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“RIS Hi-Mod System

Installation Guide and User Manual



**RIS Hi-Mod -
Installation Guide
and User Manual**

Pisa, August 2009

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SAFETY INFORMATION

The equipment conforms to the following requirements set by EC regulations, including subsequent modifications, and to the legislation set by the member states that implement these regulations:

1999/05/EEC Radio Directive

Warning: this equipment is destined for use in industrial environments (Class A apparatus). In residential, commercial and light industry environments, this apparatus may generate radio interference: in this case, the user may be required to operate while taking appropriate countermeasures.

The apparatus is sensitive to the presence of external electromagnetic fields, which may reduce its performance.



IMPORTANT NOTE FOR THE US CUSTOMERS

FCC ID: UFW-Hi-Mod

This device complies with part 15 of the FCC Rules:

Operation is subject to the following 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

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Operation of this device is restricted to law enforcement, fire and rescue officials, scientific research institutes, commercial mining companies, and construction companies. Operation by any other party is a violation of 47 U.S.C. § 301 and could subject the operator to serious legal penalties.

Coordination Requirements.

(a) UWB imaging systems require coordination through the FCC before the equipment may be used. The operator shall comply with any constraints on equipment usage resulting from this coordination.

(b) The users of UWB imaging devices shall supply detailed operational areas to the FCC Office of Engineering and Technology who shall coordinate this information with the Federal Government through the National Telecommunications and Information Administration. The information provided by the UWB operator shall include the name, address and other pertinent contact information of the user, the desired geographical area of operation, and the FCC ID number and other nomenclature of the UWB device. This material shall be submitted to the following address:

Frequency Coordination Branch., OET

Federal Communications Commission

445 12th Street, SW

Washington, D.C. 20554

ATTN: UWB Coordination

(d) Users of authorized, coordinated UWB systems may transfer them to other qualified users and to different locations upon coordination of change of ownership or location to the FCC and coordination with existing authorized operations.

(e) The NTIA/FCC coordination report shall include any needed constraints that apply to day-to-day operations. Such constraints could specify prohibited areas of operations or areas located near authorized radio stations for which additional coordination is required before operation of the UWB equipment. If additional local coordination is required, a local coordination contact will be provided.

(f) The coordination of routine UWB operations shall not take longer than 15 business days from the receipt of the coordination request by NTIA. Special temporary operations may be handled with an expedited turn-around time when circumstances warrant. The operation of UWB systems in emergency situations involving the safety of life or property may occur without coordination provided a notification procedure, similar to that contained in CFR47 Section 2.405(a)-(e), is followed by the UWB equipment user.

Notice: Use of this device as a wall imaging system is prohibited by FCC regulations.



CLEANING INFORMATION

Before cleaning any external parts of the apparatus, make sure that all cables have been disconnected, including the power supply cable. If a damp cloth is used, make sure it is not too wet, to avoid any damage to the electrical components of the equipment. Wait until the equipment is totally dry before reconnecting the cables.

The Detector Duo should be cleaned periodically using a damp cloth.

Do not use solvents or abrasive detergents.

Do not apply liquid directly to the electrical contacts of the various connectors. If a specific spray is used to clean the PC TFT monitor, make sure it is not flammable; in any case, do not spray it directly on the screen, instead, spray it onto the cleaning cloth.



BATTERIES REMOVAL INFORMATION

Laptop Batteries:

Manufacturer: PANASONIC

Type: Li-ion Ni

Characteristics: 10.65V 5.7Ah

Removal instructions:

1. turn off the laptop;
2. open the drawer with the symbol of the batteries;
3. extract the battery pack pulling the tab.

Radar batteries:

Manufacturer: FIAMM FG21202 / SAFT MP176065

Type: rechargeable lead acid / rechargeable lithium-ion

Characteristics: 12V & 12Ah / 15V & 6.8Ah

Removal instructions:

1. disconnect the battery from the instrument:
 - a. pull the connector wings;
 - b. separate the connectors;
2. remove the battery from the cover (optional) opening the strap.



The crossed out wheeled bin symbol shown on the equipment indicates that the product must be recycled separately from other waste at the end of its useful life.

Separate waste disposal of this product at the end of its useful life will be organised and managed by IDS. When you decide to dispose of the equipment, contact IDS and follow the system that IDS has set up to permit the separate collection of the apparatus at its life end.

Adequate separate collection for its subsequent recycling, treatment and environmental friendly disposal contribute towards avoiding any unnecessary effects on the environment and to health and favour the reuse or recycling of the materials that make up the equipment. Unauthorised disposal of this product as unsorted waste by its possessor will lead to an administrative penalty foreseen by national regulations.

WARRANTY CERTIFICATE CONDITIONS

- 1) IDS Ingegneria dei Sistemi S.p.A, hereinafter referred to as IDS, warrants hardware/software products for a period of 12 months from the delivery date to the original customer;
- 2) The delivery date is certified by the “Warranty Registration Form”;
- 3) IDS’s hardware products will be free from defects in materials workmanship under normal use and service;
- 4) IDS’s obligation is limited to repairing or replacing parts or equipment which are returned to IDS, without alteration or further damage, and which in IDS s judgment, were defective or became defective during normal use;
- 5) IDS’ software will have to be installed on a PC according to the requirement of the IDS hardware (see IDS User’s Guide the Software Data Acquisition);
- 6) IDS’ s software products designed by IDS for use for IDS hardware products are warranted not to fail to execute their programming instructions due to defects during the warranty period, provided they are properly installed on IDS hardware products. IDS does not warrant if the IDS software will be used and operated in hardware and software combinations not selected by IDS;
- 7) IDS does not assumes any liability for any direct, indirect, special, incidental or consequential damages or injuries caused by proper or improper operation of its equipment whether defective or not defective;
- 8) This software may include automated data processing and analysis tools. While every effort is made to ensure the accuracy of the information provided by those tools, they must not be intended as a substitute for intelligent analysis; rather, they have to be intended as an advisor and the user must not completely rely on the results provided by them to give the complete answer. IDS assumes no liability for any direct, indirect special, incidental or consequential damages or injuries caused by such reliance on the accuracy, reliability, or timeliness of the information provided by those tools. Any person or entity who relies on information obtained from the automated data processing/analysis tools only, does so at his or her own risk;
- 9) IDS’s warranty does not extend and shall not apply to:
 - a) Products which have been repaired or altered by other than IDS personnel;
 - b) Products which have been subjected to misuse, neglect, accident or improper installation;
 - c) Products in which have been installed Hardware/Software accessories not supplied by IDS and/or without any approval by IDS;
 - d) Products which have been connected to equipment different from the ones supplied by IDS (except the PC data Logger which must conform to IDS specifications);
 - e) Products which have been damaged by natural disaster or calamities.
- 10) Before returning any equipment to IDS , you have to contact the IDS Customer Care Office that will authorize you to return the material to be repaired;
- 11) Once the parts/equipment to be repaired arrive to IDS, IDS may inspect the defective products to verify they are eligible for repair or replacement. All packing must be saved for inspection purpose in order to assist IDS to understand the cause of the defects. IDS, will not be obliged to repair, or replace for products returned as defective but damaged from abuse, misuse, negligence , accident loss or damage in transit;
- 12) The final clients, is responsible for ensuring the defective products returned to be properly packaged;
- 13) The above warranty are sole and exclusive, and no other warranty, whether written or oral, is expressed or implied.

