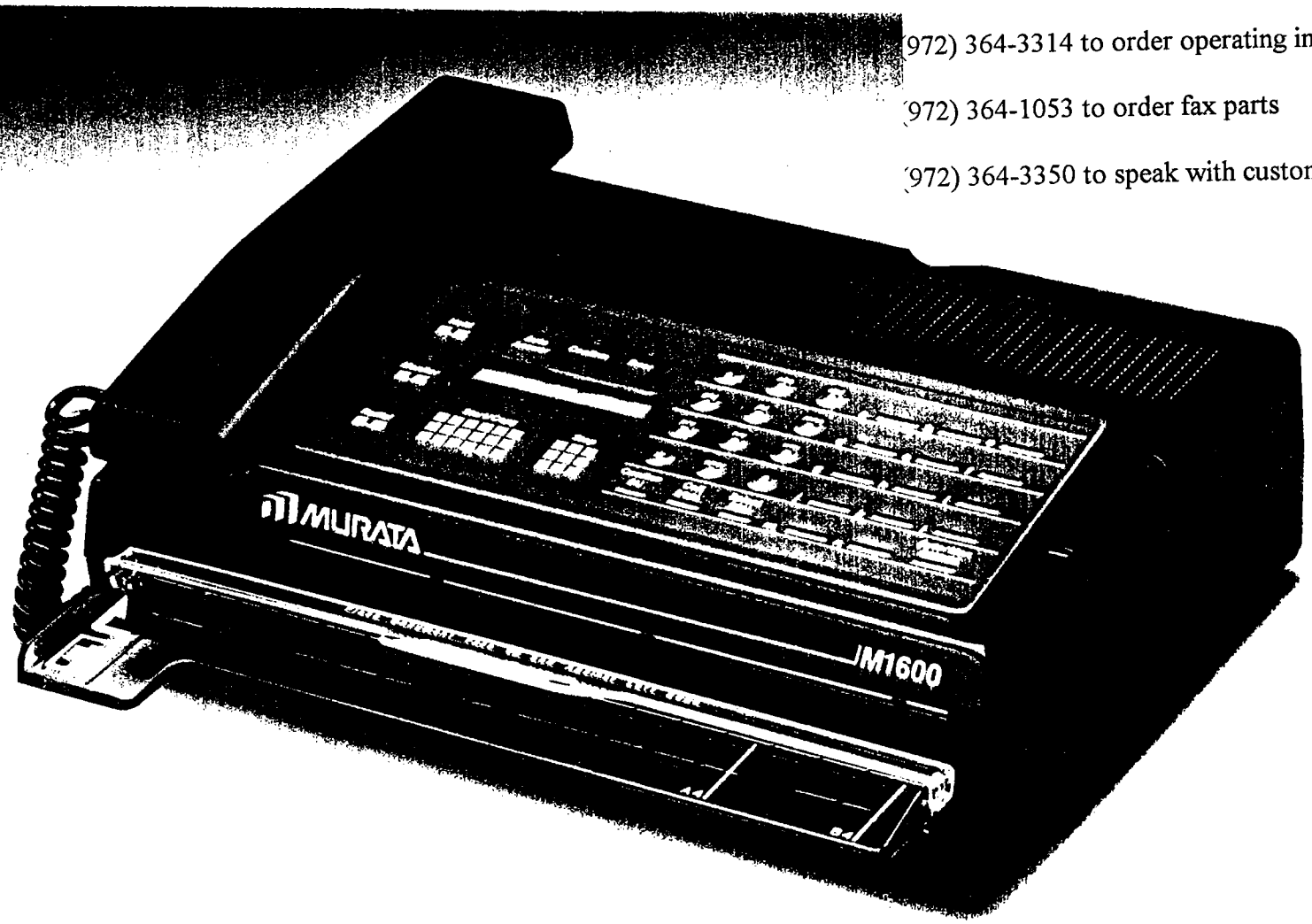
# OPERATING INSTRUCTIONS

(800) 292-2492 to order paper and other supplies

(972) 364-3314 to order operating instructions

(972) 364-1053 to order fax parts

(972) 364-3350 to speak with customer support




MURATA

# Murata M1600™

MURATA BUSINESS SYSTEMS, INC.

# Contents



Please fax your comments, suggestions and questions regarding this manual to M1600 Manual, Product Development, MBS, 214-702-9778. Murata M1600 is a registered trademark of Murata Business Systems, Inc. 

# Introduction

Your Murata M1600 is a high-speed facsimile machine, executive-quality phone and convenience copier, all in a compact system that takes up less desk space than your in/out box.

Despite its small size and ease of use, though, your M1600 offers some of the most popular facsimile features, like a 30-number autodialer, polling and pass code security. The M1600's advanced operation provides compatibility and rapid communication with hundreds of thousands of Group 3 and Group 2 facsimile machines around the world. Murata's proprietary transmission speeds provide even faster transmissions between Murata-manufactured units.

The M1600 is so easy to operate everyone in your office will use it. But to get started, pay special attention to these sections:

| | |
|---|---|
| **Installation** | **Preparing Your Fax** |
| **Basic Operations** | **Autodialer** |

These four sections provide the fundamentals. With them, you can begin worldwide facsimile communication today.

## Service

If you have any questions or need service for your unit, call the Murata Customer Support Center at 1-800-TALKFAX (1-800-825-5329).

## Serial Number

If you call Customer Support, have your unit's serial number ready for the technician: The serial number appears on a bar code label on the bottom of your unit.

## Extended Coverage

Murata extended service plans are available for your facsimile machine. For more information on one- and two-year service plans, call Murata's Customer Support Center.

## FCC Regulations

Call your telephone company if you have any questions about your telephone service, including how many pieces of equipment you may connect to your telephone line.

**Warning:** This equipment generates, uses and can radiate radio frequency energy. It may cause interference with radio communication if not installed and used in accordance with these operating instructions. It has been tested and found to comply with the limits for a Class A computing device in accordance with Subpart J of Part 15 of FCC Rules. These rules are designed to provide reasonable protection against interference for operation in a commercial environment. Use of this equipment in a residential area is likely to cause interference. If so, the user will be required to bear the expense of correcting the interference.

### *If Problems Arise*

If any of your telephone equipment is malfunctioning, remove it from your telephone line. Malfunctioning equipment may harm the telephone network. If the telephone company notes a problem with your telephone line, they may temporarily discontinue service. When practical, they will notify you in advance of the disconnection. If advance notice is not possible, you will be given the opportunity to correct the problem and be informed of your right to file a complaint with the FCC.

## DOC Regulations for Canadian Operators

**Notice:** The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the conditions above may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any equipment malfunctions or repairs or alterations made by the user to this equipment may give the telecommunications company cause to request the user to disconnect the equipment.

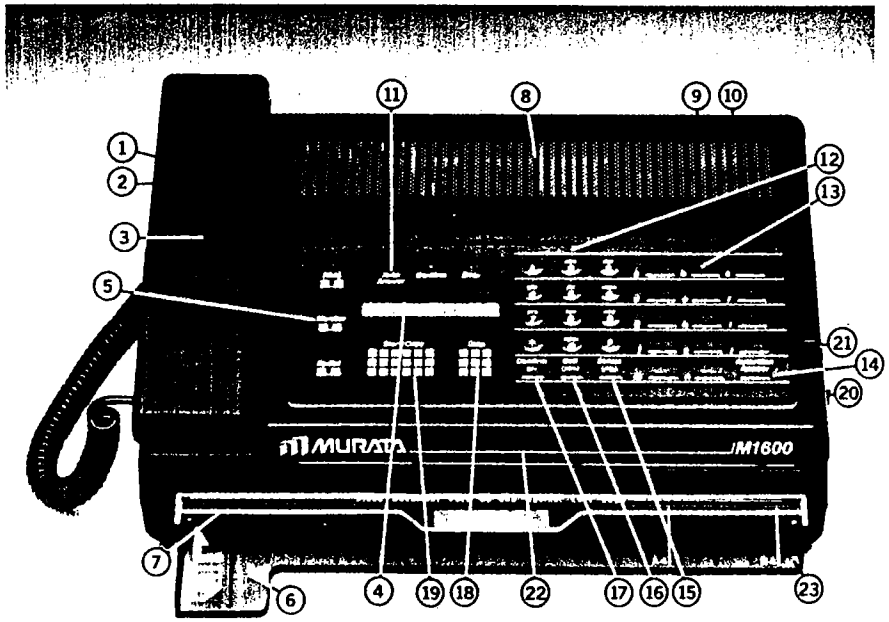
Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

**Caution:** Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority or electrician.

The load number assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop used by the device. Load numbers are assigned to prevent overloading. The termination on a loop may consist of any combination of devices, subject only to the requirement that the total of the load numbers of all the devices does not exceed 100. An alphabetic suffix is also specified in the load number for the appropriate ringing type (A or B), if applicable.

The load number for your unit is 66.

# Machine Layout




1. Line Jack - Connection for telephone line from wall jack.
2. Phone Jack - Connection for handset cord.
3. Telephone Handset - Telephone with monitor and ringer volume adjust.
4. LCD - Shows the date and time or facsimile function underway.
5. Telephone Features - Hold, monitor and redial feature keys for telephone use.
6. Document Tray and Cover - Guide page into unit for copying or transmission.
7. Document Feeder - Automatically feeds document past scanner.
8. Ventilation Grills - Allow a cooling airflow through your facsimile machine. Do not cover or block.
9. AC Plug - Connection for power cord.
10. On/Off Switch - Turns power to unit on and off.
11. Status Lamps - Show when a call or confirmation report has been requested or when an error has occurred.
12. Speed-Dial Numbers - Two-digit codes, 01 to 16, to speed phone and facsimile dialing.
13. One-Touch Keys - One-touch dialing commands for 14 frequently called numbers.
14. Auto/Manual - Press to select automatic or manual reception.
15. Select - Press to select transmission mode.
16. Call - Reserves a voice call during facsimile transmission.
17. Confirm - Requests an RCR during facsimile transmission.
18. Stop - Press to halt function underway.
19. Start/Copy - Press to begin transmission or reception or to copy a document.
20. Printer Release - Disengages document feeder to clear paper jams.
21. Cover Release - Opens cover to load recording paper.
22. Paper Exit - Exit for copied or received documents, with tear bar.
23. Document Exit - Exit for original documents.

