OPERATION MANUAL

RID)))))(((ISO MAX IV

The RID)))))(((® ISO MAX IV is a portable, high-performance Radio Frequency Tag reader.

It is designed to read RID)))))(((® and other Tags.

This manual describes the use of the Portable Reader ISO MAX IV.

The RID)))))(((® ISO MAX IV reader and the RID)))))(((® Tags, are according to ISO Standard 11784/11785 and are DATA*MARS* products. The RID)))))(((® ISO MAX IV reader and the RID)))))(((® Tags are distributed in the UK by Bayer PLC under the Trademark "Tracer Animal Coder".

RID)))))(((® is an internationally registered Trademark

I N D E X

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1. Description

Antenna

Display

Menu buttons

Power ON &
Start Reading
button

USB or RS232
communication
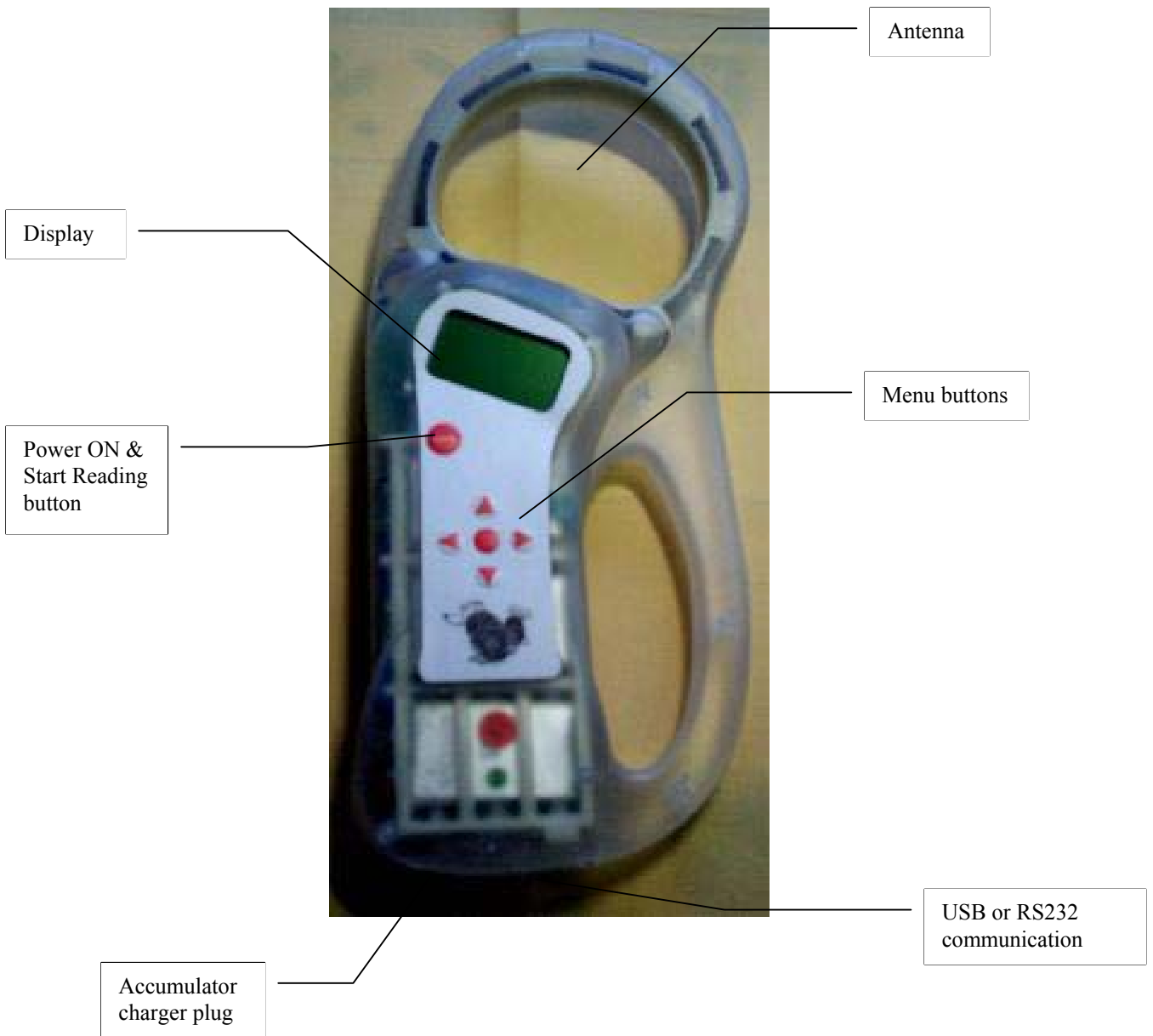
Accumulator
charger plug