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1. HARDWARE EQUIPMENT OF THE HI-MOD SYSTEM

Hi-MOD system offers you the possibility to choose up to four different equipments, matching the number of antennas you want to use. This handbook shows you the equipment you will receive and guides you through the configuration of your hardware.

1.1 One antenna equipment and configuration

Fig. 1-1 shows you the equipment you will receive for your mono antenna configuration. The equipment is composed of:

- A Rudder
- Two Wheel frames
- Two Junction pipes
- An Antenna and its cable
- A Battery and its cable
- DAD control unit
- LAN cable



Fig. 1-1 – Equipment provided for mono antenna configuration

1.1.1 Assemblage instructions

First you have to set the rudder in its mono antenna setting. The rudder has two free bars and four knobs (Fig. 1-2). The bigger ones must be screwed in vertically to block the free bars in place while the little ones can be screwed in two different position: if placed on the inside part of the frame you will get the mono or three antenna configuration (Fig. 1-3); if placed on the external part of the frame you will get the two or four antenna configuration (Fig. 1-14).



Fig. 1-2 – Rudder in mono antenna configuration

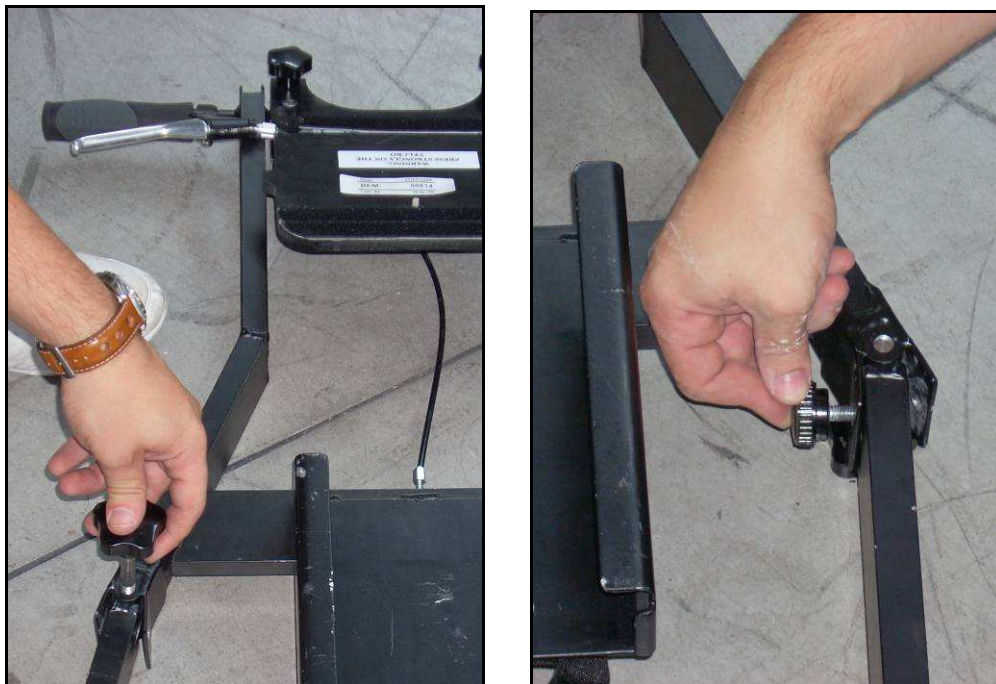


Fig. 1-3 – Rudder knobs: bigger one on the left, smaller one on the right

Now you have to build the frame carrying the antenna: you will need the equipment shown in Fig. 1-4. Take one of the wheel frame and screw the two junction pipes in it, then close the frame with the other wheel part (Fig. 1-5).

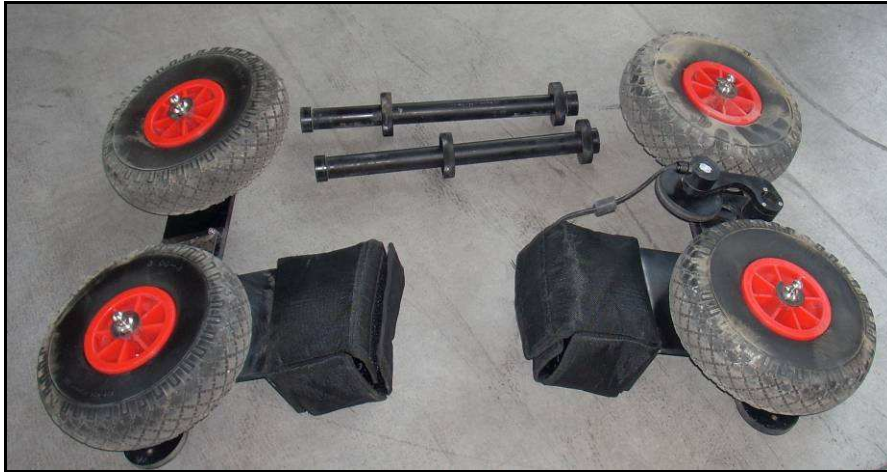


Fig. 1-4 – Antenna frame equipment



Fig. 1-5 – Junction pipes in position and closed frame

Place the rudder into the metallic junctions of the wheel frame as shown in Fig. 1-6 then insert the two locking devices shown in Fig. 1-7 in the metallic junctions. The locking devices are the two knobs with a little button in their centres: you have to push it , insert the knob in place and then release it.



