IMS500™

(Invetex Monitoring System Model 500)

Installation and Operations Manual

Invetex Corporation
Suite 27A
Building 400
2705 Artie Street
Huntsville, AL 35805

www.Invetex.com

1-866-582-5029

IMS500™
Installation and Operations Manual

Systems Capabilities and Basic System Information

Do not attempt to install the IMS500™ until you read and understand the **Installation** section starting on page 3.

The **IMS500™ (Invetex Monitoring System Model 500)** alerts personnel when your computer server room or other protected area is exposed to water in the ceiling or if temperature extremes are reached. When hooked up to an auto-dialer, a security system, or other systems, **IMS500™** can call designated numbers in response to a potential problem, inform your security system of problems, or provide other assistance.

A Master Controller Box is shown below to the right. The Master Controller Box includes one controller button at the bottom left, three alarm lights on the upper face of the Master Controller Box, and a second button under the three lights. An **IMS500™** can support up to 30 Halotiles that detects up to 120 square feet.

If the system detects a water leak, the left light, which is yellow, illuminates brightly. If the system detects temperatures at 130º F or higher, the center light, which is red, will illuminate brightly. If the system detects temperatures at or below 32º F, the right light, which is blue, will illuminate brightly.

Blue light to show if 32° F is reached

Red light shows if 130° F is reached

Yellow light to show a wet condition

The Mute button is also used to activate a properly installed system (see page 6)

Hole for alarm

Power On button

The power supply plugs into the bottom.

**Power supply**   **IMS500™ Master Controller Box**

The power supply (shown above) plugs into either a standard 110 volt, 60 cycle AC or 220/240 volt, 50 cycle AC source and the single end plugs into the Master Controller bottom as shown (above right). To adapt **IMS500™** to use 220/240 volts, simply replace the flat two-

prong plug on the power supply with a round two-prong plug by pressing the button near the prongs and sliding in the new plug.

To provide back-up power to **IMS500™** the system should be plugged into a universal power supply. This will ensure continual operation in case of a power failure.

Water leaking onto a ceiling is detected by Halotiles™ placed on top of standard 2x2 or 2x4 ceiling tiles. A Halotile™ is shown below.
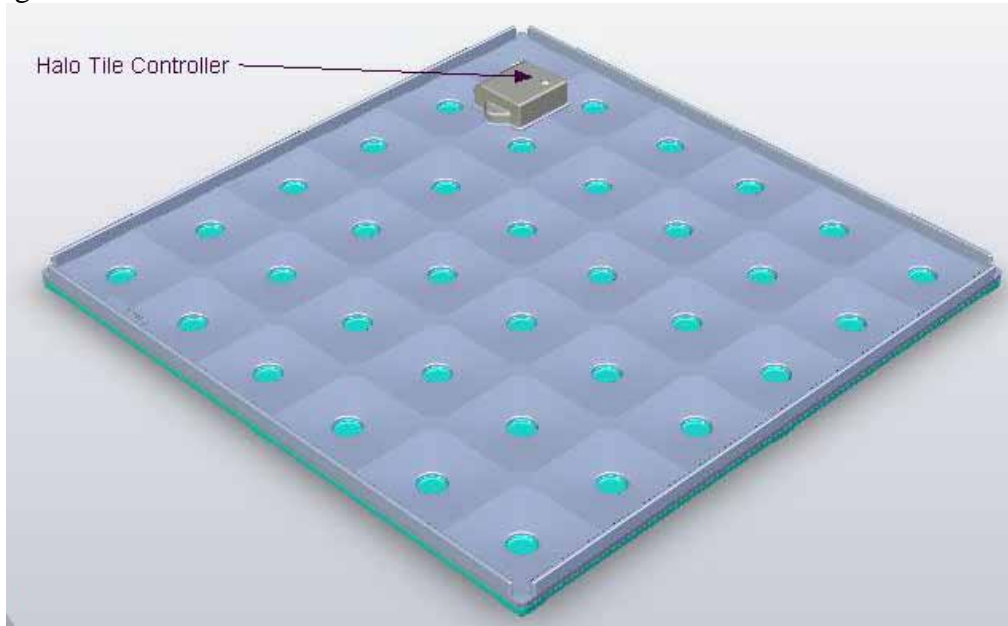
Halotile™

