Vic System

Mini eXplorer Deluxe PLUS

Portable integrated AUDIO-VIDEO system for professional, commercial and military diving

USER GUIDE

*MiniExplorer Deluxe **Plus** - Deluxe **A** - Deluxe **V** - Deluxe **M***

GUIDE TO THE MANUAL

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Please write the data regarding for the MINIEXPLORER model, the seller and the place of purchase, serial number and date of purchase in the space below. The serial and model number are registered on the plate located on the back of the device.

All correspondence concerning your unit should include the serial and model number as well as the purchase information.

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Fill in the following fields, and attach duly completed copy of this page, together with a copy of the purchase invoice in case of a warranty claim.

Seller details: _____

Model: _____

Serial number: _____

Purchase date: _____

Place of purchase: _____

Introduction

Thank you for choosing this VicSystem product. Before operating the unit, please read this manual and keep it for future reference.

Description

The MINiEXPLORER Deluxe PLUS is the full-featured model from the MINi EXPLORER series, and is totally different from the previous model for performance, features and functions.

The internal electronics have been completely redesigned and engineered using analog and digital technologies. It provides high performance in terms of reliability, quality of audio and video communications and a greater battery life, along with a wide range of connectivity with external audio / video equipment (even remote), as it works on IP networks.

With its small size, it is a unique device and one of the best equipped currently on the market: versatile, compact and lightweight (5.5 kg) and can be used either for quick more demanding jobs with two divers and a supervisor.

It can be used in closed mode, on the shoulder using the strapor on the ground, through the multi-function remote control and direct listening with the internal speaker or through a headset (with microphone) and multimedia video glasses.

Or it can be used in a fixed position for complete control of audio communications from the surface in half or full duplex even in cross talk between divers and viewing & recording of two video signals from the cameras.

The dimensions of the apparatus in the closed mode are 30 cm wide, 14 cm high and 24 cm deep. The weight, as we have already said, is about 5.5 kg including the internal battery, strap and remote control.

Outside there are, on one side the waterproof connectors for connection to the audio and video cables with the possibility of using the two-wire audio set for half duplex systems or the four-wire set for full duplex.
On the other side there are two other waterproof connectors for the remote control and headphones with microphone and multimedia video glasses.

The headphone jack can also be used as a general audio-video output for connecting when necessary additional external speakers, external fixed base microphones and future accessories.
On the same side there is the built-in loudspeaker grille which is completely waterproof and in sealed plastic. On the back of the case there is the plug for the backup battery or the battery charger and the fuse to protect against overloads.

Opening the suitcase you will immediately notice that it is divided into two sections: one audio and one video with the possibility to be powered independently should just one be in use.

On the control panel of the audio section, we can see the voltmeter display that constantly indicates the output voltage and the internal battery life, as well as the backup battery life when connected, and the charging voltage.
To the left are the two switches: one for turning off the internal speaker and the other for the conversation blocking.

The latter is active only in Full duplex mode and allows the supervisor to operate by hands-free and maintain the communications active to a single or both divers with no need to press the manual buttons on the panel or on remote control.

Two other unique features of the MINiEXPLORER Deluxe Plus are electronic protection to limit audio peaks that often cause the microphones and headphones in the helmets to break, and the restore communications system in full duplex mode in case of breakage of the same microphones.

It is activated automatically by switching the communication to half duplex mode by using (in this mode) the headset inside the helmet as a provisional microphone.
Another feature that has been implemented in the new version of Mini Explorer Deluxe, is the compensation system for abnormal onnection often due to false contacts and oxidations up to a maximum value of about 4200 ohms.

The sound power is 15w and is 4 times higher than the previous model. Improvements have been made to the quality of the audio by cutting unused frequencies for speech, reducing background noise and isolating wired connections.

With the internal potentiometers you can adjust and balance the sound level of the two divers, adjust the volume of the internal speaker, the microphone on surface level and the listening level for the divers.
Furthermore, with the switch you can select the type of audio connection that you want (2-wire for half-duplex systems and 4-wire for full duplex).

At the bottom are the "push to talk" buttons, the "cross talk" switch used between the divers under the supervisor's supervision, and the power switch. The remote control has a duplicate of all the buttons and switches that the panel has with the addition of a "block conversation" button for use with either diver (useful in full-duplex mode for hands-free operation), microphone preamplifier , the start / stop button for video or photo recording and video source selection button with the ability to enable the picture in picture from the two cameras.

With the remote control you have complete management of communications when used with the case closed or with the shoulder strap, both with or without headphones. If you do use the headphones, maybe in a noisy environment, you will need to turn off the internal speaker with the power switch and use the built-in microphone in the headset that will turn on automatically in the place of the one built-into the remote control.

The video section is made up of a removable panel that serves as the lid of the case, which in the full-featured version (deluxe plus) houses the 9" LED LCD monitor, the video selectors of the internal display and the USB port, the outlet for the connection with the base device, the LAN Video Server ports and the USB Video Grabber and the incorporated Wi-Fi antenna for the remote use of the apparatus by the supervisor via PC-MAC or mobile phones (built-in only on version for Military uses).

This panel can be easily released and eparated from the central apparatus to facilitate repairs or to update older versions of the Mini Explorer equipped with the optional supervisor WI-FI and additional digital video connections described later.

On the body of the apparatus we find the two-channel DVR that records on the SD card and the controls for the LED spotlights for the two divers. There is also the possibility to adjust the brightness of the spotlights using the potentiometer and to select different modes by means of two switches (on - off - adjustable brightness). Above the video section panel, you can see the LED indicator that indicates use with external battery or charging status and audio rec RCA connector for audio recording of communications with external devices.

Compared to the previous version, the video switching selector is no longer present.
In fact, as can be seen from the diagram, the new Mini EXPLORER DELUXE PLUS is equipped with 3 independent analog video output plugs. Here , by means of an external monitor, you can connect and view the video signals directly from the two sources, or video from the DVR. You can also view movies recorded on an SD card, the picture in picture of the two video sources and the OSD menu settings of the DVR. The external audio / video side plug can also be used to connect future accessories and video glasses.

The most important innovative characteristic of the new Mini Explorer Deluxe Plus regarding connectivity, is the ability to interface with IP networks for remote supervision in real time for inspection jobs. In fact, using the LAN jack and the integrated Video Web Server, you can connect multiple users with a common cross-platform browser to view, listen and remotely record both individual video sources with audio communications, as well as an overview of all video sources. In addition, using the self-powered mini wi-fi router accessory with 3g USB modem, you will be able to supervise both from client wi-fi workstations placed within Hotspot range as well as remote internet stations without geographic limits.

The USB Video device connects to your Windows PC or Mac and provides a digital video source such as that of a webcam or high quality video samplers and can be used to make dual audio / video recordings or broadcast live on the most common networks and Internet TV (USTREAM, LIVESTREAM ETC).

Now a brief description of the functions of the internal monitor and DVR.

On the bottom of the screen are buttons for the power, the settings menu with the selection commands, the 16/9 or 4/3 format selector and switch for 2 video input channels, one for the direct sources and the other for the video output of the DVR where you can also view photos and play movies recorded on an SD card. All the functions of the monitor can also be activated from the ultra slim remote control included.

On top of the DVR there are the buttons to activate playback functions, select the video source (camera 1 and 2) and the picture in picture, thumbnails during playback and the button to start / stop movie and photo recording. By means of the menu button, you can setup the DVR with the ability to quickly select the recording mode (movies, photos, sequential photos up to 3 per shoot).

On the front at the bottom we find the slot for an SD card up to 32GB and the power light. In order to optimize the internal battery life you can even turn off just the monitor and / or the DVR in case of use via USB, LAN or for supervision without recording with just the multimedia video glasses.

The Mini Explore Deluxe Plus is completely waterproof and is able to operate in closed mode in the rain without damage.

The models available upon request are also assembled with just the audio or the video either with or without internal DVR. In any case, you can perform the upgrades at a later date to expand the system by sending the product to our company.

GENERAL TECHNICAL FEATURES

Housing *- made from impact-resistant plastic IP67 Dustproof*
Weight *- 5.5 kg including internal battery*
Dimensions *- cm L 30 - W 24 - D 14*
Power supply *- Internal battery 12v 5A and external socket for charger or extra battery*
Battery life *- In audio mode about 12 hours; In video mode at full load (2 LED spotlights -2 cameras - Monitor and DVR in use) about 4 hours*
Protection against polarity inversion and overvoltage
Adjustable quick-release shoulder strap in synthetic fabric.
Shielded electronic circuits immune to radio interference.
Power saving system with eparate audio / video power sections
Automatic restoration of communications *in full duplex mode in case of failure of the divers' microphones*
Sound peak limiting system *to protect divers' microphones and headphones*
Use in closed mode *using he remote control, with or without a headset with microphone and video glasses.*

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SAFETY MEASURES

Read these instructions carefully. Keep this document for future reference. Follow all warnings and instructions marked on the product.

Turn off the product before cleaning. Unplug this product from external power source before cleaning. Do not use liquid or spray cleaners. To clean, use a damp cloth. For any questions about the manual or the device, contact your authorized VicSystem RSM s.r.l dealer.

The Miniexplorer DeLuxe Plus is an excellent tool for the supervision of divers in underwater work when used by supervisors with certified qualifications AND IN NO EVENT SHOULD IT REPLACE THE INSTRUCTIONS OF THE SUPERVISING DIVER.

