

# *Dispatch Radio Service*



**USER GUIDE**

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## 1.0 MSV Dispatch Radio Service (DRS)

Welcome to Mobile Satellite Ventures (DRS), a unique and powerful communications service for workgroups of any kind.

DRS provides two-way radio functionality with the reliability, security, and coverage available only with satellite communications.

DRS is a real-time, voice-based service that provides point-to-multipoint communication at the push of a button. With DRS, a dispatcher can easily exchange information with an individual, a select group of workers, or an entire fleet. Mobile workers can speak with a base operation, coworkers, or customers from the road or on-site. Increased communications result in greater efficiency, improved response time, and cost effectiveness.

In an emergency situation, the Priority One emergency function allows a user to automatically activate a talkgroup or be the next speaker on that talkgroup.

### DRS Operations

Private Mode allows users to initiate private person-to-person communications between any two members in a talkgroup over dispatch radio.

Dial-In and Dial-Out Dispatch services allow dispatch communication via a landline phone. Dial-In Dispatch lets a supervisor relay a broadcast message to an entire talkgroup from any landline telephone. Dial-Out Dispatch enables talkgroup members to call an assigned number.

## Coverage Map

MSV Dispatch Radio Service provides seamless communication at any time and virtually anywhere across North America.



## Key Features of Dispatch Radio Service

- Provides seamless two-way radio coverage across North America, Alaska, Hawaii, the Caribbean, and hundreds of miles of coastal waters
- Utilizes L-band spectrum, which is not susceptible to most degradation effects of inclement weather
- Provides clarity and security to assure private communications through all-digital network
- Provides real-time point-to multipoint and point-to-point voice communications
- Customize private talkgroups to meet operational needs
- Provides 24-hour access to the MSV Customer Service Center

## Benefits

- Provides the power to manage your remote operations
- Cost effective — No need to build, license, or maintain private networks
- Safety — Reliable backup or emergency communications and an effective tool for emergency response operations
- Security — Private digital communications that cannot be intercepted by scanners
- Reliability — with a proven network, DRS ensures communications when other systems fail. Because there are no radio towers, there are no dead zones or outages due to lack of tower coverage and/or failure from storm damage.

## 2.0 Using DRS with Mitsubishi Satellite Terminals

Mitsubishi subscriber equipment requires a separate Push-to-Talk (PTT) microphone for dispatch communication.

**Note:** *You cannot access telephone functionality using the PTT.*



### Basic Operation

#### 1. Powering on Unit:

Power on the Mobile Terminal (MT), by pressing and holding the PWR key on either PTT or telephone handset.

**Note:** *If you power on the unit using the telephone handset, the PTT display will read **SLEEP**. To activate PTT, press and hold any key on the PTT keypad except PWR or BAR.*

If using a land mobile unit, remain stationary until the satellite has been acquired and the service is ready to use.

You will see **NO SVC** in the upper right corner of the PTT display. Within 20 seconds to one minute, your MT should be locked on the satellite, **NO SVC** will disappear from the display and you will be ready to use the service. The bottom left corner of the display on PPT will either read **NOSEL** indicating that no talkgroup has been selected, or it will display the talkgroup tag (i.e. 05, 06, ...) number that was selected when the unit was powered off.

## 2. Selecting a Talkgroup:

- Press the **GRP** key on the keypad of the PTT, and enter the two-digit number of the tag (i.e. 01, 02, 03,...).

**OR**

Press the **GPR** key and scroll through the talkgroup tags preprogrammed in your MT using the arrow keys.

**OR**

Press and hold the **GRP** key for one second and you will enable the SEARCH (“SCAN”) mode. **GRP** will blink on the display and every 10 seconds your display will show the next talkgroup programmed in your MT. SEARCH mode will continue until you either press the **GRP** key again, press the **STO/END** key, or someone begins talking on the talkgroup that you have SEARCHED on.

***Note:** To select a talkgroup, you need its associated tag number (i.e. 01, 02, 03,...).*

## 3. Initiating a Dispatch Call:

- Press and hold the PTT. When the display reads **SELF** you will hear a two-tone beep. You can begin talking, holding the microphone approximately two inches from your mouth.