Clip Light™

The **IMS500™** can be equipped with Clip Lights™ that turn very bright when a Halotile™ is wet or the area around the tile is at 32º F or at 130º F (61º C). These clip lights will blink at a low light level when the system is functioning to show the **IMS500™** is operating.

Left: Clip Light™. The arrow on the clip points to the protected tile. A light emitting diode is in the arrow's center.

Halotile™ **Controller**

Halotile™ controllers connect to each other using four-wire RJ-11 cables that are specially marked to assist with connections. An identical colored coded RJ-11 cable also connects the first Halotile™ controller to the **IMS500™** Master Controller Box. The black end goes into the Master Controller Box and the red end goes into the first Halotile™.

In the event of a power failure the **IMS500™** will automatically return to its previous condition when power is restored.

Installation

This sections describe step-by-step installation and operating procedures. First locate where the Master Controller Box will be installed. You should install the Master Controller Box on a wall near a power outlet, however do not turn the Master Controller Box on until all Halotiles™ are in place and connected. Halotiles™ will be daisy chained together, one after the other. The **IMS500™** will automatically number each tile in sequence. The Halotile™ connected to the Master Controller Box will be Halotile™ 1, the tile connected to it will be Halotile™ 2, etc.

Install Master Controller Box

The Master Controller Box must be installed near a power outlet and also be near the first Halotile™. Mount the two screws 2 inches apart and parallel to the floor. Insert the screws so 5/32 inch remains exposed. Slide the Master Controller Box onto the screws. Do not plug the Master Controller Box into a power outlet until the Halotiles™ are installed and connected.

Install Halotiles™

Halotiles™ are 23-3/4 inches square and are designed to fit on top of normal 2ft x 2 ft or 2 ft x 4 ft ceiling panels. Before you install Halotiles™, it is suggested that you plan where you will place each tile. For non-standard ceiling tiles, such as near a wall, Halotiles™ may be cut to fit. **CAUTION** - Special procedures are required to properly cut Halotiles™. See "Cutting Halotiles™," on page 6.