WARNINGS AND LIMITATIONS

- *The Miniexplorer is not a tool for monitoring the physiological condition of the diver.*
- *The Miniexplorer should not be used in environments with pressurized air.*
- *Do not use compressed air to dry the device.*
- *Do not place this product on unstable surfaces. If the product should fall, it could be seriously damaged.*
- *This product should never be placed near or on top of radiators or air heaters of any kind, and should never be installed in frame-mounted structures unless proper ventila tion is provided.*
- *It is hazardous to push objects of any kind through the gaps in the frame of this pro duct as they may come into contact with areas of high voltage that can cause short cir cuits and lead to fire.*
- *Never spill liquid of any kind onto or into the product.*
- *To prevent damage to the internal components, do not place the product on surfaces where there may be vibrations for a prolonged period of time.*

USE OF ELECTRICITY

- *This product should be operated using the advised type of power source. In case of doubt about the type of power available, consult the manual.*

- *Do not allow anything to rest on the power cord connected to the device.*

WATER RESISTANCE

The MiniExplorer is not an underwater device.

VicSystem RSM s.r.l assumes no responsibility for damage caused by moisture unless the instructions of this manual are strictly adhered to. In case of damage or malfunction of the device, deliver the product to the dealer or to an authorized distributor immediately.

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CHECKING OF THE ACCESSORIES PROVIDED

STANDARD ACCESSORIES

1 – Headset with microphone
2 – Power supply unit 12v 5A Vdc / 110 - 220 Vac
3 – Electric charger 14,4 Vdc 1,5 A / 110 - 220 Vac
4 – Power cord with battery and external plugs
5 – LAN cable 6 - Video RCA cables and BNC adaptors
7 – USB cable of 1.5 Mt
8 – Wired multifunction remote control with microphone

CHECKING OF THE ACCESSORIES PROVIDED

OPTIONAL ACCESSORIES

1

2

3

*1 - DVR on SD Card (standard only on **PLUS** and **M** versions).*
*2 - LAN socket and power supply unit (standard on **PLUS** and **M** versions)*
*3 - Video glasses and adapters - (standard on **M** version)*

VERSIONS

MiniExplorer Deluxe Plus *- Audio-video-network sections*
MiniExplorer Deluxe A *- Only audio functions*
MiniExplorer Deluxe V *- Only video functions*
MiniExplorer Deluxe M *- Version for government and military agencies*

STANDARD EQUIPMENT

MiniExplorer Deluxe Plus - Audio-video-network sections

Wired multifunction remote control with integrated microphone
Headset with microphone
Digital voltmeter
9" LCD monitor
LAN video web server port
USB video grabber port for Windows PC and/or MAC
DVR on SD card
8 GB SD Card
2 RCA video cables with BNC adapters
Fast battery charger 110 - 220 Vca - 14,4v 1.5A
Switching power supply 110 - 220 Vca - 12v 5A
Power cable for batteries and external power sources
Power cord for cigarette lighter plugs 1.5 mt
USB cable 1 mt
LAN cable
Shoulder Strap
Recording software with superimposed text and logo (Window / Mac)
DVD with manual, drivers etc.

MiniExplorer Deluxe A - Only audio functions

Wired multifunction remote control with integrated microphone
Headset with integrated microphone
Digital voltmeter
Fast battery charger 110 - 220 Vca - 14,4v 1.5A
Switching power supply 110 - 220 Vca - 12v 5A
Power cable for batteries and external power sources
Power cord for cigarette lighter plug 1.5 mt
Shoulder Strap
DVD with manual, drivers etc.

MiniExplorer Deluxe V - Only video functions

Wired multifunction remote control with integrated microphone
Digital voltmeter
9" LCD Monitor
LAN video web server port
USB video grabber port for Windows PC and/or MAC
DVR on SD card
8 GB SD Card
2 RCA video cables with BNC adaptors
Fast battery charger 110 - 220 Vca - 14,4v 1.5A
Switching power supply 110 - 220 Vca - 12v 5A
Power cable for batteries and external power sources
Power cord for cigarette lighter plug 1.5 mt
USB cable 1 mt
LAN cable
Shoulder Strap
Recording software with superimposed text and logo (Window / Mac)
DVD with manual, drivers etc.

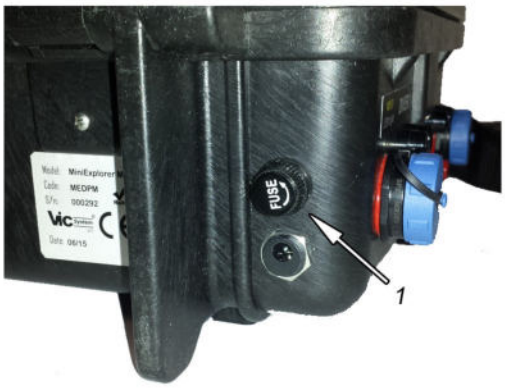
STANDARD EQUIPMENT

MiniExplorer Deluxe M - *Version for government & Military agencies*

Wired multifunction remote control with integrated microphone
Headset with integrated microphone
Digital voltmeter
9" LCD Monitor
Video glasses and adaptors
LAN video web server socket
USB video grabber port for Windows PC and/or MAC
Router with built-in USB port for H3g / 4G modem with SIM card
Additional CVBS video input for the remote management of external sources such as ROV etc.
Additional internal shielding
Software for remote supervision from Android – iPhone smartphone devices
DVR on SD card
8 GB SD Card
2 RCA video cables with BNC adaptors
Fast battery charger 110 - 220 Vca - 14,4v 1.5A
Switching power supply 110 - 220 Vca - 12v 5A
Power cable for batteries and external plugs
Power cord for cigarette lighter plug 1.5 mt
USB cable 1 mt LAN cable
Strap
Recording software with superimposed text and logo (Window / Mac)
DVD with manual, drivers etc.

REPLACEMENT BATTERY VOLTMETER AND FUSE

F1



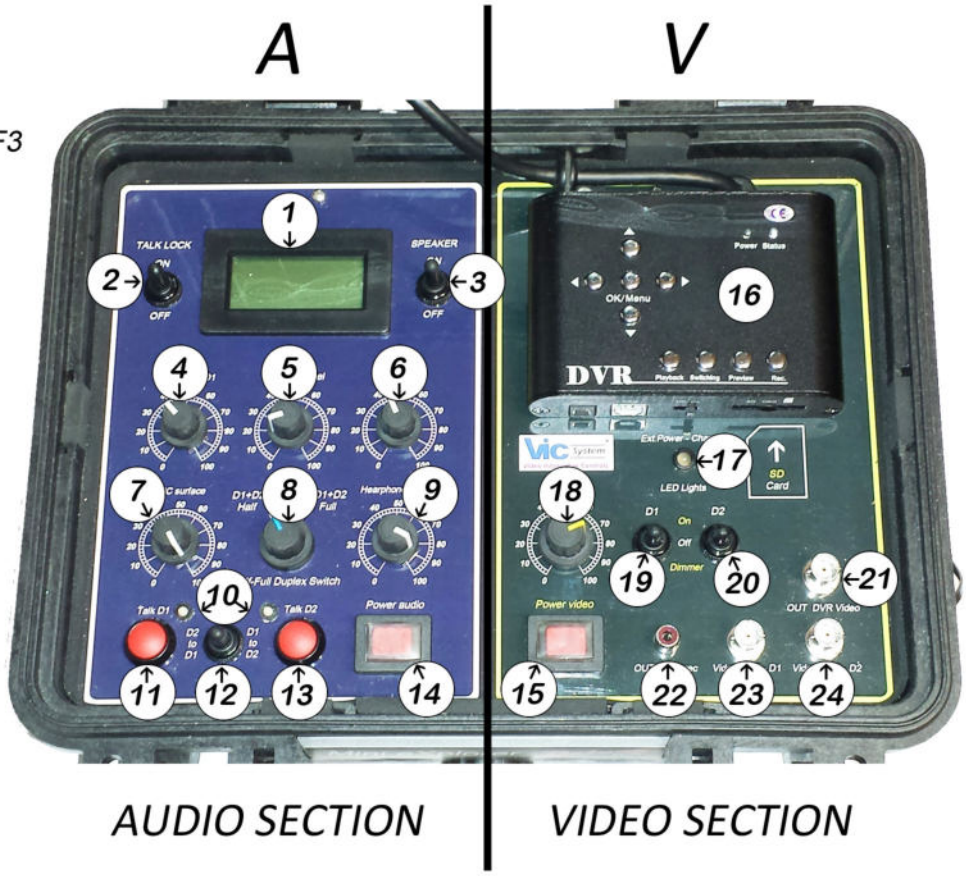
F2

To substitute the fuse, unscrew the upper part of the fuseholder located on the back (F1-1), and replace it with a new one of the same value - ***5A rapid.***

*When the low battery symbol shows on the voltmeter display, replace the battery by removing the old one from the battery holder under the case (F2-2), and putting in a new one of the same type -****9V 6LP3146****.*

BASE PANEL FUNCTIONS

F3



A - AUDIO SECTION

1 - Voltmeter – Indicates voltage of the internal battery, the charger and external power source
2 - ON - OFF block conversation in Full Duplex
3 - ON - OFF Internal speaker
4 - Diver 1 microphone volume
5 - Internal speaker volume
6 - Diver 2 microphone volume
7 - External microphone volume
8 - Audio mode switch - Half duplex / Full Duplex
9 - Divers' headphone volume
10 - LED indicators of communication with supervisor and / or between divers
11 - Switch for communication between supervisor and diver 1
12 - Switch for cross-communication between divers
13 - Switch for communication between supervisor and diver 2
14 - Power switch for audio section

V - VIDEO SECTION

15 - Power switch for video section
16 - DVR - audio/video recorder on SD card
17 - LED external power indicator - Charging - (green light)
protection against polarity inversion on the external power source (red light)
18 - LED spotlight brightness regulator
19 - Power supply selector for Diver 1 spotlight - fixed brightness - off – variable brightness
20 - Power supply selector for Diver 2 spotlight - fixed brightness - off – variable brightness
21 - Additional CVBS video output from DVR for large screens or external monitors.
Possibility to play movies and photos recorded on the SD card on large screens.
22 - BF audio output for external devices. It provides a general audio signal of
communications between divers and supervisor
23 - Additional CVBS video output from Diver 1's camera for large screens
and external video screens
24 - Additional CVBS video output from Diver 2's camera for large screens
and external video screens