***Note:** Be sure to wait until **SELF** is displayed before speaking, to avoid having your voice cut off*

- When finished speaking, release the PTT and the display will change to **VACANT**, accompanied by a single beep, someone can now respond to you.

***Note:** **VACANT** means that the talkgroup is still active and anyone can now become the speaker.*

- When someone in the talkgroup responds, you will see their unique four-digit Directory Number (DN) appear on the PTT display. When they stop talking, the DN will be replaced by **VACANT**.
- You can respond to a communication as soon as you see **VACANT** on your display. To respond, simply press and hold the PTT. When **SELF** is displayed, you may begin speaking. Release PTT when finished speaking.

***Note:** A talkgroup will remain in the **VACANT** state for 10 seconds if another user does not PTT. After 10 seconds in the **VACANT** state the dispatch call will be terminated.*

- When **IDLE** is displayed it means the talkgroup has broken down, you must follow the steps for initiating a dispatch call to re-establish communication on the talkgroup.
- The cue that the talkgroup is available – **VACANT** – is always accompanied by a single beep. The cue that you may speak – **SELF** – is always accompanied by a two-tone beep. Once users become accustomed to the service they can navigate usage through audio tones without relying on the PTT display.

## Priority One

- Each talkgroup offers a Priority One feature, which allows anyone to override the current speaker (except in Private Mode talkgroups).
- You can access Priority One from any talkgroup except Private Mode (tag #00).
- Press and hold the **EMG** key on bottom left of PTT keypad until the **EMG** indicators are displayed.
- Display will then read **SELF** and you will remain the speaker for approximately 30 seconds. Your speaker assignment will automatically be released after approximately 10 seconds of silence.
- You can talk on the talkgroup for up to 30 seconds without pressing the PTT.
- If you wish to hear a response prior to the expiration of those 30 seconds, press and release the PTT and the talkgroup will become available to other speakers.

## Private Mode (Optional)

Private Mode allows point-to-point communication between two MTs using PTT functionality. It is a separate talkgroup not a feature of a talkgroup. Therefore, to have Private Mode, a customer would have a minimum of two talkgroups configured on each MT, one standard and one private. Like standard dispatch talkgroups, a private talkgroup is half-duplex, identical to standard dispatch. A private talkgroup is always located on tag 00. To activate Private Mode:

- Press **GRP** and toggle to tag 00 or enter 00.
- Display will read 00:DN??.
- Enter the four-digit DN of the MT you are trying to reach.
- Press and hold PTT and speak when display reads SELF.

**Note:** *If the person you are trying to reach does not have their MT powered on, or is tuned to an active talkgroup call, you will be unable to pull them into a Private Mode call.*

## Dial-In Dispatch (Optional)

The Dial-In Dispatch service provides the ability for anyone with access to a standard telephone, which could be a landline, cellular, or satellite telephone without dispatch service, to dial directly into a dispatch talkgroup. The number is supplied by the MSV Customer Service Center (CSC) when the Dial-In Dispatch feature is configured. Customers need to provide a four-digit pin number that MSV will program into the talkgroup for access.

To activate Dial-In Dispatch:

- Dial the 10-digit telephone number supplied by the CSC.
- At the beep enter four-digit pin number followed by #.

**Note:** *If you have not received a response within the 10 second talkgroup hangtimer you will lose the connection and will need to retry the entire Dial-In Dispatch process.*

- Press 4 to enable PTT and speak, when finished speaking press \* to release PTT.

**Note:** *The dial-in dispatcher will hear a click and can then begin speaking.*

- The dial-in dispatcher can always be heard on the talkgroup, even if the 4 or \* is not pressed.
- To leave talkgroup, hang up the phone.

## Dial-Out Dispatch (Optional)

The Dial-Out Dispatch service allows the user's network administrator to assign a single telephone number to the talkgroup that can be automatically dialed from any MT. This feature allows the talkgroup to communicate with a home base whenever the need arises. Dial-Out Dispatch is a subscription feature that must be activated by MSV before it can be utilized. The dial-out number is supplied by the customer at account set-up, and is configured into the talkgroup by MSV.