# Installation

When you are ready to install your unit and connect it to the telephone system, call your telephone company and give them the following information:

- The telephone number of the line to which you will connect the unit.
- The FCC registration number of the unit: EFG79R-19635-FA-E.
- The ringer equivalent number of the unit: 2.5B.

Outside the United States, you may need to provide different information. Ask your telephone company.

## Telephone Requirements

Your unit connects to the telephone line with a standard modular jack. Telephone companies refer to this type of jack as a USOC RJ11C. If you do not have this jack where you want to install your unit, call your telephone company for information on installation.

**Warning:** Do not connect your unit to a PBX system without first checking with the system manufacturer or a service representative.

Facsimile transmission and reception can be stopped by telephone call-waiting signals. If you have requested call-waiting service for the line to which you will connect your facsimile machine, you may experience interruptions of facsimile service.

Your facsimile machine is for use on standard device telephone lines. Connection to telephone company coin service is prohibited. Connection to party-line service is subject to state tariffs.

If you decide to permanently disconnect your unit from its present line, notify the telephone company of the change.

## Electrical Requirements

Your facsimile machine can be powered from a standard three-pronged electrical outlet and consumes far less electricity than a table lamp. Because its solid-state construction makes your unit so economical to operate, leave your unit turned on all the time. That way, there is no chance you will accidentally miss an important transmission.

Good fax operation and long system life require a constant power source: Do not install your unit on the same electrical circuit as an air-conditioner, copying machine or other high-consumption electrical appliance.

*1. Voltage Requirements*

115 volts AC ± 10%, 50-60 Hz, single phase

Units for use outside the United States and Canada require either:

220 VAC ± 10% or 240 VAC ± 10 %
50-60 Hz, single phase

A label on the bottom of your unit will specify the voltage required.

*2. Approximate Power Consumption*

| | | | |
|---|---|---|---|
| Standby | 15 watts | Transmission | 40 watts |
| Copy | 100 watts | Reception | 70 watts |

## Site Requirements

Choose a vibration-free spot for your unit that offers:

1. An RJ11C telephone jack within 10 feet.

2. A standard 115 VAC, three-pronged electrical outlet within 5 feet.

3. An unrestricted airflow around your unit to prevent overheating. (Do not put your unit in a drawer or cabinet, and allow at least 10 inches clearance from all sides and the top. Do not block the ventilation grills on your unit.)

4. A cool, dark place nearby to store extra recording paper.

**Do not** install the unit:

- In direct sunlight
- In dusty areas
- In areas of excessive heat or humidity
- Where water splashes are possible
- Near a radio or TV set

## Unpacking

To unpack your unit:

1. Open the shipping carton.

2. Take out the paper roll, handset, document tray and cover, power cord, telephone line and documentation.

3. Lift the facsimile console out of the carton and remove the foam braces from either side of the unit.

4. Place the unit on a steady shelf or desk, and remove the plastic bag.

5. Keep the bag, foam braces and carton for reshipping.

After unpacking, check for the following:

- Facsimile console
- Telephone handset
- Document tray and cover
- Paper roll
- Power cord
- Telephone line
- Supply order form
- Quality assurance report
- Operating instructions
- Warranty registration and questionnaire

## Connections

1. Make sure the on/off switch at the back of the unit is off.

2. Plug the telephone line into the connector marked Line on the left side of the console. Plug the other end into the telephone wall jack.

3. Plug the handset cord into the connector marked Phone on the left side of the console.

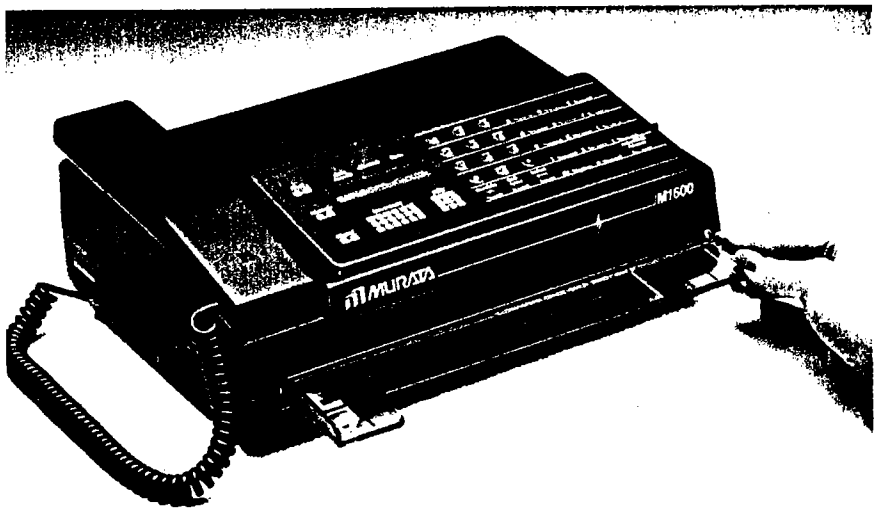
4. Attach the power cord to the connector on the back of the console. Plug the other end into a three-pronged electrical outlet.

5. Turn the on/off switch on.

## Document Tray

The tray and tray cover for your unit help guide documents during transmission and prevent recording paper from curling into the document feeder. Always keep the document tray and cover in place when using your unit.

1. Insert the tab on the left side of the document tray into the small hole on the left side of the document feeder.




2. Press gently against the tab on the right side of the tray. Slide the tray into the document feeder and release the tab to secure the tray in place.

3. Snap the tray cover into place on top of the tray.

## Recording Paper

Put in a new roll of Murata recording paper when you install your unit and whenever the red low-paper line is visible on the side of the recording paper. The red line indicates less than 5 feet of paper remain and is a reminder to load a new roll as soon as possible.

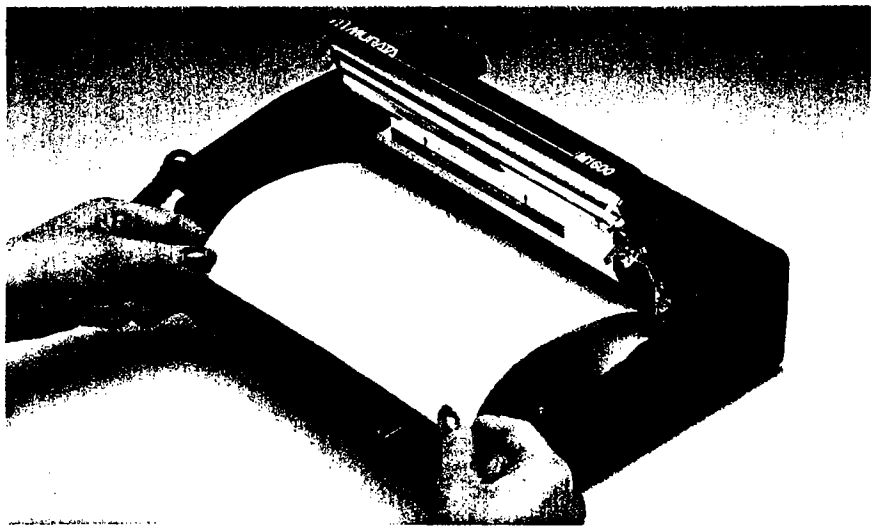
When the unit's display shows the add-paper error message, your recording paper has reached the black end-of-paper line. This message is accompanied by an alarm tone and lighted Error lamp. You cannot transmit or receive until you replace the paper supply.

To load a new roll of paper:

1. Push back on the printer knob and open the cover.

# Installation

2. Remove the empty roll from the paper cradle and put in a new roll. Load the paper to unroll from the top. Pull the paper out about 4 inches.



3. Close the top, pressing firmly on both sides of the cover.

4. Tear off the excess paper, pulling up and to the right to tear the sheet cleanly against the cover.

## Check List

After you have installed your unit, check its operation:

1. Make sure the recording paper is installed and the cover is closed.

2. Make sure the telephone line is attached to the connector marked Line and to the telephone wall jack.

3. Make sure the power cord is securely fitted into the unit and the wall outlet. Make sure the on/off switch is on.

4. Check that the unit's LCD shows the date and time rather than an error message. Until you set the time and date (see page 7), the time shown may not be accurate.

5. Pick up the telephone handset and make sure you hear a dial tone. Return the handset to its cradle.

6. Position a document face up and flush with the left side of the document tray.

7. Insert the document into the tray until the automatic feeder takes it.

8. When the automatic feeder has stopped, press **Start/Copy** to make a copy of your document.

9. When the copy is completed and the tone sounds, tear off the copy and remove your original.

# Preparing Your Fax

## Standby Mode

All commands and programmable functions for your unit begin from the standby mode. In standby, your unit displays the current date and time in the system display.

```
** SYSTEM READY **
Feb.  26, 88,  10:45
```

Make sure your unit is in standby before you begin. If it is not, press **Stop** to cancel the function underway.

## Setting the Clock

Time is displayed on a 24-hour clock: 11 a.m. is shown as 11:00, for example, and 2 p.m. is shown as 14:00.

