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1031832-0001 Rev. C



Hughes Outdoor Pointing Interface Operating Instructions

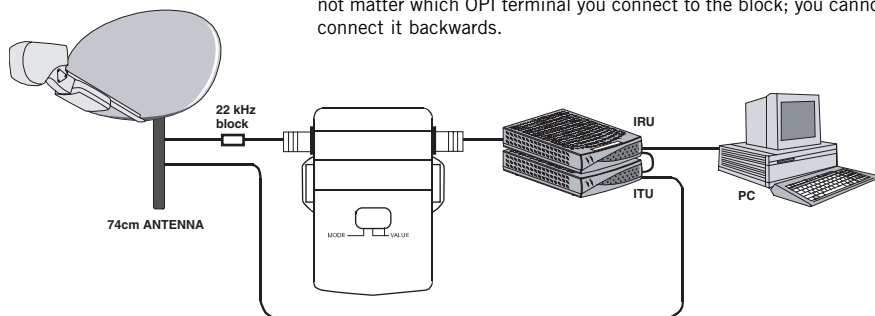
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Revision C
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7. Start the pointing software as you would normally. Be sure that 'Enable OPI' is checked. You should see a 0 in the Mode column and a number from 0 to 99 in the Value columns. The 0 in the Mode column indicates that you are in receive pointing mode. The number in the Value column is the signal quality factor (SQF) value as displayed on the computer screen running the pointing software. The display is updated four times a second. If a number 0-29 is displayed in the Value column, you are not locked on to a satellite. If 30 appears in the value column, you may be locked onto the wrong satellite. If the numbers 31-99 appear in the Value column, you are locked on to the correct satellite.
8. As you move the antenna, the SQF value changes. When you are confident that you have achieved the best possible signal, completely lock down the antenna.
9. To transmit point for cross polarization isolation measurement, you must change the mode at the computer. Click "Next" on the computer receive pointing screen; the transmit antenna pointing screen will be displayed. Begin "Manual" transmit pointing. The OPI displays a blinking 1 in the Mode column, which indicates that you are queued to make the isolation measurement. The Value column displays the number of installers ahead of you in the queue.
10. When a 2 appears in the Mode column, you can begin fine pointing the antenna for transmit. The Value column displays the isolation measurement. Measurements will be taken continuously for 5 minutes to give you an opportunity to fine point the antenna and lock it down. We suggest that you unlock and adjust one axis at a time. (Adjust polarization and tighten the bolts; adjust elevation and tighten the bolts; adjust azimuth and tighten the bolts). When the 2 stops blinking and is solid, you are passing. Continue to fine point the antenna until you are satisfied that you have achieved the best possible signal. If you do not complete pointing in five minutes, the system will stop testing and automatically go to the next installer in the queue. You will be moved to the end of the queue.
11. After you fine point the antenna, lock down the antenna while monitoring the isolation value. Go to the computer and stop the manual pointing test. Then run the transmit isolation test in "Automatic" Mode. This test runs only one time and results in either a Pass or Fail indication on the computer screen. If you pass, go to Step 12. If you fail, go back to Step 9 and restart the transmit pointing in Manual Mode. Note: when you run the isolation test in Automatic mode, the OPI may flash an isolation value briefly and then revert to receive pointing mode.
12. Power down the IRU.
13. Disconnect the OPI. Save it and the jumpers for the next job.
14. Connect the RG-6 cable that runs from the IRU to the LNB.
15. **Return to the computer and run the transmit isolation test in "Automatic" mode again.** This is to ensure you did not move the antenna out of alignment when you disconnected the OPI and connected the RG-6 to the LNB. If you pass, go to Step 16. If you fail, go back to Step 9 and restart the transmit pointing in Manual Mode.
16. Proceed with your installation as you would normally.

Using the Outdoor Pointing Interface

The following assumes that the installation is completed with the installer's IRU/ITU connected to the customer's antenna.

1. Make a 6-foot RG-6 "jumper" cable, which will be connected to the OPI and taken from job to job. In addition, make a short jumper cable for the 22 kHz block (if required.)
2. With the power off to the IRU, attach one end of the jumper to the LNB and one end to the 22 kHz block. Attach one end of the short jumper to the 22 kHz block and the other end to the OPI. It does not matter which OPI terminal you connect to the block; you cannot connect it backwards.



3. Connect the other terminal of the OPI to the cable running to the IRU. The configuration is shown in the figure above.
4. Power up the IRU.
5. The OPI display starts to blink 8L8 or 8H8, which indicates that the OPI is working properly and receiving power from the IRU. The "L" and the "H" indicate the voltage sent to the LNB (13v or 18v, respectively).
6. Strap the OPI to the antenna mast or to the Az/EI cap with the Velcro strap provided.

