Anybus CompactCom 40 Ethernet products are available in a special version that is able to communicate with IoT protocols such as OPC UA and MQTT. This means that industrial Ethernet protocol data (for example PROFINET or EtherNet/IP) is processed as usual by the CompactCom — and data from the device can also be sent to an IT system via OPC UA or MQTT.

Networks:

PROFINET

EtherNet/IP

Article numbers:

Module with housing
ABCC-40-PIR-IIoT
- AB6650

ABCC-40-EIP-IIoT
- AB6651

Module without housing
ABCC-40-PIR-IIoT-W/OH
- AB6750

ABCC-40-EIP-IIoT-W/OH
- AB6751

Brick
ABCC-B40-1-PIR-IIoT
- AB6689

ABCC-B40-1-EIP-IIoT
- AB6690

OPC UA on CompactCom – How it works

OPC UA is a service-oriented industrial communication standard for secure and reliable data exchange. It defines services for the exchange between clients and servers including access to real-time data.

The Anybus CompactCom implements an OPC UA server which models the Anybus CompactCom as a device in its address space, using the OPC UA Device Integration (DI) model. The application will enable the OPC UA functionality where the ADIs (application parameters) are readable as variable nodes through OPC UA. The modelled device is of type CompactCom40DeviceType which is a subtype of the OPC UA DeviceType.

MQTT on CompactCom - How it works

MQTT is a fast and light weight publish-subscribe messaging protocol that runs on top of TCP/IP. All devices that produce or consume data are clients that connect to a common broker device, to either publish data, subscribe for data or doing both.

The Anybus CompactCom acts as a publisher on the network using data from the host application. The data can be encoded using Json encoding with time stamp. Alternatively transparent transfer of the data is supported. Data is tagged with a topic string by the producing client (handled from the host application or the CompactCom module). The topics can be subscribed to by one or several clients from the broker.

Features and benefits

Functionality on OPC UA:

- Support for micro-embedded profile
- Supports Discovery Services
- User name and password authentication
- Supports DataChange Subscription
- Timestamp supported via discovery server or time protocol of the industrial network
- OPC UA extension to all standard Anybus features
- Available for PROFINET and EtherNet/IP

Functionality on MQTT:

- MQTT client acting as publisher
- MQTT version 3.1.1
- Json data encoding with Time stamp
- Transparent transfer supported
- Last Will and QoS 0-2 supported
- User name and password authentication
- Maximum 4K data from host application (maximum 8K on network including Json encoding).
- Available for PROFINET and EtherNet/IP

What you can do

With OPC UA or MQTT communication on the factory floor, it is possible to use a computer, server or edge gateway to relay information to IT systems and clouds.

What you can do
- Tap data from the host device, all ADI data is readable (application parameters)
- Provide on-the-fly statistics from your device
- Predictive maintenance — Spot problems before they occur
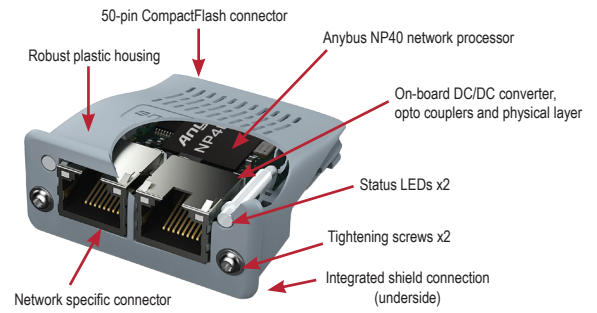- Collect data to perform data analysis (local server or on IT level)

CompactCom 40-series

The Anybus CompactCom 40-series is a range of communication products in chip, brick and module formats.
The 40-series is especially suitable for modern and demanding industrial applications.

HMS

Technical specifications

Technical Details

Dimensions (L • W • H)	52•50•22 mm, 2.04•1.97•0.86" 51•37•16 mm, 2.01•4.46•0.63" (modules without housing)
Protection class	IP20
RoHS Compliance	Yes
Galvanically isolated network interface	Yes
Application interfaces	- 8/16-bit parallel (30 ns access) - High speed SPI, baudrate configurable up to 20 MHz - UART (for backwards compatibility with 30-series, max 625kbps)
Industrial network profile support	Generic device
LED indicator	Integrated on front (only module with housing). Indicates Module Status and Network Status.

Certifications

UL, cUL	Yes
Network conformance	Yes

CE - Declaration of Pre-Conformity

Emission EN 61000-6-4	EN55016-2-3 Radiated emission EN55022 Conducted emission
Immunity EN 61000-6-2	EN61000-4-2 Electrostatic discharge, EN61000-4-3 Radiated immunity. EN61000-4-4 Fast transients/burst, EN61000-4-5 Surge immunity. EN61000-4-6 Conducted immunity.

Electrical Characteristics

Power requirements	3.3 VDC, +/- 0.15 VDC

Environmental Characteristics

Operating temp	-40 to 70 ℃, -40-158 ℉ -40 to 85 ℃, -40-176 ℉ (modules without housing)
Humidity	5-95 % non-condensing

- 50-pin CompactFlash connector
- Robust plastic housing
- Anybus NP40 network processor
- On-board DC/DC converter, opto couplers and physical layer
- Status LEDs x2
- Tightening screws x2
- Integrated shield connection (underside)
- Network specific connector

Module mounting

The CompactCom module slides into a pre-designated slot in the host automation device PCB. The module is secured with an innovative mechanism by tightening the two screws located on the front cover of the Compact-Com module.
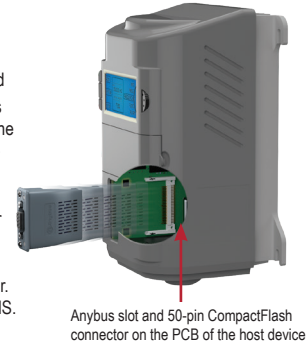
HMS offers a customized CompactFlash connector for Anybus CompactCom. The module insertion can be made at any stage in the logistical chain between the automation device manufacturer and the end customer. CompactCom slot cover available on request from HMS.
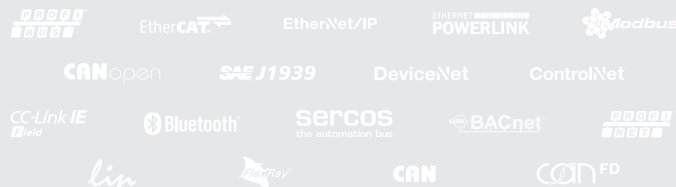

Anybus slot and 50-pin CompactFlash connector on the PCB of the host device

- Controlling PLC
- Wi-Fi
- Computer, server or edge gateway
- Drive
- Sensors and actuators
- Barcode scanner
- PROFINET®
- EtherNet/IP

Example use case of an industrial network using the Anybus CompactCom OPC UA or MQTT functionality.

Twincomm

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CANopen • SAE J1939 • DeviceNet • ControlNet
CC-Link IE Field • Bluetooth • sercos the automation bus • BACnet
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