Fig. 1: Outline of the ISO MAX IV reader

2. Operation

Although the ISO MAX IV was designed for easy use we recommend that you read this manual carefully in order to be familiar with all its useful features.

2.1. Reading a code with ISO MAX IV:

2.1.1. Power ON

Make sure that the charger is not connected to the reader.

Pass your hand through the handle and use your thumb to push the start button in the top left corner of the panel.

Start
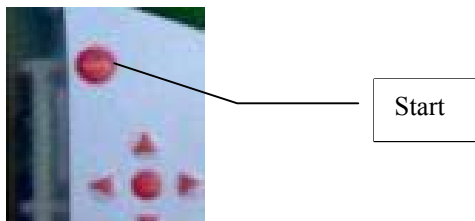
Fig. 2

The display shows the following window :

Firmware version

mem :
OFF
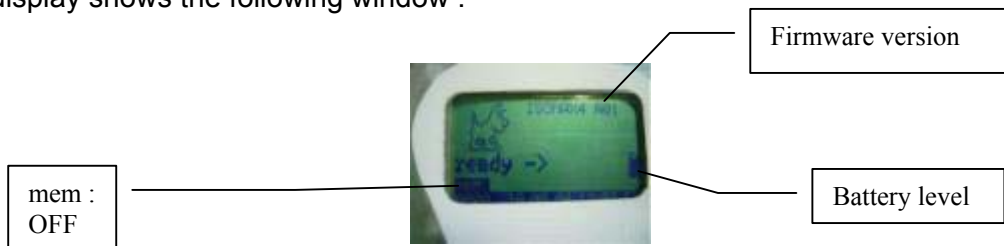
Battery level

Fig. 3

This message indicates that the reader is functioning correctly and is ready to read a transponder (tag). "A.x". informs about the firmware version and is of no importance to the user.

Check that the battery level is not empty (the indicator must not be entirely clear).

Check if the code memory is enabled or disabled by looking at the tool bar on the bottom of the screen.

Mem: OFF
Indicates that the transponder codes read will not be saved in the reader memory.

Mem: ON
Indicates that any transponder read will be saved in the memory. The capacity off the memory is 2000 codes with date and time saved with the code number. See chapter 3.1.1. **memory functions menu window** for more information.

2.1.2. Reading a transponder

In order to read, press the start button again. The display will show the following:

Fig. 4

 reading means that your reader is searching for a transponder (tag).

According to a specific analysis the reader scans through the different tag types.

Place the ISO MAX IV near the tag to be read.

If an ISO transponder has been read the display will show the following:

Fig. 5

This display indicates that a transponder (tag) ISO 171784/5 FDX-B or HDX-B with the country code "Austria" and the identification code number "040" (country code) " 098101065557" has been found.

If other code FDX-A are read the display will show the type or category of this transponder.

```
┌─────────────────────────┐
│  IDI:                   │
│    7 012 345 97F        │
│                         │
└─────────────────────────┘
```
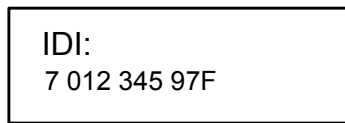
Fig. 6

Type displayed are:
  - **IDI** for Destron, Avid, PETRAC and similar
  - **TVN** for Trovan, AEG, and similar

If no transponder has been found, the display will show the following ("Tag not found"):

Fig. 7

The code will be displayed for about 90 seconds, then the ISO MAX IV will switch off automatically in order to save battery life.

