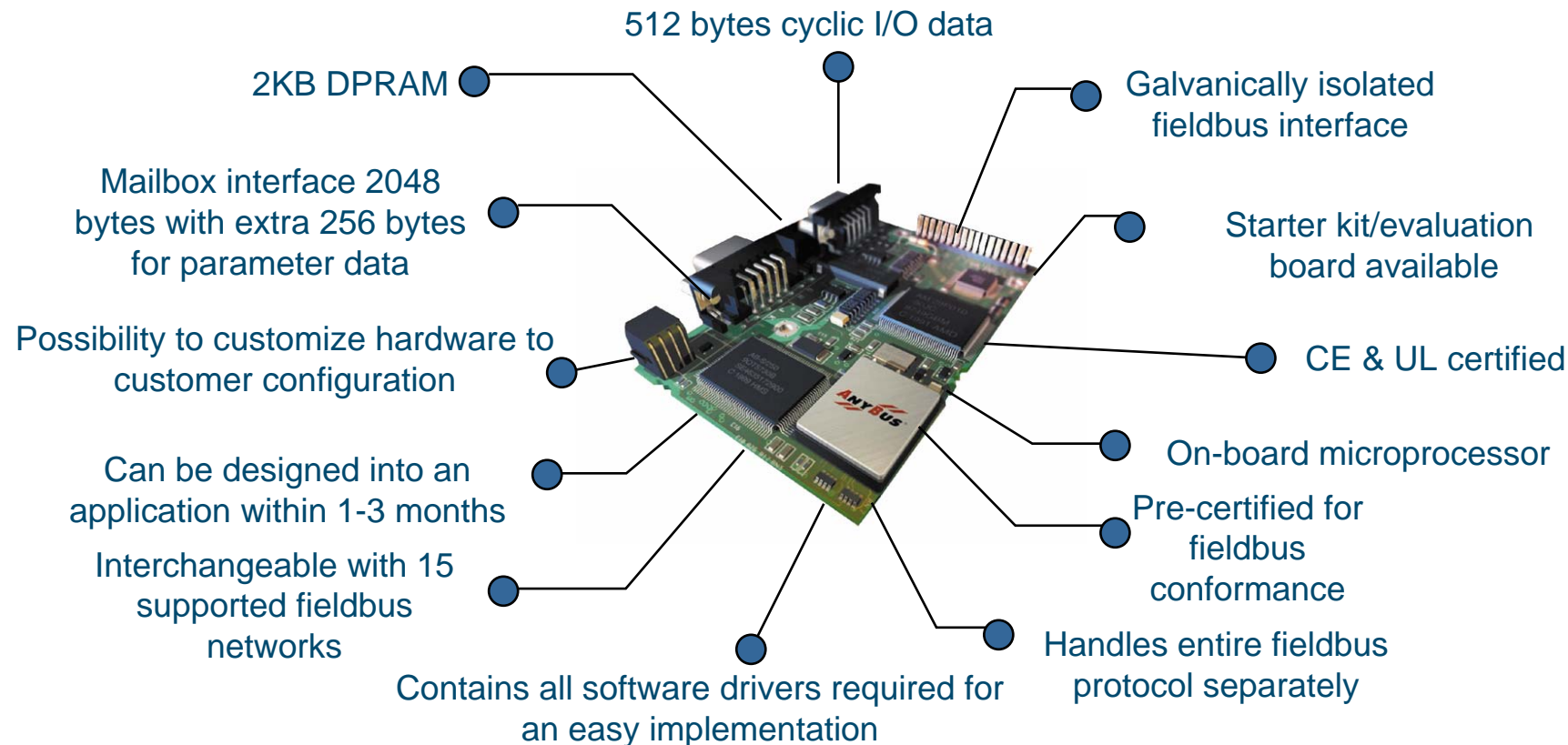## Typical Applications for Anybus-S

Drives **Instruments** **Robotics** **Controllers** **Pnuematics** **HMI's**

BIA SYSTEM
Industrial Networking

Features of Anybus-S

512 bytes cyclic I/O data

2KB DPRAM

Galvanically isolated fieldbus interface

Mailbox interface 2048 bytes with extra 256 bytes for parameter data

Starter kit/evaluation board available

Possibility to customize hardware to customer configuration

CE & UL certified

Can be designed into an application within 1-3 months

On-board microprocessor

Interchangeable with 15 supported fieldbus networks

Pre-certified for fieldbus conformance

Contains all software drivers required for an easy implementation

