

PMP *Systems*

***Channel Controller
IRD-200, Revision H***

Installation and Operating Instructions

PLEASE READ!

Set your *remote's* address to 2 in order to communicate with the Channel Controller (IRD-200). Leave your EchoStar *receiver* set to address 1.

You can use the *IRD-200* with any EchoStar *receiver*. Although the *IRD-200* can be used with any EchoStar *remote*, we encourage you to use an addressable *remote*. If you have to use a non-addressable *remote*, please see page 10 for mounting instructions. The *IRD-200* comes pre-loaded with channels 920–979.

Quick Start Instructions

1. Set your *remote's* address to 2.
2. Mount the **IRD-200** on your *receiver* (see page 10).
3. Plug the **IRD-200** into a power outlet.
4. See **Basic Operation** on page 11.

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Introduction

PMP's **IRD-200** provides a visual interface that allows you to select channels on an EchoStar *receiver*. You can use any EchoStar *remote* to control the **IRD-200**, which relays commands to the *receiver*. The **IRD-200** displays satellite channel numbers from a pre-loaded or customized list. The **IRD-200** comes with 60 pre-loaded channels (920-979). You can store as many as 120 channels in the **IRD-200's** nonvolatile memory. By activating the **IRD-200's Learn Mode**, you can not only customize your channel list but also change the unit's function values (see the **IRD-200 Function Menu** on page 2).

Adding Channels

1. Point the *remote* at the **IRD-200** and press **SYS INFO** to enter **Learn Mode**. Flashing decimal points will appear on the display. **Note:** If your *remote* does not have a **SYS INFO** key, press **MENU** and **INFO** in rapid succession to enter **Learn Mode**.
2. Enter the new channel number. A four-digit channel number must be preceded by the # key.
3. Press **VIEW** to add the entry to the channel list.
4. Repeat steps 2 and 3 until you've finished adding channels to your list.
5. Press **SYS INFO** to exit **Learn Mode**.

Removing Channels

1. Point the *remote* at the **IRD-200** and press **SYS INFO** to enter **Learn Mode**. Flashing decimal points will appear on the display. **Note:** If your *remote* does not have a **SYS INFO** key, press **MENU** and **INFO** in rapid succession to enter **Learn Mode**.
2. Enter the channel number to be removed, or use the **Up/Down Arrow** keys to display the channel to be removed.
3. Press **CANCEL** to remove the entry from the channel list.
4. Repeat steps 2 and 3 until you've finished removing channels from your list.
5. Press **SYS INFO** to exit **Learn Mode**.

If you have many channels to remove, consider using the **Quick Channel Load** (see page 4).

Changing Function Values

To change the value of an **IRD-200** function:

1. Press **SYS INFO** to enter **Learn Mode**.
2. Press **MENU**, then enter the number of the function you wish to change. The current function value will be displayed.
3. Enter the new function value.
4. Press **VIEW** to save your entry (or press **CANCEL** to quit).
5. Press **SYS INFO** to exit **Learn Mode**.

IRD-200 Function Menu

Function	Description	Values	Default
0	Quick Channel Load	0, 30, or 60	n/a
1	Two-Digit Unit ID	1 or 2	1
2	Unit ID Number	0-9 or 00-99	0
3	Refresh Rate	0-19	9
4	Slow Modes	0-3	3
5	Pass-Through Enable	0 or 1	1
6	Reserved for Future Function	n/a	n/a
7	IRD-200's Receive Address	1-16	2
8	IRD-200's Transmit Address	1-16	1
9	Program <i>receiver</i> Address	n/a	n/a

Displaying Function Values

To display the value of an **IRD-200** function:

1. Press **SYS INFO** to enter **Learn Mode**.
2. Press **INFO**, then enter the number of the function you wish to display.
The current function value will be displayed.
3. Press **SYS INFO** to exit **Learn Mode**.

IRD-200 Display Menu

Function	Description
0	Display Firmware Version
1	Two-Digit Unit ID Enabled
2	Unit ID Number
3	Refresh Rate
4	Slow Modes
5	Pass-Through Enabled
6	Reserved for Future Function
7	IRD-200's Receive Address (set remote to this address)
8	IRD-200's Transmit Address (set receiver to this address)

Function 0: Quick Channel Load

Note: The **Quick Channel Load** resets all of the **IRD-200's** functions to the default values shown in the Function Menu (see page 2). The channel ranges are 0, for an empty channel list; 30, for channels 950-979; and 60, for channels 920-979.