Each Halotile™ (except the last) will have a four-wire RJ-11 running from its black connection to the adjacent tile with the next higher number, where it will plug into the red connection. This is important since **IMS500™** will automatically locate each tile in the sequence in which they are connected. If you use Clip Lights™, any alarmed tile will illuminate the Clip Light™ to let you find the problem quickly.
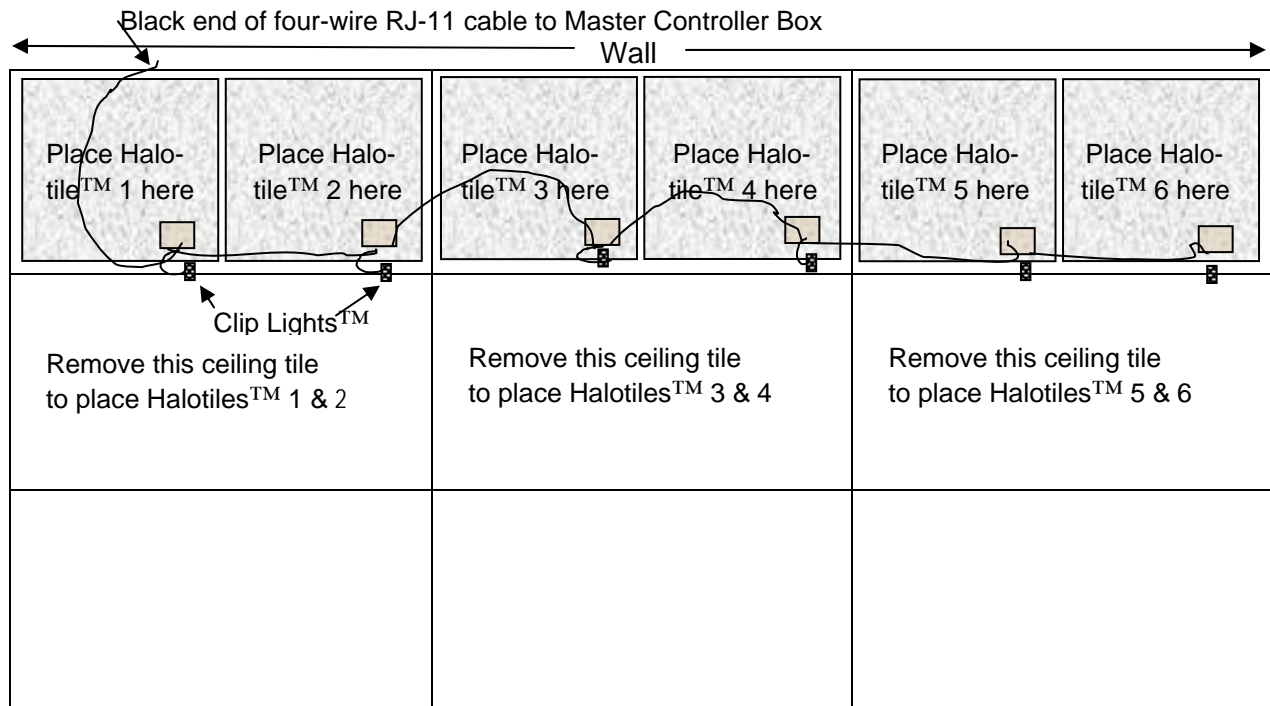
To place a Halotile™, remove the ceiling tile adjacent to the location where you will install the tile. To start installation of a row next to a wall, remove ceiling tiles one row away from the wall. Place a Halotile™ on top of the ceiling tile next to the wall, as shown in the following figures.

To install a Halotile™ remove a ceiling tile that is adjacent to where you want the Halotile™ (left picture) and then insert the Halotile™ by bending the tile slightly (right picture). The Halotile™ will be installed on the ceiling tile next to the opening.

Some ceilings have insulation on top of the ceiling tiles. In these cases, simply lift the insulation and slip the Halotile™ under the insulation, after hooking up the four-wire RJ-11 cable.

Black end of four-wire RJ-11 cable to Master Controller Box

Wall

Place Halo-tile™ 1 here	Place Halo-tile™ 2 here	Place Halo-tile™ 3 here	Place Halo-tile™ 4 here	Place Halo-tile™ 5 here	Place Halo-tile™ 6 here

Clip Lights™

Remove this ceiling tile to place Halotiles™ 1 & 2

Remove this ceiling tile to place Halotiles™ 3 & 4

Remove this ceiling tile to place Halotiles™ 5 & 6

Top view of 2 x 4 ceiling tiles and Halotiles™. Remove the ceiling tile adjacent to where the Halotile™ will be replaced. The same technique is used for 2 x 2 tiles. Clip Lights™ affix to the ceiling suspension rails.

Each four-wire RJ-11 connecting cable has a red end and a black end. The ends are colored next to the connector. Each Halotile™ Controller has a receptacle with red dot nearby and a receptacle with a black dot. A red cable end goes into the red receptacle and a black cable end goes into the black receptacle.