To set the clock:

1. From standby, press **P** 4 times.

```
SET  CLOCK
          YES/NO
```

2. The unit will ask if you want to set the clock. Press **Yes**.

```
SET  CLOCK
01 01,  01 01:01
```

3. Use the numeric keypad to enter the month.

```
SET  CLOCK
02  01,  01 01:01
```

4. Press **Yes**.

5. Use the numeric keypad to enter the day.

```
SET  CLOCK
02, 26,  01 01:01
```

6. Press **Yes**.

7. Use the numeric keypad to enter the last two digits of the year.

```
SET  CLOCK
02, 26,  88 01:01
```

8. Press **Yes**.

9. Use the numeric keypad to enter the hour.

```
SET  CLOCK
02,  26,  88 10:01
```

10. Press **Yes**.

11. Use the numeric keypad to enter the minute.

```
SET  CLOCK
02,  26,  88 10:45
```

12. Press **Yes**.

```
** SYSTEM READY **
Feb.  26, 88,  10:45
```

## Setting the Subscriber ID and Transmit Terminal Identifier

The Subscriber ID and TTI are transmitted automatically with the documents you send, and appear at the top of each page printed by the receiving unit. The Subscriber ID is your unit's telephone number. The TTI can be your name, your business name or any other identifier up to 22 characters long.

To set the Subscriber ID and TTI:

1. From standby, press **P** 9 times.

```
SET TTI
          YES/NO
```

2. Press **Yes**.

The unit will ask if you want to set the Subscriber ID.

```
SET TELEPHONE    #
PROGRAM?    YES/NO
```

3. Press **Yes**.

```
SET  TELEPHONE   #
```

4. Use the numeric keypad to enter the telephone number for your unit. Press **b** to enter a dash. Enter up to 20 digits.

```
214-392-1622
```

# Preparing Your Fax

5. Press **Yes.** The unit will ask if you want to set the TTI.

```
TTI:
PROGRAM?      YES/NO
```

6. Press **Yes.** The unit will display the first set of TTI characters.

```
@ABCDEFG          00
KEY   a/b  d /e   Y/N
```

Press **a**, **b**, **d** and **e** to scroll through the characters.

**a** moves the display back one character group.
**b** moves the display to the next character group.
**d** moves the cursor to the left.
**e** moves the cursor to the right.
**No** deletes one character from the right each time it is pressed.

7. When the cursor is under the first character of your TTI, press **Yes.** The character will appear in the lower right-hand corner of the display.

```
PQR STUVW         01
                   S
```

8. Repeat Steps 6 and 7 until all characters are entered. Enter up to 22.

```
() * + , - . /      09
              SmithCo.
```

9. When the TTI is entered, press **P.**

## Printing the TTI

1. From standby, press **P** 8 times.

```
PRINT TTI
          YES/NO
```

2. Press **Yes** to print the TTI.

```
PRINT TTI
**   PRINTING   **
```

3. The TTI, Subscriber ID, date and time will be printed.

```
** SYSTEM READY **
Feb. 26, 88, 10:45
```

| GROUP NO. | CHARACTER | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | @ | A | B | C | D | E | F | G |
| 2 | H | I | J | K | L | M | N | O |
| 3 | P | Q | R | S | T | U | V | W |
| 4 | X | Y | Z | [ | ¥ | ] | ^ | _ |
| 5 | ` | a | b | c | d | e | f | g |
| 6 | h | i | j | k | l | m | n | o |
| 7 | p | q | r | s | t | u | v | w |
| 8 | x | y | z | { | \| | } | | |
| 9 | | ! | " | # | $ | % | & | ' |
| 10 | ( | ) | * | + | , | - | . | / |
| 11 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12 | 8 | 9 | : | ; | < | = | > | ? |

## Setting the Pass Code

The pass code on your unit allows you to protect a document set to be polled from unauthorized access, and to poll a document from another unit with a pass code in place. The pass code is used only when communicating with other Murata-manufactured units and only when you want to deny access to your unit to all units not presenting the correct pass code.

To set a pass code:

1. From standby, press **P** once and **No** 7 times. The unit will ask if you want to set a pass code.

```
SET  PASSCODE
             YES/NO
```

2. Press **Yes**.

```
SET  PASSCODE
               0000
```

3. Use the numeric keypad to enter a four-digit pass code.

```
SET  PASSCODE
               1234
```

4. Press **Yes**.

```
SET  PASSCODE
** COMPLETED  **
```

**Note:** To cancel the pass code function, set the code to "0000". This setting allows any remote terminal to poll a document.

# Basic Operations

## Acceptable Documents

In general, your unit can transmit images from any normal weight paper whose dimensions fall within the maximum and minimum width and length requirements:

**Maximum:** 10(W) x 15.8(L) inches
**Minimum:** 3.9(W) x 3.1(L) inches

When transmitting to a unit with an 8.5-inch print width, larger documents will be reduced automatically to accommodate the receiving unit. To transmit images from documents smaller than the minimum or from heavy paper, cardboard, overhead transparencies or other non-paper originals, first copy the document on a copier. Use the copied image for your unit.

**Do not** transmit:

- Extremely thin or wrinkled pages
- Documents carrying staples, adhesive tape or paper clips
- Pages with duplicating carbon on one side

## Inserting a Document

For the best copy and transmission quality, insert your documents carefully, flush with the left side of the document tray.

1. Position the document face up and flush with the left side of the document tray.

2. Insert the document into the document tray until the automatic feeder takes it.

3. After the document feeder has positioned the page, press **Select** to set the transmission mode. Norm is suited to most documents. Fine is ideal for detailed or handwritten documents. G2 is used when transmitting to CCITT Group 2 units.

4. Begin transmission.

**Note:** Your unit will automatically compensate when transmitting to a Group 2 unit. If you select Norm or Fine when transmitting to such a unit, your unit will fall back automatically. Selecting G2 manually saves the time needed for your unit to fall back from Norm or Fine.



## Transmitting Multiple Pages

After your first page has been transmitted, your unit will hold the telephone line open and beep for six seconds, giving you time to insert a second page into the document feeder. (You can increase the line hold to 12 seconds. See page 20.) If you do not want to transmit additional pages, do nothing: Your unit will complete the call and return to standby automatically.

## Transmitting with the Numeric Keypad

1. From standby, insert the document.

```
** SYSTEM READY **
A4   NORM     10:45
```

2. Enter the telephone number for the receiving unit with the keypad.

```
** SYSTEM READY **
      18008255329
```

3. Press **Start/Copy.** Transmission will begin.

```
18008255329
A4   NORM
```

## Transmitting with a One-Touch Key

1. From standby, insert the document.

```
**   SYSTEM READY   **
A4      NORM     10:45
```

2. Press the one-touch key programmed for the receiving unit.

```
1-800-825-5329
A4      NORM
```

3. Transmission will begin.

## Transmitting with a Speed-Dial Number

1. From standby, insert the document.

```
**   SYSTEM READY   **
A4      NORM     10:45
```

2. Press * and the two-digit speed-dial number programmed for the receiving facsimile machine.

```
**   SYSTEM READY   **
                    *01
```

3. Press **Start/Copy**. The Location ID or, if the Location ID is not programmed, the telephone number for the receiving unit will be displayed.

```
1-800-825-5329
A4       NORM
```

4. Transmission will begin.

## Transmitting with the Handset or Monitor

1. From standby, insert the document.

```
**   SYSTEM READY   **
A4      NORM    10:45
```

2. Pick up the handset.

```
**    TEL. COMM.     **
```

3. Enter the telephone number for the receiving unit with the numeric keypad or using a speed-dial number.

```
**    TEL. COMM.     **
      1-800-825-5329
```

4. When the remote unit answers and you hear facsimile tones, press **Start/Copy** and return the handset to its cradle. Transmission will begin.

```
1-800-825-5329
A4       NORM
```

To use your unit's internal monitor, press **Monitor** in Step 2 rather than lift the handset. Enter the telephone number as shown. When the remote unit answers and you hear facsimile tones, press **Start/Copy.**

**Note:** One-touch keys cannot be used when transmitting with the handset or monitor.

## Setting the RCR

A receive confirmation report is your assurance that the document you transmitted was received. The RCR identifies the receiving unit and records the date, time, mode, number of pages sent and result.

The RCR function works between Murata-manufactured units only. If you request an RCR while transmitting to a non-Murata unit, your unit will display the communication result (see below) instead.

You can instruct your unit to print an RCR automatically after each transmission, or manually request an RCR while transmitting a particular document.

To print the RCR automatically:

1. From standby, press **P** once and **No** 8 times.

```
SET   CONFIRMATION
          YES/NO
```

2. Press **Yes.**

```
RCR       =     OFF
          YES/NO
```

3. Press **No** to set the RCR on.

```
RCR       =      ON
          YES/NO
```

4. Press **Yes.**

```
SET   CONFIRMATION
**  COMPLETED   **
```

To print an RCR on demand:

1. Insert and begin transmitting your document.

2. While the document is being transmitted, press **Confirm.** The Confirm lamp will light.

3. After your document is transmitted, the RCR will print and the Confirm lamp will go out.

# Basic Operations

## Setting the Communication Result

The communication result is a shortened form of the RCR displaying the telephone number called, transmission length, number of pages sent and result.

When requested, the communication result will appear in the LCD after transmission.

The communication result will also be displayed if you request an RCR when transmitting to a non-Murata unit.

To request the communication result:

1. From standby, press **P** 5 times.

```
SET  COMM.  RESULT
           YES/NO
```

2. Press **Yes.**

```
RESULT  =    OFF
           YES/NO
```

3. Press **No** to set the communication result on.

```
RESULT  =     ON
           YES/NO
```

4. Press **Yes.**

```
SET  COMM.  RESULT
**  COMPLETED  **
```

## Redialing Busy Numbers

When your unit reaches a busy number during transmission, it will automatically try to call back twice more to transmit your document. (You can instruct your unit to try five more times. See page 21.)