REMOTE CONTROL FUNCTIONS

Figure 4

Multifunction remote control with microphone

1 - Switch for communication between supervisor and diver 1
2 - Switch for communication between supervisor and diver 2
3 - Communication lock switch with D1 - D2
4 - Switch for cross-communication between divers
5 - Switch to select video source for DVR, video glasses and picture in picture.
6 - Start/stop switch for recording video and photos
7 - Pre-amplified microphone

F11

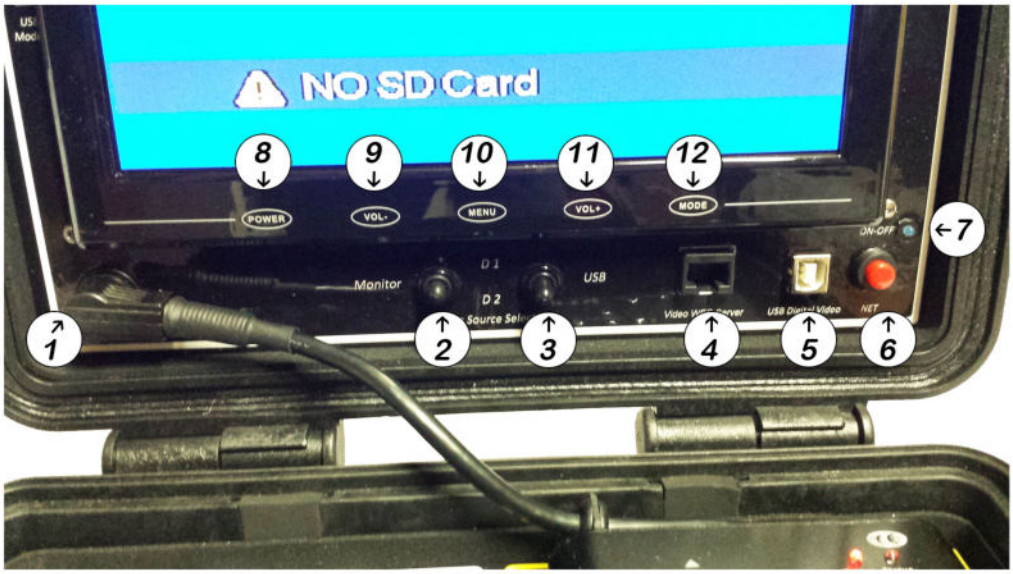
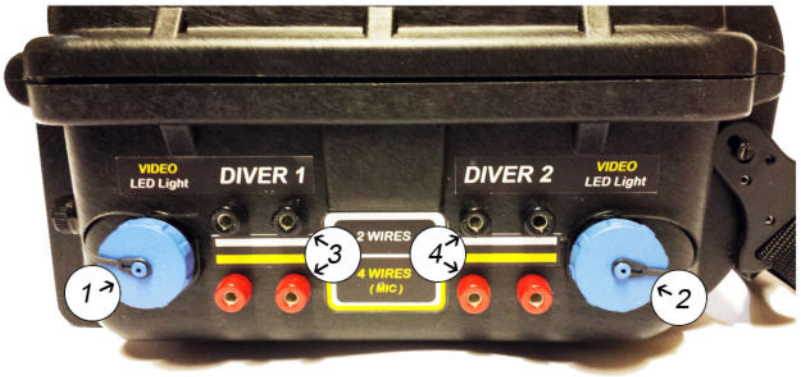


Figure 11 - Upper panel - Cover

1 - Plug and connector for connection with the base unit
2 - D1 and D2 video source selector for direct viewing on the internal monitor, set to AV1 via the touch switch 12
3 - D1 and D2 video source selector for USB plug
4 - 10/100 LAN socket with integrated Video Web Server
5 - 2.0 USB socket with connection to Windows – MAC PCs. It provides audio-video like a webcam and other capture devices. Drivers supplied on CD.
6 - On-off switch separate from LAN network section
7 - On-off light for network section
8 - Touch On-off switch for internal monitor
9 - Touch scroll button - back – monitor setup menu
10 - Touch access button to the monitor setup menu
11 - Touch scroll button - forward – monitor setup menu
12 - Touch switch of the two video inputs of the monitor - AV1 e AV2. The first is used to view live video signals for D1 and D2, selected through switch 2.The second is for viewing and management of the two video channels through the DVR as well as for viewing movies and photos recorded on the SD card.

F5



F6

Figure 5 - Audio/Video umbilical sockets

1 - Video-Light connector plug for Diver 1
2 - Video-Light connector plug for Diver 2
3 - Connector plugs for half-duplex and full-duplex standard audio communicaton for Diver 1
4 - Connector plugs for half-duplex and full-duplex standard audio communicaton for Diver 2

Figure 6 - Remote control ports - audio/video accessories headphones

5 - Multifunction remote control plug (see standard accessories in figure 8)
6 - Plug for headphones with microphone (see standard accessories in figure 1), video glasses with use of adaptor (see optional extra in figure 3), external accessories
7 - Internal watertight speaker grille

F7

F8

Figure 7 - Plug for charging and power supply

1 - The network cable (see standard features in figure 2), the electronic charger (see standard features in figure 3), and the power supply cable for batteries and external sources (see standard features in figure 4) should be connected to this socket. The device is protected from short circuits in the cables connected to the socket and from reverse polarity of external power sources

Figure 8 - Plug for video glasses on the headphones

2 - If using the headphones with microphone, connect the video glasses to the mini-plug on the left speaker, as the audio video plug on the MiniExplorer (F6-6) is already in use.

F9

F10

Releasing the upper panel

In case of necessity or for fixed installations, repairs and system updates, you can separate the top from the base unit. Proceed as follows: Loosen screw 1 F10, disconnect connector 2 F9 from plug 3 F9, tilt the cover to 45 ° and simultaneously slide it to the right.

Audio-Video umbilicals cabling

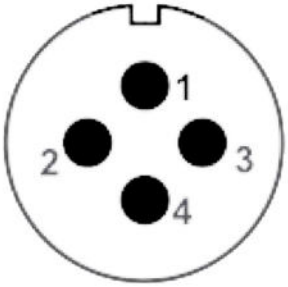
F12

F13

F14

Figure 14 - Example of cable connector using DCS0005 type it is possible to use other cables.

1 - Shielding and negative power - Weld to the gray cable
2 - Positive power of the camera
3 - Positive power of the LED spotlight
4 - Video signal *--- ALL OTHER TERMINALS ARE UNUSED ---*



1 = Shielding / - negative

2 = + 12 V Camera

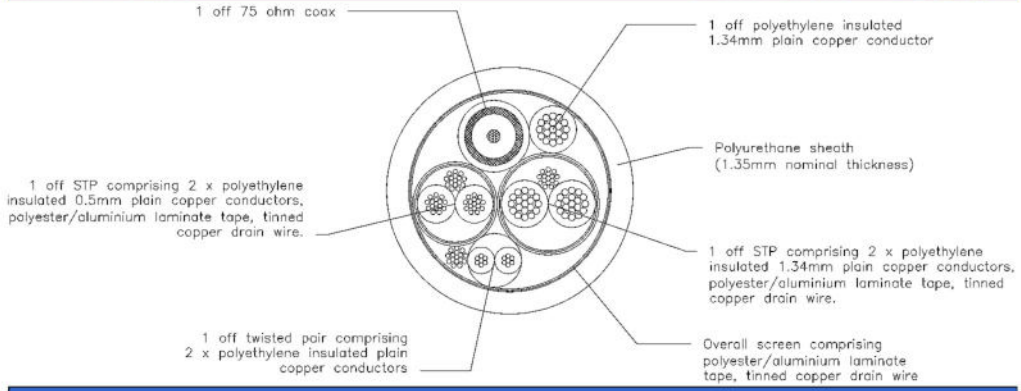
3 = + 0 : 12V LED spotlight

4 = CVBS 1vpp video signal

Connector seen from behind on the welded side

TECHNICAL SPECIFICATION OF CABLES TO USE

Mini TV Cable — CFBX Part No - DCS0005



Weights, dimensions & mechanical characteristics

Outside diameter	11.0mm
Weight in air	170.0 Kg/Km
Weight in sea water	72.5 Kg/Km
Density	1,788.0 Kg/Km
Minimum bend radius (static)	70 mm
Minimum bend radius (dynamic)	105 mm
Minimum break strength	N/A