The four-wire RJ-11 connecting cables hook to adjacent Halotile™ control, connecting each Halotile™ to its neighbor. <u>For the tile nearest the master control panel</u>, the black cable will be left hanging from the Halotile™ and it will be hooked into the Master Control Box top once all tiles are connected to each other. <u>The last tile will not have a black connection cable</u>.
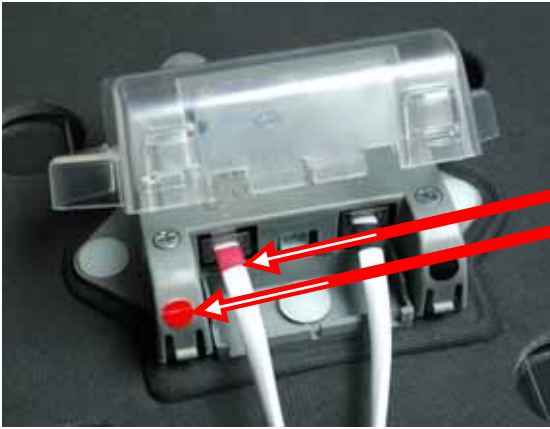
Connect the Halotiles™ by inserting a four-wire RJ-11 cable colored end into the receptacle that has a matching colored dot on the Halotile™ controller. Shown at the left is a red cable inserted into the corresponding red receptacle.

The center receptacle is for the clip light cable.

A four-wire RJ-11 cable connects two Halotiles™ as shown. One cable end is red (upper tile) and one is black (lower tile).

This "daisy chain" system connects each Halotile™ to a neighboring tile. In this way all tiles are connected. No four-wire RJ-11 cable should be longer than 70 feet long.
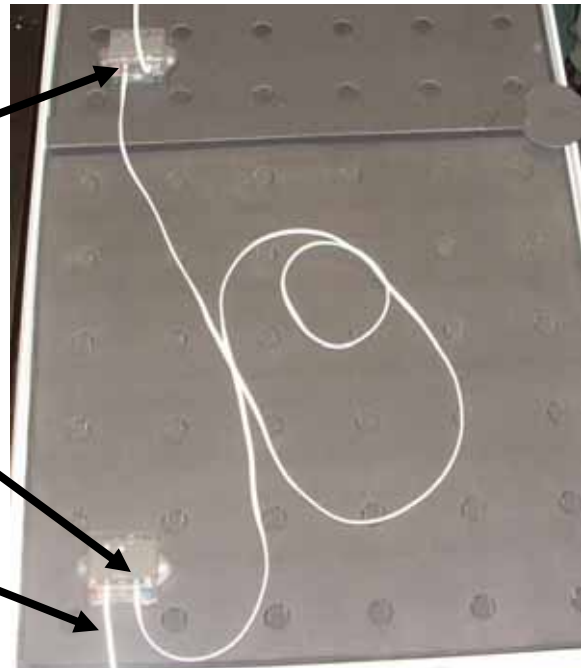
To complete installation of a Halotile™, add a Clip Light™ to the ceiling tile support with the arrow pointed towards the Halotile™ where you plugged in the Clip Light™ wire. Insert the wire from the Clip Light™ into the Halotile™ controller to complete installation. When installed, the Clip Light™ will rapidly blink at a low level to show the system is operating.

When all wires have been inserted into each Halotile™ Controller, rotate the clear plastic cover closed. This will snap into place and help prevent the cables from becoming disconnected.

To complete installation of a Halotile™, add a Clip Light™ to the ceiling tile support with the arrow pointed towards the Halotile™ where you plugged in the Clip Light™ wire. Insert the wire from the Clip Light™ into the Halotile™ controller to complete installation. When installed, the Clip Light™ will rapidly blink at a low level to show the system is operating. This "normal operation" blinking can be turned off if desired.

When all wires have been inserted into each Halotile™ Controller, rotate the cover closed to its original location. This will snap into place and help prevent the cables from becoming disconnected.

Once all Halotiles™ are installed and hooked to each other, connect tile number 1 to the Master Controller Box by inserting the black-end wire from Halotile™ 1 into the top of the Master Controller Box.