Note: If the display indicates **NO ANIMAL CODE**: This means that the transponder was read and has the same structure code as the ISO 11785 but is not an animal transponder. (Animal bit not set). To avoid number coincidence the ISOMAX IV will not accept to show the number. Please contact Datamars SA for more information.

2.1.3. Code saved to memory

If the **mem** is **OFF** the code will not be memorized. In order to memorize the code switch **mem** to **ON**. Please see chapter 3.1.1. **memory functions menu window** for more information.

When the memory is full (max. 2000 codes) the display will show: "**Memory full**" and   no more reading will be allowed.

It is possible to read more code by (unloading) clearing the memory or by disabling the memory (mem: OFF).

2.1.4. Code read and send to the computer

All code read are send to the communication line USB or RS232.
Please refer to chapter @@@@@ for more information.

2.1.5. Transfer of codes to the PC

All the code saved in the memory can be send to the computer by a button the ISOMAX IV menu. Please refer to chapter 3.1.6. **SERIAL DUMP**.
All code read are sent to the communication link instantaneously.
Please refer to chapter 4.1. **Real time communication** for more information.

3. Managing the menu. How to enter into the menu window

Power on the reader by pushing the **start** button. (Please ref. To chapter 2.1.1).

Push the round button to enter into the menu.
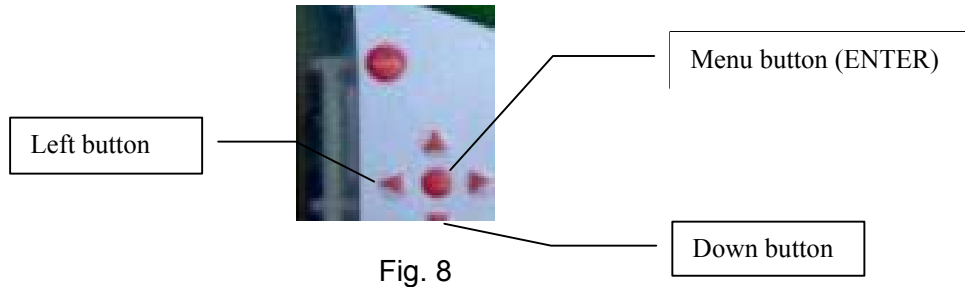
Fig. 8

The display will show the menu window:

Fig. 9

Note: If the button menu is pushed and no action is done the main the ISOMAX IV will switch to the main window after a few seconds.

3.1. 1. Memory functions menu window

Move to the **MEMORY functions** window by pushing on the **down** button.

Once selected the **MEMORY functions** push the **menu** button to enter the MEMORY functions window.
The display will show the following window:

Fig. 10

3.1.2. Browsing the memory

Move to the **BROWSE** function window by pushing on the **down** button.
Once selected the **BROWSE** function push the **menu** button to enter the BROWSE window.
The display will show the following window:

Fig. 11

The window shows 6 codes at once. The tool bar (reverse video) shows the date and the time of 1 code which correspond to the 1 selected.
The code in tool bar is used also for the memory features. See chapter @@@ for more information.
You can browse up and down using the up and down buttons. If the button if pressed more than 2 seconds the browsing up or down will be accelerated for a fast searching.
You can also use the right and left buttons to jump a complete page at a time for a very fast searching up and down respectively.

To exit the **BROWSE** window press the **menu** button (fig. 8).

To exit the **MEMORY** functions menu window, position the cursor on **OK** (if not already) and press the **menu** button.

To exit the **MENU** position the cursor on **EXIT** (if not already) and press the **menu** button.

Note: If there is no action for several seconds the menu windows closed and set on the main window.

3.1.3. Clear memory

It is possible to clear the memory: Using the **CLEAR** function window or sending a command from the computer.

Using the **CLEAR** function window:
Move to the **CLEAR** function window by pushing on the **down** button.
Once selected the **CLEAR** function push the **menu** button to enter the **CLEAR** window.
Move to the **YES** with the **down** button.
The display will show the following window:

Fig. 12

To <u>clear</u> the memory press the **menu** button, to <u>avoid clearing</u> the memory move to the **OK** with the **right** button and press the **menu** button.

