

# GP-Probe DIN L1

Product information and specifications  
Document version 1.2



## GP-Probe DIN L1

Designed for telecom to monitor GNSS interference and synchronization quality

Cost-effective GNSS probe with built-in RF blocker, onboard GNSS interference detection and LUA scripting. Compatible with GP-Cloud

GP-Probe DIN L1 covers three primary applications: GNSS interference detection and classification, PPS accuracy monitoring, GNSS signal quality analysis, and logging. The device is easily installed between a GNSS antenna and a receiver or time server. When an event is detected, the GNSS and PPS outputs are immediately disabled, preventing any counterfeit signals from reaching your systems.

With Onboard Signal Processing option, GP-Probe DIN L1 can detect GNSS interference and anomaly without connecting to GP-Cloud

- PPS Accuracy Measurement
- RF spectrum analyzer
- LUA scripting for custom scenario
- Embedded GNSS blocker



### Key Features

- Supported by GP-Cloud to provide centralized monitoring of your entire GNSS-dependent infrastructure. The combination of two features – GNSS interference detection and PPS accuracy tracking – makes the device perfect for ensuring robust and reliable synchronization systems for mission-critical infrastructure.
- Onboard Signal Processing Option – the device can detect anomalies of GNSS signal and interference without connection to GP-Cloud.
- Integrated GNSS RF switch with an embedded jammer. You can connect the device between a GNSS antenna and a protected time server. If GNSS signal anomalies or interference are detected, the GNSS output port is disabled. To protect against powerful spoofing attacks, there is a built-in jammer that assures blocking of fake signals of any power.

**AUTHORIZED USA  
DISTRIBUTION BY:**

Cyntony Corporation  
195 Follen Road  
Lexington, Massachusetts  
sales@cyntony.com  
781-430-0675

**cyntony**  
customer attuned

- Built-in PPS Phase Measurement Unit. You can connect a PPS output of your time server to a GP-Probe DIN L1 and receive real-time notification of PPS phase accuracy degradation.
- Embedded LUA script engine and debugger for custom user scenarios. You can develop your own LUA script to respond to interference or GNSS signals anomaly. A terrific option for quick integration of the device into your existing infrastructure.
- 65 MHz basic RF spectrum monitoring feature.
- Validated PPS signal output.
- The embedded real-time operating system FreeRTOS guarantees high availability and cybersecurity.
- Secure firmware auto-update engine.
- Embedded self-diagnostic and dispatching all error messages to the cloud.
- Web interface for configuration.

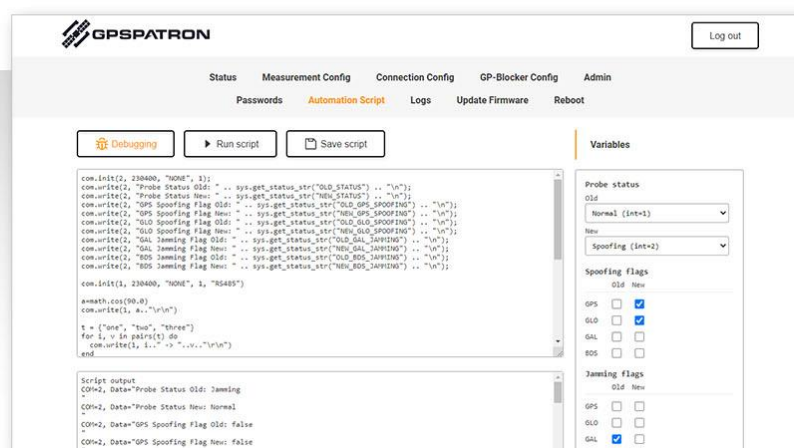
## Onboard Spoofing Detection

The probe is compatible with GP-Cloud to detect advanced attacks and build a comprehensive monitoring system



## Embedded Lua Scripting

You can develop complex LUA scenarios in response to GNSS spoofing/jamming/GNSS signal quality and PPS accuracy degradation



# Specifications

## AUTHORIZED USA DISTRIBUTION BY:

Cyntony Corporation  
195 Follen Road  
Lexington, Massachusetts  
sales@cyntony.com  
781-430-0675



### Supported GNSS:

- GPS L1 C/A
- QZSS L1 C/A L1S
- GLONASS L1OF
- BeiDou B1I/B1C
- Galileo E1B/C
- SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN

### Traceable GNSS:

Any combination of constellations

### GNSS Channels:

One GNSS RF channel for interference/anomaly detection and signal quality analysis

### Detected Threat Types:

Interference in 60 MHz band.

