



GPS-DS UPDATE

Rev 2.1


Dichiarazione di conformità
Declaration of conformity

La Ditta
The Company

DIGITAL INSTRUMENTS S.r.l.
Via Parco degli Scout, 13
20091 BRESSO (MI) ITALY

Dichiara con la presente che il Prodotto
Herewith declares that the Product

Tipo / Type

RF Disciplined Generator with Backup

Modello / Model

GPS-DS-8

Serial Number

0050 /

Oggetto di questa dichiarazione è conforme ai seguenti standard o norme della Comunità Europea
Referred to by this declaration is in conformity with the following standards or normative documents of EC

Norme Europee Armonizzate
European Armonized Standards

CEI EN 61000-6-4:2007

Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

CEI EN 61000-6-2:2006

Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

CEI EN 55011

Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment

CEI EN 61000-4-2

Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test

CEI EN 61000-4-3:2007

Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test

CEI EN 61000-4-4:2006

Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test

CEI EN 61000-4-5:2007

Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test

CEI EN 61000-4-6

Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields

CEI EN 61000-4-8:1997+A1:2001

Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test

CEI EN 61000-4-11

Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests

CEI EN 60204-1:2006

Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Bresso, March 2009

DIGITAL INSTRUMENTS S.r.l.
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Marco Genova
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Istruzioni di sicurezza Safety Instructions

Il dispositivo è stato progettato, costruito e collaudato in conformità alle normative richiamate nel Certificato di Conformità ed è stato rilasciato dal costruttore completamente testato secondo gli standard di sicurezza. Per mantenere questa condizione e assicurare la sicurezza d'uso, l'utente deve osservare tutte le istruzioni e segnalazioni di pericolo descritte in questo manuale.

This unit has been designed and tested in accordance with the EC Certificate of Conformity and has left the manufacturer's plant in a condition fully complying with safety standard. To maintain this condition and to ensure safe operation, the user must observe all the instructions and warnings given in this operating manual.

- **Prima di mettere in servizio il dispositivo, leggere attentamente ed integralmente le istruzioni per l'uso. Osservarle e seguirle in tutti i punti. Provvedere in modo che le istruzioni per l'uso siano sempre accessibili a tutti gli addetti.**

Prior to switching on the unit, please read carefully the instructions on the manual. Keep this manual available for all every user of this equipment.

- **Il terminale PE sul dispositivo deve essere connesso al conduttore PE prima di eseguire qualsiasi altra connessione. L'installazione ed il cablaggio devono essere eseguiti da personale tecnico qualificato.**

The PE terminal of the unit must first be connected to the PE conductor on site before any other connections are made. Installation and cabling of the unit to be performed only by qualified technical personnel.

- **Lo strumento supporta alimentazione AC wide range da 95 Vac a 240 Vac e deve essere connesso tramite protezione con corrente nominale massima pari a 16A.**

This unit may be operate from wide range AC supply networks from 95 Vac to 240 Vac fused with max. 16A.

- **Lo strumento supporta alimentazione DC wide range da 20 Vdc a 50 Vdc e deve essere connesso tramite protezione con corrente nominale massima pari a 5A. Il circuito di protezione contro l'inversione di polarità è implementato a bordo.**

This unit may be operate from wide range DC supply networks from 20 Vdc to 50Vdc fused with max. 5A. Circuit against polarity inversion is also implemented.

Le condizioni di sicurezza vanno testate ad ogni sostituzione. Ispezione visiva dei cavi, stato dell'isolamento, corrente di dispersione, stato del connettore PE e test funzionale.

A safety test must be performed after each replacement of part. Visual inspections, PE conductor test, insulation resistance, leakage-current measurement, functional test.

- **Non interrompere il conduttore PE in nessun caso. Un'interruzione del cavo PE rende l'apparato elettricamente pericoloso.**

It is not permissible to interrupt PE conductor intentionally, neither in the incoming cable nor on the unit itself as this may cause the unit become electrically hazardous.

- **Ogni riparazione, manutenzione e sostituzione del dispositivo deve essere eseguita unicamente da personale autorizzato dalla Digital Instruments.**

Any adjustments, replacements of parts, maintenance or repair may be carried out only by authorized Digital Instruments technical personnel.





