

FieldLink

Rugged Field Communications Platform

Secure Field Communications, Telemetry and Sensor Networking Platform

PRODUCT DATASHEET | FL-1 | September 2026 | Rev 1.0

FieldLink is a modular field communications platform developed to carry reliable data and messages where infrastructure is unavailable, inaccessible or unable to maintain operational continuity. It comprises four components: FieldLink Scout, FieldLink Probe, FieldLink Gateway and FieldLink Bridge.

The shared communications core manages critical and routine traffic prioritization, delivery acknowledgement, retransmission, store-and-forward and network-status monitoring.



Illustrative product view. Configuration and component placement may vary.

KEY FEATURES

Infrastructure-independent field communications and bidirectional data transfer.

Four-component modular architecture comprising Scout, Probe, Gateway and Bridge.

SOS / critical alerts, short messages, location, telemetry and sensor-data services.

ACK, automatic retransmission, packet-sequence tracking and store-and-forward support.

Link-loss detection, reconnection and network-status monitoring.

Analog, digital and serial sensor-integration options for Probe.

IP, Ethernet, USB and serial host-system integration at Gateway / Bridge.

Remote-configuration, device-health reporting and firmware-update architecture.

AES-based secure communications and a device-authentication approach.

APPLICATION AREAS

Disaster and emergency communications.

Search-and-rescue and field teams.

Defence and reconnaissance operations.

Mining, energy and critical infrastructure.

Industrial sensor monitoring and remote-field telemetry.

FIELDLINK COMPONENTS AND OVERVIEW

VARIANT	PRIMARY APPLICATION
FieldLink Scout	Personal field communications: short messages, SOS / critical alerts, location and status telemetry.
FieldLink Probe	Acquisition of analog, digital or serial data from external sensors and transmission of telemetry.
FieldLink Gateway	Field-network management: collection of node traffic, transmission coordination and network access to the host system.
FieldLink Bridge	IP / host connectivity, data transfer and system integration between Gateway and the command / monitoring computer.

COMPONENT MATRIX

GENERAL

FEATURE	SCOUT	PROBE	GATEWAY	BRIDGE
Product type	Personal field communications device	Sensor and telemetry node	Field gateway	Command / host-system bridge
Primary function	Messages, SOS, location and status telemetry	Sensor-data acquisition and telemetry	Data exchange with field nodes and network management	Transfer Gateway data to the PC / command system

USER / SENSOR

FEATURE	SCOUT	PROBE	GATEWAY	BRIDGE
User interface	Display, physical keys and SOS button target	Service / setup-oriented	Management / service-oriented	Through PC / host software
Sensor inputs	Limited / application-dependent	Analog, digital and serial options	Serial I/O for local system integration	Direct sensor connection is not targeted
Serial protocols	USB, SPI, I ² C	USB, SPI, I ² C, UART	USB, SPI, I ² C, UART	USB, SPI, I ² C, UART

COMMUNICATIONS

FEATURE	SCOUT	PROBE	GATEWAY	BRIDGE
FieldLink field connection	Yes	Yes	Yes	Via Gateway
GNSS	Location reporting	Optional / application-dependent	Optional for time / location services	Can be provided by the host system
BLE	Candidate for local connectivity	Candidate for local setup	Optional	Generally not required
Ethernet / IP	None	Yes	Yes	Yes
Wi-Fi / LTE	Yes	Yes	Optional connectivity choices	Depends on host-system requirements
USB	Charging / service / update target	Service / configuration target	Service / host connection	PC / host connection

NETWORK AND DATA MANAGEMENT

FEATURE	SCOUT	PROBE	GATEWAY	BRIDGE
ACK / Retry	Yes	Yes	Coordinates / manages	Transfers status information to the host system
Store-and-forward	Yes	Yes	Yes	Local queue / log support
Critical traffic	SOS / critical-message priority	Alarm / priority sensor data	Network-wide priority management	Integrated with host-system policies
Status reporting	Battery, link, location and device status	Sensor, battery, link and device status	Network health and node status	Event, device and link records