Fig. 1-6 – Insertion of the rudder

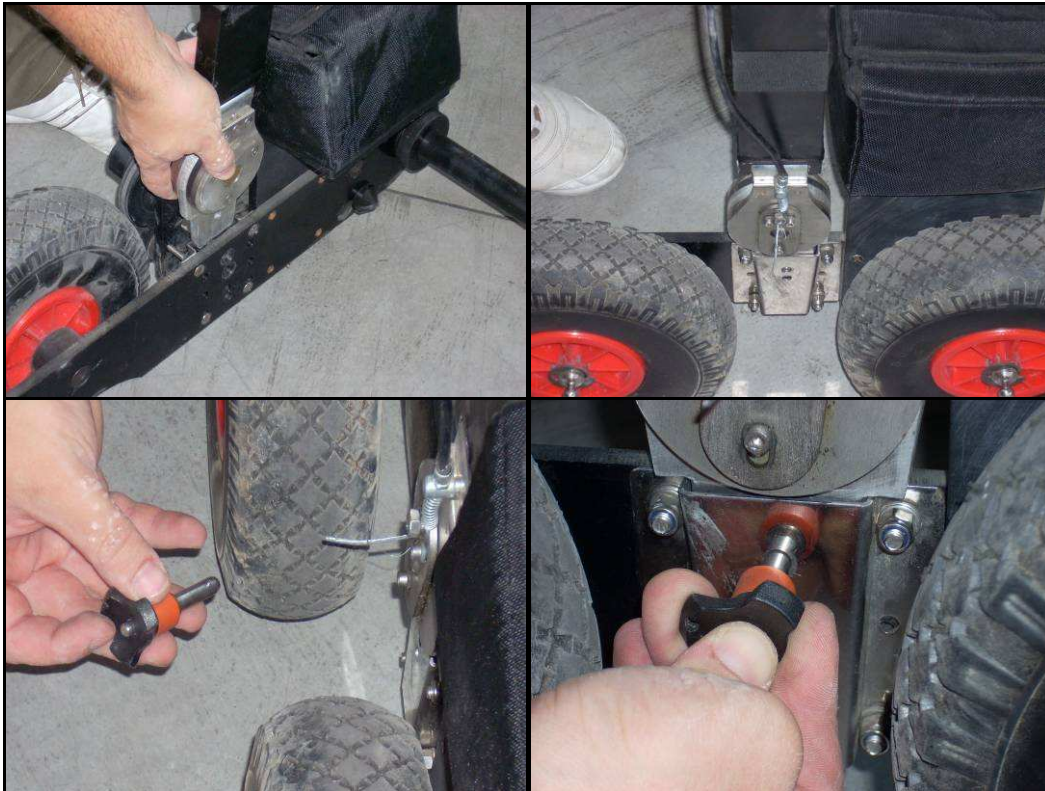


Fig. 1-7 – Close up of the metallic frames (up) and locking device (down)

Take the antenna and make it slide in the frame from behind. Remember to put and remove the antenna always from the rear part of the frame. When the antenna is in place lock it around the two junction pipes using its four hooks (Fig. 1-8).



Fig. 1-8 – Insertion of the antenna and close up of the hook

Finally put the DAD Control unit inside the box in the middle of the rudder (Fig. 1-9) and the battery in one of the two small black bags.



Fig. 1-9 – Insertion of the DAD Control Unit and battery

1.1.2 Wiring

Once the DAD unit is in place you have to connect it with the metric wheel, the antenna, the battery and your laptop.

The metric wheel cable is located on one of the wheel frames. Let it pass through the black strip on the rudder until you reach the first ferrite then link the connector with the *Wheel* port of the DAD unit (Fig. 1-10).

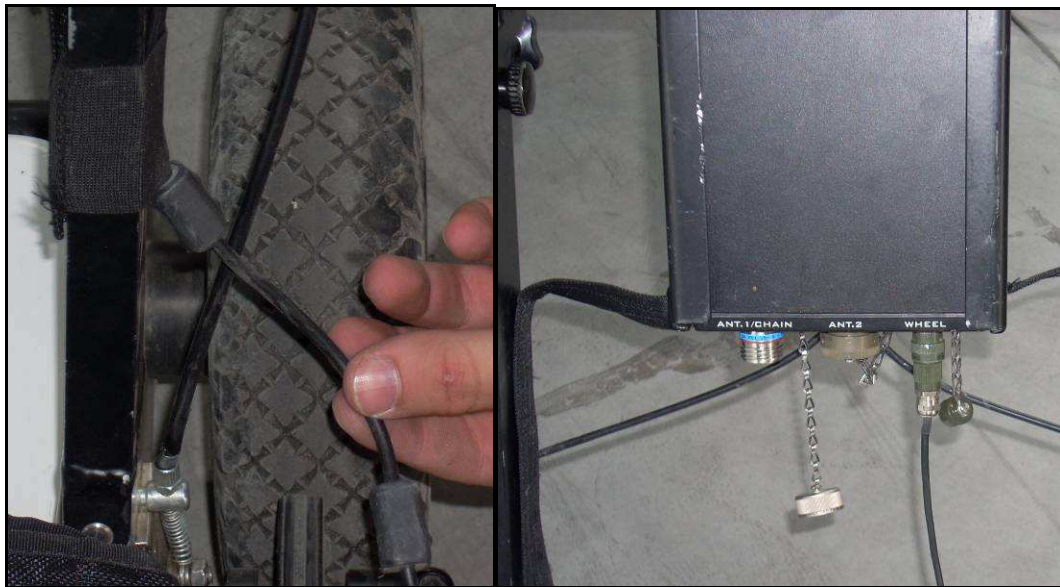


Fig. 1-10 – Metric wheel cable

Take the Antenna cable and link the IN port of the antenna box with the ANT1/CHAIN port of the DAD unit (Fig. 1-11).