Example: To program the **IRD-200** for 60 channels:

1. Press **SYS INFO** to enter Learn Mode.
2. Press **MENU**, then 0.
3. Enter **60** (for channels 920-979).
4. Press **VIEW** to begin programming, or press **CANCEL** to quit.

Functions 1 and 2: Unit ID Assignment

An **IRD-200** may be assigned one of 99 Unit IDs, so a single *remote* can control multiple *receivers*. **Function 1** sets the number of digits to use in the Unit ID; **Function 2** sets the Unit ID itself.

To make the IRD-200 addressable (Single-Digit IDs):

1. Press **SYS INFO** to enter **Learn Mode**.
2. Press **MENU**, then **2**.
3. Enter the Unit ID Number (**1-9**).
4. Press **VIEW** to save the entry.
5. Press **SYS INFO** to exit **Learn Mode**.

To make a IRD-200 addressable (Two-Digit IDs):

First enable two-digit Unit IDs by setting Function 1 to 2.

1. Press **SYS INFO** to enter **Learn Mode**.
2. Press **MENU**, then **1**.
3. Press **2** to enable two-digit IDs.
4. Press **VIEW** to save the entry.

Then set the Unit ID as follows:

1. Press **MENU**, then **2**.
2. Enter the ID number (**01-99**).
3. Press **VIEW** to save the entry.
4. Press **SYS INFO** to exit **Learn Mode**.

Note: Setting the Unit ID to 0 or 00 makes the IRD-200 non-addressable (factory default).

IMPORTANT: When an **IRD-200** has been assigned a Unit ID, it will always power up and reset in the deactivated state. When deactivated, the **IRD-200** will respond only the **INFO** key (to display the Unit ID), and the **VIEW** key (to display and change the currently active **IRD-200**). When the **IRD-200** returns from **Learn Mode**, it is in a deactivated state. Press **VIEW**, then **1** to activate the unit. The **IRD-200** will remain activated until it is powered down, reset, or until another controller is activated.

Function 3: Periodic/Power-Up Refresh

The **Periodic Refresh Function** ensures that the *receiver* does not lose its channel setting. By default, the **IRD-200** refreshes the *receiver's* channel setting every six minutes. You can customize the **IRD-200's** refresh rate. Users of video applications should note that a view banner will appear on-screen for about five seconds during each refresh operation; these users might want to turn off the **Periodic Refresh Function** by entering a refresh rate value of 10 in the following procedure (labeled "To change the **IRD-200's** Refresh Rate"). If you set the refresh rate to 10, the *receiver's* refresh operation will be limited to a one-time **Power-Up Refresh** that occurs four minutes after the **IRD-200** is plugged in. This four-minute delay allows time for the *receiver* to reacquire its satellite signal.

To change the IRD-200's Refresh Rate:

1. Press **SYS INFO** to enter **Learn Mode**.
2. Press **MENU**, then **3**.
3. Enter the value (**0-9**) corresponding to the desired refresh rate (see table below).
4. Press **SYS INFO** to exit **Learn Mode**.

Power Up Refresh	Refresh Rate Values									
	Off	24 hrs.	12 hrs.	6 hrs.	3 hrs.	90 min.	45 min.	22 min.	12 min.	6 min.
On	10	11	12	13	14	15	16	17	18	19
Off	00	01	02	03	04	05	06	07	08	09

Function 4: Slow Receivers

Some older *receivers* cannot function at the rate at which **IRD-200** commands are transmitted. By default, the **IRD-200** transmits at its slowest rate. Function 4 can be set from 0 (for newer *receivers*) to 3 (for older, slower *receivers*).

1. Press **SYS INFO** to enter **Learn Mode**.
2. Press **MENU**, then **4**.
3. Enter **0** for a Model 301, or press **3** for an older *receiver*.
4. Press **SYS INFO** to exit **Learn Mode**.

Function 5: Pass-Through Mode

FOR SERVICE USE ONLY!