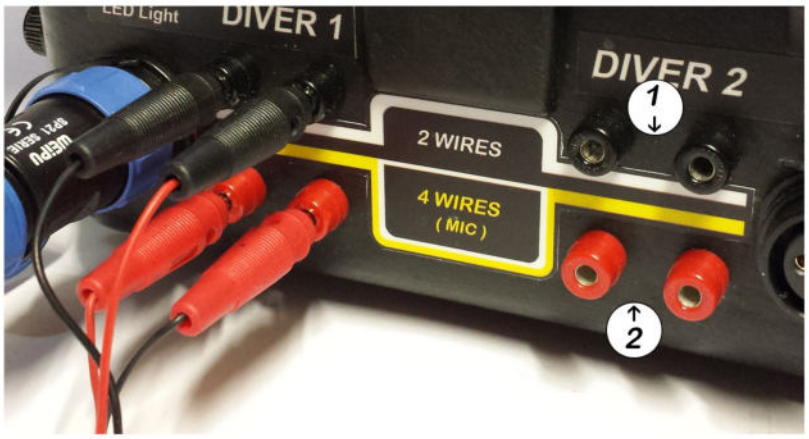
Electrical characteristics

1.34mm² STP *(NEEDED)*	Conductor resistance @ 20°C	15.0 Ω/Km (maximum)
	Resistance (core – core)	500 MΩ/Km (minimum)
	Resistance (core – screen)	250 MΩ/Km (minimum)
	Operating voltage	500 V (maximum)
0.5mm² STP *(NOT NEEDED)*	Conductor resistance @ 20°C	41.0 Ω/Km (maximum)
	Resistance (core – core)	500 MΩ/Km (minimum)
	Resistance (core – screen)	250 MΩ/Km (minimum)
	Operating voltage	500 V (maximum)
0.22mm² STP *(NOT NEEDED)*	Conductor resistance @ 20°C	94.0 Ω/Km (maximum)
	Resistance (core – core)	500 MΩ/Km (minimum)
	Resistance (core – screen)	250 MΩ/Km (minimum)
	Operating voltage	500 V (maximum)
1.34mm² Single Core *(NEEDED)*	Conductor resistance @ 20°C	15.5 Ω/Km (maximum)
	Resistance (core – core)	500 MΩ/Km (minimum)
	Resistance (core – screen)	250 MΩ/Km (minimum)
	Operating voltage	500 V (maximum)
Mini Coax *(NEEDED)*	Conductor resistance (inner) @ 20°C	147.0 Ω/Km (maximum)
	Conductor resistance (outer) @ 20°C	36.5 Ω/Km (maximum)
	Impedance	75 Ω

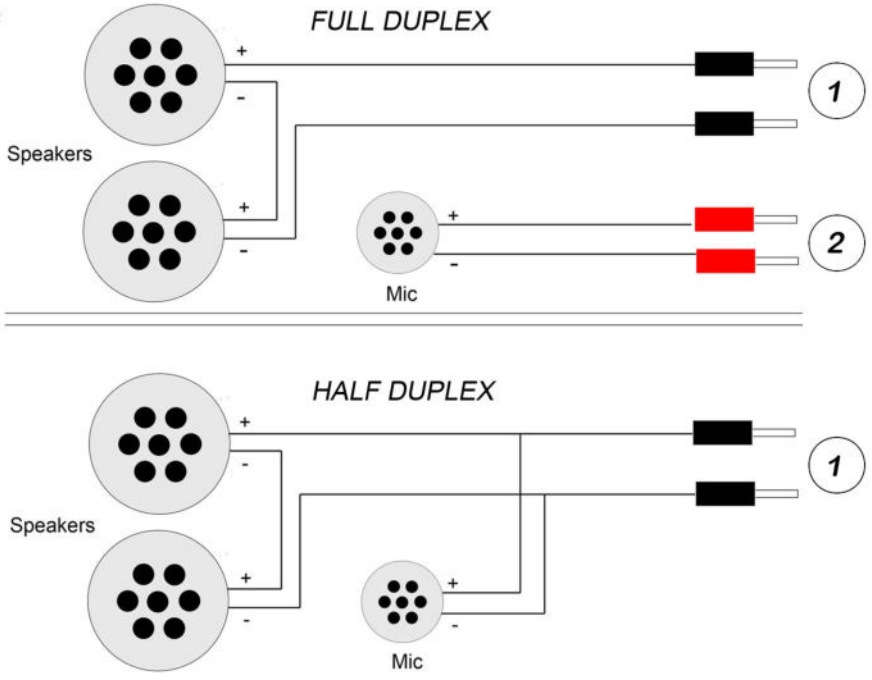
Data sheet — **DCS0005/REV00/021006**

CONNECTIONS CHART WITH STANDARD AUDIO SET
HALF - DUPLEX / FULL - DUPLEX

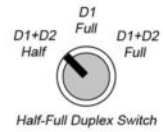
F15



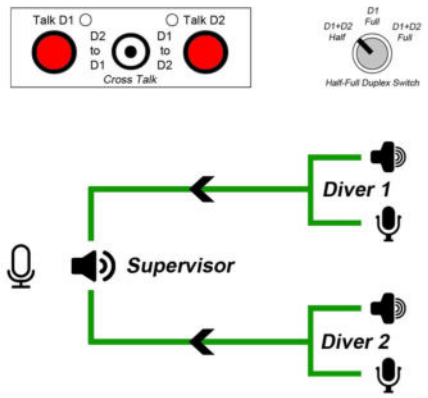
F16

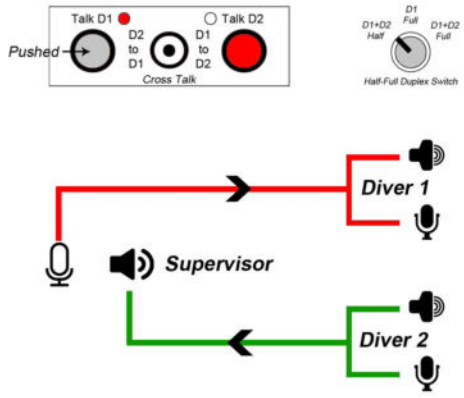


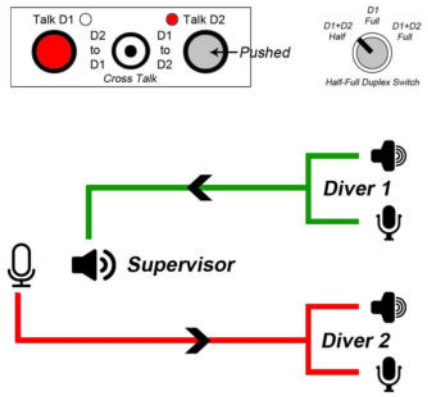
Various audio switching options

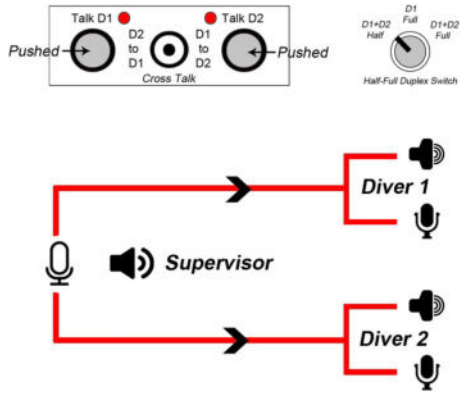


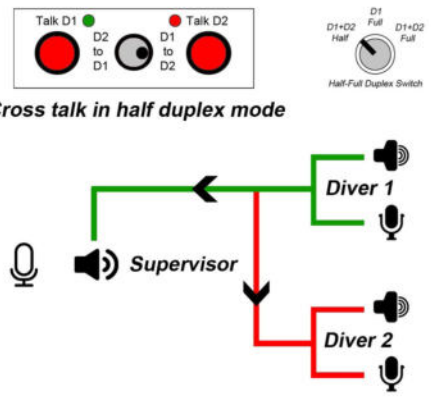
Diver 1 and Diver 2 HALF DUPLEX

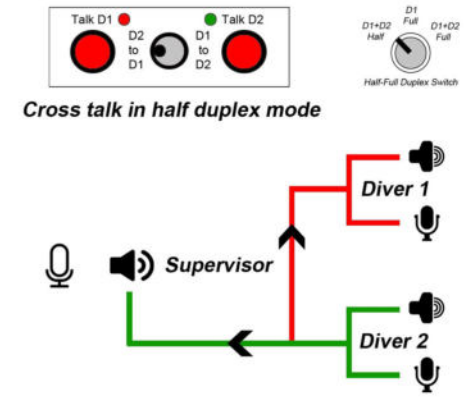






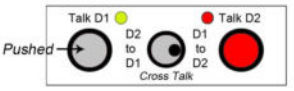






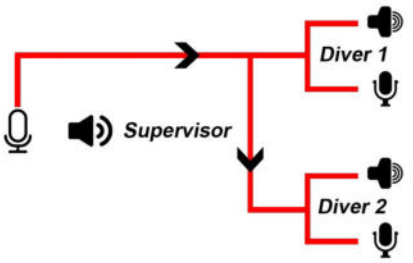
Various audio switching options

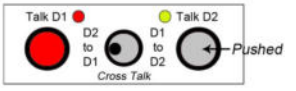
Diver 1 and Diver 2 HALF DUPLEX

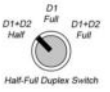


Cross talk in half duplex mode

Crosstalk break by supervisor talking to both divers

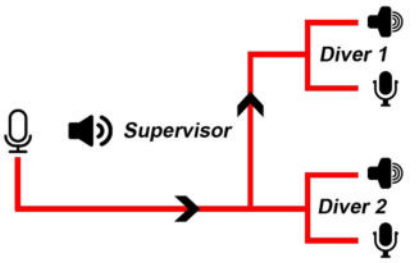






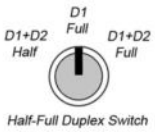
Cross talk in half duplex mode

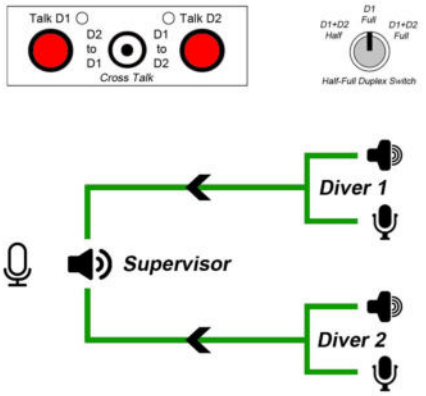
Crosstalk break by supervisor talking to both divers