To exit the **MEMORY** functions menu window, position the cursor on **OK** (if not already) and press the **menu** button.

To exit the **MENU** position the cursor on **EXIT** (if not already) and press the **menu** button.

Note: If there is no action for several seconds the menu windows closed and set on the main window.

From the computer command:
Connect the ISOMAX IV to the computer and send the command in ASCII ".rX" (dot r X)

3.1.4. Set the memory ON / OFF

Move to the **ON OFF FEATURES** function window by pushing on the **down** button.

If you desire to save the code read in the memory (up to 2000 codes):
Once selected the **ON** function push the **menu** button to enter the **ON** window.
Press the **menu** button to set the memory **ON.**
The display will show the following window:

Fig. 13

Press the **menu** button to return to the **MEMORY functions** menu.

If the code should not be memorized move to the **OFF** with the **right** button and press the **menu** button to set the memory **OFF**.
Press the **menu** button to return to the **MEMORY functions** menu.

3.1.5. Select the features "memory hit" and "selected hit"

Move to the **ON OFF FEATURES** function window by pushing on the **down** button.
Move to the **FEATURES** using the **right** button and press the **menu** button to enter the
FEATURE window.
The display will show the following window:

Fig. 14

MEMORY HIT is used to inform you how many times a code is in the memory. When you
read a transponder the "**code hit:** " above the tool bar indicates how many times this code is
saved already in the memory.
Move to the option **MEMORY HIT** using the **down**, **right** or **left** buttons, then enter the option
ON and enable it by pressing the **menu** button.

SELECTED HIT is used to inform you if the code you just read is already in the memory. The
ISOMAX IV will beep several times once the code is found. This is useful to search for a
transponder number.
The code must be first introduced in the memory by a read code with the memory ON. See
chapter 3.1.2.3.
Once the **SELECTED HIT** feature is **ON**, open the **BROWSE** window (see chapter 3.1.2.1.)
and select the code you desire to search by placing it to the position indicated to the tool bar
(reverse video).
When the reading is performed the code selected for the search will be displayed above the
tool bar.
To select the feature, move to the option **SELECTED HIT** using the **down**, **right** or **left**
buttons, then enter the option **ON** and enable it by pressing the **menu** button.

Note: Only one feature at a time can be selected. To unselect the features use the same
procedures. Go to the **FEATURES** window (fig. 14), select the feature to **OFF**. It is not
important to remember which feature was selected, the **OFF** will disable either feature.

To exit the **MEMORY** functions menu window, position the cursor on **OK** (if not already) and
press the **menu** button.

To exit the **MENU** position the cursor on **EXIT** (if not already) and press the **menu** button.

Note: If there is no action for several seconds the menu windows closed and set on the main
window.

3.1.6. SERIAL DUMP (Download/Upload) **the code memorized into a computer**

It is possible to download the data to a computer: Using the **SERIAL DUMP** window or
sending a command from the computer.
From the **SERIAL DUMP** menu:
Move to the **SERIAL DUMP** function window by pushing on the **down** button.
Press the **menu** button to start the sending of all codes in memory into the serial
communication.

The display will show the following window:

Fig. 15

To exit the **MEMORY** functions menu window, position the cursor on **OK** (if not already) and press the **menu** button.

To exit the **MENU** position the cursor on **EXIT** (if not already) and press the **menu** button.

Note: If there is no action for several seconds the menu windows closed and set on the main window.

From the computer command:
Connect the ISOMAX IV to the computer and send the command in ASCII ".rF" or ".rS" (dot r F or dot r S)

3.2.1. CLOCK adjust

See chapter 3.1. **How to enter into the menu window**.

Move to the **CLOCK adjust** window by pushing on the **down** button.