- **Assicurarsi che ogni collegamento con dispositivi informatici sia eseguito secondo IEC950/EN60950**

Ensure that the connections with information technology equipment comply with IEC950/EN60950

Simboli di sicurezza Safety Symbols

Sono presenti sul dispositivo e nella documentazione simboli utilizzati per la segnalazione di segnalazione conformi alle specifiche IEC61010-1 II.

Safety-related symbols used on equipment and documentation comply with IEC 61010-1 II.

	<ul style="list-style-type: none"> • SIMBOLO DIRECT CURRENT IEC 417, N°5031 Vdc may be used on rating labels
	<ul style="list-style-type: none"> • SIMBOLO ALTERNATING CURRENT IEC 417, N°5032 For rating labels, the symbol is typically replaced by V and Hz as in 230V, 50Hz.
	<ul style="list-style-type: none"> • SIMBOLO PROTECTIVE CONDUCTOR TERMINAL IEC 417, N°5019 This symbol is specifically reserved for the PROTECTIVE CONDUCTOR TERMINAL and no other. It is placed at the equipment earthing point and is mandatory for all grounded equipment
	<ul style="list-style-type: none"> • SIMBOLO CAUTION ISO 3864, N°B.3.1 used to direct the user to the instruction manual where it is necessary to follow certain specified instructions where safety is involved.

Changelog

Rev.	Note	Data
1.0	First review	18/02/2009
2.0	Added possibility to update the GPS-MODULE	14/04/2010
2.1	Updated CE certification	10/02/2012

GPS-DS UPDATE

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1.0 Summary

This manual gives some indications on the firmware update process of the **GPS-DS** and **GPS-MODULE**.

This update can be done in two different ways:

- Via network connection
- Via serial (RS-232) connection (only for GPS-DS)

The first one is faster, whilst the second one can be done even when a previous update has failed, due to a temporary power failure, for example.

Note

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2.0 Software update through network connection

Is suggested to close any eventually open connection with the device (e.g. WEB Browser) before proceeding with the network update.

The possibility to update the GPS-MODULE is present since the release 2.0 of the software utility, that can be downloaded from the Digital Instruments web site at *GPS-DS* → *Software* → *Update utility (ethernet)*.



GPS-DS

After having launched the application the user must:

1. Make sure that the TARGET filed is set on **BOARD**
2. Insert the IP address of the board
3. Click on the **TCP Link OFF** button and check that the led would turn to green
4. Click on the **Erase** button and wait for the led to get green
5. Click on the **Update** button and choose the appropriate .BIN file with the firmware to load
6. After the update process is completed (it may take a few minutes) it is possible to click the **Reset** button to restart the board
7. Then click on the **TCP Link ON** button to close the connection

GPS-MODULE

Please note that if the update of the GPS-MODULE would fail the module itself could brick and would not resume its normal functionality. In this case it would need a servicing at our site to restore its functionalities.

In case of a timeout it is possible to launch the update process again, without removing the module or unplugging the power.

After having launched the application the user must:

1. Make sure that the TARGET filed is set on **GPS MAIN** or **GPS BACKUP**
2. Insert the IP address of the board
3. Click on the **TCP Link OFF** button and check that the led would turn to green
4. Click on the **Erase** button and wait for the led to get green
5. Click on the **Update** button and choose the appropriate .BIN file with the firmware to load
6. The power led on the GPS-MODULE should start to blink at a few seconds interval
8. After the update process is completed (it may take a few minutes) it is possible to click the **Reset** button to restart the module
7. Then click on the **TCP Link ON** button to close the connection

In order to be sure the update has been successfully completed is possible to remove the module, plug it in back again and check under Status→GPS that the software revision is correct.

Software update through serial connection (only for GPS-DS)