While waiting, your unit will display "Reserved" in the LCD and can receive documents as usual.

To cancel the transmission while the unit is reserved and return to standby, press **Stop.**

The redial feature does not work with calls placed using the handset or monitor.

## Receiving

Your unit lets you choose automatic or manual call reception for flexibility in your business communication.

Automatic answering provides worry-free facsimile reception with no operator involvement. To assure automatic answering:

Press **Auto/Man Answer** to light the Auto Answer lamp.

The manual answer mode is ideal when your unit will be used frequently as both a facsimile machine and a telephone. To require a manual answer for all incoming calls:

Press **Auto/Man Answer** to turn off the Auto Answer lamp.

## Set Auto Receive Time

For even more flexibility, your unit can be instructed to switch from manual to automatic answering at the end of the day, and to return to manual at the start of the next day.

1. Make sure the Auto Answer lamp is not lighted. If it is, press **Auto/Man Answer.**

2. From standby, press **P** once and **No** 4 times.

```
SET AUTO Rx TIME
           YES/NO
```

3. Press **Yes.**

```
SET AUTO Rx TIME
START TIME  00:00
```

4. Use the numeric keypad to enter the hour you want automatic answering to begin.

```
SET AUTO Rx TIME
START TIME  17:00
```

5. Press **Yes.**

```
SET AUTO Rx TIME
START TIME  17:00
```

6. Use the numeric keypad to enter the minute you want automatic answering to begin.

```
SET AUTO Rx TIME
START TIME  17:31
```

7. Press **Yes**.

```
SET AUTO Rx TIME
END TIME    00:00
```

8. Use the numeric keypad to enter the hour you want automatic answering to end.

```
SET AUTO Rx TIME
END TIME    08:00
```

9. Press **Yes.**

```
SET AUTO Rx TIME
END TIME    08:00
```

10. Use the numeric keypad to enter the minute you want automatic answering to end.

```
SET AUTO Rx TIME
END TIME    08:29
```

11. Press **Yes**.

```
SET AUTO Rx TIME
**  COMPLETED  **
```

**Note:** To cancel, set the starting and ending times at 00:00.

To provide continuous automatic answering over a weekend, press **Auto/Man Answer** before you leave the office and before your unit is set to switch over automatically. The **Auto/Man Answer** command will override the auto-receive function and will provide automatic reception even during those hours your unit would normally switch to manual reception.

## Set Number of Rings

When your unit is set for auto answering, it automatically responds to incoming calls as a facsimile machine, preventing conversation, after two rings. Increasing the number of rings to six allows an operator more time to answer before the unit answers the line.

To set the number of rings:

1. From standby, press **P** once and **No** 5 times.

```
SET # OF RINGS
        YES/NO
```

2. Press **Yes.**

```
# OF RINGS = TWO
        YES/NO
```

3. Press **No** to change the number of rings from two to six.

```
# OF RINGS = SIX
        YES/NO
```

4. Press **Yes.**

```
SET # OF RINGS
**  COMPLETED  **
```

## Set Receive Delay

Adding a receive delay lets you listen for up to 15 seconds to incoming calls answered by your unit. During the delay, your unit's monitor will turn on and allow you to hear the incoming call. If the call is from a person, pick up the handset and begin your conversation. If the call is from a facsimile machine, do nothing: Your unit will begin communication automatically.

To set the receive delay:

1. From standby, press **P** once and **No** 6 times.

```
SET Rx DELAY
        YES/NO
```

2. Press **Yes.**

```
SET Rx DELAY
DELAY = 00 SEC.
```

3. Enter a receive delay of up to 15 seconds with the numeric keypad.

```
SET Rx DELAY
DELAY = 15 SEC.
```

4. Press **Yes**.

```
SET Rx DELAY
**  COMPLETED  **
```

**Note:** This feature is only effective when your unit is set for automatic reception.

# Basic Operations

## Polling

Polling allows you to set a document in your unit for automatic transmission to a remote unit when that unit calls, or to call a remote unit and receive a document set in its tray to be polled.

Polling is convenient whenever a central unit must receive information from one or several remote units. By polling remote units, the central facility bears all telephone charges and prevents several units from calling at the same time.

Your unit can also be used for data base polling. You can call and request specific files of information stored inside a Murata unit with internal memory. Murata's high-volume office facsimile machines offer this internal storage feature.

Setting a document to be polled:

1. From standby, insert the document.

```
**   SYSTEM READY   **
A4      NORM     10:45
```

2. Press **P** 2 times.

```
POLLING
          YES/NO
```

3. Press **Yes** to reserve your unit for polling. While waiting to be polled, your unit can receive facsimile transmissions as usual.

```
**    RESERVED    **
POLL   NORM    10:45
```

## To Poll Another Unit, and Data Base Polling

1. From standby, press **P** 2 times.

```
POLLING
          YES/NO
```

2. Press **Yes**.

```
POLLING
TEL:
```

3. Enter the telephone number for the unit to be polled using the numeric keypad or a speed-dial number. Precede a speed-dial number with *. Press **Yes.**

or

Enter the telephone number using a one-touch key.

```
POLLING
TEL:   214-392-1622
```

4. If you do not want to data base poll, press **No.**

```
POLLING
DATA BASE    YES/NO
```

Polling will now begin.

5. If you want to data base poll, press **Yes.** Enter the number of the data base file you want to receive.

```
POLLING
DATA BASE  #  0001
```

6. Press **Yes.**

```
POLLING
ANOTHER  #   YES/NO
```

If you want another data base file, press **Yes** and repeat Step 5.

7. If not, press **No.** Polling will now begin.

# Other Features

## Autodialer

Your unit includes a powerful autodialer that stores up to 30 of your most frequently called telephone numbers. The 14 one-touch keys are identified by the characters **a** to **n**. The 16 speed-dial numbers are represented by the two-digit numbers **01** to **16**.

You can enter up to 35 digits for each autodialer number, including dialing pauses required for use with some long distance and PBX systems.

## Programming a One-Touch Key

One-touch keys are represented by keys **a** through **n**.

To enter a one-touch key into memory:

1. From standby, press **P** once and **No** once.

```
SET  DIRECTORY
PHONE  #    YES/NO
```

2. Press **Yes** to set the directory. The unit will ask if you are ready to enter the first number.

```
a:
PROGRAM  ?  YES/NO
```

3. Press **Yes.**

4. Enter the telephone number using the numeric keypad. If you enter a number by mistake, press **No** to delete from the right.

```
a:  9/1-800-825-5
```

5. To insert a 5-second dialing pause, press **a**. A slash, "/", will appear on the display. (To change the delay from 5 to 10 seconds, see page 21.) To insert a dash, "-", press **b**. The dash will appear on the display and on printed reports, but does not affect the operation of your unit.

```
a:  -800-825-5329
```

6. When you have entered the telephone number, press **Yes**.

```
b:
PROGRAM  ?  YES/NO
```

7. Press **Stop** to return to standby, or **Yes** to program other one-touch keys.

**Note:** Pressing **P** after pressing **Yes** in Step 2 displays the autodialer locations in reverse order. Pressing **No** displays the locations in order.

## Programming a Speed-Dial Number

Speed-dial numbers are identified by a two-digit number from **01** to **16.**

To enter a speed-dial number into memory:

1. From standby, press **P** once and **No** once. The unit will ask if you want to set the directory.

```
SET  DIRECTORY
PHONE  #    YES/NO
```

2. Press **Yes.**

```
a:
PROGRAM  ?  YES/NO
```

3. Now press **No** until the first speed-dial number, 01, is displayed.

```
01:
PROGRAM  ?  YES/NO
```

4. Press **Yes.**

5. Enter the telephone number using the numeric keypad. If you enter a number by mistake, press **No** to delete from the right.

```
01:  9/1-800-825-5
```

6. To insert a 5-second dialing pause, press **a.** A slash, "/", will appear on the display. (To change the delay from 5 to 10 seconds, see page 21.) To insert a dash, "-", press **b.** The dash will appear on the display and on printed reports, but does not affect the operation of your unit.

```
01:  -800-825-5329
```

7. When you have entered the telephone number, press **Yes.**

```
02:
PROGRAM  ?  YES/NO
```

# Other Features

8. Press **Stop** to return to standby, or **Yes** to enter other speed-dial numbers.

**Note:** Pressing **P** after pressing **Yes** in Step 2 displays the autodialer locations in reverse order. Pressing **No** displays the locations in order.

## Programming the Location ID

The Location ID is used to identify one-touch and speed-dial telephone numbers. It appears on the LCD during transmission and on the printed activity journal. Like the TTI, it can be a person's or business' name or other identifier.

To enter the Location ID:

1. From standby, press **P** once and **No** 2 times.

```
SET  DIRECTORY
LOC. ID     YES/NO
```

2. Press **Yes.**

```
a:
PROGRAM  ?  YES/NO
```

3. If you want to program the Location ID for location **a**, press **Yes.**

If not, press **P** to display the locations in order or **No** to display them in reverse order until you reach the location you want to program. Then press **Yes.**

```
@ABCDEFG        00
KEY  a/b  d/e   Y/N
```

4. Press **a**, **b**, **d** and **e** to move through the characters on the display.

**a** moves the display back to the previous character group.
**b** moves the display forward to the next character group.
**d** moves the cursor to the left.
**e** moves the cursor to the right.
**No** deletes one character from the right each time it is pressed.