Once selected the push the **menu** button to enter the clock menu window.
The display will show the following window:

Fig. 16

Press the button **Down** to select **HOUR** or **DATE**.
Press the button **Right** to select the **hour:minute:second** or the **day.month.year** field.
Use the Up or Down button to change the value.
Note: The seconds will only be set to 00 when changing the value.

Once a value is changed press the ENTER button (or menu button) see fig. 8 to validate the change. You can check the changes observing the menu bar on the bottom. The date and time are active.

Press the **Right** button to position the cursor to the **OK** to exit the **CLOCK** menu.

To exit the **MENU** position the cursor on **EXIT** (if not already) and press the **menu** button.

Note: The time can be changed using the utility TiMax (for p.c.). TiMax can be found in the supplied CD.

4.   Connection to an Host or PC

There are two interests to connect the ISO MAX IV to a Host:

1) By sending a code to a terminal or P.C. in real time (immediately after being read)
2) By downloading the saved codes from the ISOMAX IV memory into the host. See chapter **3.1.6. SERIAL DUMP**

There are two types of ISOMAX IV communications:

1) **USB**
2) **RS232**

The USB communication requires an installation of the USB drivers.
You can find the drivers in the CD supplied.
For the developers: The USB drivers will installed the communication USB link as a VCP.

Virtual COM Port (VCP) Drivers appear to the system as an extra Com Port (in addition to any existing hardware Com Ports). Application software accesses the USB device in the same way as it would access a standard Windows Com Port using the Windows VCOMM API calls or by using a Com Port Library.

Use the USB cable type A-B supplied with the ISOMAX IV.

Fig. 17

The RS232 communication does not requires any installation.

For both communication port the serial should be set as:
- 9600 bauds, no parity, 8 bit, 1 stop bit
- XON XOFF protocol

4.1.   Real Time communication

To send a code directly to a terminal after being read :

a)   Plug the communication cable

Use a terminal emulator program such as Windows HYPERTERMINAL (P.C.)

In HYPERTERMINAL environment set the communication:
     - 9600 bauds, no parity, 8 bit, 1 stop bit
     - XON XOFF protocol
     - TTY emulated.

b)   Start the reading as referred in chapter 2.1.

The data will be sent directly to the host without protocol. The format of the data is 29 characters ASCII + carriage return + line feed.
Any terminal or P.C. will accept this format.

4.2. Download the saved code from the ISOMAX IV and an host.

See chapter 4. for the communication connection.

Open program HYPERTERMINAL.EXE on your PC.

Open a receive file into your terminal and then do a **SERIAL DUMP** or send a ASCII command from the host. See chapter 3.1.6. **SERIAL DUMP** to download the data.

Should you need further information on the commands, please call DATAMARS SA.

Data: string of characters

The string of characters is 29 ASCII characters long.

The first three numbers indicate the Country code of the ISO 11785 transponder. The first three letters indicate the kind of supplier for the non ISO transponder.

Examples:
981000000001234 240804 154809 ISO transponder with manufacturer code Datamars
528210000004567 240804 130812 ISO transponder with Netherland country code
IDI__7F7E12177E 240804 155701 IDI, PETRAC, VALID or similar
TVN_712746517F 240804 155706 Trovan, AEG transponder or similar

5. Battery (Accumulator)

5.1. Battery indicator

The battery indicator is located to the right of the display. See fig. 3.
In this manual the term battery or accumulator is used.
The ISOMAX IV is equipped with cells Li-ion high quality accumulator. These cells are in the reader and part of the electronic module.

5.2. Recharging the accumulator

To recharge the battery, connect the accu charger has into the socket at the bottom of the reader. See fig. 18.
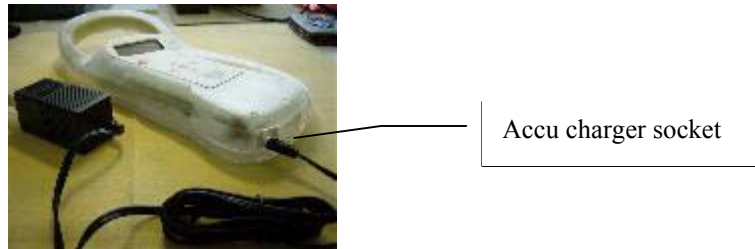

Accu charger socket

Fig. 18

Once the charger plugged, the ISOMAX IV goes into charging mode and will indicate the status of the charging with the battery indicator located to the right of the display. See fig. 3.
The charging time is controlled by the ISOMAX IV and is about 3 hours. After 2 hours the charge is already at approx. 80% of its full charge.
Once the battery is charged the ISOMAX IV will beep and display the message that the charger can be unplugged.