Fig. 1-11 – Antenna cable in place

Battery cable has two connectors of different shapes in order to help you: one of them must be linked with the battery, the other one with the DAD unit (Fig. 1-12).

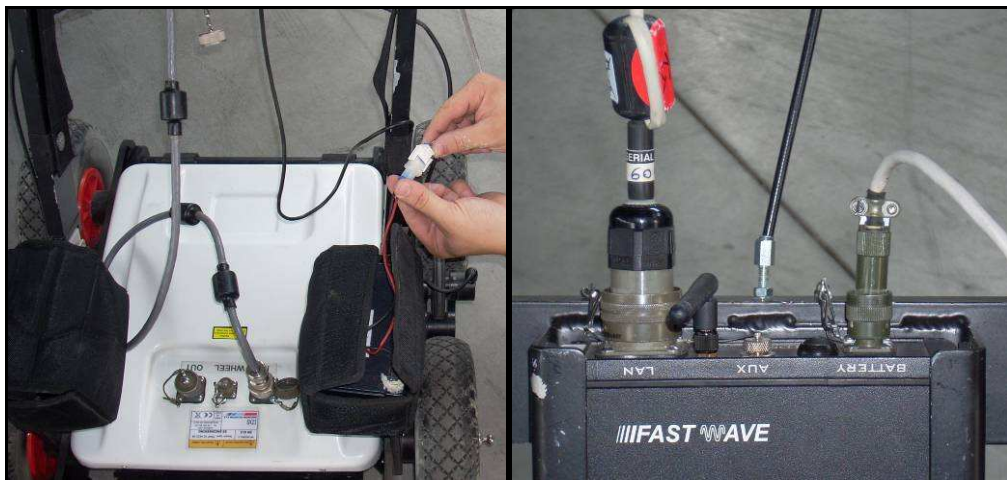


Fig. 1-12 – Battery cable and LAN cable

Fig. 1-12 shows also the LAN cable connector. You have to link the other end of this cable with the LAN port of your laptop.

You can find more info about the DAD unit and its cable connectors in Chapter 2: The DAD control unit.

1.2 Two antennas equipment and configuration

Fig. 1-13 shows you the equipment you will receive for your two antennas configuration. The equipment is composed of:

- A Rudder
- Two Wheeled frames
- One non-Wheeled frame
- Four Junction pipes
- Two Antennas and their cables (one short, one long)
- Two Batteries and their cable
- DAD control unit
- LAN cable



Fig. 1-13 – Equipment provided for the two antennas configuration

1.2.1 Assemblage instructions

First you have to set the rudder in its two antennas setting. The rudder has two free bars and four knobs (Fig. 1-2). The bigger ones must be screwed in vertically to block the free bars in place while the little ones can be screwed in two different position: if placed on the inside part of the frame you will get the mono or three antenna configuration (Fig. 1-3); if placed on the external part of the frame you will get the two or four antenna configuration (Fig. 1-14).



Fig. 1-14 – Two antennas rudder configuration

To build the frame carrying the antennas you need the equipment shown in Fig. 1-15.



Fig. 1-15 – Two Antennas frame equipment

Take one of the wheeled frames and screw two junction pipes in it. Connect these pipes with the non-wheeled frame (the white spots on it show you which side goes down). Link the other two junction pipes and finally close the box with the other wheeled frame.

Fig. 1-16 shows you how to build the box.

Now take the rudder and put it in the metallic junctions of the wheeled frames. Be sure to lock it with the knobs showed in Fig. 1-17.

The locking devices are the two knobs with a little button in their centres: you have to push it, insert the knob in place and then release it.



Fig. 1-16 – Making the two antennas frame



Fig. 1-17 – Insertion and locking of the rudder

Take the antennas and make them slide in the frame from behind. Remember to put and remove the antennas always from the rear part of the frame. When the antennas are in place lock them around the four junction pipes using their hooks (Fig. 1-18).



Fig. 1-18 – Insertion of the antennas and close-up of the hook

Place the DAD control unit inside the box on the rudder and the batteries in the two little black bags (Fig. 1-19).

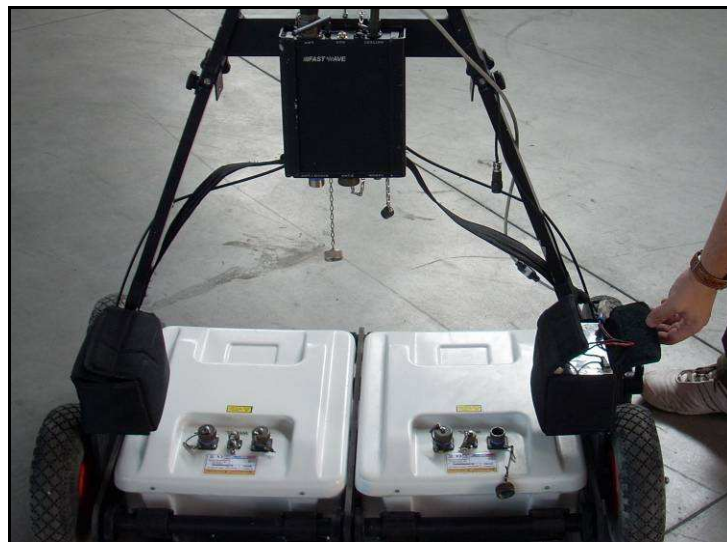


Fig. 1-19 – DAD unit positioning and Battery bags

1.2.2 Wiring

Battery, wheel and LAN cables are linked to the DAD control unit as in the mono antenna configuration (see Par 1.1.2 Wiring for further instruction).

In the two antennas configuration you have two antenna cables. The longer one must connect the ANT1/CHAIN port of the DAD unit with the IN port of the first antenna on the left; the shorter cable makes a cascade connection linking the OUT port of the first antenna with the IN port of the second one (Fig. 1-20).



Fig. 1-20 – Antenna cables

You can find more info about the DAD unit and its cable connectors in Chapter 2: The DAD control unit.