Handles entire fieldbus protocol separately

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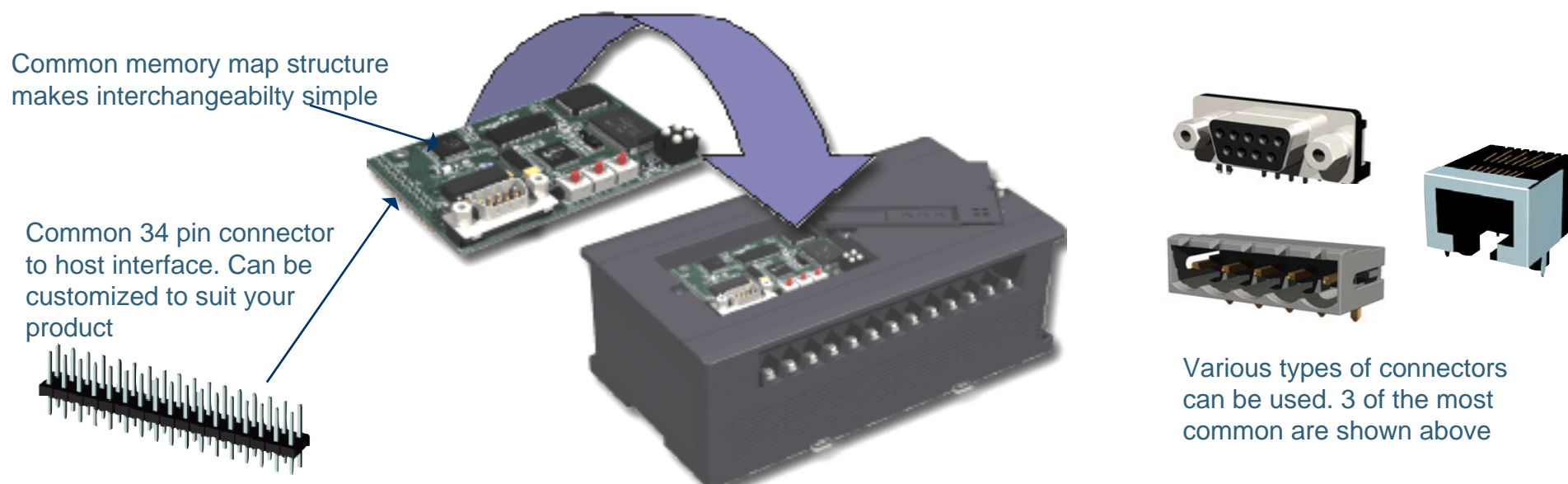
How it all works!

As shown below with an Embedded Anybus-S interface all Anybus products have a common memory map structure!

Common memory map structure makes interchangeabilty simple

Common 34 pin connector to host interface. Can be customized to suit your product

Various types of connectors can be used. 3 of the most common are shown above

This interchangeability with all Anybus products permits you to exchange fieldbuses without having to re-design your product !

Your product after one short In-design could offer Profibus capability in Europe, DeviceNet in USA or Ethernet in Japan! The choice is yours…!