The average number of readings when accumulator is fully charged is greater than 1000 readings.

Note:
When using the reader for the first time it is recommended to use it until its accumulator is fully discharged. Then recharge the accumulator using the charger supplied with the ISOMAX IV. The battery needs at least 3 to 4 a full charges and discharges before giving its full potential.

It is always recommended to wait that the battery is discharged before recharging it. This will expend the life of the battery.

Leaving the battery charger plugged in after the charge is finished will not damage the battery since the ISOMAX IV is in complete control of the charging.

Also it is recommended to use the original Datamars charger it is possible to use a regular power supply to charge the ISOMAX IV.
The output characteristics must be: DC regulated power, 15 VDC, minimum 1 ampere.

6.   Care of your reader

Ensure that the reader does not get damaged by dropping it onto a hard surface nor by subjecting it to very wet conditions.

If the outer casing of the reader becomes soiled it can be cleaned with a slightly humid cloth, at first having ensured that it is not connected to the charger.

If for any reason the reader malfunctions please do not attempt to repair it, but return it for repair to your local dealer.

The ISO MAX IV reader is equipped with a Li-ion type battery. This battery lasts longer, does not contain Cadmium nor lead which makes it much safer for the environment.
In case the reader has to be destroyed please return it to a battery specialist.

The display of the reader ISO MAX IV may change color if exposed to temperatures higher than 50 deg. C. It will return to its original colour as soon as the temperature gets below 50 deg. C.
At very low temperature the display may loose its contrast but at normal temperature it will return to the normal contrast.

7.   Specifications

Dimensions	approx. 330 x 160 x 40 mm
Weight	534 g.
Operation temperature	0 - 50 Degrees C.
Storage temperature	0 - 40 Degrees C.
Humidity	20 % ~ 70 % without condensation
Accumulator	integrated 3 cells 3.7V, 740mAh, Li-ion type
Accu Charger	in 230 VAC, out 15VDC, 1A.

Accessories :

- Battery charger with connection cable

- Communication cable USB or RS232 + CD

- Operation manual ISO MAX IV

- Warranty certificate

8. USB installation

To be done

Appendix: Do you have problems in identifying an animal ?

The reading distance is too short

The maximum reading distance is obtained with the transponder (tag) oriented perpendicularly to the antenna and aimed at the center of the antenna coil. If the tag is implanted into an animal its orientation may not be optimal and therefore the reading distance may be reduced.

You might be close to a source of electromagnetic disturbances like video or TV. Move a few meters from the place you are and try again.

Do not use the reader on a steel table. The metal will reduce the performance of the antenna.

The reading distance is reduced if the tag is still in the needle.

The reader does not read the transponder

Change angle of the reader and try again.

Some types of tags from other manufacturers are disturbed if placed in the center of the reader-antenna. It is possible that some tags will not function if placed in parallel and at the center of the antenna. Change the direction of the tag or of the antenna.

The reader does not work

Charge the reader for at least 30 minutes and try again. (Recommended time for fully battery recharging = 3 hours)

Check the ambient temperature: It has to be between 0º C and 50º C.

If you're still having problems, please contact your dealer. Your reader may need to be repaired.

The ISO MAX IV reader is a product developed and produced by DATA*MARS* SA, Switzerland.

Should you have any suggestions or require information regarding this or other DATA*MARS* products, please contact your dealer.

Lugano, Switzerland, Sept 2004

DATA*MARS* SA
Via ai Prati
CH - 6930 Bedano-Lugano
E-Mail: contact@datamars.com

INFORMATION TO USER

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.