5. When the cursor is under the desired character, press Yes. The character will appear in the lower right-hand corner of the display.

```
@ABCDEFG        01
                 A
```

6. Continue Steps 4 and 5 to enter the Location ID. Enter up to 10 characters. (A list of all characters available appears on page 8.)

```
( ) * + , - . /     09
          ABC Corp.
```

7. When you have entered the Location ID, press **P.**

```
b:
PROGRAM  ?  YES/NO
```

8. Press **Stop** to return to standby or press **Yes** to enter other Location IDs.

## Deleting or Changing a Telephone Number

1. From standby, press **P** once and **No** once.

```
SET  DIRECTORY
PHONE #      YES/NO
```

2. Press **Yes.** The first memory location and the telephone number assigned to it will appear in the display.

```
a: 800-825-5329
CHANGE   ? YES/NO
```

3. Press No to advance to the number you want to delete.

```
b:       555-1212
CHANGE   ? YES/NO
```

4. Press **Yes** once when the unit asks if you want to change the number displayed.

```
b:
```

The programmed number will disappear. If you want to delete the number, go to Step 5. If you want to change the number, enter the new numbers now using the numeric keypad.

```
b:  214-555-1212
```

5. Press **Yes.** Repeat Steps 3, 4 and 5 to change or delete other numbers.

```
c:       392-1622
CHANGE   ? YES/NO
```

6. Press **Stop** to return to standby.

## Printing the Telephone Directory

1. From standby, press **P** once and **No** 3 times.

```
PRINT  DIRECTORY
          YES/NO
```

2. Press **Yes** to print.

```
PRINT  DIRECTORY
**  PRINTING  **
```

# Programmable Features

## Erase Directory

To erase all one-touch and speed-dial numbers from your unit's memory:

1. From standby, press **P** 3 times.

```
ERASE   DIRECTORY
          YES/NO
```

2. Press **Yes.** The unit will ask again if you want to erase the directory.

```
ERASE   DIRECTORY
ERASE?      YES/NO
```

3. Press **Yes** again.

```
ERASE   DIRECTORY
**  COMPLETED  **
```

## Erase Memory

To erase all information—including TTI, Subscriber ID, primary mode and other user settings—in your unit:

1. From standby, press **P.**

```
PRINT  JOURNAL
          YES/NO
```

2. Press *, then the numeral **0.**

```
ERASE    MEMORY
          YES/NO
```

3. Press **Yes.**

```
ERASE    MEMORY
ERASE ?     YES/NO
```

4. The unit will ask again if you want to erase all information stored in your unit. You can press **No** to cancel the erasure and return to standby.

5. Press **Yes** again to erase your unit's memory.

```
ERASE    MEMORY
*** COMPLETED ***
```

## Set Primary Mode

Your unit's standard resolution mode is Norm, 203 x 98 lines per inch. If you occasionally transmit detailed or handwritten documents, you can manually select Fine mode, 203 x 196 lines per inch, before transmission (see page 10). If most of your documents require the finer resolution, however, you can change the primary mode to Fine and save the manual process when transmitting.

To set the primary mode:

1. From standby, press **P** 6 times.

```
SET  PRIMARY  MODE
          YES/NO
```

2. Press **Yes.**

```
MODE    =    NORM
          YES/NO
```

3. Press **No** to change the mode to Fine.

```
MODE    =    FINE
          YES/NO
```

4. Press **Yes.**

```
SET  PRIMARY  MODE
**   COMPLETED  **
```

## Set Activity Journal

Setting the print-out for your unit's activity journal instructs your unit to print an activity journal automatically after every 20 transmissions or receptions.

1. From standby, press **P** 7 times.

```
SET ACT.  JOURNAL
          YES/NO
```

2. Press **Yes.**

```
PRINT    =    OFF
          YES/NO
```

3. Press **No** to set the print on.

```
PRINT    =      ON
              YES/NO
```

4. Press **Yes.**

```
SET ACT.  JOURNAL
**  COMPLETED  **
```

To print the activity journal manually:

1. From standby, press **P** once.

```
PRINT  JOURNAL
           YES/NO
```

2. Press **Yes.**

```
PRINT  JOURNAL
**  PRINTING  **
```

**Note:** The activity journal will not print out if you have just installed your unit and have no communication activity to report or if you have erased your unit's memory since your last transmission or reception.

# Software Settings

These software settings offer additional features you may want to use on your unit.

**Note**: Use care when changing these settings: Changing other than the settings shown could alter or prevent facsimile operation. If the operation of your unit appears changed by an incorrect software setting, use the erase-memory command (see page 18) to return all switches to their factory settings. This command will also delete all information you have programmed in your unit. If you have any questions, call the Customer Support Center before you begin (see page 2).

## Display Modem Speed

This optional setting instructs your unit to display the current communication speed during transmissions and receptions. Communication speed will be shown as 9600, 7200, 4800 or 2400 bits per second and will be influenced by the quality of the telephone lines used and the CCITT group of the remote unit.

1. From standby, press **P**, *, **1**.

```
DIP SW SET
          YES/NO
```

2. Press **Yes** 2 times.

```
DIP SW SET
DIPSW-2 10100000
```

3. Press **e** 4 times.

```
DIP SW SET
DIPSW-2 10100000
```

4. Press the numeral **1**.

```
DIP SW SET
DIPSW-2 10101000
```

5. Press **Yes**, then **Stop**.

**Note:** To cancel the speed display, enter "0" in Step 4 rather than "1".

## Set Redial Interval

Your unit will redial a busy number after a 3-minute wait. You can increase that redial interval to 5 minutes using this optional setting.

1. From standby, press **P**, *, **1**.

```
DIP SW SET
          YES/NO
```

2. Press **Yes** 4 times.

```
DIP SW SET
DIPSW-4 10000000
```

3. Press **e** 6 times.

```
DIP SW SET
DIPSW-4  10000000
```

4. Press the numeral **1**.

```
DIP SW SET
DIPSW-4  10000010
```

5. Press **Yes**, then **Stop**.

**Note:** To return to a 3-minute redial interval, enter "0" in Step 4 rather than "1".

## Set Line Hold

Your unit holds the telephone line open for 6 seconds after a page is transmitted to give you time to insert additional pages. Use this optional setting to increase the line hold time to 12 seconds.

1. From standby, press **P**, *, **1**.

```
DIP SW SET
          YES/NO
```

2. Press **Yes** 5 times.

```
DIP SW SET
DIPSW-5 00000000
```

3. Press **e** 6 times.

```
DIP SW SET
DIPSW-5  00000000
```

4. Press the numeral **1**.

```
DIP SW SET
DIPSW-5  00000010
```

5. Press **Yes**, then **Stop.**

**Note**: To return to the six-second hold, enter "0" in Step 4 rather than "1".

## Send TTI

This optional setting instructs your unit not to send your Transmit Terminal Identifier. Normally, the TTI is sent with every document and appears at the top of the page printed by the receiving unit.

1. From standby, press **P**, *, **1**.

```
DIP SW SET
          YES/NO
```

2. Press **Yes** 2 times.

```
DIP SW SET
DIPSW-2 10100000
```

3. Press the numeral **0.**

```
DIP SW SET
DIPSW-2 00100000
```

4. Press **Yes**, then **Stop**.

**Note:** To include the TTI on every transmission, enter "1" in Step 3 rather than "0".

## Set Number of Redial Attempts

This optional setting instructs your unit to redial 5 times after a busy signal. The unit is set initially to redial two times.

1. From standby, press **P**, *, **1**.

```
DIP SW SET
          YES/NO
```

2. Press **Yes** 6 times.

```
DIP SW SET
DIPSW-6 00000000
```

3. Press **e** 7 times.

```
DIP SW SET
DIPSW-6  0000000 0
```

4. Press the numeral **1.**

```
DIP SW SET
DIPSW-6 00000001
```

5. Press **Yes**, then **Stop.**

**Note:** To return to two redials, enter "0" in Step 4 rather than "1".

## Set Dial Pause

The slash character, "/", can be used in one-touch and speed-dial numbers to provide a pause required when dialing overseas and on some long distance services (see page 15). This pause is set initially at 5 seconds.

To increase the pause to 10 seconds:

1. From standby, press **P**, *, **1**.

```
DIP SW SET
          YES/NO
```

2. Press **Yes** 3 times.

```
DIP SW SET
DIPSW-3 00010000
```

3. Press **e** 6 times.

```
DIP SW SET
DIPSW-3  0001000 0
```

4. Press the numeral **1**.

```
DIP SW SET
DIPSW-3  0001001 0
```

5. Press **Yes**, then **Stop.**

**Note:** To return to a 5-second pause, enter "0" in Step 4 rather than "1".

# Telephone Features

## Tone, Rotary Dialing

Your unit is set initially for use with "touch-tone" dialing systems, called DTMF systems, rather than rotary. If your telephone line requires rotary dialing pulses, you must set two dip switches on the bottom of your unit.

First, turn the power to your unit off.

The dip switch is located near the middle of the bottom of your unit. A label near the switch will identify the settings for each switch. A thin, clear adhesive film covers the switch and may be removed.

To set your unit for rotary dialing, move dip switch 3 to the on position.

Your unit is initially set for 10 rotary dialing pulses per second. If your system requires 20 pps, move dip switch 4 to the off position. If you are unsure which your system requires, call your telephone company.

When set, turn the power to your unit on.

## Handset Controls

The sliding lever on your telephone handset adjusts the ringer volume for your telephone. The dial adjusts the monitor volume.

## Console Controls

To put a call on hold:

Press **Hold**. The Hold lamp will light and your unit will beep for 10 seconds once every minute to remind you a call is holding. If you have not picked up your call after five minutes, your unit will disconnect the line automatically.

While on hold, your caller will hear Brahm's Lullaby.

To take a caller off hold, pick up the handset and press **Hold**.

## On-Hook Dialing

Press **Monitor.** When you hear a dial tone, enter the telephone number using the numeric keypad or a speed-dial number. When your call is answered, pick up the handset and begin your conversation.