To activate Dial-Out Dispatch:

- Press and hold PTT until **SELF** appears on the display.
- Continue holding PTT and press **SEND**.
- The display will read **SETUP\*TEARDOWN#** – press \* and release the PTT.
- The MSV dispatch network will automatically dial the assigned telephone number.
- You will hear the phone ring and the dialed party will join the talkgroup by answering the phone.

***Note:** The dialed party is the priority speaker.*

- To respond you need to press and hold PTT to speak and release when finished.

***Note:** Everyone on the talkgroup will be able to hear the conversation.*

- To remove Dial-Out Dispatch, the current talkgroup speaker must press the **STO/END** key.

## Frequently Asked Questions

Q: My PTT display says NOSEL and my dispatch is not working.

**A: Press GRP button and use up or down arrows to scroll through the talkgroups and select desired talkgroup.**

Q: My PTT display says NET BAR and it's not allowing me to transmit.

**A: Press the BAR button; this acts as a toggle switch.**

Q: I see TXFAIL on my display.

**A: Wait a few seconds and try again, be sure to firmly press and hold the PTT button only once. If the problem persists call the CSC.**

Q: I see RETRYING on my display.

**A: Wait a few seconds and try again. Someone else may be trying to access the talkgroup at the same time. The MSV network will automatically handle network contention to avoid garbled transmissions from two users trying to speak at the same time.**

Q: I'm using a transportable unit and NO SVC will not disappear from the display.

**A: If using the ST251 or ST151: position the antenna toward the satellite. After you achieve the best signal strength as indicated by the Return Signal Strength Indicator (RSSI) on the handset display, press \* for satellite acquisition.**

Sufficient signal strength (measured by RSSI): ST111, ST141, ST121, ST151 — RSSI is 17-24; ST251 — RSSI is 46-54.

Q: What is my Directory Number (DN)?

**A: To learn your DN press FCN 11 on the PTT. A DN can be any number between 0001-9999. You are automatically assigned a DN when dispatch service is added to your MT.**

## 3.0 Using DRS with Westinghouse Satellite Terminals

The Westinghouse Mobile Terminal (MT) does not require a separate handset for dispatch functionality. Using the function keys on the telephone handset, you can toggle the MT to dispatch mode. With the PTT “chicklet” button on the side, you can engage in two-way dispatch communication. The microphone is located in the mouthpiece and the speaker is in the earpiece. If the handset is in the cradle it functions as a speakerphone, and the hands-free microphone accessory is required to respond.



A separate PTT microphone and amplified external speaker accessories are also available options. The telephone handset is used in conjunction with the PTT in order to scroll through talkgroups and access function keys. Both the handset and separate PTT can be used interchangeably.

### Basic Operations with Westinghouse Satellite Terminals

#### 1. Powering on Unit:

- Press and hold PWR to turn on MT.

***Note:** MT will automatically acquire the satellite (20 - 60 seconds), and the following messages will be displayed in sequence:*

**SEARCHING SAT CHANNEL  
SAT CHANNEL FOUND  
POWER ON**

## 2. Selecting Talkgroup Mode:

- Press **FCN**, then 1 and the current communications mode will be displayed (i.e. **Voice**, **Data**, or **NetRadio**).
- Using the arrow key, scroll until **NetRadio** is displayed. Press the **STO** key.

## 3. Selecting a Talkgroup:

- Display will read either **No Net Sel** or **SELECTED**.

***Note:** The talkgroup ID# will be in the hexadecimal form.*

- You can select a talkgroup by pressing **RCL**, then the two-digit talkgroup tag # (location). Single digit tags must be prefaced with 0 (i.e. 01, 02, 03,...).

**OR**

Press **RCL** and scroll using the arrow keys to the desired talkgroup.

Press **STO** to lock on a talkgroup. The display will read **NetLock**.

Press **STO** a second time; display will read **SELECTED**.

## 4. Initiating a Dispatch Call:

- Press the PTT “chicklet” button on the side of the telephone handset, and hold until the display reads **YOU R ON**, accompanied by two-tone beep.