1.3 Three antennas equipment and configuration

Fig. 1-21 shows you the equipment you will receive for your three antennas configuration. The equipment is composed of:

- A Rudder
- Four Wheeled frames (two of them with battery bags)
- Two non-Wheeled frames
- Six Junction pipes
- Three Antennas and their cables (two short, one long)
- Two Batteries and their cable
- DAD control unit
- LAN cable



Fig. 1-21 - Equipment provided for the three antennas configuration

1.3.1 Assemblage instructions

First you must set the system in its mono antenna configuration (see Par 1.1.1), then you have to build the frames for the antennas on the side. Equipment needed for the side frames is shown in Fig. 1-22.



Fig. 1-22 – Side antenna frames parts

Take one of the wheeled frames and screw two junction pipes in it. After that close the box using one of the non-wheeled frames as shown in Fig. 1-23.



Fig. 1-23 – Side antenna frame

Unite the side frame with the central one by linking the metallic locks with the wheels “mushrooms”. Lock up the structure by turning the switches (Fig. 1-24). Do the same operations to build and place the box on the other side.



Fig. 1-24 – Main frame “mushrooms” & locking device

Take the antennas and make them slide in the side frames from behind. Remember to put and remove the antennas always from the rear part of the frames. When the antennas are in place lock them around the junction pipes using their hooks (Fig. 1-25).



Fig. 1-25 - Insertion of one antenna and close-up of the hook

1.3.2 Wiring

Battery, wheel and LAN cables are linked to the DAD control unit as in the mono antenna configuration (see Par 1.1.2 Wiring for further instruction).

In the three antennas configuration you have three antenna cables. To make a cascade connection between the antennas you have to link the longer cable from the ANT1/CHAIN port of the DAD unit to the IN port of the leftmost antenna; use the two short cable to link OUT and IN ports of each adjacent antenna (Fig. 1-26).

The complete three antenna configuration is shown in Fig. 1-27.



Fig. 1-26 – Antenna cables



Fig. 1-27 – Three antennas configuration

You can find more info about the DAD unit and its cable connectors in Chapter 2:
The DAD control unit.

1.4 Four antennas equipment and configuration

Fig. 1-28 shows you the equipment you will receive for your four antennas configuration. The equipment is composed of:

- A Rudder
- Four Wheeled frames (two of them with battery bags)
- Three non-Wheeled frames (two of them with metallic lock devices)
- Eight Junction pipes
- Four Antennas and their cables (three short, one long)
- Two Batteries and their cable
- DAD control unit
- LAN cable.



Fig. 1-28 - Equipment provided for the four antennas configuration

1.4.1 Assemblage instructions

First of all follow the instruction to set the system in the two antennas configuration (see Par 1.2.1). Then build and place the two side frames as described in Par. 1.3.1. Finally insert the third and fourth antenna in the side frames.

1.4.2 Wiring

Battery, wheel and LAN cables are linked to the DAD control unit as in the mono antenna configuration (see Par 1.1.2 for further instruction).

In the four antennas configuration you have four antenna cables. To make a cascade connection between the antennas you have to link the longer cable from the ANT1/CHAIN port of the DAD unit to the IN port of the leftmost antenna; use the three short cable to link OUT and IN ports of each adjacent antenna (Fig. 1-29).

Fig. 1-30 shows the complete four antenna configuration.



Fig. 1-29 – Antenna cables



Fig. 1-30 – Four antennas configuration

You can find more info about the DAD unit and its cable connectors in Chapter 2: The DAD control unit.

2. THE DAD CONTROL UNIT

The *DAD Control Unit* is the control unit responsible for directing the antennas and digitalising the acquired radar data.

The *DAD Control Unit* has the following ports

- *Lan Port* for a network connection to the Notebook Computer
- *Battery Port* to connect the battery
- *Wheel Port* to connect the position sensor wheel
- *Ant.1/CHAINED - Ant.2* for radar antenna connection
- *Power switch with pilot light*
- *Wireless antenna connector*



Fig. 2-1 – DAD side Fast Wave with Battery Port, Lan Port and wireless connector



Fig. 2-2 – –DAD side Fast Wave with connections to position sensor and antennae

Considering the type of available antenna, the following combinations are possible:

1. *Ant.1 (connector with 19 poles)*

This kind of connector may be connected to the following categories of radar antennae.

- Entire range of **TR IDS** antennae that has a 19 pole connector and foresee a cascade connection, Fig. 2-3 shows an example of a an antennae with a 19 pole connector with a cascade connection.

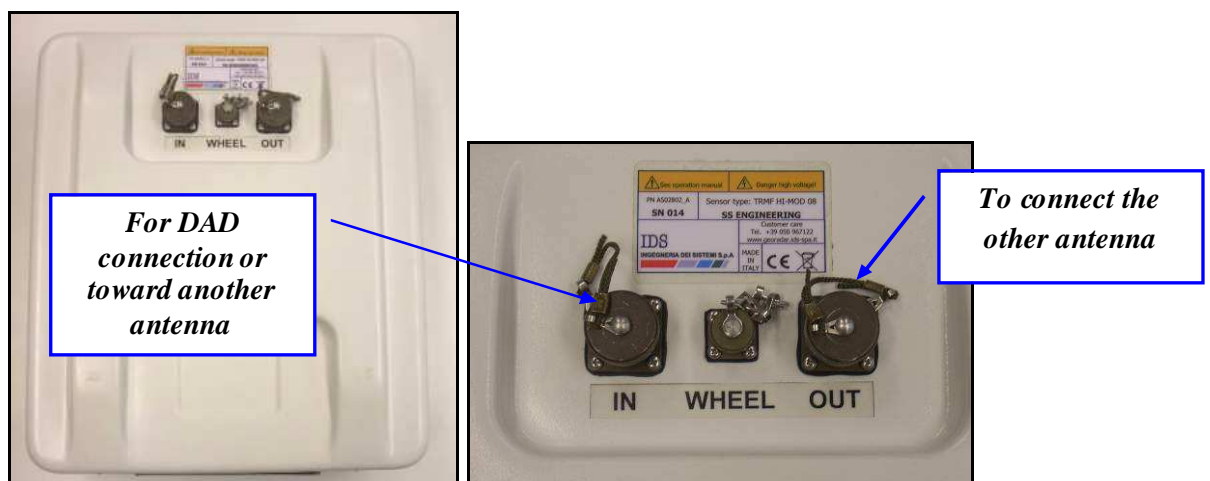


Fig. 2-3 – Example of antenna with a 19 pole connector and possibility of a cascade connection

- Entire range of **TR IDS** antennae that have an 11 pole connector, if supplied with an appropriate 19-11 pole adaptor (Fig. 2-4).