Proven Technology

Anybus products have existed since 1994. During the past 10 years Anybus products have been widely accepted by the worlds leading OEM manufacturers as an industry standard product range for fieldbus communication products

These tried and tested products are CE & UL certified. HMS has its own environmental test lab facility to ensure that all Anybus products meet a high environmental standard
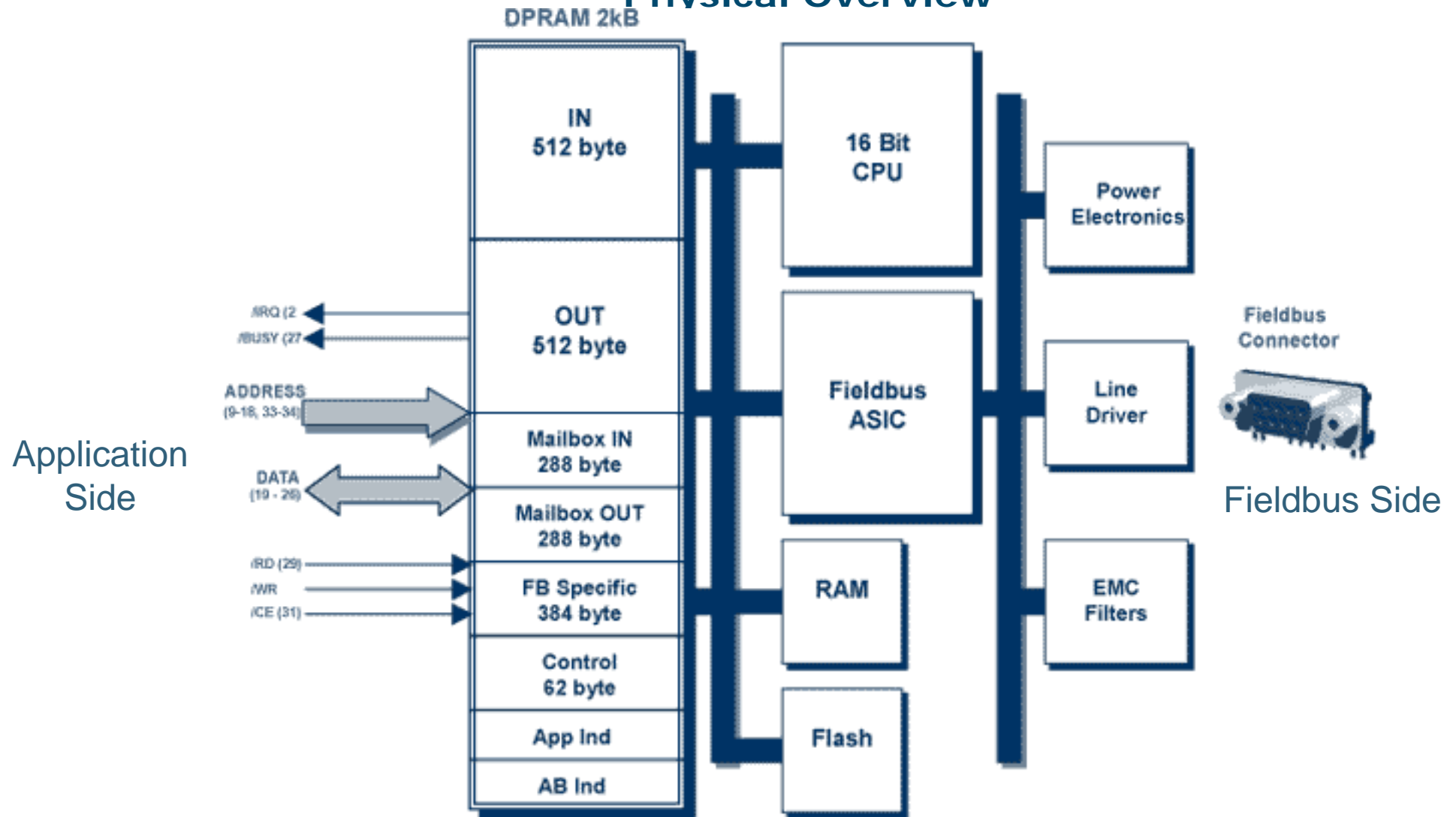

Most Anybus products also have certificates of conformance from fieldbus user organizations 3rd party test labs .