***Note:** Be sure to wait until **YOU R ON** is displayed before speaking to avoid having your voice cut off.*

- While continuing to press PTT button, speak into the microphone.

- Release button when you have finished speaking.
- Display will return to NetAvail and someone else in the talkgroup can now respond.

**Note:** You can lock the PTT function by quickly double pressing the PTT button. This way the user does not have to hold the PTT button while speaking. To release the PTT lock, press END.

## On Older Models without the PTT ‘Chicklet’ Button:

To utilize the PTT functionality on older models without the PTT “chicklet” button on the side of the handset you must:

Press and hold either the 1 or 3 key on handset to enable PTT. After hearing a two-tone beep and display reads **YOU R ON**, you may begin speaking.

Release the 1 or 3 key when you have finished speaking.

**OR**

To lock the PTT, quickly double press either the 1 or 3 key on the handset. This will lock the PTT button and you will not have to hold down the 1 or 3 key while talking. Begin speaking after the two-tone beep and display reads **YOU R ON**. To release PTT lock when you finish speaking, simply press and release the 1 or 3 key again.

## Optional External PTT Accessory

If you have purchased the separate PTT microphone accessory you will first need to perform the following one-time enabling process:

- On the handset, press the **Menu** key.
- Press **RCL**.
- Enter password (the default password is 1234), then the **STO** key.
- Using the down arrow key scroll to **EXT PTT**, press **RCL**.
- Using the down arrow key scroll to **AUX PTT** and press **STO**.
- Handset display will read **UPDATED**.
- Press **CLR** twice and handset display will show the talkgroup selected.

### Steps for Using the Optional External PTT Accessory:

Follow the same steps as with the handset in order to select a talkgroup. You can then initiate a dispatch call using the separate PTT microphone accessory in place of the handset.

### Priority One

Each talkgroup comes configured with the Priority One feature which allows anyone to override the current speaker (except in Private mode).

- Press \* **9 9**.
- You will hear a two-tone beep and the display will blink **YOU R ON**.
- You will remain the designated speaker as long as you continue talking without using the PTT function. Your speaker assignment will be released after approximately 10 seconds of silence.
- To release your speaker assignment prior to the 10 seconds press **END**.

## Private Mode (Optional)

Private Mode allows point-to-point communication between two mobile terminals (MT) using PTT functionality. It is a separate talkgroup, not a feature of a talkgroup. Therefore, to have Private Mode, a customer would have a minimum of two talkgroups configured on each MT, one standard and one private.

Like standard dispatch talkgroups, a private talkgroup is half-duplex. Communication is “wait to talk”.

A private talkgroup is always located on tag 00. To activate Private Mode:

- Press the **RCL** key.
- Enter the tag 00 and press **STO**.
- You will be prompted for a DN.
- Enter the four-digit DN of the called party and press **STO** (Private mode is now selected).
- Press and hold PTT and speak when display reads **YOU R ON**.

**Note:** *If the person you are trying to reach does not have their MT powered on, or is tuned to an active talkgroup call, you will be unable to pull them into a Private Mode call.*

## Dial-In Dispatch (Optional)

The Dial-In Dispatch service provides the ability for anyone with access to a standard telephone, which could be a landline, cellular, or satellite telephone without dispatch service, to dial directly into a dispatch talkgroup. The number is supplied by the CSC when the Dial-In Dispatch feature is configured. Customers will need to provide a four-digit pin number, which the CSC will program into the talkgroup for access.

To activate Dial-In Dispatch:

- Dial the 10-digit number supplied by the CSC.
- At the beep, enter four-digit pin number followed by #.
- Press 4 to speak. When finished, press \* to release PTT.

**Note:** *The dial-in dispatcher will hear a click and can then begin speaking.*

- To leave talkgroup, hang up the phone.

## Dial-Out Dispatch (Optional)

The Dial-Out Dispatch service allows the user's network administrator to assign a single telephone number to the talkgroup that can be automatically dialed from any MT. This feature allows the talkgroup to communicate with a home base whenever the need arises. Dial-Out Dispatch is a subscription feature that must be activated by MSV before it can be utilized. The dial-out number is supplied by the customer at account set-up, and is configured into the talkgroup by MSV.