Fig. 2-4 – 19-11 pole Adaptor

2. *Ant.2 (11 pole connector)*

This kind of connector may have the following antenna radar categories connected

- Entire range of mono static **TR IDS** antennae with an 11 pole connector
- Entire range of **TR IDS** antennae with internal or external multiplex and an 11 pole connector

2.1 *The Notebook Computer*

The **K2_FW** acquisition SW is installed on a *Notebook Computer*. This SW is dedicated to the specific phases of setting up, acquiring and saving radar data.

IDS recommends to use one of the two following laptops:

2.1.1 *Panasonic Toughbook rugged tablet PC*


The Panasonic Toughbook CF-19 PC (Fig. 2-5), has the following characteristics:

- *CPU*: 1.6GHz Intel Core Duo.
- *Operating System*: Windows XP Professional SP2.
- *RAM/Expandable to*: 512MB SDRAM (DDR2)/4GB
- *Hard Drive/Speed*: 80GB shock-proof (mounted on a gel support or equivalent).
- *Optical Drive*: 2.4X DVD+R DL
- *Display Resolution*: 10.4 inches/1024 x 768

- *Graphics/Video Memory*: Intel 945GM video accelerator with up to 128MB shared video memory
- *Wireless Networking*: WLAN 802.11a/b/g, Bluetooth 2.0, Optional WWAN (EVDO, HSDPA) and GPS
- *Ports*: Two USB 2.0, Firewire, Ethernet, modem, headphone, mic, docking connector
- *Card Slots*: PC Card Type II, SD Card slot
- *Weight*: 5 pounds
- *Size*: 10.7 x 8.5 x 1.9 inches
- *Warranty/Support*: Three-year limited warranty, parts and labor lifetime toll-free 24/7.
- *Battery Life (Wi-Fi On/Off)*: 5h / 6h about
- *Environmental*: Water-proof (IP54)



Fig. 2-5 – Panasonic Toughbook CF-19

	<p>No communication software of the type Firewall, WiFi or Antivirus protection may be installed on the computer; these types of SW enter into conflict with the K2_FW acquisition SW.</p> <p>IDS takes no responsibility for any functional conflicts that may occur between their own software and any other software installed by the user onto the Notebook Computer. IDS doesn't guarantee that equipment performance will be maintained using configurations different from those recommended.</p>
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2.2 Connecting the DAD Control Unit - Notebook Computer

The following describes how to cable the DAD Control Unit to the Notebook Computer

- Use the **Lan Cable** (Fig. 2-6) to connect the **DAD Control Unit** and the **Notebook Computer** as shown in (Fig. 2-7)



Fig. 2-6 – Lan Cable



Fig. 2-7 – Lan Cable connection between the Notebook Computer and the DAD Control Unit

- Connect the *DAD Control Unit* to the *Battery* using the **Battery Cable** (Fig. 2-8) as shown in (Fig. 2-9)



Fig. 2-8 – Battery Cable

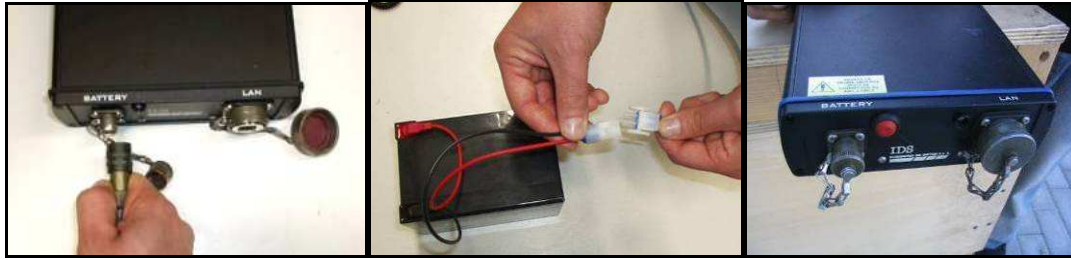


Fig. 2-9 – Connecting the DAD Control Unit to the battery pack and switching on button (red color)

Press the red button to switch on the DAD control unit (Fig. 2-9). This button has to be kept pressed until the blue on switch lights up. If the K2_FW software is not activated within 30 seconds, the indicator light will start to flash. As soon as the K2_FW software is activated the indicator light stops flashing and appears a constant blue light. If, however, the Software is not activated within about 2 minutes 30 seconds, the DAD unit will automatically shut down. Once the K2_FW software has been shut down, the indicator will flash for about 30 seconds and will automatically shut down after 2 minutes.



DON'T CONNECT the **Battery Cable** to the **Remote** connector found on each IDS TR antenna; IDS declines any responsibility for damage caused to the system due to erroneous connections.

2.3 Wireless connection

Here below you can see the requirements and steps to connect by wireless DAD to PC:

- 1) System requirement: wireless network board of PC must support network protocol type 802.11g.
- 2) Disconnect Lan cable from DAD and from PC.
- 3) Connect the wireless plug on LAN port of the DAD (Fig. 2-1 e Fig. 2-11).
- 4) Activate wireless network on PC choosing “ON” with the button on relative port shown in in Fig. 2-10.
- 5) Set up wireless board on PC with the following IP address: 192.168.200.195.
- 6) Disable all boards present within “network connections” window on PC.
- 7) Switch off PC and reboot operating system.
- 8) Enable wireless board.
- 9) Switch on the DAD.
- 10) Wait for signal on PC of activating connection RIS K2.
- 11) Launch K2_FW software icon setting up as configuration file “TRMF_HiMod_1A_WiFi (see Fig. 2-12).