All conformance certificates can be downloaded free of charge from the HMS website.

www.anybus.com

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Interface Overview

Physical Overview

Application Side

Fieldbus Side

DPRAM 2kB: IN 512 byte, OUT 512 byte, Mailbox IN 288 byte, Mailbox OUT 288 byte, FB Specific 384 byte, Control 62 byte, App Ind, AB Ind

/IRQ (2, /BUSY (27, ADDRESS (9-18, 33-34), DATA (19 - 26), /RD (29), /WR, /CE (31)

16 Bit CPU, Fieldbus ASIC, RAM, Flash

Power Electronics, Line Driver, EMC Filters

Fieldbus Connector

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Tools for Anybus-S

Anybus-S Evaluation Board

- 8051 based micro controller environment
- Integrated Anybus-M slot
- Supports all parallel Anybus-S and Anybus-M interfaces
- C-Source software drivers & sample code available

Anybus-S DLA Serial Download Adapter

- CD with Windows based program
- Uses RS-232/422/485 to communicate with the PC
- 24VDC power supply required
- 9 pole D-SUB ribbon cable for PC connection.

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Anybus-S - a proven solution!

300 000 units sold to 450 customers in 46 countries *(Jan-2005)*.

AnyBus –Profibus Embedded Master Application Example

1. 적용구간 : **KTX** 광주 전라 **64** 구간 및 경북 일부 **34구간 2004년 09월**

      32 station/ 17station VEM board dual port

2. 적용회사 : 피엔시 테크㈜ **/ LG**산전**(구)** 전력통신 설계팀

3. 해외적용회사 : 도시바**DCS,**요꼬가와**DCS,ABB Robots,**히다찌 **DCS,**가와사끼 **Robits,etc**

4. Special Purpose Modules

◆ SA-PROFIBUS-M

SA-PROFIBUS-M is a dual Profibus master module for communicating with Profibus slave devices. Each channel has following characteristics;

-Complete Profibus DP/DPV1 Master according to IEC 61158
-Built on Siemens ASIC ASPC2 Step E with Infineon C165   Microprocessor
-4 kbyte Dual Port RAM
-Up to 125 slaves can be connected
-Up to 1536 bytes input & 1536 bytes Output data
-RS-485 optically isolated Profibus interface with on-board DC/DC converter
-Tested and Approved for Profibus conformance
-Up to 12 Mbit/s on Profibus
-Configuration using NetTool for Profibus

Embedded AnyBus®-S

DPRAM Overview

The subdivision of the 2KB Dual Port RAM in the shown memory areas is fully independent of the chosen fieldbus protocol

INPUT 512 byte
OUTPUT 512 byte
MAILBOX IN 288 byte
MAILBOX OUT 288 byte
FIELDBUS SPECIFIC 384 byte
CONTROL REG. 62 byte
HANDSHAKE REG. 2 bytes

AnyBus-S Access Method

➢ Interchangeability

➢ Exchange of I/O data

➢ Exchange of parameter data

➢ Data synchronization

➢ Direct access to module and fieldbus functions

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AnyBus-S availability

- Profibus-DP / DPv1 Slave
- Profibus-DP / DPv1 Master
- DeviceNet 2.0 Adapter
- DeviceNet 2.0 Scanner
- Ethernet/IP Adapter
- EtherNet Modbus/TCP
- CC-Link Slave
- LONworks
- ControlNet Adapter
- AS-Interface Master
- Modbus Plus
- CANopen Slave
- Interbus Slave
- Interbus Fiber Optic
- Modbus RTU
- Universal Remote IO