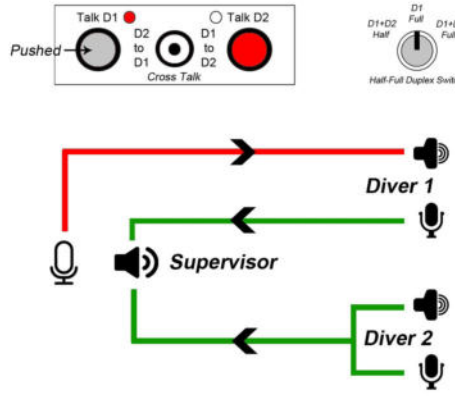


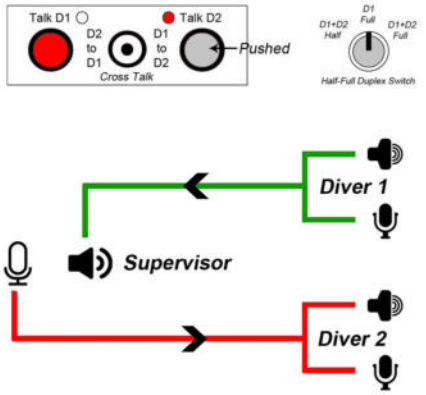
Various audio switching options

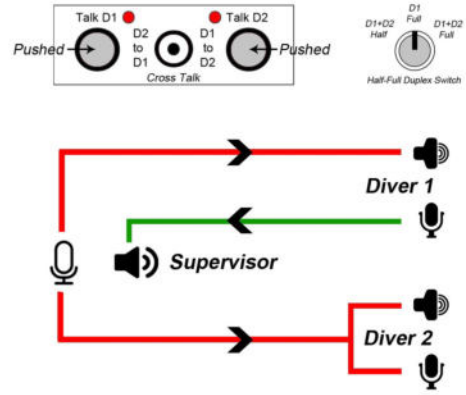
Diver 1 FULL DUPLEX (4 wires) and Diver 2 HALF DUPLEX (2 wires)

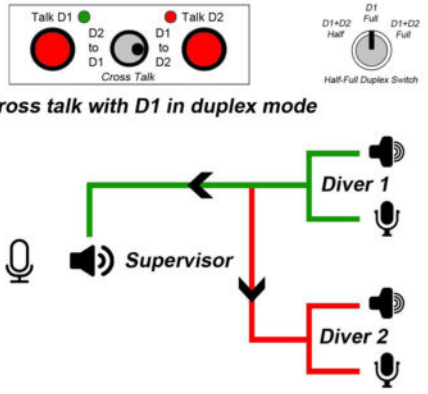




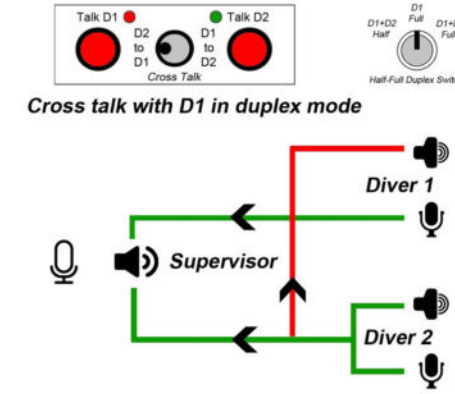






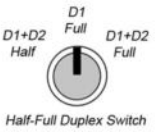


Cross talk with D1 in duplex mode

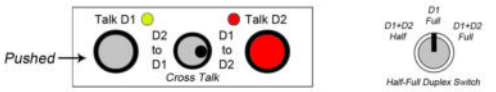


Cross talk with D1 in duplex mode

Various audio switching options

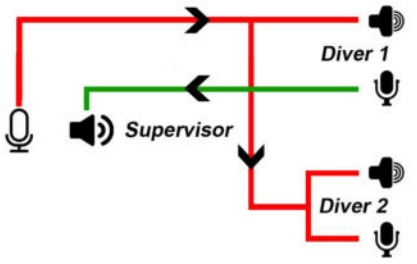


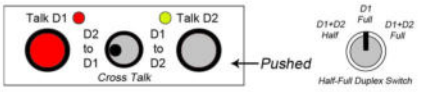
Diver 1 FULL DUPLEX (4 wires) and Diver 2 HALF DUPLEX (2 wires)



Cross talk in duplex mode

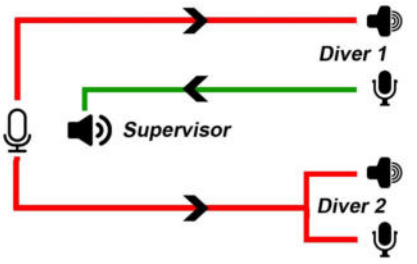
Crosstalk break by supervisor talking to both divers



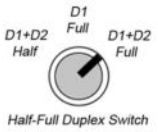


Cross talk in duplex mode

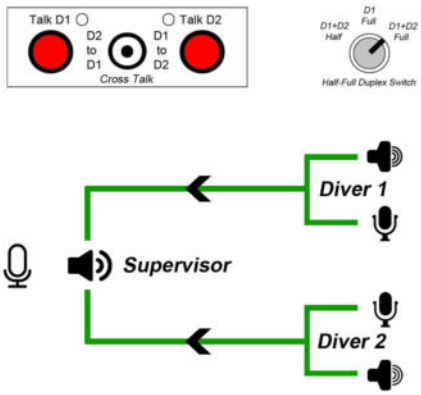
Crosstalk break by supervisor talking to both divers

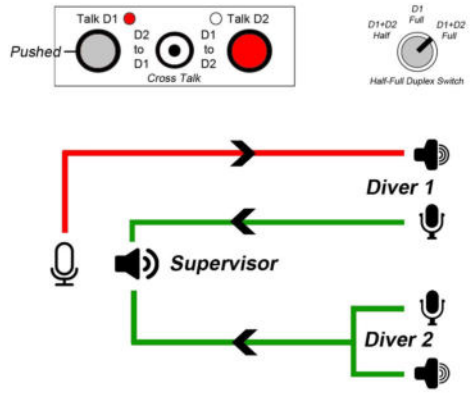


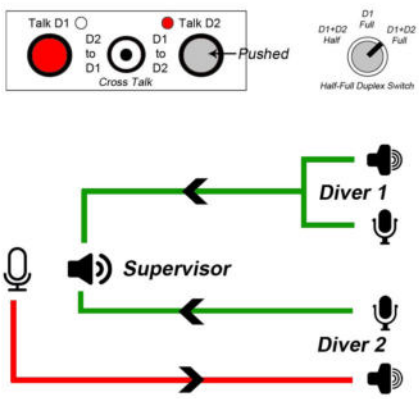
Various audio switching options

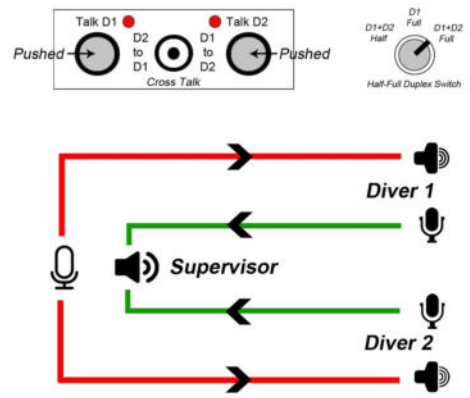


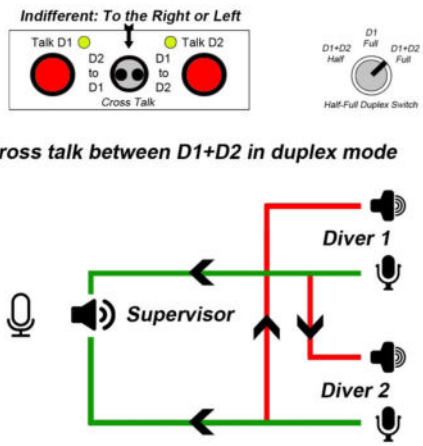
Diver 1 and Diver 2 FULL DUPLEX (4 wires + 4 wires)



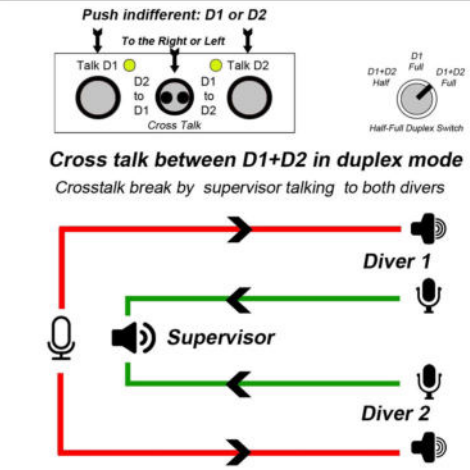








Cross talk between D1+D2 in duplex mode



Cross talk between D1+D2 in duplex mode

Crosstalk break by supervisor talking to both divers

USE OF THE SYSTEM

PRELIMINARY OPERATIONS

Before powering the unit, insert the fuse supplied separately in a plastic bag inside the unit.

Recharge the internal battery if necessary via electronic charger supplied or power the system from an external battery, the battery supplied or a 12V DC external source with minimum current of 5A. To verify correct operation with external sources, check if the LED gauge on the 17-F3 base panel is green. Alternately, if the LED is red it means that the external power source was connected with reversed polarity. In any case, the unit will not be damaged as it is protected from such errors.

Place the unit on a stable surface and attach the audio and / or video connections with the cables. In case of use in adverse weather conditions, once internal adjustments are made, close the apparatus and operate in closed mode with the multifunction remote control and / or headphones with built-in microphone and / or the video glasses.

USE OF THE AUDIO SECTION

After connecting the standard audio terminal cables to the system following the diagrams shown in Figures 15 and 16, select the desired type of communication on the base panel via the 8-F3 switch. In the case of use of different audio sets for each diver (eg. one FULL-DUPLEX and the other HALF-DUPLEX), take care to always use the DIVER 1 audio inputs for the FULL-DUPLEX audio set.