The telephone handset must be used for Dial-Out Dispatch. To activate Dial-Out Dispatch:

- Lock on **PTT** by pressing **PTT** button twice until **YOU R ON** flashes. Press **FCN** then **SEND** while display is locked on **YOU R ON**.
- The MSV dispatch network will automatically dial the assigned telephone number.
- You will hear the phone ring and the dialed party will join the talkgroup by answering the phone.

***Note:** The dialed party is the priority speaker.*

- To remove Dial-Out Dispatch, the current talkgroup speaker must press the END key.

## 4.0 Troubleshooting

### Helpful Tips

#### Working with line of sight satellite systems

- Satellite equipment requires line of sight to the satellite for communication.
- With fixed-site equipment, the line of sight with the satellite is resolved at time of installation.
- Land mobile equipment automatically tracks the satellite with a beam steering antenna.
- Transportable equipment requires that you physically point the antenna in the direction of the satellite.
- Line of sight can be determined using a compass. MSV satellites are located over the equator, at 101° W and 106.5° W longitude (approximate longitude for Lubbock, Texas). The MT antenna must be positioned to face south.
- When using land mobile equipment, turn ignition on before powering on the phone to conserve the vehicle battery. For best results remain stationary until satellite has been acquired and service is ready to use.
- Buildings, trees, and large metal objects may affect signal strength, so ensure you are not blocked when trying to make a call.
- You will experience a 1/4 second delay in telephone service to accommodate the 23,000 mile distance to the satellite and back. MT-to-MT calls will experience a 1/2 second delay due to the “double hop” required for the MT-to-MT connection.
- Transportable units can be used in buildings through glass windows provided there is no lead or other metal substances in the glass.

## How to Get Help

MSV Customer Service Center representatives are available 24 hours a day, 7 days a week to assist you. Dial 611 from your satellite phone or call 1-800-216-6728.

## Additional Information

Additional information on using DRS can be obtained from the following sources:

- Mitsubishi Push-to-Talk Microphone Operating Instructions Manual provided with the SZ300A PTT Microphone Accessory
- Westinghouse Series 1000 User Guide
- Westinghouse Series 1000 Net Radio User Guide

If you can not reference your manual please contact the MSV Customer Service Center.

## 5.0 Glossary

**CSC** - Customer Service Center, MSV Customer Service Center is available to assist you 24 hours a day, 7 days a week. Dial 611 from your satellite phone or call 1-800-216-6728

**DN** - Directory Number, a unique ID number that identifies you to other users.

**MT** - Mobile Terminal

**PSTN** - Public Switched Telephone Network

**PTT** - Push-to-Talk

**RSSI** - Received Signal Strength Indicator, used to measure current signal strength

**SMR** - Specialized Mobile Radio

**Tag** - Two-digit talkgroup ID number (Net ID); tag 00 is always Private Mode; tag 01-15 represent separate customer configurable talkgroups.

**Talkgroup** - A customer defined group of users who can participate in the same DRS calls. These groups can range in size from five users up to 10,000.

## 6.0 Satellite Terminals and Accessories

A variety of satellite terminal products are available for any application need, including:

**Transportable products** for use in any remote or mobile application

**Land mobile products** for permanent in-vehicle installations

**Fixed-site products** for use in command center and office installations, including both single-channel and multi-channel systems

### Accessories

There are a variety of accessories available to enhance the capabilities of the DRS and facilitate installations, such as:

- Portable fixed dish antenna - turns any Mitsubishi ST251 OmniQuest®, transportable satellite terminal into a temporary or even permanent fixed-site communications center.
- Two-way SMR radio interfaces - allow dispatch service to be integrated with existing two-way radio networks.
- Tone remote extenders - allow multiple desktop phone sets to be established in a headquarters or command center, extending the PTT functionality away from the transceiver.

***See your MSV distributor for more information on satellite terminal products and accessories.***

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