FireFly

Field Station Unit (FSU)

User Guide

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Overview: Field Station Unit (FSU)

About Field Station Unit (FSU)

The FSU is a battery-powered device with RF radio, GPS, Bluetooth, Ethernet and solid-state memory designed to record seismic data. A central station computer (CSC) controls FSU operations. The FSU records data sent from a seismic sensor and then downloads the data to a data transcription system.

The FSU is deployed in the field and is intended for use by properly trained seismic field personnel.

Regulatory and Safety Guidelines

Regulations regarding the use of the radio modems vary greatly from country to country. In some countries, the unit can be used without obtaining an end-user license. Other countries, such as United States, require end-user licensing. Consult your local communications governing agency for licensing information. Before operating an FSU with a radio modem, determine if authorization or a license to operate the unit is required in your country. **Obtaining an operator's permit or license for the FSU for the location or country-of-use is the responsibility of the end user.**

NOTE:
This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

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

NOTE:
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

NOTE:
In order for the equipment to work, the antenna must be professionally installed. In United States, for the 217 – 220 MHz band, the maximum antenna height above average terrain (HAAT) is 152 meters (500 feet). Improper installation could void the user's authority to operate the equipment.

Certification

Certification, covers technical parameters of the equipment related to emissions that can cause interference. Certification is granted to the manufacturer or importer of the transmission equipment, independent from the operation or licensing of the units. Some countries have unique technical requirements for operation in certain radio modem frequency bands. Unauthorized modification to the units voids the Certification, the warranty and the operational license of the equipment.

CAUTION:
Changes or modifications to this equipment not expressly approved, in writing, by Input/Output could void the user's authority to operate the equipment.

Licensing

Many countries require that the operator of a radio, or radio modem, obtain a license prior to operating the radio, or radio modem. Some do not. Consult your local communications governing agency for licensing information. **Obtaining an operator's permit or license for the Firefly FSU for the location or country-of-use is the responsibility of the end user.**

Before operating this radio modem, you are legally required to obtain frequency licenses as required by the country-of-use. Please contact your local communications governing agency for the licensing requirements for each of these radio modems.

Safety

Exposure to radio frequency (RF) energy is an important safety consideration. The FCC has adopted a safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated equipment as a result of its actions in General Docket 79- 144 on March 13, 1986. Proper use of this radio modem results in exposure below government limits. The following precautions are recommended:

- A 20 cm separation should be maintained between the antenna and all persons during normal operation, per Part 1.1307 of the FCC Rules and Regulations.
- All equipment must be properly grounded according to Input/Output installation instructions for safe operation.
- All equipment should be serviced only by a qualified technician.

FCC ID Label

Figure 1 is an example of the FCC ID label for the FSU radio. Figure 2 shows where the label is located on the FSU radio. The size of the label is approximately 1.75 X 3.50 inches.

FCC ID: MCV-FSU101

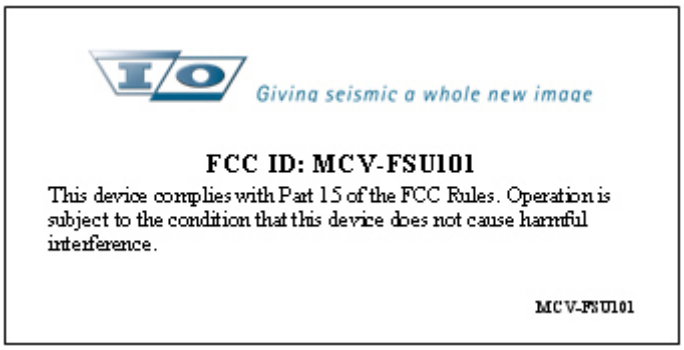

Figure 1. FCC ID Label: FSU Radio

Figure 2. FCC ID Label Location: FSU Radio

Deploying and Operating the FSU

Before you begin

Deploy the FSU by placing it on the ground.

Bringing up the FSU

1. Turn on the CSC and C/RU hardware.
2. Execute the Firefly software on CSC.
3. Turn on the FSU by swiping a magnet over it.
4. Turn on the NavTool and execute the NavTool software.
5. From the NavTool software, initiate deployment of the FSU by entering the necessary parameters.
6. In the FireFly software, open the Deployment domain view. The FSU should be on the list. Make sure Deployment domain is in Manual mode.
7. Right-click on the FSU and select Deploy. The status should change to Deployed.
8. Right-click on the FSU and select Status Pull.
9. Right-click on the FSU and select Sleep.

Shutting down the FSU

1. In the Firefly software, open the FSU domain view.
2. Select the FSU from the list, right-click on FSU, and select Wakeup.
3. Wait for Wakeup to finish.
4. Select the unit from FSU domain again, right-click, and select Undeploy. The FSU should disappear from the FSU domain view.
5. Shut down CSC operating system.
6. Turn off CSC and C/RU hardware.