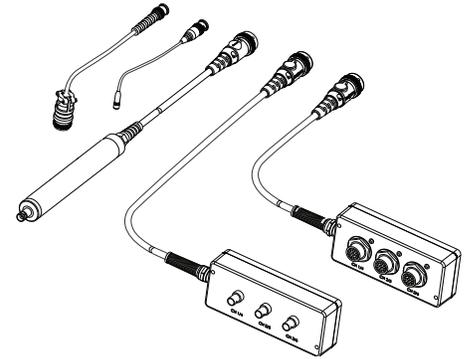


Instruction Sheet

Uniaxial / Triaxial Accelerometer Adapters

InstanTEL provides two types of adapter cables to connect accelerometers with InstanTEL's Minimate Pro4™ and Minimate Pro6™ monitoring units.

With the Uniaxial Accelerometer Adapter Cable you can connect one of the three supported accelerometers (0.5 g, 50 g and 500 g) directly to a Minimate Pro4/Pro6 monitoring unit. If additional Uniaxial Accelerometer Adapters are required, connect them using a Minimate Pro4/Pro6 Splitter Box. These configurations provide complete flexibility when installing the individual accelerometer sensors.



With the Triaxial Accelerometer Adapter Cable you can connect up to three of the supported accelerometers (0.5 g, 50 g and 500 g) to the Minimate Pro4/Pro6 unit, in either a triaxial or uniaxial configuration.

Available Accelerometers

0.5 g Accelerometer (Low Level)

The 0.5 g accelerometer measures low level accelerations (0.5 Hz to 500 Hz ± 3 dB, with minimum trigger levels 0.00032 g) for sensitive monitoring applications including computer rooms, integrated circuit manufacturing, optical balances, and electron microscopes.

50 g and 500 g Accelerometer (High Frequency)

The 50 g and 500 g accelerometers measure high frequency accelerations (1 Hz to 3 kHz) with minimum trigger levels 0.032 g for the 50 g accelerometer and 0.256 g for the 500 g accelerometer.

Please contact your InstanTEL Dealer Representative for additional applications that can be monitored using accelerometers.

Tools and Materials Required

- Uniaxial Accelerometer Adapter Cable. (P/N: 720A4901)
- Triaxial Accelerometer Adapter Cable. (P/N: 720A5201)
- Splitter Box (P/N: 720A5501)
- Minimate Pro4 monitoring unit (P/N: 720A2301) or
- Minimate Pro6 monitoring unit (P/N: 720A2401)
- THOR Advanced software (P/N: 72300201)
- 0.5 g Accelerometer. (P/N: 714A7101)
- 50 g Accelerometer. (P/N: 720A6301)
- 500 g Accelerometer. (P/N: 720A6401)
- Triaxial Accelerometer Mounting Block (50 g & 500 g). . . (P/N: 080B11)
- Triaxial Accelerometer Mounting Block (0.5 g) (P/N: 400-000289-000)

WARNING: The 0.5 g Accelerometer is a fragile sensor. To maintain the warranty, handle the accelerometer with care. For storage and shipping purposes, always use the supplied case and packing materials. Do not drop.

Installation

There are five variations to install accelerometers, follow the appropriate procedure for your configuration:

- A. Installing a Single Accelerometer in a Uniaxial Configuration.
- B. Installing Multiple Accelerometers in a Uniaxial Configuration Using Uniaxial Accelerometer Adapter Cables.
- C. Installing Accelerometers in a Uniaxial Configuration Using a Triaxial Accelerometer Adapter Cable.
- D. Installing Accelerometers Using a Triaxial Accelerometer Adapter Cable and Triaxial Accelerometer Mounting Block.
(Procedure for 50 g and 500 g Accelerometers)
- E. Installing Accelerometers Using a Triaxial Accelerometer Adapter Cable and Triaxial Accelerometer Mounting Block.
(Procedure for 0.5 g Accelerometers)

Note: If longer cables are required, Instanteel recommends extending the shielded coaxial cable between the the Instanteel accelerometer adapter and the Minimate Pro4/Pro6 unit.

- 30 m (100 ft) Extension Cable P/N: 720A3301 or
- 75 m (250 ft) Extension Cable P/N: 720A3302

A. Installing a Single Accelerometer in a Uniaxial Configuration

Refer to Page 4, Section A for a graphical depiction of the proper installation.