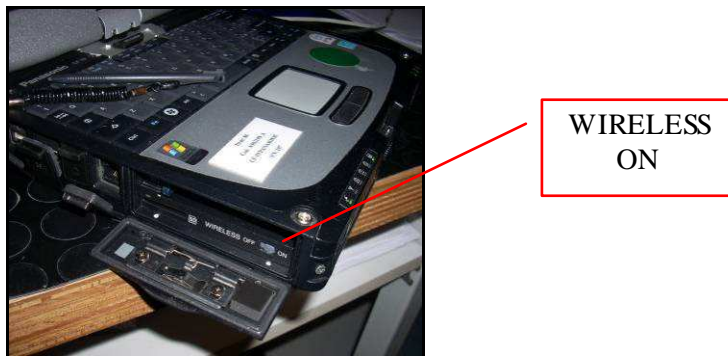


Fig. 2-10 – Wireless port to be activated on CF-19



Fig. 2-11 – Wireless connection on the DAD

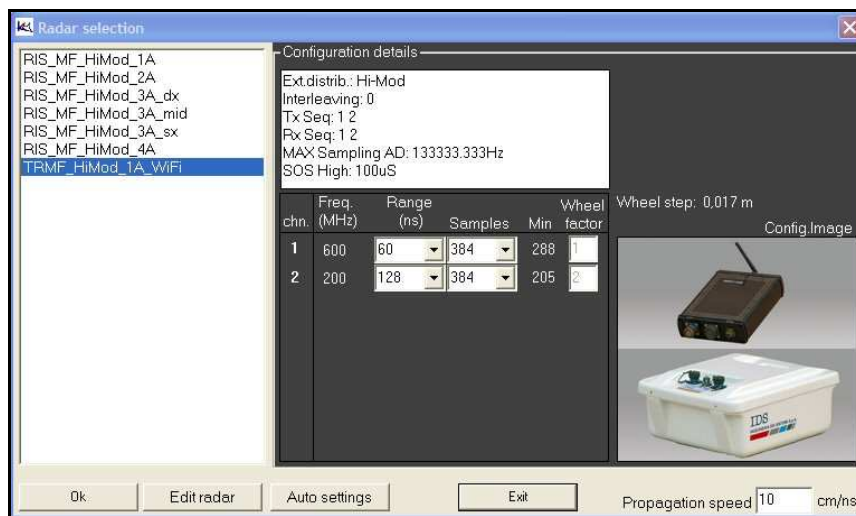


Fig. 2-12 – Configuration file for wireless connection

Once the Notebook Computer has been switched on, and the start up button on the DAD unit has been pressed (a blue indicator light will be continuously lit), open the **K2_FW** acquisition software by clicking on the desktop icon.

3. ON LINE ASSISTANCE

3.1 Remote assistance using Webex Support Center

Webex Support Center is a service that allows the activation of a two host session, making an application or the desktop available to the other user or letting you capture another remote desktop.

It can be used to perform web conferences and presentations.

It is easy to use thanks to its simple and intuitive interface.

Since there are no firewalls or other types of network configurations, it is a fast and secure means of reaching any client host in any part of the world. In fact, the client only has to accept to download a small plug used to permit the service authentication and functioning.

3.1.1 How to use the Webex service

You will receive an email from IDS Customer Care containing a link to the support session (see Fig. 3-1).

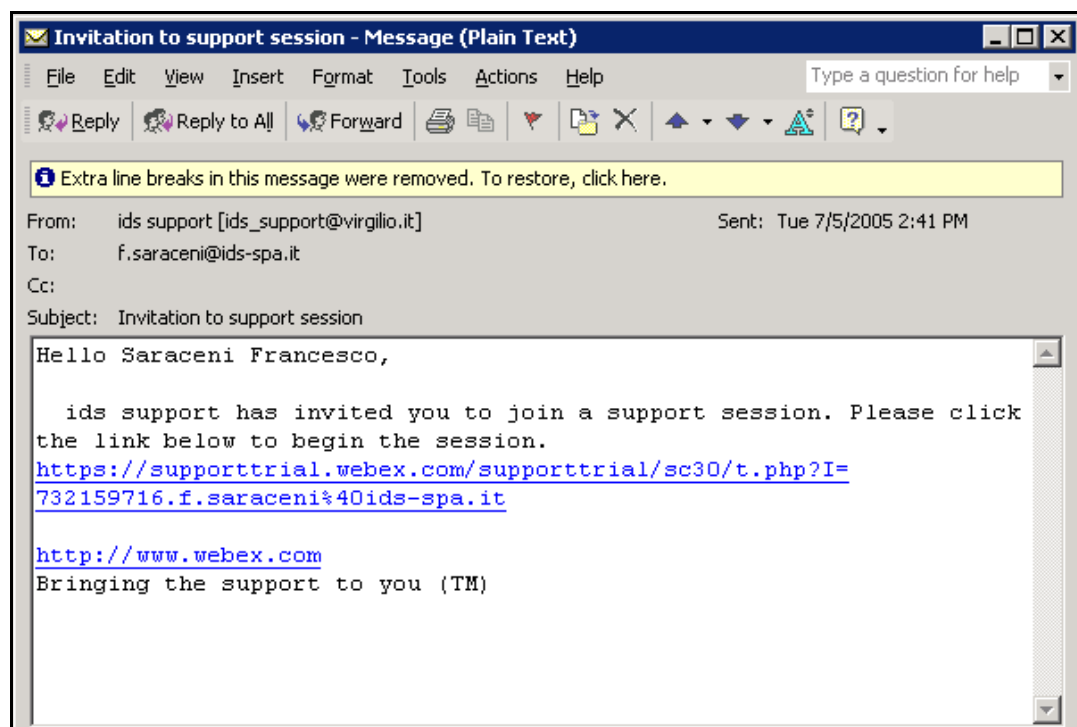



Fig. 3-1 – Mail sent by IDS to the client

Once you have clicked on the link sent by email, the following window will appear. Insert your data into the form (see Fig. 3-2).



Pre-Session Form
In order to provide a higher quality of service, we ask that you fill in the following information:

Support session number:	732 159 716
First name:	<input type="text" value="Saraceni"/> (Required)
Last name:	<input type="text" value="Francesco"/>
Email:	<input type="text" value="f.saraceni@ids-spa.it"/>
Company:	<input type="text" value="IDS"/>

Fig. 3-2 – Client data insertion form

Once you have clicked **Submit**, the following page will appear showing a downloading bar. The session starts as soon as the download is complete. (see Fig. 3-3).