Note: The IRD-200's **Pass-Through Mode** is enabled by default.

It is sometimes necessary to access *receiver* functions that are normally blocked by the **IRD-200**. Using a *remote*, you can bypass the **IRD-200** in order to directly communicate with your *receiver*; to do so, use the Pass-Through Mode as follows:

1. Press **SYS INFO** to enter **Learn Mode**.
2. Press **MENU**, then **5**.
3. Enter **1** to enable or **0** to disable **Pass-Through Mode**.
4. Press **VIEW** to save your entry.
5. Press **SYS INFO** to exit **Learn Mode**.

Using Pass-Through Mode

To use this feature in the normal operating mode, press **MENU** and **CANCEL** in rapid succession; the **IRD-200** will respond by displaying three dashes. Every *remote* command will now be passed through to the *receiver*.

Resuming Normal Operation

To resume normal operation, press **SYS INFO**.

Powering the Receiver On and Off

You can send the **POWER** command directly to the *receiver* by pressing the **MENU** and **POWER** keys in rapid succession.

Note: For newer receivers and the Model 301 specifically, set Function 4 to 0 prior to using Pass-Through Mode. This avoids double key presses.

Function 7: Remote Address

Function 7 controls the address at which the **IRD-200** receives commands from the *remote*. In its default setting, the **IRD-200** receives commands from the *remote* at address 2 and sends commands to the *receiver* at address 1. This addressing scheme prevents the *receiver* from accepting simultaneous commands from the **IRD-200** and the *remote*.

1. Press **SYS INFO** to enter Learn Mode.
2. Press **MENU**, then press 7.
3. Enter the new address (**01-16**).
4. Press **VIEW** to save your entry.
5. Press **SYS INFO** to exit Learn Mode.

Function 8: IR Transmit Address

Function 8 controls the address the **IRD-200** uses to communicate with the *receiver*. Normally this value does not have to be changed.

1. Press **SYS INFO** to enter **Learn Mode**.
2. Press **MENU**, then press **8**.
3. Enter the new address (**01-16**).
4. Press **VIEW** to save your entry. (The **IRD-200** can now program the *receiver*.)

You can assign the **IRD-200** a new transmit address regardless of the *receiver's* current address. To assign a new transmit address, make sure that the **IRD-200** is mounted on the *receiver* and that the *receiver* is turned ON.

1. Press **MENU**, then press **9**.
2. Press **VIEW** to begin programming the *receiver* with the new address. This takes about a minute; please wait until the letter “P” stops flashing.
3. Press **SYS INFO** to exit **Learn Mode**. (The **IRD-200** resumes normal operation.)

Note: On Model 3000 receivers the address must be set manually through the receiver's menu not by using the IRD-200 Function 9.

Installation Tips

Ensuring Trouble-Free Operation

The *receiver* should accept commands from the **IRD-200**, not from the *remote*. This mode of communication can be implemented in either of two ways: (1) by using an addressable *remote* and an **IRD-200** in its default configuration or (2) by using the appropriate mask and mount for the *receiver*. In the first approach, the *receiver* ignores all remote commands on the basis of address. In the second approach, a physical barrier blocks the *receiver's* access to *remote* commands. **PMP Systems** encourages the use of an addressable *remote* with the **IRD-200**.

Rack Management Features

Unit IDs (from 00 to 99) provide flexibility for sites with multiple *receivers*. Unit IDs can be assigned by CATV channel number to simplify *receiver* identification and control (see page 4).

Power-Up Refresh

This feature recalls the *receiver's* channel setting after a power outage (see page 6).

Select All

This feature recalls the channel settings for all *receivers* in a system simultaneously (see page 12).

Video Installations

By default, the **IRD-200** refreshes the *receiver's* channel number every six minutes. This causes the view banner to appear on the video display. Slowing down or turning off the **Periodic Refresh** will prevent this display (see page 6). You can use the **Power-Up Refresh** feature instead of the **Periodic Refresh**. When **Power-Up Refresh** is enabled, the **IRD-200** will wait four minutes after a power interruption, then perform a full-channel reselect. The four-minute delay allows the *receiver* to regain its signal after being powered down.

Newer Receivers

On newer *receivers*, the Slow Modes Function setting may be reduced or turned off. For example, on Model 301 *receivers*, the value of Function 4 may be set to 0 (see page 6).