1. Install the accelerometer to measure in the axis of interest.
2. Connect either the:
 - 0.5 g Accelerometer to the **Cable for 0.5 g Accelerometers** (P/N: R6-2-J5A-6, included with P/N: 714A7101).
 - or
 - 50 g & 500 g Accelerometers to the **Cable for 50 g & 500 g Accelerometers** (P/N: 002C10, included with P/N: 720A6401, 720A6301).
3. Connect the Accelerometer Cable to the **Uniaxial Accelerometer Adapter Cable** (P/N: 720A4901).
4. Connect the **Uniaxial Accelerometer Adapter Cable** to the Minimate Pro.
5. Proceed to the THOR Software Setup procedure on Page 5.

Results will appear on channel 1 or 4 depending on the connector that was selected.

B. Installing Multiple Accelerometers using Uniaxial Accelerometer Adapter Cables

Refer to Page 4, Section B for a graphical depiction of the proper installation.

1. Install an accelerometer to measure in the axis of interest.
2. Connect the:
 - 0.5 g Accelerometer to the **Cable for 0.5 g Accelerometers** (P/N: R6-2-J5A-6, included with P/N: 714A7101).
 - or
 - 50 g & 500 g Accelerometers to the **Cable for 50 g & 500 g Accelerometers** (P/N: 002C10, included with P/N: 720A6401, 720A6301).
3. Connect the **Cable for 0.5 g Accelerometers** or **Cable for 50 g & 500 g Accelerometers** to the **Uniaxial Accelerometer Adapter Cable** (P/N: 720A4901).
4. Repeat Steps 1-3 for each accelerometer.
5. Connect the **Uniaxial Accelerometer Adapter Cables** to the **Splitter Box** (P/N: 720A5501).
6. Connect the Splitter Box to the Minimate Pro Channels 1-3 connector (if using two Splitter Boxes with a Minimate Pro6, connect the second Splitter Box to the Channels 4-6 connector.)
7. Proceed to the THOR Software Setup procedure on Page 5.

Results will appear on channels 1, 2 and 3 or 4, 5 and 6 depending on the connector that was selected.

C. Installing Accelerometers in a Uniaxial Configuration Using a Triaxial Accelerometer Adapter Cable

Refer to Page 4, Section C for a graphical depiction of the proper installation.

You can use a **Triaxial Accelerometer Adapter Cable** (P/N: 720A5201) to create a uniaxial configuration. Using this procedure, you can install a single accelerometer or multiple accelerometers.

1. Install an accelerometer to measure in the axis of interest.
2. Connect the accelerometer to one of the following cables:
 - 0.5 g Accelerometer to the **Cable for 0.5 g Accelerometers** (P/N: R6-2-J5A-6, included with P/N: 714A7101).
or
 - 50 g & 500 g Accelerometers to the **Cable for 50 g & 500 g Accelerometers** (P/N: 002C10, included with P/N: 720A6401, 720A6301).
3. Connect the accelerometer cable to the **Triaxial Accelerometer Adapter Cable** (P/N: 720A5201).
4. Repeat Steps 1-3 for each accelerometer.
5. Connect the **Triaxial Accelerometer Adapter Cable** to the Minimate Pro.
6. Proceed to the THOR Software Setup procedure on Page 5.

D. Installing Accelerometers Using a Triaxial Accelerometer Adapter Cable and Triaxial Accelerometer Mounting Block. (Procedure for 50 g & 500 g Accelerometers)

Refer to Page 4, Section D for a graphical depiction of the proper installation.

1. Connect the accelerometers to the **Triaxial Accelerometer Mounting Block** (P/N: 080B11). Align the accelerometers, one each, to the transverse (Tran), vertical (Vert), and longitudinal (Long) axes.
2. Attach the **Triaxial Accelerometer Mounting Block** securely at the point of interest.
3. Connect each 50 g or 500 g Accelerometer to a **Cable For 50 g & 500 g Accelerometers** (P/N: 002C10, included with P/N: 720A6401, 720A6301).
4. Connect each accelerometer cable to the **Triaxial Accelerometer Adapter Cable** (P/N: 720A5201).
5. Connect the **Triaxial Accelerometer Adapter Cable** to the Minimate Pro.
6. Proceed to the THOR Software Setup procedure on Page 5.

