



Features

- Dual-Core ST STM32H747XI
- Wide power input range (24 ~ 48 V_{DC})
- Wide operating temperature range (-40 ~ 85 °C)
- Ruggedized DIN-rail kit
- FIP communication (IEC 61158)
- XIP communication (X-WAY over TCP/IP)
- UNI-TE point-to-point messaging

Introduction

FIPBOX-H7/M2 hardware is designed for the maintenance and the retrofitting of older industrial installations based on the FIP/WORLDFIP fieldbus. Designed to be robust, this device is suitable for use in harsh environments. This two-module (M2) format is ideal for establishing an industrial FIP to Ethernet gateway.

The XIPFIP embedded software implementation enables to connect any control system supporting XIP (X-WAY over TCP/IP) to any FIPWAY device with a point-to-point connection allowing UNI-TE messages exchanges. In addition, an intuitive web-based user interface allows for easy configuration and diagnostics.

Specifications

General

- Certification CE, ready for EN 50155
- Dimension (W x D x H) 71 x 125 x 153 mm (2.8 x 5 x 6 in)
- Form Factor Small
- Enclosure Stainless Steel housing (SUS430)
- Mounting DIN-rail (EN 50022 standard) or Rubber Feet
- Weight (Net) 1.125 kg (2.48 lb)
- Power Requirement 24 ~ 48 V_{DC}
- Power Consumption 1.5W (typical), 6W (max.)
- Current Consumption 60mA @ 24V_{DC} (1.5W)
40mA @ 48V_{DC} (1.9W)

System Hardware

- Microcontroller STM32H747XI dual Cortex®-M7 + M4 32bit low power Arm® MCU
- Program Memory 1 MB (RAM)
2 MB (Flash)
- Storage 16MB (QSPI NOR Flash)
- RTC 1F supercapacitor
- Security ATECC608B Crypto (Microchip)
- LED Indicators
 - H7 module
 - 1 x power LED
 - 2 x programmable LED (RUN/ERR)
 - 2 x LAN (active, status)
 - FIP module
 - 1 x power LED
 - 1 x COM LED (carrier detect)
 - 1 x ERR LED (watchdog, tx error)

I/O

- Isolated FIP Port 1x D-SUB 9 Male
±30kV HBM
±16kV IEC 61000-4-2 Contact discharge
±4kV IEC 61000-4-4 Electrical fast transient
- LAN 1x 10/100 Mbps (RJ45)
- USB 1x USB-C (programming/flashing)
- Push Buttons 1x Reset
1x Programmable User Button (factory boot)
- Power Connector 1x 4-pin terminal block (5.08 Phoenix plug)

Environment

- Operating Temperature -40 ~ 85 °C / -40 ~ 185 °F
- Relative Humidity 95% RH @ 40 °C / 104 °F, non-condensing
- Ingress Protection IP20

Ordering Information

- Product Range FIPBOX-H7/M2
- Product ID 700-500
- Origin Country France

XIP/FIP Gateway Characteristics

FIP Features

- Protocol FIP / WorldFIP (IEC 61158)
- FIP Mode Master / Slave
- FIP Baud Rate 31.25 Kbps
1 Mbps
2.5 Mbps
5 Mbps
- Medium Redundancy None (Mono-medium)
- Max. Identifiers 4096 IDs (4 MB private memory)