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AnyBus-Single Chip

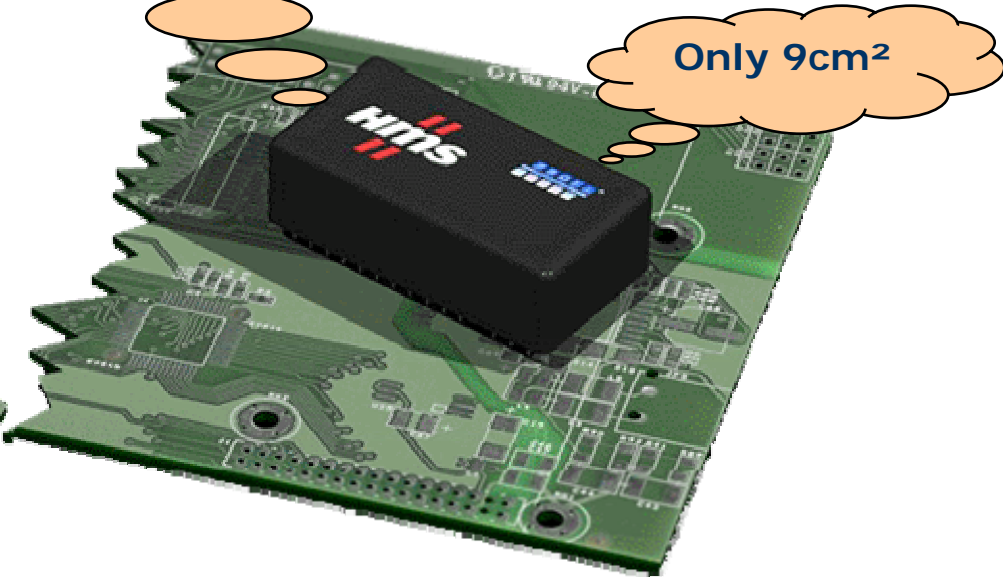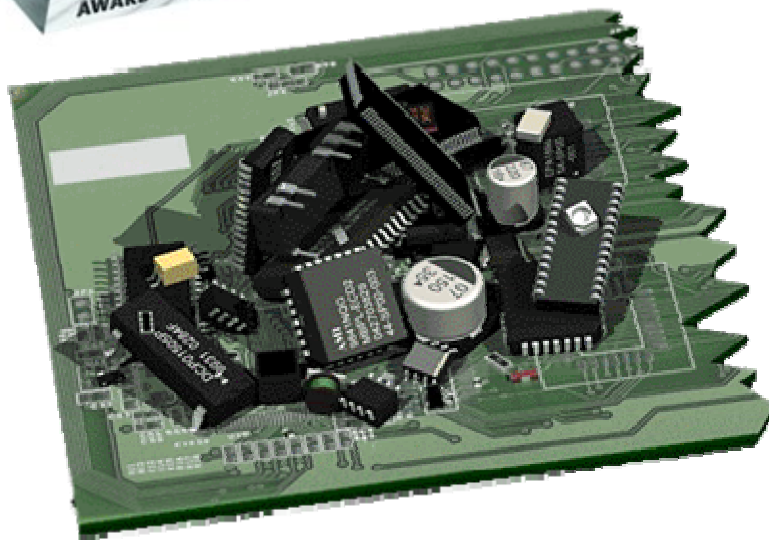Following Slides are for
more detailed info about
ABIC:
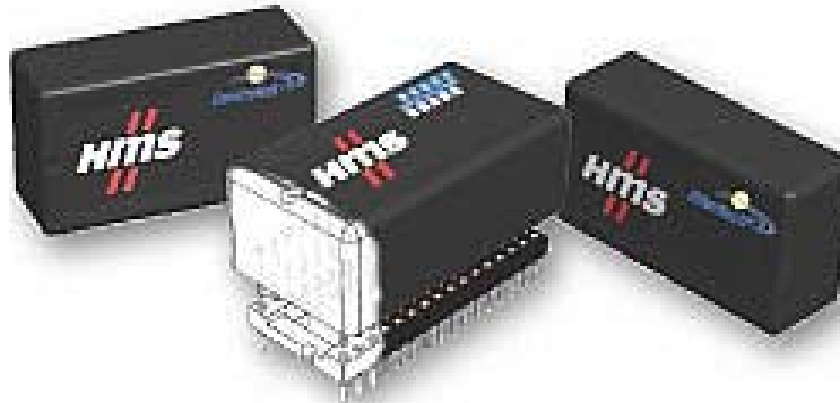
Embedded AnyBus®-IC