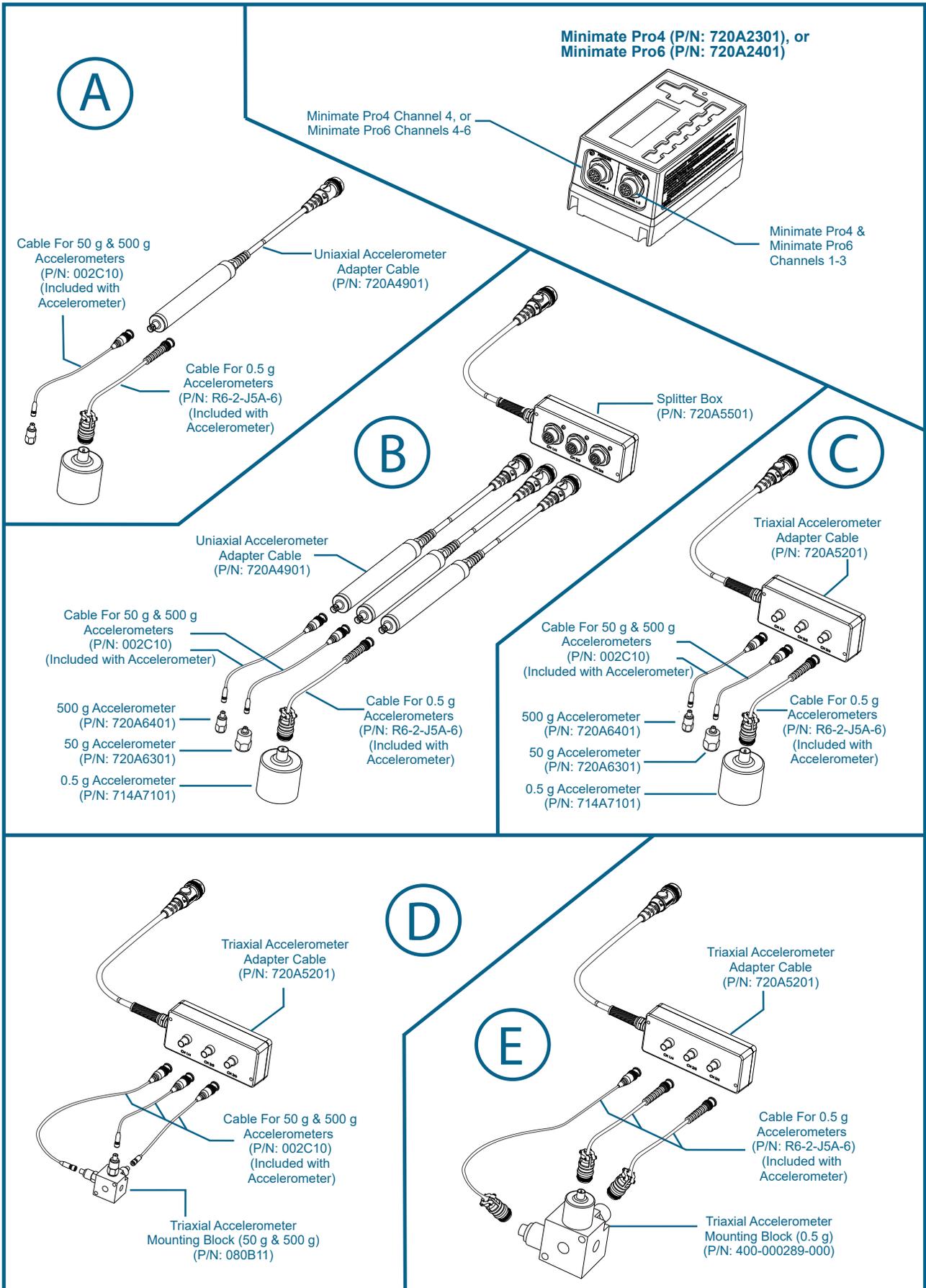
E. Installing Accelerometers Using a Triaxial Accelerometer Adapter Cable and Triaxial Accelerometer Mounting Block. (Procedure for 0.5 g Accelerometers)

Refer to Page 4, Section E for a graphical depiction of the proper installation.

1. Connect the accelerometers to the **Triaxial Accelerometer Mounting Block** (P/N: 400-000289-000). Align the accelerometers, one each, to the transverse (Tran), vertical (Vert), and longitudinal (Long) axes.
2. Attach the **Triaxial Accelerometer Mounting Block** securely at the point of interest.
3. Connect each 0.5 g Accelerometer to a **Cable For 0.5 g Accelerometers** (P/N: R6-2-J5A-6, included with P/N: 714A7101).
4. Connect each accelerometer cable to the **Triaxial Accelerometer Adapter Cable** (P/N: 720A5201).
5. Connect the **Triaxial Accelerometer Adapter Cable** to the Minimate Pro.
6. Proceed to the THOR Software Setup procedure on Page 5.