Lighting Interference

Some types of lighting (especially full-spectrum lighting and direct sunlight) may interfere with the IR reception of the **IRD-200**. If lighting interference becomes a problem, shade the **IRD-200's** IR window from the offending light source to improve performance.

Day-Parting Receivers

The **IRD-200** will periodically retune the *receiver*, overriding the Day-Part feature. To use the **IRD-200** with Day-Parting *receivers*, set the **IRD-200**'s refresh rate to **0**. (See Periodic/Power-Up Refresh documentation on page 6.)

Installation and Mounting

There are two strategies for mounting the IRD-200 to the satellite receiver.

1. When used with an Addressable *remote*:

Secure the **IRD-200** to the front of the *receiver*, using the provided double-sided foam tape. Be careful to position the **IRD-200** over the satellite *receiver*'s IR window. Do not cover the IR transmitter on the back of the **IRD-200**.

2. When used with a Non-Addressable *remote*:

When a non-addressable *remote* is used, there must be an optical isolation between the commands the *remote* sends to the **IRD-200** and the commands the **IRD-200** sends to the *receiver*. **PMP Systems** makes several types of isolating masks to work with different *receivers*. For *receivers* with a Plexiglas cover over the IR window, **PMP Systems** recommends that you use an addressable *remote*.

Mount for Model 301 Receivers

A V-shaped plastic wedge mount is available for the 301 *receivers*. This works equally well for either addressable or non-addressable *remotes*; an adequate light seal is virtually assured. Peel off the protective strip from the back, align the hole with the center light pipe on the front of the *receiver*, and press the mount into place. Then peel off the protective strip from the front of the mount, align the transmit hole on the back of the **IRD-200** with the center light pipe of the *receiver*, and press the **IRD-200** into place.

Power Connection

An AC wall adapter is provided. Plug the adapter into the bottom of the display, then plug the cable into a 110-Volt AC power source (INDOOR USE ONLY).

Basic Operation

On power-up, the **IRD-200** briefly displays the number of available channels. It then switches the *receiver* to the last channel it had accessed before it was powered down.

Display

The display shows the current channel number. Four-digit channel numbers are displayed with the three least significant digits visible and the lower right decimal point lit. To display the leftmost digit, press the **GUIDE** key.

Changing Channels

Use the Arrow keys to scroll through the channel list. Pausing on the desired channel number or pressing **SELECT** causes the **IRD-200** to switch the *receiver* to the displayed channel. You can directly access a channel by entering the channel number from the remote's numeric keypad. As soon as you enter the third digit of a valid channel number, the *receiver* will switch to that channel. If you enter an invalid channel number, the display will flash briefly, then the *receiver* will return to the previously selected channel. You must press the **POUND (#)** key before entering a four-digit channel number. One- and two-digit numbers may be entered either by entering leading zeros or by entering the digits and pressing **SELECT**. Press the **RECALL** key to switch to the previously selected channel.

Select

The **SELECT** key forces the **IRD-200** and the *receiver* to re-synchronize the channel number; this can be useful if the *receiver* becomes stuck in an unknown state.

Cancel

When using the Arrow keys to scroll through the channel list, or when using the remote's numeric keypad to enter channel numbers directly, you may stay on your currently selected channel by pressing **CANCEL**.

Advanced Operation

Addressing Multiple Receivers

In multi-receiver installations, each **IRD-200/Receiver** combination is assigned a Unit ID. Prior to changing channels or performing any other operation, you must activate the *receiver*.

Note: If your site uses two-digit Unit IDs, you must enter both digits to activate a *receiver*.

Activating a Receiver

Press **VIEW**, then enter the Unit ID number displayed on the **IRD-200** you wish to use. The activated **IRD-200** will flash briefly.

Displaying Unit IDs

Pressing **INFO** causes each **IRD-200** to display its Unit ID number. The active *receiver's* ID will flash. Pressing **VIEW** and **0** or **VIEW** and **00** deselects all **IRD-200s**.

Select All

Pressing **VIEW**, then **SELECT** causes all *receivers* in a multi-receiver configuration to re-synchronize their respective channels, so you don't have to reselect each *receiver* individually.

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