The AnyBus-IC is an award winning single-chip controller for industrial networks. It is optimized for medium-end devices, where small size and price is important
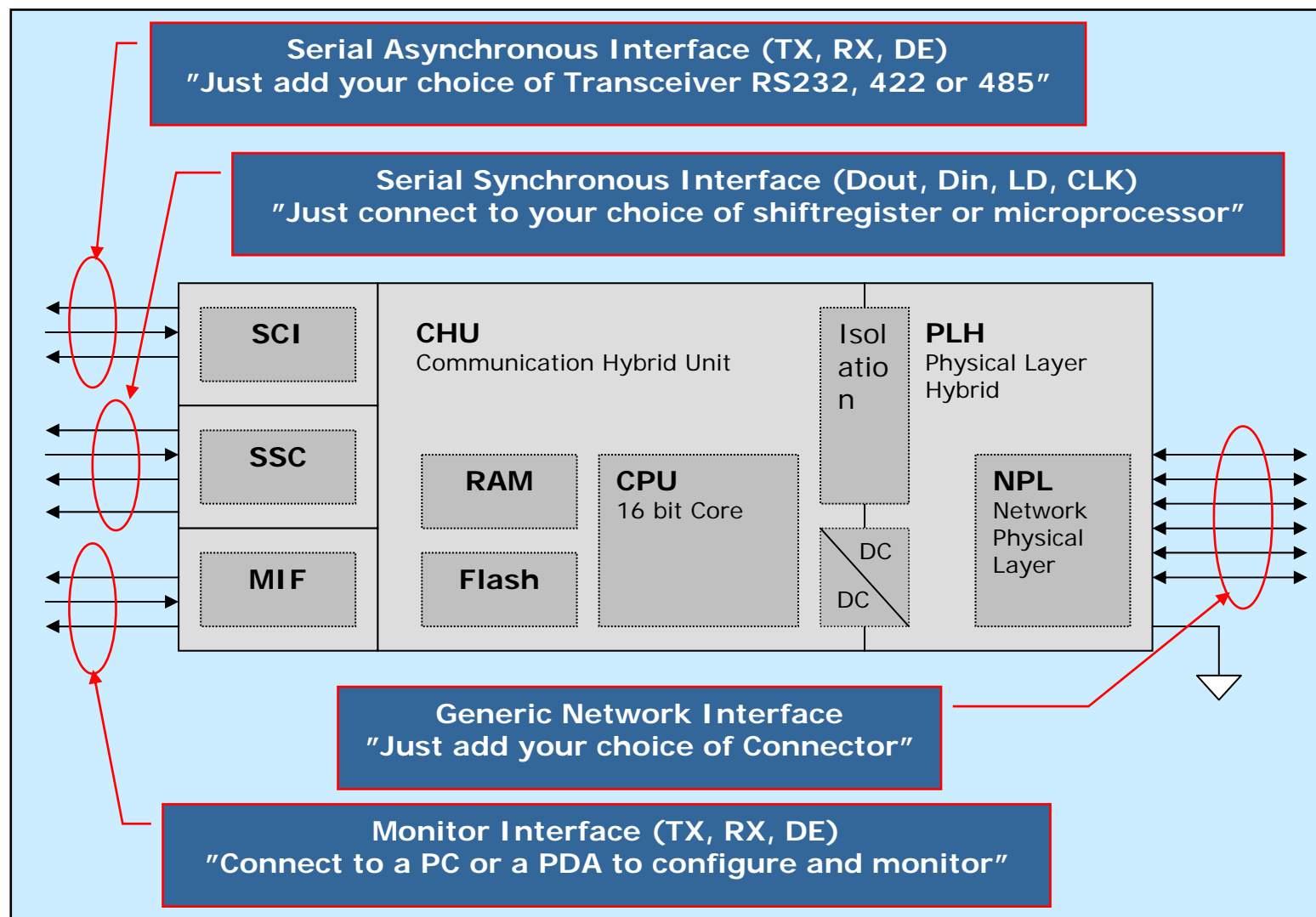
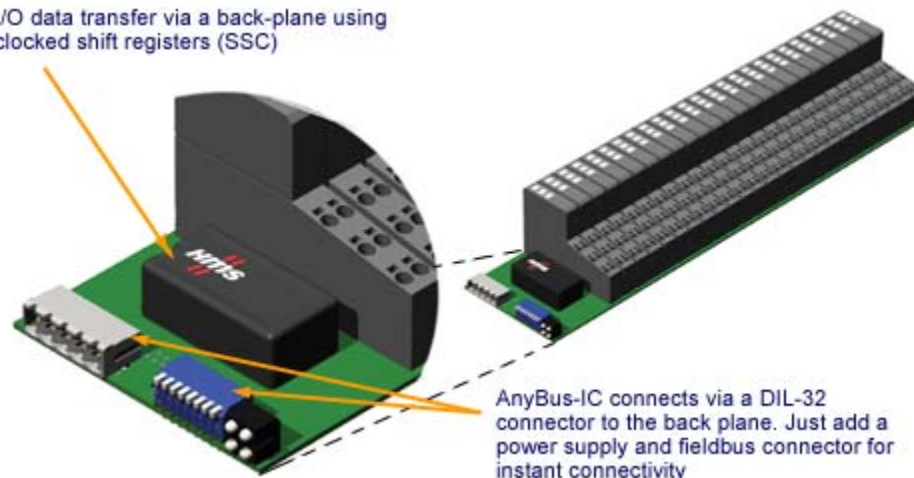Contains all analog and all digital components necessary to implement a network interface.