Turn on the audio section via the 14-F3 switch. The LCD display will light up indicating the voltage of the internal battery and / or that of the external power source if connected. Adjust / balance the volume of the divers' microphones using potentiometers 4 and 6 - F3. Then adjust the overall internal speaker volume using potentiometer 5-F3. Adjust the sensitivity of the surface microphone and headphone volume of divers with potentiometers 7 and 9 - F3, so as to get undistorted sound in the divers' headphones as well as having the right preamplification of the supervisor's microphone in relation to the distance and the environment in which it is operating.

Use the respective divers' communication buttons to enable communication with them, both for duplex and half-duplex communications. The communications buttons are located both on the base panel of 11-13-F3, as well as on the wired multifunction remote control 1 and 2-F4. Note that the system makes use of both the microphone located on the remote control as well as an internal pre-amplified microphone. The latter is only activated at the touch of the communication buttons located on the base panel in order to be able to use the system without any external accessory connected. If you are operating in duplex mode, even with a single diver, you can block the conversation between the divers and the surface via the 2-F3 switch and operate hands-free. In half-duplex mode for both divers, the lock switch is turned off automatically.

To enable communication between divers, use the switch on the 12-F3 panel or the F4 switch on the multifunction remote control.

The two 10-F3 LED indicators on the panel will light up. The green one indicates the diver who is talking and the red the diver who is listening.

During these stages the supervisor is always listening and may interrupt the conversation between the divers, and talk simultaneously with both quickly (for all possible communications options, refer to the diagrams in

("AUDIO COMMUNICATIONS -OPTIONS ").

To mute the internal speaker and operate with headphones only set the 3-F3 switch to OFF and, if necessary, close the device to operate in adverse weather conditions.

Working with the headphones plugged in, the remote control's built-in microphone will turn off automatically and that of the headphones will be used.

If you have optional video glasses, you can use them along with the headphones with the device closed in order to see the video sources of the cameras and the general output of the DVR.

USE OF THE VIDEO SECTION

After connecting the video-light cables correctly according to the diagram in the section - Video and audio cable connections - turn on the video section via the 15-F3 switch.

The LCD display will light up indicating the voltage of the internal battery and / or that of the external source if connected.

At this point, you can choose whether to display the direct video signals from the cameras of the divers, or view them via the built-in DVR. With the built-in DVR you can also view picture in picture in real time, show picture and video recordings via the "Rec" button on the command panel or from the wired multifunction remote control 6-F4, or play back movies recorded on an SD memory card.

To select the two modes, use the touch key on the 2-F12 monitor and select AV1 for direct viewing and AV2 for viewing through the DVR.

If you are operating in direct view mode, use the 2- F11 switch to select the two cameras sources, D1 for that of Diver 1 and D2 for that of diver 2.

If you are working in DVR mode, select the two video sources of the two cameras either from the DVR control panel via the "Switching" button, or from the wired multifunction remote control 5-F4 button. Press it sequentially also to select picture in picture of the two video sources.

The video section is also equipped with three CVBS PAL outputs with separate BNC connectors, (21-23-24- F3), positioned on the base panel.

They provide direct video signals from the cameras of divers 1 and 2. The third output provides the general video signal from the built-in DVR.

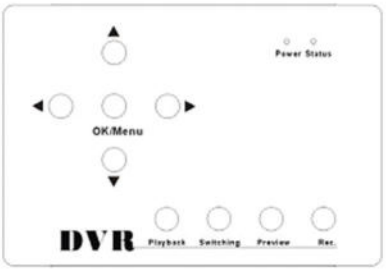
These video sources may be used, also at the same time, to connect wide external monitors so as to create a video direction (for example on ships, containers and on fixed installations in general), or may also be used to connect external video and recording equipment compatible with the type of video signal supplied (CVBS PAL 1Vpp 75 ohms).

Together with the three BNC video outputs, again on the base panel, there is a BF audio plug (22-F3) with RCA connector that provides a general audio output of low frequency communications. This again can be used with external audio equipment.

To turn on the two respective divers' LED spotlights, use the 19-20-F3 switches and select the two modes for each LED spotlight: on or dimmer (adjustable). In "dimmer" mode use the 18-F3 potentiometer to adjust the brightness of the spotlight. To get the maximum brightness of the LED spotlight, select ON instead of turning the potentiometer to maximum while in "dimmer" mode.

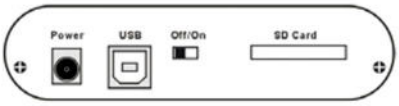
USE OF DVR

Keys on DVR



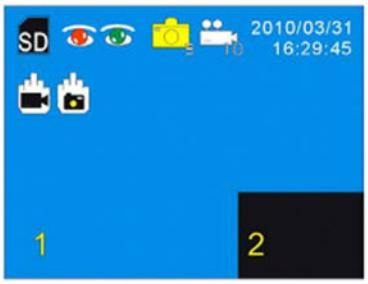
↑	Turn on motion detection
↓	Turn off motion detection
←	Move left
→	Move right
OK/Menu	Confirm/enter into main menu
Power	Power indicator
Status	Working indicator
Playback	Playback videos
Switching	Switch cameras
Preview	6 pictures preview
Rec.	Manual start/stop recording

Side face on DVR



Power	Surface microphone
USB	Connect USB cable to a PC
Off/On	Power on/off
SD Card	Insert SD card

Icons on screen



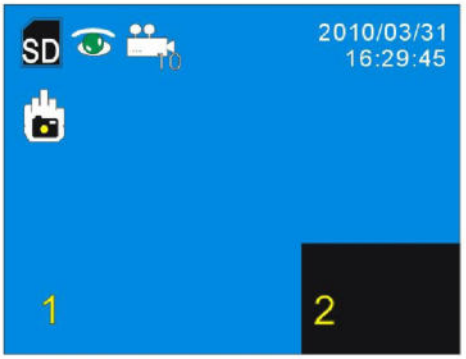
SD	SD inserted
	Manual start recording
	Manual start snapshot
/	Record by motion detected
/	Motion detection status
1 2	Diver 1 camera Diver 2 camera
2010/03/31	Date (Year/Month/Day)
16:29:45	Time（Hour/Minute/Second）

Switch camera to record

You can see 2 different pictures on screen and choose which camera you need by press "Switching" key in standby mode.

1, If only 1 picture on full screen, the DVR only record 1 camera pictures, and the frame is 30f/s.

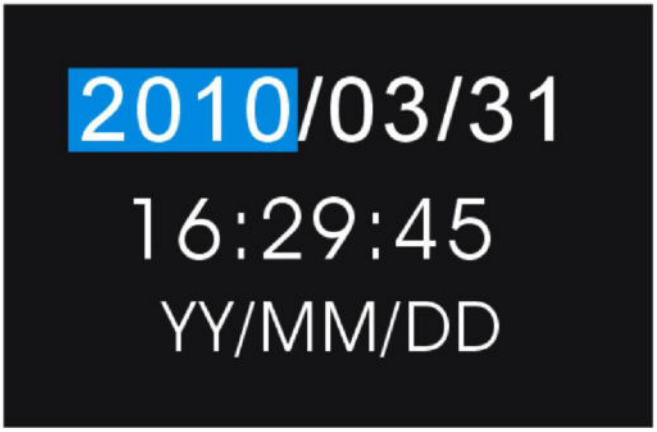
2, When 2 pictures on screen, the larger picture is recording mode, the recording frame is 10f/s. The smaller picture is snapshot mode.



Set time and date

Insert a SD card before use it. Press "OK/Menu" key to enter into main menu and choose icon.

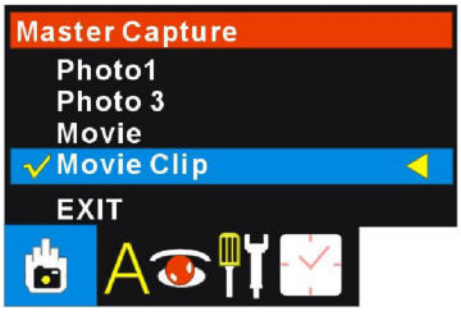
1, Choose Set Time/Date, press "OK" to confirm. Press"←, →"key to choose items. Press"↑,↓" to set



2, You can set the date format when you choose "YY/MM/DD". Press"↑,↓" to set it.

Manual Record setting

1, Press "OK" key enter into main menu and choose ,choose Master capture to set it.



2, ***Photo 1:*** *Snapshot 1 photo when manual record*
Photo 3: *Snapshot 3 photos when manual record*
Movie: *Record videos when manual record*
Movie Clip: *Record videos clips when manual record,10 seconds for every clip.*

1, Press "OK" key enter into main menu and choose *icon.*

4, File Overwrite Setting:

Choose ON to turn on overwriting function, choose OFF to turn off. DVR will delete the 100MB to save new videos when SD card capacity less than 10MB.

Picture quality and TV mode setting

1, Press "OK" key enter into main menu and choose *icon*

2, Photo Quality (detail resolution please see the list below)

High quality: *High resolution*
Standard quality: *Standard resolution*
Low quality: *Low resolution*

3, Movie Quality (detail resolution please see the list below)

QVGA: *QVGA Resolution*
D1 *D1 Resolution*

Resolution in different status

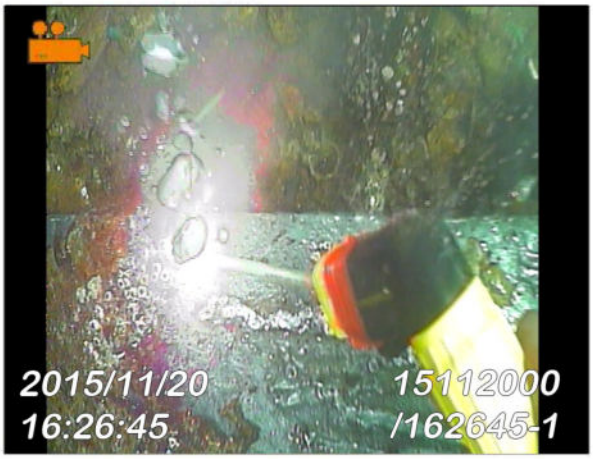
Type	Video		Photo	
	D1 camera	D2 camera	D1 camera	D2 camera
D1&HIGH	720x576	720x480	720x576	720x480
D1&Standard	720x576	720x480	720x576	720x480
D1&Low	720x576	720x480	720x576	720x480
QVGA&HIGH	360X288	360X288	720x576	360X288
QVGA& Standard	360X288	360X240	720x576	360X240
QVGA& Low	360X288	360X288	720x576	360X288

TV Output Standard

You can choose PAL or NTSC mode to fit your Monitor and TV

PLAYBACK:

Press "Playback" key in standby mode. You can see the video recorded time at the left corner. Press "←""→" keys to choose the video you want to play back, and press "Rec." key to play videos.