Do not press **Monitor** when dialing with a one-touch key: Just press the one-touch key. Your unit automatically turns on the Monitor and begins dialing. When your call is answered, pick up the handset and begin your conversation.

**Note:** Do not use a one-touch key for a personal call when there is a document loaded in the document tray.

## Redial the Last Number Called

Pick up the handset or press **Monitor.** Then press **Redial.** Your unit will call the most recent telephone number dialed.

## Call Reserve

The call reserve function of your unit allows you to have both telephone and facsimile communication at different times during the same call.

Without call reserve, your unit prevents telephone conversations after it begins facsimile transmission.

To use this feature, the remote unit must have a similar call-reserve capability.

To reserve a call:

1. During facsimile transmission or reception, press **Call.**

```
**   CALL MODE   **
A4       NORM
```

At the remote unit, the telephone will ring after transmission. Your unit's LCD will show that a call has been reserved.

If an operator at the remote unit responds to the call request, your telephone will ring.

2. When your telephone rings, pick up the handset. Then press **Call.** In a few seconds, the line will open.

3. Begin your conversation.

```
**  TEL. COMM.  **
```

**Note:** To transmit after your conversation, insert a document into your unit before hanging up. At the end of your call, instruct the operator of the remote unit to press **Start/Copy** before hanging up. When you hear facsimile tones, press **Start/Copy** and return your handset to its cradle. Transmission will begin in about 15 seconds. You can reserve another call during each succeeding transmission.

## Responding to a Call Request

1. When a remote operator reserves a call, your telephone handset will ring after each page of the document is received.

```
**   CALL MODE   **
Rx      NORM
```

2. To answer the call request, pick up the handset and press **Call.**

3. When the remote operator responds to your call request response, begin your conversation.

## Other Phone Features

Your unit allows you to control the number of telephone rings before automatic answering and to add a receive delay to the auto-answering function (for both, see page 13).

# Copier Features

Your unit can provide clear, convenient copies of documents up to 10 inches wide and 15.8 inches long. Images on documents wider than 8.5 inches will be reduced automatically to fit your unit's recording paper.

To copy a document:

1. Position the document face up and flush with the left side of the document tray.

```
**  SYSTEM READY  **
Feb. 26, 88    10:45
```

2. Insert the document into the tray until the automatic feeder takes it.

```
**  SYSTEM READY  **
A4     NORM     10:45
```

3. When the automatic feeder has stopped, press **Start/Copy.** Your unit will begin to copy the document.

```
**       COPY        **
A4    NORM       FINE
```

4. When the copy is completed and the tone sounds, tear off the copy and remove your original from the document exit.

```
**  SYSTEM READY  **
Feb. 26, 88    10:45
```

# Trouble Shooting

## Check Messages

Occasionally your unit will detect a problem with the telephone line in use or encounter some trouble in transmission or reception. When it does, it will alert you with the lighted Error lamp and a beeping alarm tone. You can identify the problem with the check message shown in the LCD. Press **Stop** to cancel the Error lamp and tone.

| Message | Meaning and Corrective Action |
|---|---|
| **Confirm Correct Telephone Number** | The remote unit is malfunctioning or an incorrect telephone number was entered in the transmitting unit. Check the telephone number in your unit and try the call again. |
| **Please Try Again** | The telephone line was disconnected during transmission or was of such poor quality facsimile communication was not possible. Try the call again. |
| **Please Transmit Again** | Poor telephone line conditions may have made the printed copy unreadable. Try the call again. |
| **Telephone Line Was Busy** | The remote unit was busy each time your unit attempted to call it (see page 12). Try the call again. If the message is repeated, call the remote operator to check the condition of the unit. |
| **Please Clear Tx Document** | Your unit is jammed or the paper being transmitted is too long. Clear the paper jam (see page 26). Do not transmit documents longer than 15.8 inches. |
| **Add Receive Paper** | Your unit is out of recording paper. You cannot transmit or receive until you install a new roll. |
| **Hang Up Phone** | Your telephone handset is off its hook. Hang the handset on its cradle. |
| **Please Close Cover** | The cover to your unit is open or is not securely closed. Press firmly on both sides of the cover to close. |
| **Call for Service New Lamp Needed** | The fluorescent lamp in your unit is burned out or is too weak for facsimile transmission. Call the Murata Customer Support Center (see page 2). |

## Error Codes

These error codes are printed on your unit's activity journal and can be used with the check messages to identify the cause of an error. Codes prefaced by a "T" occur during transmission. Those with an "R" occur during reception and "D" codes occur while dialing.

| | |
|---|---|
| **T.1.1.** | The remote unit did not respond properly to your unit and may not be working. Call the operator of the remote unit. |
| **T.2.1.** | The telephone line disconnected during transmission or facsimile communication became impossible because of poor line conditions. Try the call again. |
| **T.2.3.** | Communication was not possible because of poor line conditions. Try the call again. |
| **T.4.1.** | The telephone line disconnected during the transmission of a page because of excessive modem errors or because the receiving unit ran out of paper. Try the call again. |
| **T.4.2.** | Poor line conditions developed after the start of transmission. Try the call again. |
| **T.7.1.** | Poor line conditions were detected before transmission began. Try the call again. |
| **T.7.3.** | Poor line conditions were detected after transmission of a page, or the receiving unit ran out of recording paper. Try the call again. |

# Trouble Shooting

**R.1.1.** The calling unit did not respond properly to your unit. The error can be caused by a wrong number reaching your unit or by a calling unit restricting access with a pass code.

**R.1.2.** The calling unit was not compatible.

**R.2.3.** Communication was not possible because of poor line conditions.

**R.3.1.** The transmitting unit detected too many errors from the receiving unit. This is frequently caused by an intermittently poor phone line.

**R.3.3.** The transmitter is not compatible or had a document feeder problem.

**R.4.1.** The received document contained too many errors, usually as a result of poor phone lines.

**R.4.2.** The phone line disconnected before confirmation of transmission, or the transmitting unit requires maintenance.

**R.7.1.** Poor line conditions were detected before reception began.

**R.7.2.** Poor line conditions were detected during reception.

**R.7.4.** The transmitting unit had a document feeder problem or disconnected during transmission.

**D.0.0.** The remote machine is busy. Try the call again.

**Note:** Reception errors R.2.3 through R.7.4 can occur at the beginning of fax communication, before your unit prints the remote unit's TTI or Subscriber ID, or after several pages during the transmission of a multiple-page document. You may be able to fax the remote unit in these instances and identify the reception error you detected for the remote operator. Errors R.1.1 and R.1.2 occur before the TTI can be transmitted, and do not allow you to identify the transmitting unit.

## Clearing Paper Jams

When a document is jammed:

1. Push and hold back the document knob.

2. Gently pull the document toward you from the document feeder.

When the recording paper is jammed:

1. Push the printer knob and open the cover.

2. Pull out all jammed and wrinkled paper.

3. Close the top firmly, pressing both sides of the cover.

4. Tear off the excess recording paper.

When the unit won't scan a document:

1. Push and hold back the document knob.

2. Insert the document into the document feeder. Release the document knob.

3. Press **Start/Copy**.

# Specifications

**Type**: High-speed portable desktop facsimile transceiver

**Compatibility:** CCITT Group 3 and Group 2

**Telephone Line Required**: Public switched telephone network or the equivalent

**Modem**: 9600 bps with automatic fallback to 7200, 4800 and 2400 bps per CCITT V.29 and V.27 ter.

**Resolution:**

| | |
|---|---|
| Fine | 203H x 196V lpi |
| Norm | 203H x 98V lpi |
| G2 | 203H x 98V lpi |

**Original Document Size**

| | |
|---|---|
| Width: | 3.94 - 10.1 inches (100 - 256mm) |
| Length: | 3.15 - 15.8 inches (80 - 400mm) |

**Effective Scanning Width:** 10 inches (254mm)

**Effective Printing Width:** 8.5 inches (216mm)

**Scanning Method:** Solid-state CCD

**Recording Paper Size:** 8.5 inches x 98 feet (216mm x 30m)

**Power Supply:** 115 VAC ± 10%, 50-60 Hz, single phase

**Approximate Power Consumption**: 100 watts max.

**Dimensions:** 11.9(W) x 8.5(D) x 3.4(H) inches (302x215x85mm)

**Weight:** 115 VAC version: 9.2 pounds (4.2kg)

# Glossary

The terms and words below are frequently used when discussing facsimile machines and facsimile communication.

Your unit may not have every feature or capability listed in this glossary. Some features listed, like broadcasting, are found on Murata's highest-volume office facsimile machines. Other terms, like leased line and analog facsimile, are included—even though they do not apply to your Murata facsimile machine—because you may encounter them during facsimile communication or operation.

Use these definitions for your reference only. Specifications and technical information are subject to change, so call Murata's Customer Support Center at 1-800-825-5329 if you have any questions.

**A4, B4** — Standard stationary sizes defined by the International Standards Organization and representing the most common dimensions for correspondence stationary in North America and Japan, respectively. A4 paper is 8.5 x 11 inches. B4 is 10.1 x 15.8 inches.

**ACOUSTIC COUPLER** — A device used to convert electrical signals, like those coming from a facsimile machine, into audio signals capable of being transmitted over telephone lines. The acoustic coupler connects directly to the handset of an ordinary telephone and can be used when a telephone jack connection is not available or possible.

**ACTIVITY JOURNAL** — Murata facsimile machines provide an activity journal to help track and account for transmissions. Made up of individual transmit and receive journals, the activity journal includes information on the transmission mode, number of pages sent, result and any errors encountered.

**ANALOG** — The description of information through a variable signal or physical form. The human voice, with its variety of sounds and emphases, is an analog signal.