Anomalies caused by:

- asynchronous spoofing
- synchronous spoofing with high power
- synchronous spoofing after the start of parameter drifting

### GP-Probe Configuration:

Browser-based configuration and monitoring,  
GP-Cloud

### Display:

GP-Probe status  
Server connection settings and status  
GNSS channel status: satellites in view, RMS CNO

## Mechanical

### Housing:

DIN rail housing. Polyamide with metal foot catch

### Size:

139.4 x 118 x 25 mm

### Weight:

0.5 kg

## Environmental

### Operational Temperature:

-20°C to +50°C

### Storage Temperature:

-20°C ~ +70°C

### Humidity:

0% – 90% RH non-condensing @ 40°C

## GNSS Antenna Input

### Connector:

SMA(F)

### Max Input Power Level:

0 dBm

### Impedance:

50 Ω

### Antenna bias voltage:

3.3 VDC

### Maximum Antenna Current:

50 mA

### Detectable faults:

Short circuit  
Disconnected antenna

### ESD protection:

±15-kV Air discharge mode IEC 61000-4-2

## GNSS Antenna Output

### Connector:

SMA(F)

### Impedance:

50 Ω

|                                                                         |                                                                                                |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>ESD protection:</b>                                                  | ±15-kV Air discharge mode IEC 61000-4-2                                                        |
| <b>Embedded GNSS Jammer Output Power:</b>                               | -50 dBm, RMS                                                                                   |
| <b>Isolation Level for Closed Channel:</b>                              | >60 dB                                                                                         |
| <b>Maximum Allowable Input Voltage for Active Antenna Power Supply:</b> | 15 V                                                                                           |
| <b>PPS Input</b>                                                        |                                                                                                |
| <b>Connector:</b>                                                       | SMA(F)                                                                                         |
| <b>Impedance:</b>                                                       | 50 Ω, TTL compliant                                                                            |
| <b>High-Voltage Level (50 Ω):</b>                                       | 1.3 Min<br>5.5 Max                                                                             |
| <b>ESD protection:</b>                                                  | ±15-kV Air discharge mode IEC 61000-4-2                                                        |
| <b>PPS Output</b>                                                       |                                                                                                |
| <b>Connector:</b>                                                       | SMA(F)                                                                                         |
| <b>Impedance:</b>                                                       | TTL into 50Ω                                                                                   |
| <b>Typical Accuracy (clear sky):</b>                                    | < ±20 ns RMS to UTC (USNO), typical                                                            |
| <b>ESD protection:</b>                                                  | ±15-kV Air discharge mode IEC 61000-4-2                                                        |
| <b>I/O Connections</b>                                                  |                                                                                                |
| <b>Network Interface:</b>                                               | 10/100BASE-T RJ45                                                                              |
| <b>RS-232 interface:</b>                                                | HOST port for remote control of external equipment.<br>±15-kV Air discharge mode IEC 61000-4-2 |
| <b>Relay Output</b>                                                     |                                                                                                |
| <b>Relay Type:</b>                                                      | 1 Form C (SPDT); NO-C-NC                                                                       |
| <b>Contact Material:</b>                                                | Silver Alloy with Gold Alloy Overlay                                                           |
| <b>Switching Power:</b>                                                 | 60 W, 125 VA                                                                                   |
| <b>Switching Voltage DC:</b>                                            | 220 V                                                                                          |
| <b>Switching Voltage AC:</b>                                            | 250 VAC                                                                                        |
| <b>Switching Current:</b>                                               | 2 A                                                                                            |
| <b>Contact Resistance:</b>                                              | 75 mOhms                                                                                       |
| <b>Power Supply</b>                                                     |                                                                                                |
| <b>DC:</b>                                                              | 12 – 48 VDC                                                                                    |
| <b>Power Consumption:</b>                                               | < 3.5 W                                                                                        |
| <b>Supported Protocols</b>                                              |                                                                                                |
| <b>GP-Cloud interaction:</b>                                            | HTTPS                                                                                          |
| <b>Firmware Upgrade Server:</b>                                         | HTTPS                                                                                          |
| <b>Ethernet Protocol:</b>                                               | IPv4, DHCP (RFC 2131)                                                                          |
| <b>Regulatory Compliance</b>                                            |                                                                                                |
| <b>Complies with the requirements:</b>                                  | CE   FCC   RCM   ROHS                                                                          |