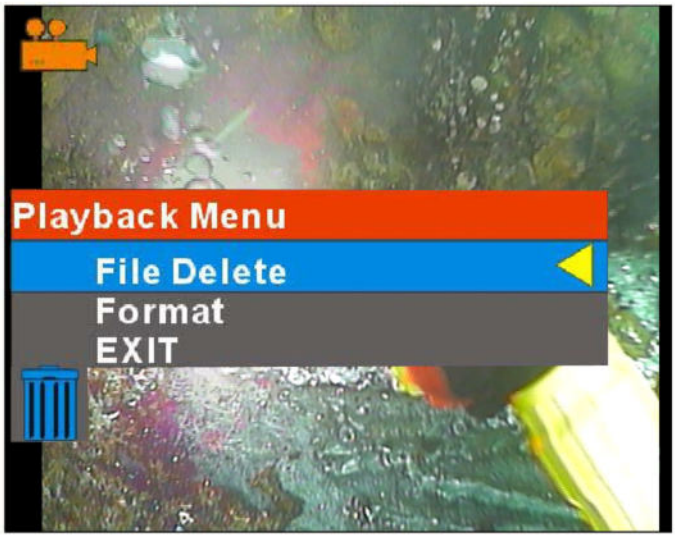


Pictures and photos preview mode:

Press "Preview" key under Playback mode.You can see 6 different pictures on screen, and you can press "←""→" keys to choose the video by different timestamp at the left corner. Press "OK" to choose and press "Rec." to play the video.

Delete files:

1, Press "Playback" key in standby mode. Press "OK" to Choose the file you want to delete, and then press "OK" to delete it.



FILE DELETE: *Delete current file*

FORMAT: *Delete all files in SD card（All files will lost and can not get them back.）*

Specifications:

Frame	Pal:25f/s NTSC:25f/s
Resolution	D1:720X576
	QVGA:360X288
Compression format	M-JEPG & Standard JPEG
Start/Stop recording	Manual - Automatic
Working mode	Recording/snapshot
Memory	SD/SDHC card≤32GB
USB Port	USB 2.0
Working temperature	-10°~+50°
Working humidity	20%~85%

SPECIFICATIONS

GENERAL:

Housing - *made from impact-resistant plastic IP67 Dustproof*
Weight - *5.5 kg including internal battery*
Dimensions - *cm L 30 - W 24 - D 14*
Power supply - *Internal battery 12v 5A and external socket for charger or extra battery*
Battery life - *In audio mode about 12 hours; In video mode at full load (2 LED spotlights -2 cameras - Monitor and DVR in use) about 4 hours*
Protection against polarity inversion and overvoltage
Adjustable quick-release shoulder strap in synthetic fabric.
Shielded electronic circuits immune to radio interference.
Power saving system with eparate audio / video power sections
Automatic restoration of communications *in full duplex mode in case of failure of the divers' microphones*
Sound peak limiting system *to protect divers' microphones and headphones*
Use in closed mode *using he remote control, with or without a headset with microphone and video glasses.*

AUDIO

- *Independent on/off switch*
- *Supports two divers in full duplex or half duplex (2-wire or 4-wire)*
- *External connectors for connection to the cords*
- *Separate adjustment of the volume for general listening, listening level and balance of divers, the level of the headphone volume for the divers and microphone level at the surface.*
- *On/off switch for internal speakers*
- *Automatic MUTE switch in Half duplex mode*
- *Intercommunication between divers with supervision from the surface of the conversation and the possibility for the supervisor to intervene*
- *15w RMS power amplifier with built-in speaker is also active when case is closed.*
- *Audio output for recording additional audio communications with eternal devices.*
- *Audio switching functions on the inside panel and on the remote control: communication between surface and diver 1 or diver 2 - between the surface and diver1 + diver2 - betwe en divers with switch blocked in Full Duplex mode for hands-free operation.*

SPECIAL FEATURES:

- *Automatic restoration of communications in Full Duplex mode in case of failure of the divers' microphones.*
- *Sound peak limiting system to protect the microphones and headphones of divers.*
- *Compensation system for connection fluctuations*
- *In half-duplex mode it is possible to constantly monitor the second diver during conver sation between the supervisor and the first diver.*

SPECIFICATIONS

VIDEO

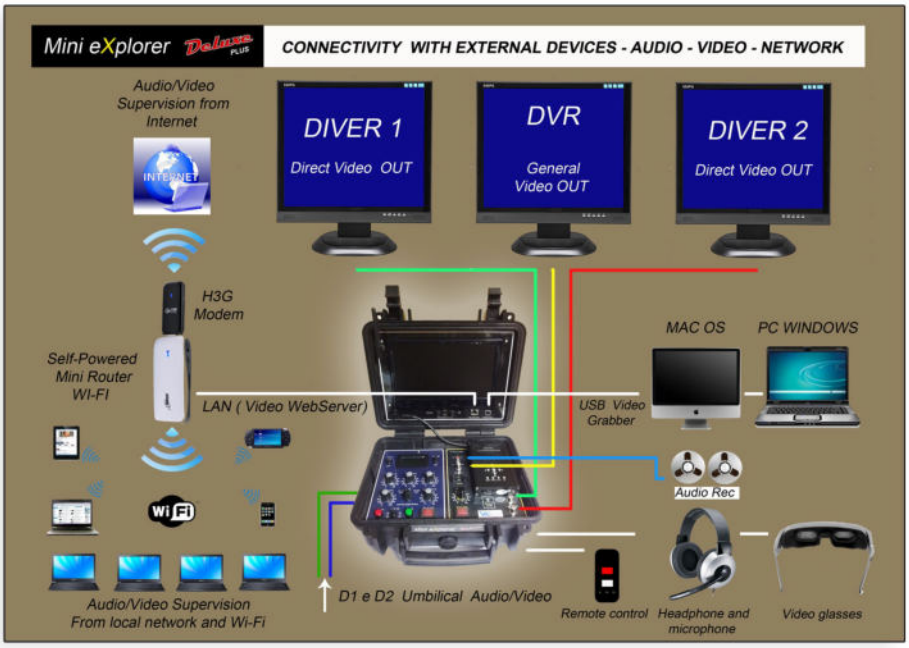
- Independent power switch.
- Supports two divers with two video sources and two LED spotlights
- External video / light connectors for connection to cord and adaptable on request to other types in use.
- Built-in 9 " 16/9 and 4/3 LCD Monitor with two video inputs: one for viewing direct video sources and the second for viewing of the recordings and the general built-in DVR video.
- Switch for the two video sources on the DVR panel and the wired remote control; you can also select the picture in picture function
- Activation switch for the 2 LED spotlights with separate brightness adjustment for each diver.
- Independent 1 VPP analog video outputs for viewing of two cameras and the DVR dir ectly to additional external monitors or for connections with extra equipment.
- External video port for use with multimedia glasses.

DVR

- Independent power switch.
- Recording Format: D1 - 720 x 576 PAL - 720 x 480 NTSC
- Frame rate during playback: PAL 25 fps - 30 fps NTSC
- Video recording on SD card up to 32 GB
- Recording: Movies - Single Photo - Sequential Pictures - Thumbnails.
- OSD menu: Setup - REC - Photo - Date and Time - Thumbnails - Recording Quality and date and time on movies and photos.
- Button: start / stop rec photo / video on the DVR panel and wired remote control
- Play video / audio on internal and external monitor.

VIDEO WEB SERVER

- Connection through 10/100 LAN port or WI - FI by the self-powered Mini Wireless Router accessory or other external adapters
- Audio and video streaming over a local network and the internet by a H3G USB modem connected to the self-powered mini router.
- Audio / video supervision hrough most popular browsers such as on MAC, Android, Windows, Linux, etc.
- ActiveX control and Java Plugin
- Complete Setup of configuration parameters from the web.
- Video overlay window on the browser remotely configurable up to a maximum resolu tion of 704 x 576 with the possibility to adjust the brightness, contrast, sharpness, color and tint of the video stream and record audio and video on the hard disk of the client used during viewing.
- Audio Priority Option - While supervising from the internet, in the presence of low bandwidth, you can enable this feature from the browser in order to give priority to fluid listening communication rather than that of the video that will always be of good quality but with a lower refresh rate.