Specifications

Specification/Sensor	0.5 g Accelerometer (Low Level)	50 g Accelerometer (High Frequency)	500 g Accelerometer (High Frequency)
Amplitude Range	0.5 g	50 g	500 g
Frequency Range	0.5 Hz to 500 Hz (± 3 dB)	1 Hz to 3 kHz	1 Hz to 3 kHz
Nominal Sensitivity	6.4451998 V/g	0.064452 V/g	0.0064452 V/g
Resolution	0.0000155 g	0.00155 g	0.0155 g
Minimum Trigger Levels	0.00032 g	0.032 g	0.256 g
Recommended Sample Rate	2,048 S/s	16,384 S/s or greater	16,384 S/s or greater
Natural Frequency	815 Hz	≥ 22 kHz	≥ 38 kHz
Cable Length	1.8 m (6 ft) Accelerometer Cable (P/N: R6-2-J5A-6)	3 m (10 ft) Accelerometer Cable (P/N: 002C10)	3 m (10 ft) Accelerometer Cable (P/N: 002C10)
Maximum Amplitude	< 10 g peak	+/- 10,000 g peak	+/- 10,000 g peak
Mounting Thread	3/8 - 16 tapped hole	10-32 UNF-2B	10-32 UNF-2B
Optional	Triaxial Accelerometer Mounting Block (P/N: 400-000289-000)	Triaxial Accelerometer Mounting Block (P/N: 080B11)	Triaxial Accelerometer Mounting Block (P/N: 080B11)



Minimate Pro4/Pro6 Uniaxial & Triaxial Adaptor Configurations

Identifying the Sensitivity of Accelerometers

IMPORTANT NOTE

When setting up the Minimate Pro monitoring unit, use the **nominal sensitivity** of the individual accelerometer. This is a calculated sensitivity value, it is not the same sensitivity value that appears on the accelerometer manufacturer's calibration report, provided with the sensor.

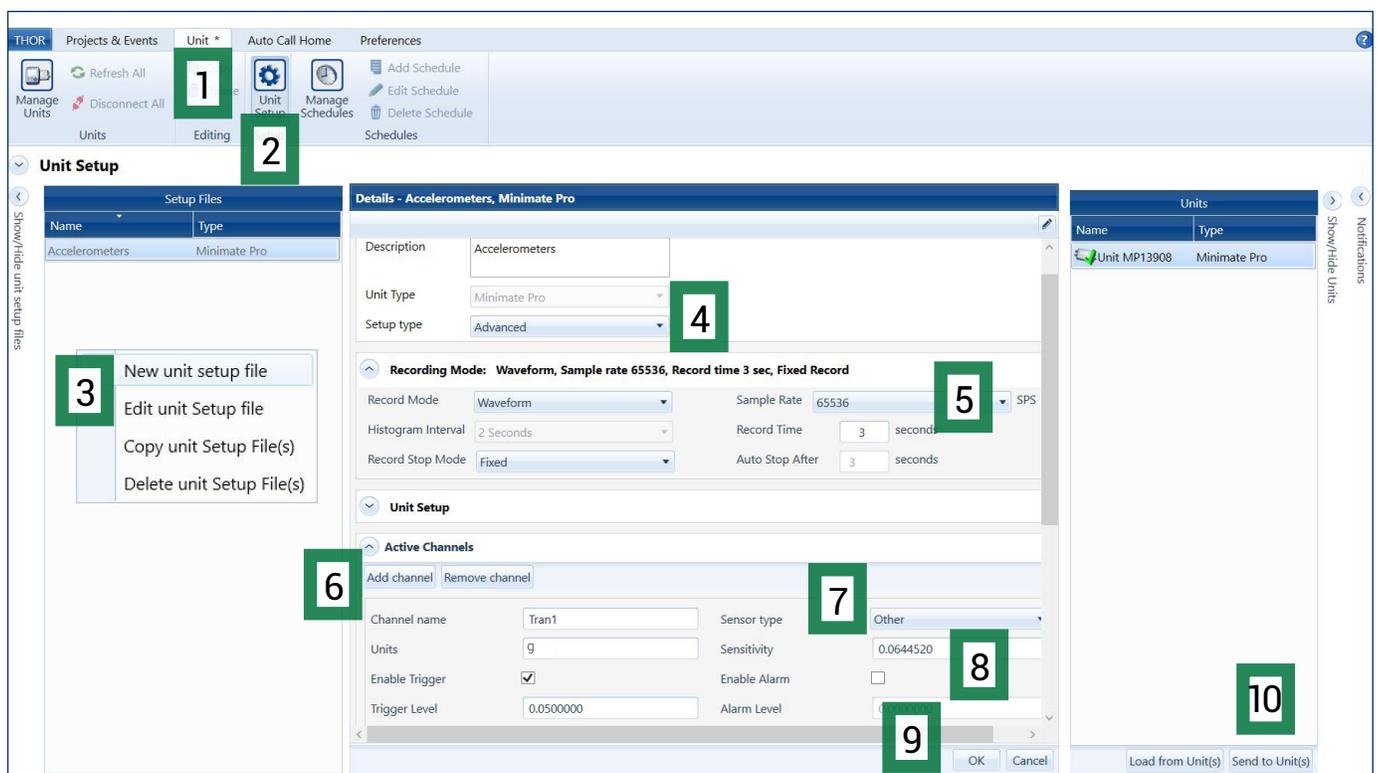
Instantel accelerometers must use the nominal sensitivity found in the Specifications table on page 3.