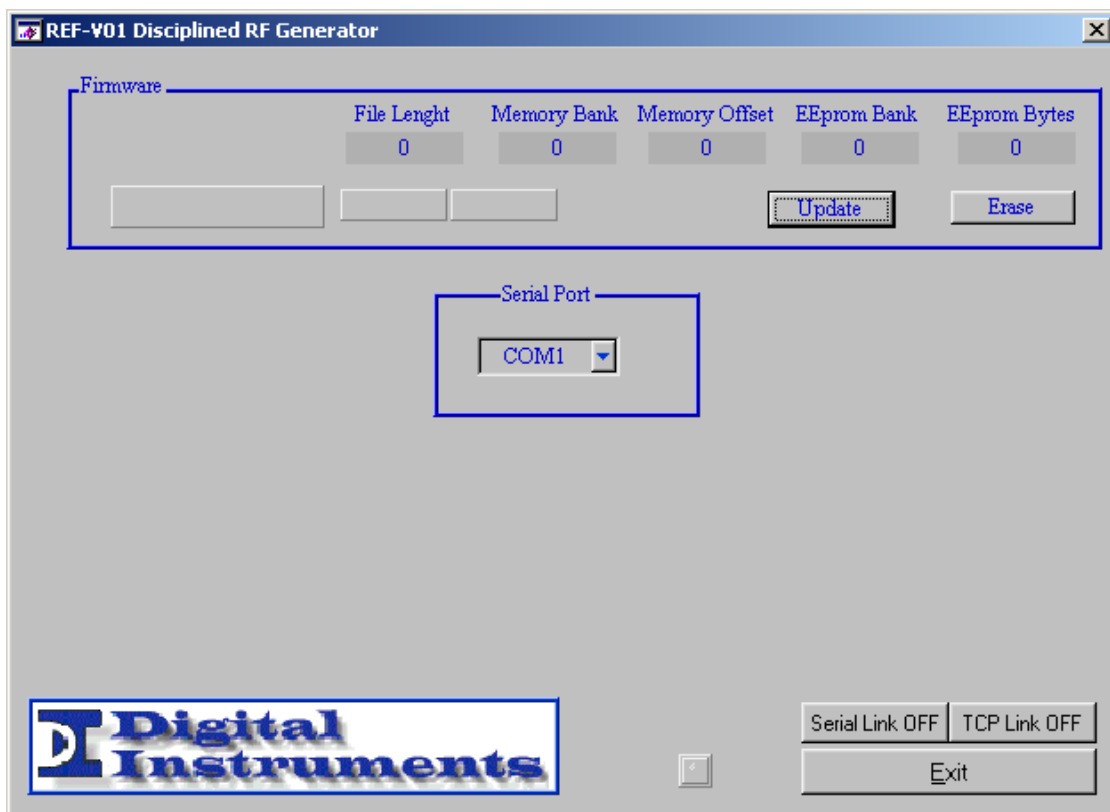
The PC must be provided with a serial connector DB9M (9 pins).

The signals on each pin are shown in the following table:

Pin	Signal	I/O	Signal description
1	DCD	I	Data Carrier Detect (optional)
2	RxD	I	Received Data
3	TxD	O	Transmitted Data
4	DTR	O	Data Terminal Ready
5	GND	-	Signal Ground
6	DSR	I	Data Set Ready
7	RTS	O	Request to Send
8	CTS	I	Clear to Send
9	RI/+5...+15V	I/O	Ring Indicator (optional) or auxiliary supply voltage (optional)

A null-modem cable must be used, with the tx and rx lines switched (to let two DTE devices to talk). It may be that some USB→RS232 adapter would cause problems with the electrical criteria.

The serial update program is shown in the following figure:



After having chosen the correct COM port it is possible to proceed with the software update of the firmware.

1. Connect the PC and the apparatus via the null-modem cable.
2. Click on the **Serial Link** button to rise the criteria on the serial port.
3. Reboot the device (via software or by unplugging the power cord). After boot only the lower led on the keyboard will be on. This means that the board entered the software update mode.
4. Click on the **Erase** button and wait for the right led on the keyboard to light up (it may take as long as 30 seconds).
5. Click on the **Update** button and choose the FlashUpdate.bin¹ file. Wait for a minuite until EEprom Bank would have reached the same value of Memory Bank. Click on the **Serial Link** button to lower the electrical criteria on the serial port.
6. Reboot the device
7. After boot only the lower led on the keyboard will be on, to indicate that the Flash Update code is running.

Now is possible to connect to the device via network connection with the fixed IP address of **192.168.200.1**, and then following the normal network update procedure.

Please note that it is necessary to erase the flash once again.

If the update process hanged/crashed it would be possible to repeat the update process without rebooting the board, but if a power failure happened it would be necessary to restart from the beginning, including the flashing of the Flash Update.bin firmware.

It is also possible to avoid flashing the FlashUpdate.bin file and directly choose the full firmware file, but please consider that it will take much more time (almost 10 munutes).

¹ The FlashUpdate.bin file can be downloaded from the Digital Instruments website under the download section of the GPS device