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
- LUA scripting for custom scenario

- RF spectrum analyzer
- 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.

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



- 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.



Embedded Lua Scripting

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

# GPSPATRON	Log out
Status Measurement Config Connection Config GP-Bio Passwords Automation Script Logs Update Firm	cker Config Admin ware Reboot
Image: Save script	Variables
<pre>com.init(2, 130400, "MOME", 1); com.write(2, 'Probe Status 01d: ', sys.get_status_str("010_SIATUS"), . "\n"); com.write(2, 'Probe Status 01d: ', sys.get_status_str("NDM_SIATUS"), . "\n");</pre>	Probe status Old
<pre>com.urite(2, "OPS Spoofing Flag Ods" sys_get_status_str("OLD_OPS_SPOOFING") "\n"); com.urite(2, "OPS Spoofing Flag New: sys.get_status_str("NBL_OPS_SPOOFING") "\n"); com.urite(2, "GLS Spoofing Flag Ods" sys.get_status_str("OLD_GLS_SPOOFING") "\n");</pre>	Normal (int+1)
<pre>com.write(2, Gul Spooling Flag New: sys.get_status_str("NME_GUG_STOOLING") 'Nn'); com.write(2, 'Gul Jamming Flag Old: sys.get_status_str("OLD_Gul_JANETING") 'Nn'); com.write(2, 'Gul Jamming Flag New: sys.get_status_str("NME_GUL_JANETING") 'Nn'); com.write(2, 'Gul Jamming Flag New: sys.get_status_str("NME_GUL_JANETING") 'Nn');</pre>	Spoofing (int=2)
<pre>com.infle(c, bos) Jeming Fag New:sys.get_status_str("NEW_BOS_JAPHING") "(n"); com.infle(c, Tobac Jeming Fag New:sys.get_status_str("NEW_BOS_JAPHING") "(n"); com.infle(c, Tobaco "News"" "Reset")</pre>	Spoofing flags
avmath.cos(90.0)	695 C
com.write(1, a. ~ \r/\n') t = ("one", "two", "three")	elo 🗌 🖸
for i, v in pairs(t) do com.unite(1, i" -> "v."(r\n") .end	- GAL
Script output	a Jaming flags
COM+2, Date="Probe Status Old: Jamming	01d New
CON+2, Data* Probe Status News Normal	
cont, our of pooring ray out table	

Specifications

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
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

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

EMC:	ETSI EN 301 489-1	
	ETSI EN 301 489-19	
	FCC Part 15B	
RF:	ETSI EN 303 413	
	ETSI EN 301 511	
Safety:	EN 62368-1	
Warranty & Support		
Warranty:	1 year	
Warranty:	1 year Extended warranty is available	
Warranty: Support:	1 year Extended warranty is available 1 year of complimentary technical support	
Warranty: Support: Package Content	1 year Extended warranty is available 1 year of complimentary technical support	
Warranty: Support: Package Content GP-Probe:	1 year Extended warranty is available 1 year of complimentary technical support 1 pc.	



Ordering Information

GP-Probe DIN L1 model number definition



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