Using the Outdoor Pointing Interface

OPI kit contents

The OPI kit consists of:

- OPI device
- Velcro strap
- 22 kHz block

Requires one or two male-to-male coaxial cables, depending on OPI block configuration.

Use the OPI with Hughes versions 4.0.3.9 or above, or the 4.0.21.11 or above installer software.

Introduction

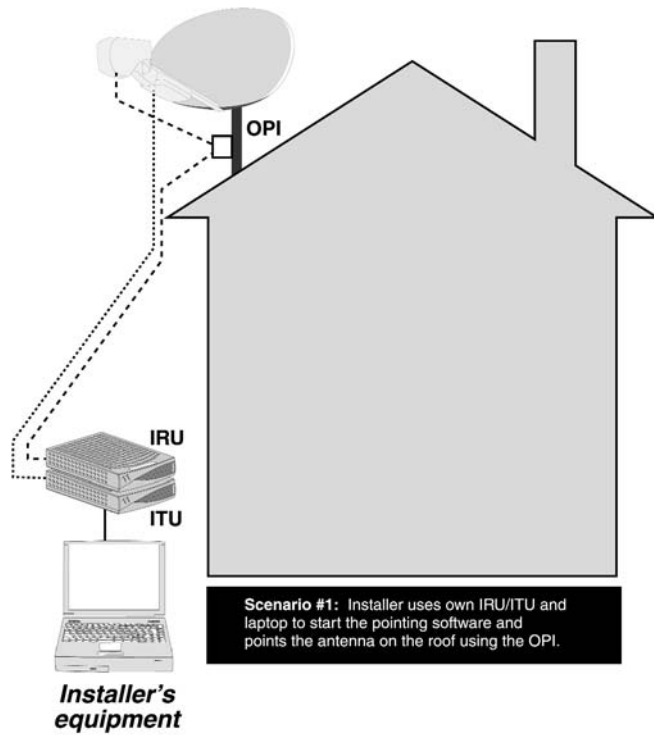
The Outdoor Pointing Interface (OPI) provides feedback from the Hughes pointing software to the installer at the antenna during the pointing process. A computer is still required, but the OPI eliminates the need to have the installer's laptop on the roof or ladder. Installers can use their own laptops or, if the cables have been installed, use the customer's computer for pointing (see the figures on pages 4 and 5).

The OPI is a repeater that displays the same values shown on the computer running the pointing software. It works in both receive pointing and transmit pointing modes, but is always connected to the receive coaxial cable between the IRU and the LNB. Since it draws power from the IRU, no batteries are required.

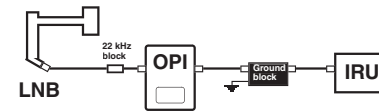
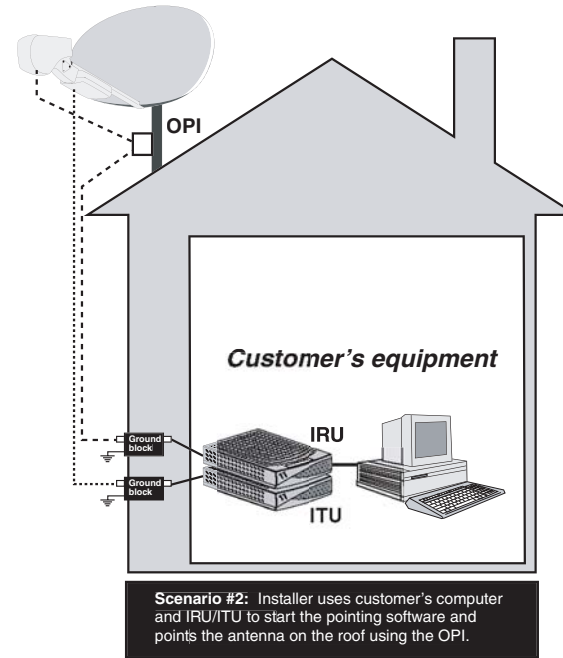
The OPI must be used with a 22 kHz block for antenna assemblies using the RA6-xxx series radio assembly. In addition, follow any antenna pointing instructions related to the 22 kHz block.

The OPI is intended as an installer's tool to be taken from job to job. It is not weatherproof and must be de-installed after the antenna is aligned.

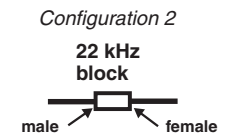
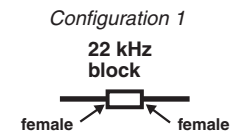
The OPI works with the DW4000 and DW6000. The DW4000 is used for illustrative purposes in these instructions.



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Note: The OPI is never connected to the ITU circuit path. The OPI can be used to point either a one-way or two-way system.



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