DATA SHEET

Bridge E

The classic
for wireless control and safety

EchoRing powered WLAN Bridge for ultra-reliable and deterministic wireless control and safety data transmission

Key Features

- Wireless Ethernet bridge device
- Optimized control and safety data support
- Supports common standard protocols:

  PROFINET (PROFIsafe),
  EtherNet/IP (CIP SAFETY),
  CC-Link IE TSN Class A,
  EtherCAT (FSoE),
  AS-Interface (ASi),
  SafetyNet p,
  PowerLink
- Ultra low-latency and high-reliability modes
- Five freely configurable QoS classes
- Guaranteed seamless roaming
- Encrypted TCP-based configuration and runtime control interface
- Config tools for Linux and Windows
- Minimal power consumption
- IP65 housing

Powered by EchoRing™

Bridge E Monitoring Solution

The Monitoring Solution provides a real-time overview of the network status and signal quality of Bridge E via intuitive map, list and heatmap views, thereby enabling faster troubleshooting and simpler plant-wide diagnostics.

Bridge E Starter Kit

The Starter Kit is a comprehensive set of tools to commission, operate and monitor an EchoRing network within an application. It includes three Bridge E devices, support by our Application Engineering team and all cables and necessary accessories.

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Interfaces

Radio	EchoRing
Ethernet with PoE	M12, 4-pole, d-coded
Power supply and digital input	M12, 5-pole, a-coded
Antenna connector	2x external SMA connectors
	Limited to 14 dBm e.i.r.p., USA/CA: up to 30 dBm e.i.r.p.

Communication properties

Channel bandwidth	20 MHz	
Data throughput	Up to 14 Mbit/s	
Latency [1]	Down to 2 ms	
Reliability (packet loss rate, PLR) (down to)	Short distance: Prioritized traffic: Best effort:	10^{-9} 10^{-7} 10^{-5}
Bridging traffic	Packet-oriented protocols, such as UDP, TCP/IP, etc.	
Industrial protocol support	PROFINET (PROFIsafe), EtherNet/IP (CIP SAFETY), EtherCAT (FSoE), AS-Interface (ASi), SafetyNet p, PowerLink, CC-Link IE TSN Class A	
Participants	Max 700 (20 per sub-net/ring)	
Security	Traffic encryption, Password protected config	

Typical cycle time configurations

CIP Safety PtP [2]	6 Safe I/Os with RPI: 20 ms
PROFIsafe	Controller & 16 devices: 64 ms

General properties

Dimensions [3]	84 × 82 × 55 mm
Weight [3]	189 g
IP protection class	IP65
Mounting Accessories [4]	Wall mount, DIN rail mount
Operating temperature	-20 °C to +65 °C
Range [5]	Up to 200 m
Power supply	24 V DC +/-10 %, PoE (48 V DC 802.3at Type 1)
Power consuption	Max 3.5 W; typ. 1 W
Max RF Output power [6]	Limited to 14 dBm e.i.r.p., USA/CA: up to 30 dBm e.i.r.p.
Boot up duration	~ 5 s

Approvals

EU (CE) / India (ETA) / China (SRRC) / Australia (ACMA)	7 certified channels 5725–5875 MHz
USA (FCC) / Canada (ISED)	9 certified channels 5150–5250 MHz 5725–5850 MHz
Other certification	RoHS 3, WEEE, NDAA, RED incl. EN 18031-1 (UL, Atex on request)

[1] application-to-application (Ethernet interface)
[2] PtP: point-to-point
[3] without antenna
[4] included
[5] depending on antenna, TX power and environment
[6] depending on antenna