**ANALOG FACSIMILE** — An analog facsimile machine scans each picture element of black or white and converts it into an electrical signal. These signals in combination produce a continuous electrical waveform that is transmitted to a receiving facsimile machine through a modulating modem. Analog facsimile machines are characterized by extremely slow document transmission, 3 minutes per page or more, and are more susceptible to the signal "noise" encountered on standard telephone lines. Compare Digital Facsimile.

**ASCII** — Abbreviation for American Standard Code for Information Interchange, and pronounced asky. A code established by the American National Standards Institute for compatibility in data transmission.

**ASYNCHRONOUS TRANSMISSION** — Data transmission in which the time intervals between characters is of unequal length. Compare Bisynchronous Transmission, Synchronous Transmission.

**AUTOMATIC REDUCTION** — Murata facsimile machines will automatically reduce documents being transmitted to accommodate the effective printing width of the receiving unit. For example, a facsimile machine with a 10-inch scanning width can send an image 10 inches wide to a unit with an 8.5-inch print width. The image will be reduced in size when printed at the receiving unit.

**BISYNCHRONOUS TRANSMISSION** — An IBM-standard communications method that provides synchronized transmission of digital data. See Digital, compare Asynchronous Transmission, Synchronous Transmission.

**BIT** — The smallest unit of information in a computer. Contraction of "binary digit". Some Murata facsimile machines, which are themselves computers used for telecommunications, allow you to change bits of information to provide or cancel optional features. Check your operating instructions.

**BROADCAST** — Some Murata high-volume units offer transmission to a hundred or more pre-programmed locations in a call group. See Call Group. Compare Relay Broadcast.

**BPS** — Bits per second. Used to express the speed of transmission between two units. Because facsimile transmission treats a document as a graphic image rather than as a series of alphabetic and numeric characters, bps does not correspond to the number of characters transmitted per second. Murata facsimile machines transmit and receive at 9600 bps, with automatic fallback to 7200, 4800 and 2400 bps if required by poor telephone line conditions. Bps is interchangeable with the term "baud".

**BYTE** — A group of digital elements, usually sent as eight bits to the byte.

**CALL GROUP** — A pre-programmed group of facsimile locations, used by Murata units with internal memory for broadcasting and relay broadcasting.

**CALL-WAITING SERVICE** — Many telephone systems offer an optional call-waiting service that identifies when another party is calling while you are on the phone. Call-waiting signals may cause interruption of facsimile transmission or reception.

**CCD** — Charged coupled device arrays. The scanning mechanism used in Murata facsimile machines to convert a document image into digital facsimile information. Fluorescent light is reflected off your document onto the CCD array as the document is advanced through the document feeder.

**CCITT** — Abbreviation for the International Telegraph and Telephone Consultative Committee, a telecommunications forum for member countries of the United Nations. CCITT Study Group XIV established the primary groups for facsimile equipment, covering communication protocol and transmission. Murata's Group 3 facsimile machines offer the one-minute-per-page transmissions possible when communicating with other Group 3 units. Some Murata facsimile machines offer compatibility with older, slower Group 2 or Group 1 systems, as well.

**CCITT V.24 and V.27 ter.** — A standard set of communication procedures allowing facsimile machines to talk to all other units adhering to those standards.

**CLOSED NETWORK** — A network of facsimile machines that limit access to the network to other units having the same pass code. Some Murata facsimile machines offer pass code protection and can participate in a closed network.

**COMMUNICATIONS PROTOCOL** — Standards governing the elements of data communication. In facsimile communication, for example, CCITT V.24 and V.27 ter. are protocols which assure compatibility among Group 3 units. See Compatibility, CCITT V.24 and V.27 ter.

**COMPATIBILITY** — The condition in which separate units, including those made by different manufacturers, can operate together properly. Compatible facsimile machines, for example, can transmit and receive documents from one another. Murata facsimile machines offer CCITT Group 3 compatibility, the modern standard for worldwide communication. Many Murata units offer Group 2 and Group 1 compatibility, as well. See CCITT.

**COPY MODE** — Murata facsimile machines can serve as convenience copiers. Many Murata units can copy in two or more levels of resolution. See Normal, Fine, Superfine and Grayscale.

**DATA BASE POLLING** — See Polling.

**DATA COMPRESSION** — Used in digital facsimile machines to speed transmission. See Digital Facsimile, MH, MR and MSE, SMSE.

**DELAYED DIALING/DELAYED TRANSMISSION** — Some Murata facsimile machines offer one or more delayed commands, allowing you to load documents into your facsimile machine during work hours for transmission after hours.

**DIGITAL** — The description of some particular information using a series of two characters or signals. Morse code, for example, represents each character of the alphabet with a unique series of dashes and dots. Digital facsimile machines convert the graphic image of your document into a series of zeros and ones. See Digital Facsimile.

**DIGITAL FACSIMILE** — Unlike analog systems that scan every portion of a document, digital facsimile machines survey a document's picture content. Digital facsimile machines scan a line and convert the information into a binary code of zeros and ones. The facsimile machine can take this information and compress it, providing transmission speeds of less than one minute per page. Modern Murata units offer the standard Group 3 data compression method for rapid transmissions to any other Group 3 fax, and many Murata units offer proprietary transmissions speeds for still faster transmissions between Murata-manufactured units.

**DIP SWITCHES** — Dual in-line package switch: A two-position/on-off switch. Many Murata facsimile machines include dip switches to control optional settings or features. "Software dip switches" are on-off commands available in the program mode of some Murata units. Although they perform much the same function as true dip switches, software settings differ in that they may be changed by a power failure or a clear-memory command.

**DTMF** — For dual-tone multiple-frequency. The dialing signals generated by push-button or "touch-tone" telephone systems. DTMF telephone service is an option in most North American telephone systems. See Touch-Tone.

**EBCDIC** — For Extended Binary Coded Decimal Interchange Code. A character code used in IBM equipment and allowing 256 bit patterns.

**EFFECTIVE PRINTING WIDTH** — The widest image which can be printed out on your facsimile machine. The effective width can be influenced by the CCITT group of the unit transmitting to your facsimile machine. Compare with Effective Scanning Width, Original Document Size.

**EFFECTIVE SCANNING WIDTH** — The maximum width the scanner in your facsimile machine can scan during document transmission or reception. Compare with Effective Printing Width, Original Document Size.

**FACSIMILE** — Although business facsimile use has grown rapidly since the advent of fast, powerful Group 3 units, facsimile telecommunication itself has a surprisingly long history. The first facsimile system was introduced in 1842, and wide-spread service was underway before 1910. In the United States, fax units attached to home radios provided facsimile newspaper service in several cities through the late 1940s. Facsimile's growing success for news transmission was halted, however, by the development of commercial television.

**FACSIMILE INTERFACE PROCESSOR** — An upgrade that allows some Murata facsimile machines to operate with asynchronous ASCII host devices, coupling the power of mainframe computers with the scanning and transmission capabilities of fax machines for high-volume communication, graphics input and rapid computer-to-fax transmissions.

**FALLBACK** — Group 3 facsimile machines operate at the highest transmission speed possible on a given telephone line. Murata systems offer automatic fallback, so if line quality drops during transmission your facsimile machine will reduce speed to the fastest possible level. See Bps.

**FINE RESOLUTION** — 203H x 196V lpi. Also shown as G3F on some units. See Resolution.

**FIP** — See Facsimile Interface Processor.

# Glossary

**FM** — Or North American FM. Used to identify CCITT Group 1.

**GRAYSCALE** — A method of scanning and transmitting photographs. Murata facsimile machines with grayscale abilities interpret photographs in levels of gray between white and black. The transmitting facsimile machine must have grayscale ability to accurately send a photographic image, but the receiving machine does not need it to print the image. See Resolution.

**G2** — Used on some Murata units to identify Group 2 resolution or to identify when a document is being transmitted to a Group 2 facsimile machine.

**G3, G3F** — Used on some Murata facsimile machines to designate normal and fine resolution, respectively. See Resolution.

**GROUPS 1, 2 AND 3** — See CCITT.

**HANDSHAKING** — Used by telecommunications and computer equipment to "introduce" two systems. Facsimiles use a handshaking protocol, for example, to identify the CCITT group of each unit and to begin fax communication.

**HZ** — Or hertz. A measure of frequency equal to one cycle per second. Used in the power requirement specifications for your facsimile machine, it identifies the type of AC power your unit is designed to operate on. Most standard electrical outlets in North America provide approximately 115 volts AC at about 60 Hz. Call your electrician or electrical company if you are unsure.

**INTERNAL MEMORY** — Some of Murata's most advanced high-volume business facsimile machines include internal memory. This memory can be used to store documents for transmission or to store incoming messages in SecureMail boxes. See Data Base Polling, SecureMail.

**LCD** — Liquid crystal display. Used on some Murata facsimile machines for status displays.

**LED** — Light emitting diode. Used on some Murata facsimile machines for displays and status lamps.

**LPI** — Lines per inch. See Resolution.

**LOAD NUMBER** — A number assigned to telecommunications equipment intended for use in Canada. Load numbers are assigned to prevent overloading on a telephone circuit. Read the Canadian Department of Communications information in your operating instructions or call your local telecommunications company for more information.

**LOCATION ID** — An optional identifier used on Murata facsimile machines equipped with an autodialer. The Location ID allows you to identify by name the telephone numbers programmed in your autodialer.

**MURATA IMAGE INTERFACE** — A hardware and software package that allows some Murata facsimile machines to operate with IBM PC and compatible personal computers, providing high-volume communication, graphics input ability and computer-to-facsimile transmissions.

**MH** — Modified Huffman, the CCITT Group 3 standard data compression method. A feature of all Murata facsimile machines, MH assures the one-page-per-minute transmissions possible when communicating with other Group 3 units, regardless of manufacturer. See MSE, SMSE.