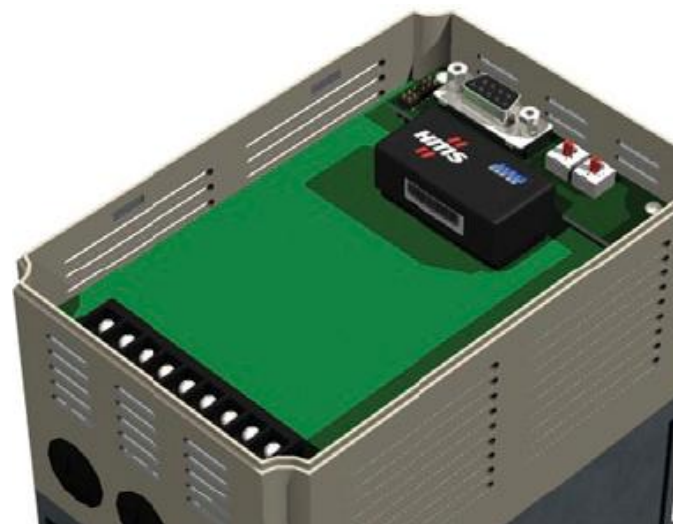Only 9cm²

Embedded AnyBus®-IC Overview

Physical Overview

Serial Asynchronous Interface (TX, RX, DE)
"Just add your choice of Transceiver RS232, 422 or 485"

Serial Synchronous Interface (Dout, Din, LD, CLK)
"Just connect to your choice of shiftregister or microprocessor"

SCI

SSC

MIF

CHU
Communication Hybrid Unit

RAM

Flash

CPU
16 bit Core

Isolation

DC

DC

PLH
Physical Layer Hybrid

NPL
Network Physical Layer

Generic Network Interface
"Just add your choice of Connector"