CONNECTIVITY:

- *3 independent CVBS 1 Vpp video outputs on BNC connectors*
- *General 1 Vpp audio output on RCA mono.*
- *USB - A/V port for connection with PC and MAC – auto-configurable.*
- *10/100 LAN Port and incorporated video web server*
- *External power port and charger with protection against polarity inversion.*
- *External headphone port - multimedia glasses .*
- *External microphone port and an extra speaker .*
- *Wired remote control port.*
- *Fuse.*

Precautions during use:

1 *During traditional use of audio communications, place the Cross Talk switch on the base panel and on the remote control to the center position. (The LEDs on the panel, positioned to the sides of the Cross Talk switch must be turned off)*

2 *When using the device with a single diver, turn the microphone volume potentiometer to the 0 position of the diver that is not in use, in order to avoid background noise.*

3 *To power the device from the mains, do not use the battery charger but the electronic power adapter supplied.*

4 *While using the headset, when inserting its connector into the audio / video port, the built-in microphone in the wired multifunction remote control will automatically turn off, and the microphone built into the headphones will be used.*

5 *The two video channels AV1 and AV2 of the monitors are used, the first to show direct video signals of the cameras of the two divers, and the second to view the general video output of the DVR, photos and playback of movies recorded on the SD card. To select the two channels AV1 and AV2 use the touch button "mode" on the monitor.*

6 *During playback of movies recorded on an SD card, in order to also listen to the audio communication between the divers and the supervisor directly from the device's speaker, set both divers' microphone potentiometers to zero and adjust the overall volume.*

7 *Make sure the wired multifunction remote control's plug is screwed on right to the bottom as this represents the negative and the shield of the built-in microphone.*

8 *When using the device without the remote control and headphones, audio communication between the supervisor and the divers will be guaranteed by the built-in microphone located on the front panel of the DVR. The microphone will only be activated when using the communication buttons located inside the device instead of those on the remote control.*

9 *Do not power halogen spotlights, cameras or LED lights that are not compatible from the device in order to avoid irreparable damage. The maximum total current drawn by the camera and light should not exceed 1 to 1.5 A 12V.*

10 *When necessary, replace the fuse, making sure to use a new one with the same characteristics (**5A rapid**).*

Precautions for disposal:

Disposal of the device and its accessories

Disposal of old electrical or electronic devices
(Applicable in the European Union and other European countries with recycling systems)

This symbol on the product or its packaging indicates that the product should not be treated as household waste, but must be delivered to an appropriate collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate disposal.

The recycling of materials helps to conserve natural resources. For more detailed information about the recycling of this product, please contact your local council, your local waste disposal service or the shop where you purchased the product.

In the event of illegal disposal of electrical and / or electronic equipment you may be subject to the penalties provided for by law (valid only in Italy).

Disposal of dead batteries

(applicable in the European Union and other European countries with recycling systems)

This symbol on the product or its packaging indicates that the battery should not be disposed of as household waste.
On some types of batteries this symbol might be used together with a chemical symbol.

The chemical symbols for mercury (Hg) or lead (Pb) are added if the battery contains more than 0.0005% mercury or 0.004% lead. By ensuring these batteries are disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate disposal.
The recycling of materials helps to conserve natural resources. In case of products that for safety, performance or data integrity reasons require a permanent connection with a built-in battery, this battery should be replaced only by qualified personnel. Deliver the old item to a collection point for the recycling of electrical and electronic equipment to ensure that the inbuilt battery will be disposed of properly. For other batteries, please view the section on safe battery removal.
Take dead batteries to a collection point for recycling. For more detailed information about the recycling of this product or dead battery, please contact your local council, your local waste disposal service or the shop where you purchased the product.

Location of the identification label

Labels indicating the model number, date of manufacture (month / year) and the supply voltage (in accordance with applicable safety standards) are located on the back of the device.

LIMITS OF WARRANTY AND ACCESSORIES

The product is in warranty for one year from the purchase date.
VicSystem RSM s.r.l. provides this warranty to anyone buying one of the Miniexplorer device versions and its supplied accessories. In case of malfunction or a manufacturing defect during the warranty period, the user is required to contact the authorized service center shown on the web site at www.vicsystem.it, which will take responsibility for the product and, at its sole discretion, remedy defects in materials or workmanship free of charge:

a) *repair the product or faulty parts;*
b) *replace the product or faulty parts;*
c) *refund the purchase price of the product according to the terms and conditions of this limited warranty.*

Any service carried out during and after the limited warranty period is subject to a service charge and compensation for any shipping costs incurred by VicSystem RSM s.r.l. or an Authorized Service Center. Please note that the Warranty Service can be carried out by a service center located in a country other than that of where you purchased the product.

WARRANTY PERIOD

The warranty period starts from the date of retail purchase by the original end user. Some accessories supplied with the Miniexplorer may have different warranty periods. These are:

1) *One year for the Miniexplorer;*
2) *Six months for parts and accessories that may need to be replaced including (but not limited to): rechargeable batteries -battery chargers - cables - power supply (even if sold separately) - remote control - headphones - video glasses.*

In line with national laws, the warranty period will not be extended or renewed in the event of subsequent resale of the product, or in the event of authorized repair or replacement of the product. However, the parts repaired or replaced by an authorized service center will be covered by the guarantee in the following terms: either for the three months following the date of repair or replacement, or for the remaining period of the original warranty, whichever is longer.

GUARANTEE

EXCEPTIONS AND LIMITATIONS

This limited warranty does not cover:

1) - Normal wear and tear;
- Faults caused by transport (including and without limitation, defects caused by pointed objects, bending, compression or breaking due to a fall etc.);
- Faults or damage caused by improper use, including use contrary to the instructions provided by RSM VicSystem s.r.l. (for example as given in the product user guide and / or instruction manual);
- Other acts caused by third parties and outside the control of RSM VicSystem s.r.l.

2) - Use not mentioned in the manuals provided by RSM VicSystem s.r.l.
This is true even if use is indicated in user manuals or any third-party software (even if packed or sold as Miniexplorer VicSystem RSM s.r.l accessories) settings, content or data, whether included or downloaded in the product or whether included during installment, assembly, shipping or at any other time or in any other way, if we have not supplied it and it has not been purchased by you.

3) - Faults or alleged faults caused by the use or connection of the device with any other product, accessory, software and / or services not provided by RSM VicSystem s.r.l. or used differently from its intended use.

4) - Use of a power supply other than the one supplied and recommended by VicSystem RSM s.r.l. in this manual.

5) - Use of an external battery or external power source other than that recommended and supplied by VicSystem RSM s.r.l. in this user manual.

This limited warranty is not valid if:

- *The product has been opened, modified or repaired by anyone other than VicSystem RSM s.r.l. or non-authorized service centers.*
- *The product has been repaired using unauthorized spare parts;*
- *The product's serial number has been removed, erased, or its data altered or made illegible in any way (and this is determined at the sole discretion of VicSystem RSM s.r.l.);*
- *The product has been used when the surrounding temperature exceeds the range of -10 to + 50 ° C*
- *The product has been exposed to chemical products.*
- *The product has been used in environments with dust / air particles that could block the air vents;*
- *The product has been subject to high pressure jets of air.*

GUARANTEE

VicSystem RSM s.r.l. does not guarantee that the functioning of product will be uninterrupted or free of errors, or that the product will work in combination with any hardware or software provided by third parties.

APPLICATION TO THE VICSYSTEM RSM s.r.l. GUARANTEE SERVICE

Before you ship the product to the authorized service center, contact them and provide your name, address, proof of purchase (supplier's invoice, date and place of purchase and model) together with the serial number of the device, as well as informing them of the type of problem / fault before sending the product yourself.

In the event the Authorized Service Center deems that the problem or fault cannot be solved with appropriate guidance and support, they will proceed with the technical assistance covered by the warranty, will let you know the ticket number, and invite you to arrange for the shipment of the device by prepaid carrier.

The claim will be honored and the product repaired or replaced at no charge and returned in a reasonable period of time. This is determined at the sole discretion of VicSystem RSM s.r.l. or service center authorized by the former. If the product is not covered by the terms or conditions of this limited warranty, VicSystem RSM s.r.l. or its Authorized Service Center reserves the right to charge for transport costs and the payment of a management fee.

Any claim under this Limited Warranty is subject to notification to VicSystem RSM s.r.l. or its authorized Technical Assistance Centre of the alleged fault in a reasonable time and in any case no later than the end of the warranty period.

ALSO OF NOTE

Please remember to backup all content and data stored on the device (where possible), before shipment for warranty repair, as this data could be lost during repair or replacement of the product. VicSystem RSM s.r.l or its Authorised Technical Assistance Centre is not responsible for any damage or loss of any nature arising from damage or corruption of content or data loss during the repair or replacement of the product.

When a product or part is replaced during repairs, the replaced item becomes the property of VicSystem RSM s.r.l.

If the product is reimbursed by VicSystem RSM s.r.l, it must be delivered to the authorized service center because at that time it becomes the property of VicSystem RSM s.r.l.

At the time of warranty repair / replacement of the product, VicSystem RSM s.r.l. or its Authorised Service Centre may use new, equivalent to new or reconditioned products or spare parts.

GUARANTEE

LIMITATION OF LIABILITY

TO THE EXTENT THAT IT IS ALREADY PERMITTED BY THE APPLICABLE LAWS, THIS LIMITED WARRANTY IS THE SOLE AND EXCLUSIVE REMEDY AND SUBSTITUTES OTHER WARRANTIES, EXPRESS OR IMPLIED.

VICSYSTEM RSM S.R.L. WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL OR PUNITIVE DAMAGE, INCLUDING WITHOUT LIMITATION, LOSS OF BENEFITS OR PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF DATA, PUNITIVE DAMAGE, LOSS OF USE OF THE PRODUCT OR RELATED EQUIPMENT OF ANY KIND, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT OR SERVICES, DOWNTIME, CLAIMS OF THIRD PARTIES (INCLUDING CUSTOMERS) AND PROPERTY DAMAGE RESULTING FROM THE PURCHASE OR USE OF THE PRODUCT OR ARISING FROM BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, TORT OR ANY OTHER LEGAL OR EQUITABLE THEORY, EVEN IF VICSYSTEM RSM SRL KNEW OF THE POSSIBILITY OF SUCH DAMAGE.

VICSYSTEM RSM S.R.L. WILL NOT BE LIABLE FOR DELAYS IN SERVICE DURING THE LIMITED WARRANTY PERIOD, OR LOSS OF USE DURING THE PERIOD NECESSARY FOR REPAIR.

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For informations on products VicSystem:
Http://www.vicsystem.it

VIC System® RSM s.r.l.

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