Cutting Halotiles™

Halotiles™ should only be cut in one direction. Cut Halotiles™ with standard scissors parallel to the two wires that are exposed in each Halotile™ cup. Leave at least ½ inch edge to a row of cups. Measure the Halotile™ so the part with the Halotile™ controller box will be the part you install. Discard the part of the Halotile™ that does not contain the Halotile™ controller. As an option to cutting, *one Halotile™ may overlap another with no operational problems*.
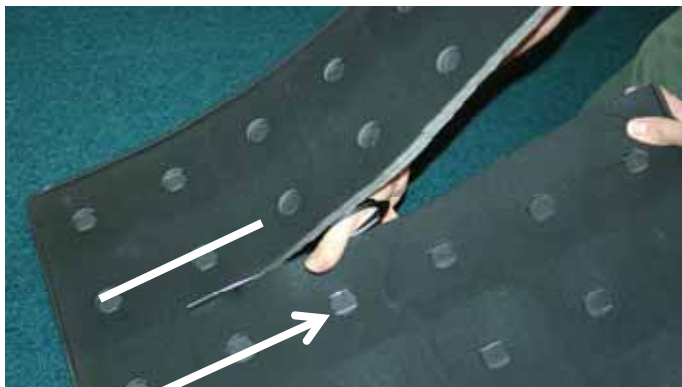
Cut parallel to the wires, ensuring the portion that is retained contains the controller box. Discard the unused part.

Activate Master Controller

Plug the power supply into the wall and the power outlet into the Master Controller Box. Turn on the power by depressing and holding the lower left ("Power On") button for two second. The **IMS500™** will take three seconds to initialize.

The Master Controller Box may chirp at an approximate rate of one chirp each 1-1/2 seconds. The **IMS500™** is looking for an acknowledgement of this slow chirping, which means the system has been properly installed. Depress and hold the "Mute Alarm" button for two seconds to activate the system. The chirp will stop and the three lights on the IMS500™ Master Controller Box will flash rapidly. This indicates the system is working properly. If no one presses the "Mute Alarm" button on start-up, after about 25 seconds the chirping will stop and the system will start to detect water and temperature extremes, however every time the system is

turned off or a power loss occurs, it will repeat the slow chirp and will not function until the chirping stops.

If Master Controller Box chirps rapidly (about 3 chirps each second) this indicates that one or more four-wire RJ-11 connector cables have been installed incorrectly. Depress and hold the power button for three seconds to turn off the system, then reconnect the wires with a black end into the **IMS500™** and the red end into the red receptacle on the first tile; and then the black receptacle on the first tile should connect to the red receptacle on the second tile, etc. When the tiles have been properly connected, turn on the power by depressing and holding the lower left ("Power On") button for two second. Repeat the process on the lower part of the previous page to activate the controller.

Normal Operation

The **IMS500™** will notify you of water leaks (yellow light), if temperatures fall to 32º F (blue light), or above 130º F (red light). It also sounds a continuously alarm tone. Each effected tiles will illuminate their associated Clip Light™ or the light on the Halotile™ controller (as shown below).

Alarm Responses

Turn off Alarm

To turn of the audible alarm depress the "Mute Alarm" button below the three lights. The wet, hot, or cold tiles(s) will light-up the Halotile™ controller box (shown below, left) or the Clip Light™ for the tile(s). The alarm lights on the **IMS500™** Master Controller Box and the associate Hatltile™ controller light(s) will remain on until the problem is fixed. The **IMS500™** will continue to function and will sound an alarm if a second event (hot, cold, or wet) occurs.

In the event of an alarm, the light on each affected Halotile™ controller illuminates.

Halotile™ controller

Support Systems

The "Autodialer" port on the bottom of the Master Controller Box is for a standard RJ-11 connection that is designed to support contact closures. This can be connected to an alarm system, water shut-off valve, or other closure activated system. If you use Inventex color-coded connecting cables to hook up to your system, use the black and green lines. Lines longer than 50 feet should not be used unless approved by your alarm company.