Monitor Interface (TX, RX, DE)
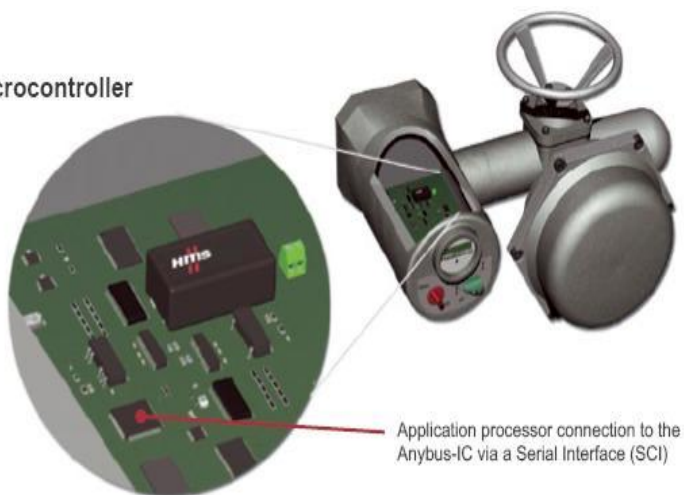"Connect to a PC or a PDA to configure and monitor"

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Application Example 01 : AnyBus-IC

I/O data transfer via a back-plane using clocked shift registers (SSC)

AnyBus-IC connects via a DIL-32 connector to the back plane. Just add a power supply and fieldbus connector for instant connectivity

With a Microcontroller

Application processor connection to the Anybus-IC via a Serial Interface (SCI)

AnyBus-IC Hardware

Anybus®
IC - CHIP

Available for:
Profibus
DeviceNet
EtherNet/IP
Modbus-TCP

Tiny Size on 9cm²

On-board DC/DC, opto couplers and physical layer

DIL-32 mounting to host product

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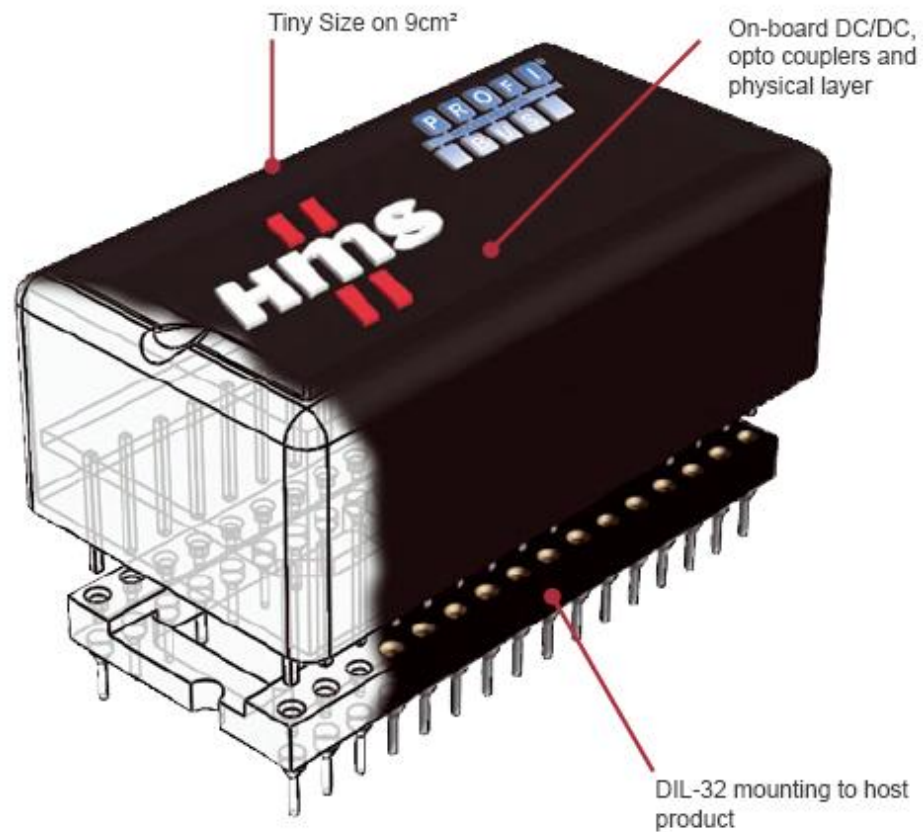
ABIC-Evaluation Board

Included in the Anybus-IC EVB:

Manuals for the ABIC modules and an easy startup manual for the EVB. Example software

Example schematics of carrier board for the AnyBus-IC.