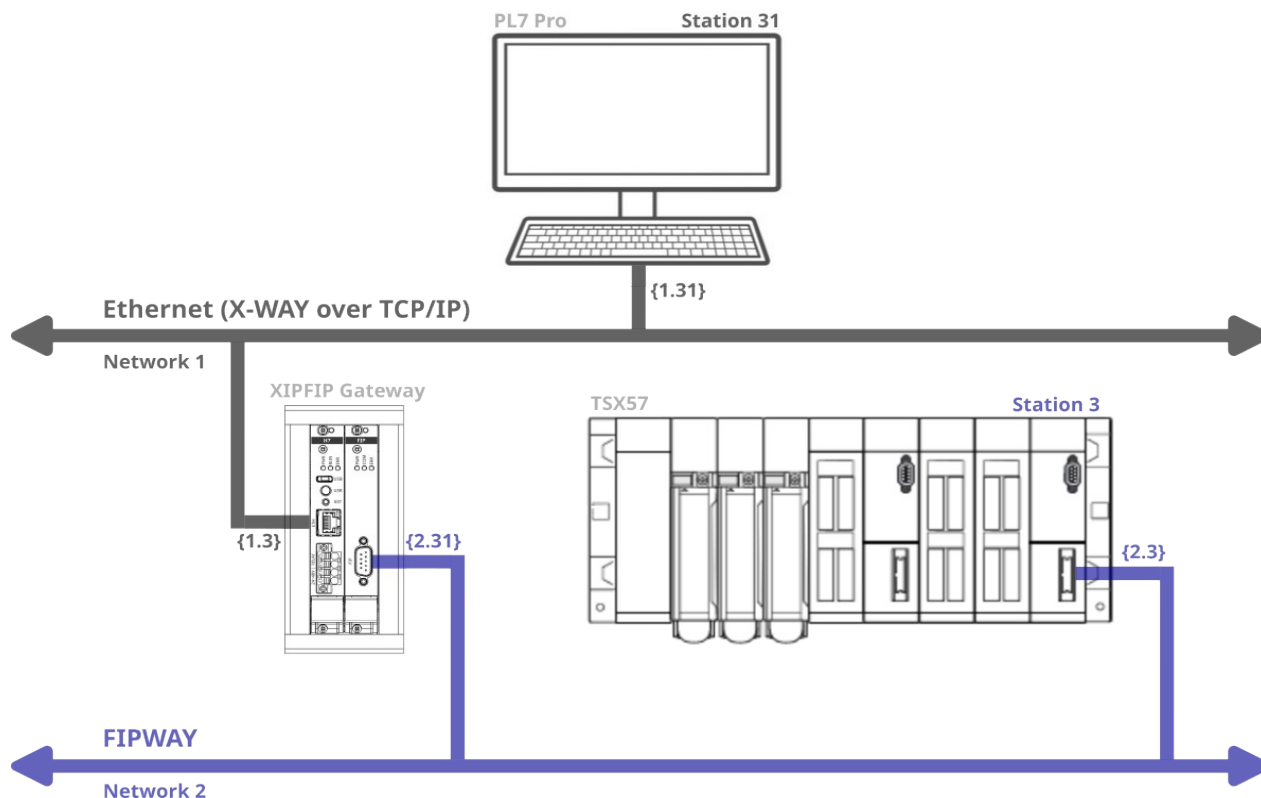
XIP Features

- XIP Mode Server
- X-WAY Services UNI-TE Messaging
- Max. Connection 5

Web Server

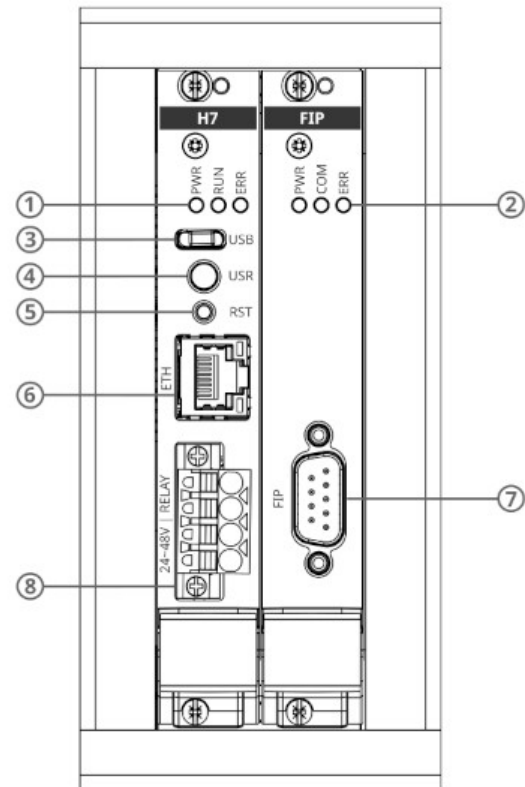
- Authentication Admin / User accounts
- Dashboard Gateway Statistics (XIP/FIP)
Version, Uptime, Temperature infos
- Settings Ethernet Configuration (DHCP/Static IP)
XIP/FIP (Network and Station address)
- Events Info/Warning/Events/Errors messages

Functional Diagram



Front I/O

1	H7 LEDs Status
2	FIP LEDs Status
3	USB-C Connector (Flashing/Programming)
4	Programmable User Button
5	Reset Button
6	RJ45 Ethernet Interface (XIP Connection)
7	D-SUB9 Male FIP Interface (FIPWAY Connection)
8	Power Supply Connector, Relay



Boot Modes

Mode	Buttons Seq.		Description
Normal	1	RST=1	Normal device restart. (User settings loaded from FLASH).
	2	RST=0	
Factory Boot	1	RST=1	Press the USB button within one second after releasing RST button to start the gateway with the factory settings.
	2	RST=0	
	3	USR=1	
	4	USR=0	
Bootloader	1	RST=1	Device Firmware Upgrade [DFU]. Note : Connect USB-C to host machine to flash a new firmware.
	2	USR=1	
	3	RST=0	
	4	USR=0	

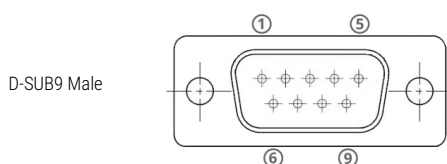
H7 LEDs Status

LED	Color	Indication
PWR	Green	Power OK
	Off	No power
RUN	Green	Gateway is active
	Green flashing	Factory boot (default settings)
	Off	Gateway is inactive, or error
ERR	Red	Major unrecoverable fault
	Red flashing	Gateway is inactive
	Off	No error

FIP LEDs Status

LED	Color	Indication
PWR	Green	Power OK
	Off	No power
COM	Blue	Bus activity. Node is slave.
	White	Bus activity. Node is master.
	Off	No bus activity
ERR	Red	COM error (TX error or Watchdog)
	Off	No error

FIP Connector



Pin	Signal	Pin	Signal
Housing	Shield	Others	Not connected
6	A (D+)		
7	B (D-)		

Dimensions