For third-party accelerometers refer to the accelerometer's calibration certificate for the actual sensitivity of the accelerometer and multiply the actual sensitivity by **0.64451998**.

THOR Software Setup

Once you have connected the accelerometer(s) to the Minimate Pro and identified the sensitivity of your accelerometer, you must setup the Minimate Pro using THOR's Advanced software.

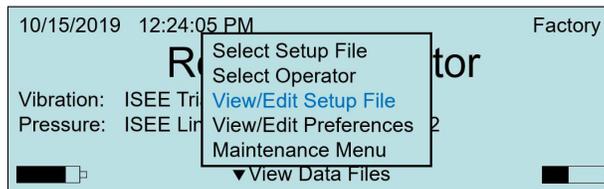
1. Click on the **Unit Tab**.
2. Click on the **Unit Setup** icon.
3. In the **Unit Setup** section, right-click and select "**New Unit Setup File**".
4. Fill in the details and select **Unit Type: Minimate Pro**, then **Setup Type: Advanced**.
5. Set the sample rate (see specifications table on page 3).
6. Under **Active Channels**, add the necessary channels by clicking on the **Add Channel** button.
7. **Under Sensor Type** select "**Other**".
8. Fill in the sensitivity of the Accelerometer along with its respective units.
(Repeat for all Accelerometers to be connected.)
9. Click on **OK** to save the Setup File.
10. Select the Minimate Pro unit and click **Send to Unit(s)** to send the configuration file to the unit.



Minimate Pro Setup

Accelerometers require several seconds to stabilize after powering up. To accommodate this, a Sensor Settling Time parameter must be configured on the Minimate Pro. To do this:

1. Press the **Setup** key.
2. Press the **Down Arrow** key until **View/Edit Setup File** and press the **Checkmark** key.



3. Press the **Down Arrow** key until **Sensor Settling Time**.



4. Press the **Right Arrow** to enter the menu.
5. Adjust the **Settling Time** from 0 to 180 seconds using the arrow keys, then press the **Checkmark** key to validate.
6. Press the **Checkmark** key 2x to save the settings to the Setup File.

Warranty

InstanTel products come with a one-year warranty. Monitoring units and sensors will have the warranty extended for a second year if they are returned to the InstanTel factory for service and calibration within 30 days of the 'Next Calibration' date printed on the calibration label located on the product.

If within a period of one year from the date of shipment to a customer, the instrument fails to perform in accordance with InstanTel's published specifications and the operator's manual, due to a defect in materials or workmanship, it will be repaired or replaced at InstanTel's option, free of charge. This warranty is void if the equipment has been dismantled, altered or abused in any way. This warranty is nontransferable.

This warranty does not include any implied warranty of functionality for a particular purpose. InstanTel assumes no responsibility for damages of any description resulting from the operation or use of its products. Since it is impossible to anticipate all of the conditions under which its products will be used either by themselves or in conjunction with other products, InstanTel cannot accept responsibility for the results unless it has entered into a contract for services which clearly define such an extension of responsibility and liability.

Any shipments returned directly to InstanTel Inc. must have our prior approval and all packages must display the Return of Material Authorization (RMA) number issued by InstanTel. Shipping charges to InstanTel's plant will be paid by the customer and those for return to the customer will be paid by InstanTel.

To protect your warranty, you must complete and return a Warranty Registration Certificate, or complete the online Warranty Registration Form, within ten days of purchase. Products will be assumed out of warranty if there is no warranty card on file at InstanTel. Retain this portion and the proof of purchase for your records.

EC Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.