HARDWARE COMPARISON

MECHANICAL

FEATURE	SCOUT	PROBE	GATEWAY	BRIDGE
Enclosure	Portable, rugged field enclosure	Suitable for field / sensor integration	Rugged fixed / field enclosure	Control / integration unit
Mounting	Portable / personal	Wall, pole or DIN-rail mounting candidate	Desktop / wall / vehicle / rack mounting candidate	Desktop / wall / rack mounting candidate
Dimensions / weight	120x56x23 mm ~ 220g	130x105x60 mm ~ 500g	120x150x55 mm ~ 1.25 kg	180x100x35 mm ~ 430g
Protection rating	IP67	IP66	IP65	IP40

ELECTRICAL

FEATURE	SCOUT	PROBE	GATEWAY	BRIDGE
Power supply	Internal battery and USB-C target	Internal battery / external sensor power; optional	External DC supply / backup-power option	External DC or host power; optional
Battery	Targeted for portable use	Low-power / long-duration operation target	Optional UPS / RTC backup candidate	Application-dependent
Power consumption	1-2W	1-2W	3W	3W

PROCESSOR / MEMORY

FEATURE	SCOUT	PROBE	GATEWAY	BRIDGE
Processing platform	Arm Cortex-M7, 480 MHz	Arm Cortex-M7, 480 MHz	Arm Cortex-M7, 480 MHz	Arm Cortex-M7, 480 MHz
Local storage	SD Card Storage	SD Card Storage	SD Card Storage	SD Card Storage
Hardware security	AES / HASH / RNG-class security features are targeted	AES / HASH / RNG-class security features are targeted	AES / HASH / RNG-class security features are targeted	Host security and device authentication

ENVIRONMENTAL

FEATURE	SCOUT	PROBE	GATEWAY	BRIDGE
Operating temperature	-40 °C ... +80 °C	-40 °C ... +80 °C	-40 °C ... +80 °C	-40 °C ... +80 °C
Compliance targets	2014/53/EU (RED), 2011/65/EU and (EU) 2015/863 (RoHS)	2014/53/EU (RED), 2011/65/EU and (EU) 2015/863 (RoHS)	2014/53/EU (RED), 2011/65/EU and (EU) 2015/863 (RoHS)	2014/53/EU (RED), 2011/65/EU and (EU) 2015/863 (RoHS)

SOFTWARE NETWORKING AND INTEGRATION

COMPONENT	SOFTWARE / SYSTEM FUNCTIONS
FieldLink Scout	Messaging, SOS / critical notifications, GNSS location reporting, device status, link management, user interface and power management.
FieldLink Probe	Sensor reading / sampling, analog / digital / serial data processing, Modbus / serial acquisition, threshold / event triggers, telemetry packetization and buffering.
FieldLink Gateway	Node and link management, network-health monitoring, message routing / transmission coordination, data buffering, remote configuration and IP uplink.
FieldLink Bridge	Gateway communications, PC / host connectivity, command and telemetry interfaces, recording / logging, host API / protocol integration and user-application connectivity.

SYSTEM DATA FLOW

Scout/Probe: Field endpoint

Gateway: Network management

Bridge: Host bridge

Command / Monitoring PC: Command / monitoring / data system

SECURITY FEATURES

Bidirectional data flow between field devices and the central system.

Critical / routine traffic classification and prioritization.

ACK and automatic retransmission.

Store-and-forward for tolerance of link interruptions.

Packet sequence numbering and duplicate-packet management.

Link-loss detection and network-recovery mechanisms.

AES-based encryption architecture.

Device authentication and unauthorized-node blocking approach.

Packet-integrity checks against replay and spoofing.

Remote-configuration and firmware-update infrastructure.

Device-health, link and system-status reporting.

Access and management authorization at Gateway / Bridge.

ORDERING INFORMATION

The FieldLink order-code structure identifies the product family, processor variant and mechanical enclosure option (enclosed or bare board). The listed component codes use the family and variant format below.

SEGMENT	DESCRIPTION	VALUES
Product family	Fixed product-family code	FL-1
Variant	Processing tier	SCT · PRB · GTW · BRG

General format: FL-1-[VARIANT]

VARIANT	PRIMARY FUNCTION	ORDER CODE
FieldLink Scout	Personal field communications	FL-1-SCT
FieldLink Probe	Sensor-data acquisition and telemetry	FL-1-PRB
FieldLink Gateway	Field-network management and uplink	FL-1-GTW
FieldLink Bridge	Command / host-system integration	FL-1-BRG

Contact the Alvexis sales team for order codes specific to memory / storage configurations.

Product Views



FieldLink Scout



FieldLink Probe



FieldLink Gateway



FieldLink Bridge