**MII** — See Murata Image Interface.

**MR** — Modified Read, the optional CCITT Group 3 data compression method. Used in some Murata facsimile machines and in Murata's Facsimile Interface Processor and Murata Image Interface.

**MODEM** — Originally an abbreviation of modulator-demodulator, but now a common word in facsimile and computer use. A modem is a digital device that convents digital data (like the information coming from your facsimile machine) into an analog signal for transmission over analog lines (like your ordinary telephone line). A modem is included in your facsimile machine and allows your fax to be connected directly to your PSTN telephone line. See Analog, Bps, Digital, PSTN.

**MSE, SMSE** — Murata's proprietary data compression methods that allow transmissions faster than with MH whenever you are communicating with a Murata-manufactured unit. MSE and SMSE are features on many Murata facsimile machines.

**NORMAL RESOLUTION** — Or shown as Norm. 203H x 98V lpi. The standard resolution mode for Group 1 and 2 units. See Resolution.

**ORIGINAL DOCUMENT SIZE** — Used when defining the largest (or smallest) document which can be fed safely through a facsimile machine. Compare Effective Scanning Width, Effective Printing Width. Check your unit's operating instructions for additional information.

**PASS CODE** — A feature available on some Murata facsimile machines. The four-digit pass code limits access to information set to be polled to units with the same pass code. The code also allows several Murata systems to create a closed network, limiting access to the network to systems with the same code.

**PBX** — Private branch exchange. Often referred to as CBX, PABX, SP-PBX and others. Privately owned telephone equipment serving a particular building, business or

area. Many PBX systems use digital transmission lines which, unlike more common PSTN lines, are not compatible with facsimile machine use. Do not connect your Murata unit to a PBX without first checking with the system manufacturer or service representative.

**POLLING** — Polling allows you to set a document in your facsimile machine for automatic transmission to a remote unit when that unit calls, or to call a remote unit and receive a document set to be polled. Polling is convenient whenever a central unit must receive information from one or several remote units. By polling the remote units, the central facility bears all telephone charges and prevents several remote units from calling at the same time. In data base polling, remote units can call and request specific files of information stored inside a Murata unit with internal memory. See Internal Memory, Pass Code.

**PPS** — Pulses per second. Used to identify rotary dialing requirements. See Rotary, Tone Dialing.

**PRIMARY MODE** — The resolution used by your unit during transmission. Murata units are initially set with Norm as the primary resolution mode. You can select other transmission modes manually, or reset the primary resolution mode to the level your office needs most often. Check your operating instructions.

**PRIVATE LINE** — Or Leased Line. A service offered by many telephone systems, providing an exclusive phone circuit between two geographic points. Your Murata unit does not require a private line. See PSTN.

**PROGRAM MODES** — Individual commands within your unit that instruct your unit to perform a specific task.

**PSTN** — Public switched telephone network. PSTNs are the most common type of telephone lines and service in use, and are in contrast to private or leased lines. Murata units provide fast, reliable data transmission over PSTN telephone lines. You do not need a special line or a dedicated telephone line for your Murata unit.

**RELAY BROADCASTING** — Some Murata facsimile machines can store a scanned image in internal memory, transmit the image to all units in its call group, and instruct those remote units to retransmit the image to each facsimile machine in the remote units' call groups. This relay broadcasting feature speeds extremely high-volume facsimile communication and allows a single command to initiate document transmission to more than 10,000 preprogrammed facsimile locations.

**RESERVED** — Murata units with automatic redial are reserved while waiting to redial a busy number or while waiting to carry out delayed commands, like polling.

**RESOLUTION** — The resolution of documents transmitted or copied by facsimile machines is measured by the number of horizontal (H) and vertical (V) lines per inch the unit can print. Your Murata unit may offer one or more of these resolution levels:

| | |
|---|---|
| FM | 203H x 98V lpi |
| G2 | 203H x 98V lpi |
| Norm | 203H x 98V lpi |
| Fine | 203H x 196V lpi |
| Superfine | 203H x 392V lpi |

**RCR** — A receive confirmation report is your assurance that the document you transmitted was received. The RCR prints out after your transmission. It identifies the receiving unit and records the date, time, transmission mode, number of pages sent and result. The RCR is an exclusive feature of Murata facsimile machines and is available only when transmitting to another Murata-manufactured unit.

**RJ11C** — A standard plug-in telephone jack. The RJ11C is commonly used in North America for telephone line connections, but call your telephone company if you are unsure of the type of jacks in your office.

**ROTARY, TONE DIALING** — Most telephone systems in the United States offer rotary and touch-tone dialing options. Murata units are compatible with both rotary and tone dialing signal requirements. Check your operating instructions for information on setting your unit for rotary or touch-tone dialing.

**SECUREMAIL** — A feature on Murata's high-volume office facsimile machines. SecureMail allows you to send a document to a memory "mail box" in a Murata unit with internal storage. The transmission is protected at the receiving end by a pass code created by the mail box holder. The SecureMail transmission can be printed out by the intended recipient up to 72 hours after it was transmitted.

**SUBSCRIBER ID** — The Subscriber ID is your unit's telephone number. Part of the TTI, the Subscriber ID is printed at the top of each page received from your unit.

**TOUCH-TONE** — A push-button telephone or the characteristic tones made by such a phone. Also a registered trademark of Western Electric for a brand of telephones. See Rotary, Tone Dialing.

**TRANSMIT CONFIRMATION REPORT** — Like the RCR, a TCR provides assurance that the document you set for transmission was sent. Printed after transmission, the TCR identifies the telephone number to which you instructed the document to be sent. A feature on many Murata units.

**TRANSMIT TERMINAL IDENTIFIER** — Your programmable TTI is sent automatically with every page you send, and appears at the top of each page printed by the receiving unit. The TTI can be your personal or business name or any other identifier.

# Limited Warranty

This warranty is made by Murata Business Systems, Inc. ("Murata"). This warranty is valid only on Murata products purchased and used in the United States of America. This warranty applies to the product only while owned and used by the original purchaser (hereinafter referred to as the "Customer"). If ownership of the product is transferred, this warranty terminates. This warranty does not apply to any product in use for rental purposes.

This Murata product is warranted against defects in material and workmanship for ninety (90) days commencing the date of original Customer purchase. If the product is defective in material and/or workmanship (normal wear and tear excepted) during the warranty period, Murata or its authorized representative will, during Murata's established service availability hours, make necessary adjustments and repairs, including at Murata's option installation of replacement parts. Murata's service availability hours are 8:30 a.m. to 5 p.m. Monday through Friday, excluding Murata-recognized holidays. Murata will complete the necessary adjustments and repairs within a reasonable time period, as dictated by the nature of the problem and by Murata's service schedule. Replacement parts may have been used and/or reconditioned. Parts that have been replaced will remain the property of Murata. This warranty is subject to the OBLIGATIONS and EXCLUSIONS set forth.

OBLIGATIONS

1. This warranty will be honored only on presentation of the original dated authorized Murata bill of sale or Murata dealer bill of sale or sales slip to an authorized Murata service representative or service center. For the name of your nearest authorized Murata service center, contact Murata Business Systems, Inc., toll-free telephone number 1-800-825-5329.

2. During the warranty period, the Customer must notify Murata by telephone of any defective product material and/or workmanship.

3. Transportation (including prepayment of freight and insurance charges) of the product to and from an authorized Murata service center, designated by Murata, is the responsibility of the Customer.

4. If Murata provides maintenance or responds to a call which is outside the scope of this warranty, such maintenance shall be billed to the Customer at Murata's then current rates for maintenance and parts and shall be due and payable in full upon receipt of invoice.

EXCLUSIONS

1. This warranty shall not cover a product with missing or altered original identification marks.

2. This warranty applies only to products that the purchaser has properly installed, adjusted and operated in accordance with instructions set forth in or provided with product literature. This warranty does not apply to any product which has been subjected to tampering, alteration, misuse, abuse, neglect, improper installation or transportation damage. Nor does it apply to costs for any service requested for demonstration or to confirm proper operation of this product.

3. This warranty shall not apply to adjustments, repairs or replacements necessitated by any cause beyond the control of Murata (whether foreseeable or not) including, but not limited to, any malfunction, defects or failure caused by or resulting from any of the following: improper unpacking or installation, unauthorized service or parts, or improper maintenance or cleaning, modification or repair by the Customer, accident (including without limitation, unavoidable accidents), fire, flood or other acts of God, improper telephone or electrical power or surges thereof, interconnection with or use of non-compatible equipment or supplies (including paper), or placement of the product in an area which does not conform to Murata space, electrical and/or environmental requirements.

4. Murata will not be required to make adjustments, repairs or replacements if the product is installed or used at a location deemed by Murata to be hazardous to health or safety, or if Murata is not provided with free and reasonable access to the product and a telephone during service availability hours, or if the product location is not accessible by an authorized Murata service vehicle.

EXCEPT AS EXPRESSLY SET FORTH ABOVE, AND EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, MURATA MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED (INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTY ARISING FROM COURSE OF DEALING OR USAGE OF TRADE), AND MURATA EXPRESSLY DISCLAIMS ALL WARRANTIES NOT STATED HEREIN. IN THE EVENT THE PRODUCT IS NOT FREE FROM DEFECTS AS WARRANTED ABOVE, THE CUSTOMER'S SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT AS PROVIDED ABOVE. UNDER NO CIRCUMSTANCES SHALL MURATA BE LIABLE TO THE CUSTOMER, OR TO ANY USER, FOR ANY DAMAGES, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSES, LOST PROFITS, LOST SAVINGS OR ANY OTHER DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE MURATA PRODUCT, EVEN IF MURATA OR ITS REPRESENTATIVES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some States do not allow the exclusion or limitation of incidental or consequential damages, and some States do not allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.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