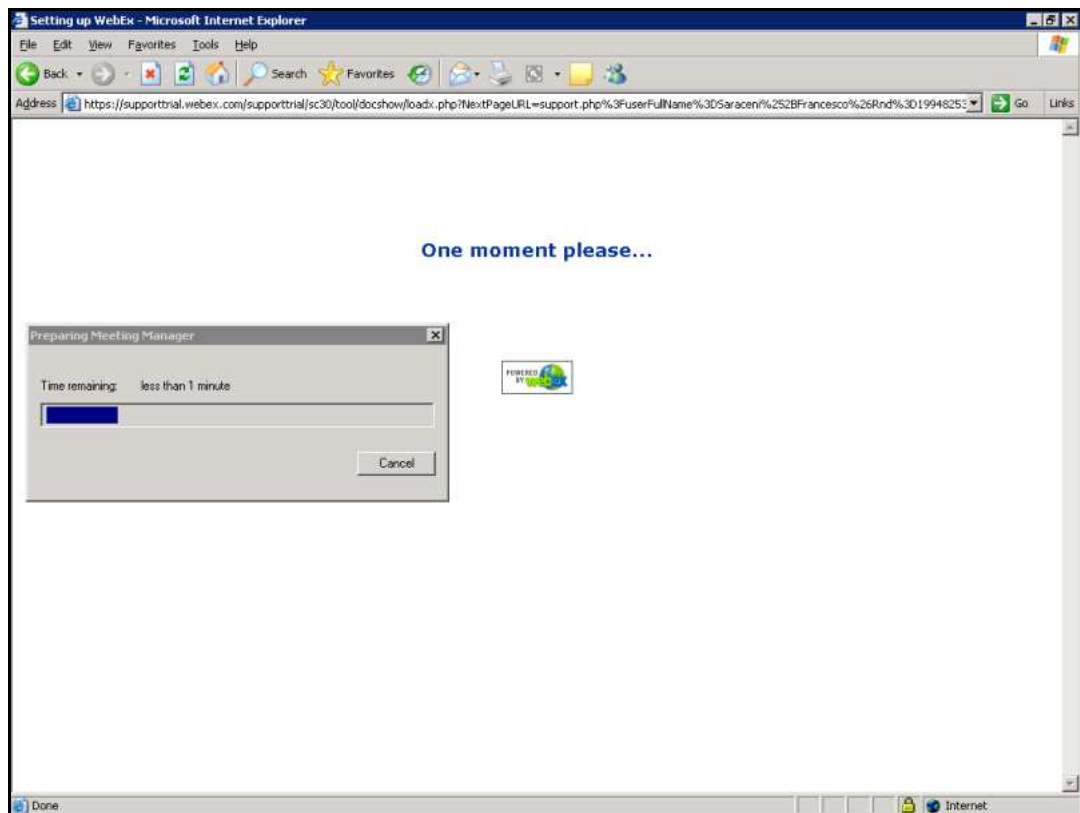


Fig. 3-3 – Webex Set up window

As you can see from the following screen, (Fig. 3-4) you are given a console, just containing the **Chat**, **Video** and **Leave Session** commands.

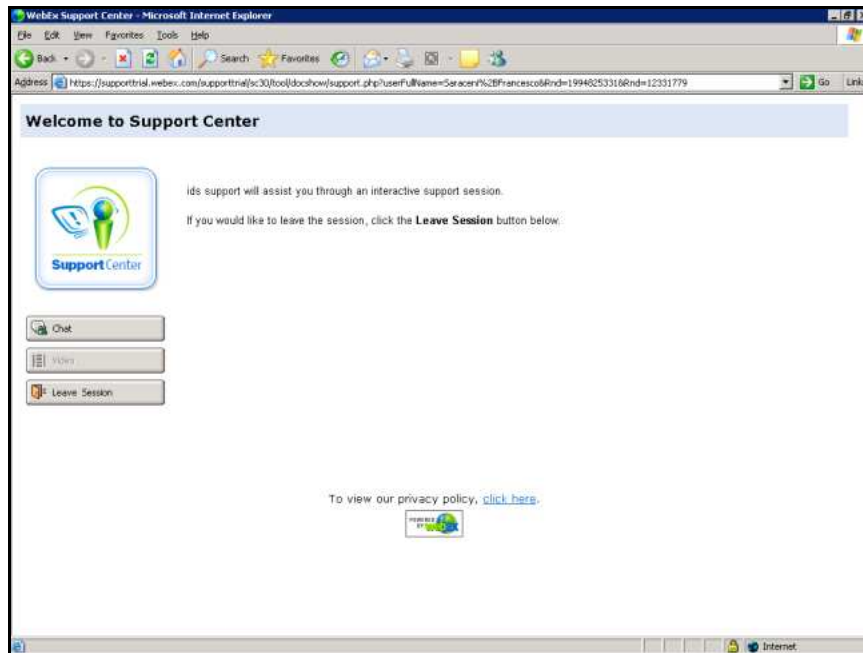


Fig. 3-4 – Welcome to Webex Support Center window

At this point, IDS Customer Care can perform a range of operations on your desktop:

- Request control of the desktop using the Request Control command.
- Give you control of the IDS desktop using the Share Control command.
- Request to display the remote desktop using Request View.
- Share the visualisation of the IDS desktop using Share View.

Before each command is activated, you are asked for confirmation through the following window (Fig. 3-5).

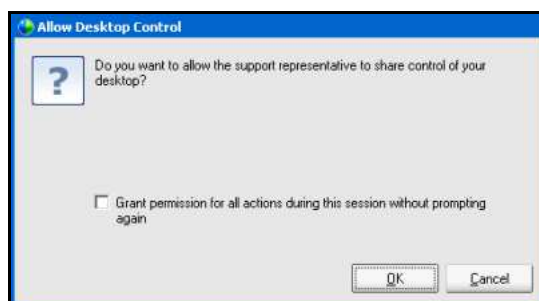


Fig. 3-5 – Command acceptance window