|                               |                                                         |
|-------------------------------|---------------------------------------------------------|
| <b>EMC:</b>                   | ETSI EN 301 489-1<br>ETSI EN 301 489-19<br>FCC Part 15B |
| <b>RF:</b>                    | ETSI EN 303 413<br>ETSI EN 301 511                      |
| <b>Safety:</b>                | EN 62368-1                                              |
| <b>Warranty &amp; Support</b> |                                                         |
| <b>Warranty:</b>              | 1 year<br>Extended warranty is available                |
| <b>Support:</b>               | 1 year of complimentary technical support               |
| <b>Package Content</b>        |                                                         |
| <b>GP-Probe:</b>              | 1 pc.                                                   |
| <b>Manuals:</b>               | Quick start guide                                       |

## Ordering Information

### GP-Probe DIN L1 model number definition

**GP-Probe**

Product

**DIN L1**

Product series

–

**PPS**

PPS accuracy  
measurement

**BL**

Built-in RF  
blocker

**RL**

Relay and  
RS232

**SCR**

Display and  
keypad

#### PPS

PPS input, PPS output,  
PPS phase measurement module.

#### BL

GNSS output,  
embedded RF blocker.

#### RL

NO-C-NC Relay,  
RS232 port.

#### SCR

Display and keypad.

### Software Options

#### Subscription to GP-Cloud

With GP-Cloud, you can monitor all your connected GP-Probes in real-time, receive notifications of detected events, and log all data for post-analysis.

#### GP-Probe DIN L1 opt.: OSP

Onboard signal processing for interference and anomaly detection. The GP-Probe can work without connecting to the GP-Cloud servers.

#### GP-Probe DIN L1 opt.: LUA

Develop custom scenarios for external equipment remote control via RS232 with the embedded LUA scripting engine.

#### GP-Probe DIN L1 opt.: STREAM

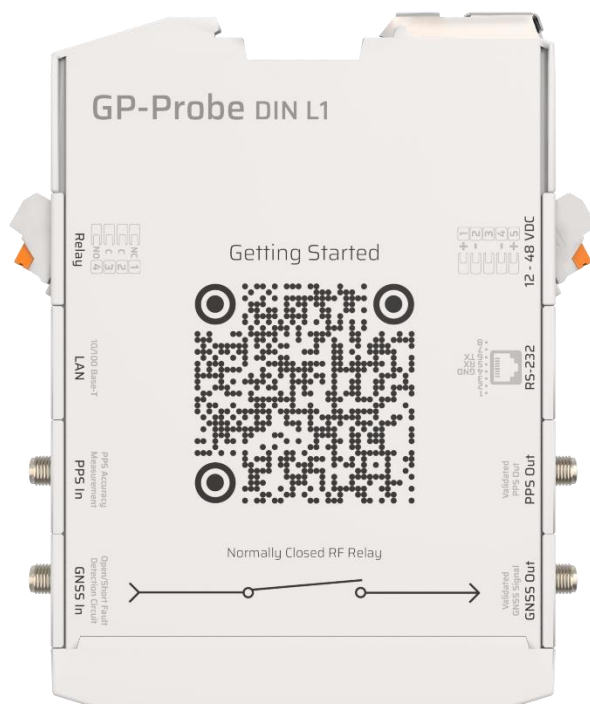
The option enables streaming and logging of raw and processed GNSS data to an external server via websocket. It enables the GP-Probe DIN L1 to be integrated into your own spoofing and jamming detection systems.

### Optional Accessories

#### GP-Divider

GNSS power divider with GNSS antenna preamplifier current simulation. It allows you to use one GNSS antenna for two receivers at once.

## Gallery







**AUTHORIZED USA  
DISTRIBUTION BY:**

Cyntony Corporation  
195 Follen Road  
Lexington, Massachusetts  
sales@cyntony.com  
781-430-0675

**cyntony**  
customer attuned