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Introduction

Getting Started

This booklet is designed to be an installation and instruction guide for MeasurLink® SPC software and the Mitutoyo U-WAVE wireless system. Most of the instructions for installing the U-WAVE wireless system are in the U-WAVE manual. This Users Guide includes the instructions that are used for MeasurLink® SPC software and the U-WAVE wireless gage multiplexer system.

In addition, there will be a brief mention of the MeasurLink® PDA Navi program and how it can enhance the U-WAVE wireless system’s use with MeasurLink® SPC software.
# Product Overview

**Using MeasurLink® with:**

U-WAVE is... Wireless data transmission  
PDA Navi is... Wireless monitoring of trends and statistics  
Together... Complete Mobility for collecting & monitoring

## U-WAVE – MeasurLink Real-Time - PDA Navi System

Mitutoyo’s U-WAVE wireless data collection hardware gives the inspector the capability of remote data acquisition. The addition of MeasurLink® PDA Navi allows the inspector to view trends and statistics for multiple MeasurLink stations while on the move.
MeasurLink Collecting Data from U-WAVE

- Inspection Wizard Setup (Using Real-Time (PLUS))

When it comes time to connect to the U-WAVE, the U-WAVEPAK program provides the necessary connection information.

➢ To Use the Inspection Wizard in Real-Time (PLUS)

1. In Real Time / Real Time PLUS Click the Run menu and select Inspection Wizard. The MeasurLink Quick Start tutorials show how to setup parts in the Inspection Wizard and will not be repeated here.
2. U-WAVE uses the same mapping techniques as any other RS232 device. Select the port that matches the virtual COM Port created in U-WAVEPAK.

3. The channel is the channel number selected for the gage.

4. Select the U-WAVE device.
Retake Last Measurement

To use U-WAVE-T Device Retake function

1. Press and hold the data button for 5 seconds. The light will flash red. Then release the button to send a remove data command.

Summary of data transmission:
- Press and release – Send data
- Press and hold 5 seconds – Retake

Only the most recent data value received by MeasurLink can be removed when the Inspection Routine Option Collect Method = By Part or By Feature.

When the Inspection Routine Option Collect Method = Random more than one data value can be removed. Each time the data button is held for the 5 seconds, the most recent data value for the selected feature is removed.

Note: If purchased, the PDA Navi device offers additional options for removing data using the U-WAVE-T device remove data command.
To Assign U-WAVE COM Port and Channels

1. Open Support Center, Workstation Center. Select the Com Port created by U-WAVEPAK.
2. Select the U-WAVE device and Click add so the top box becomes COM3 – U-WAVE in this example.
3. Click Add
4. Next
5. Select Channel that matches the channel number assigned to the gage in U-WAVEPAK.

6. Pick the gage that matches the gage sending the data. (Note: MeasurLink will not restrict your use of any gage, but a good reminder here prevents improper assignment of the channels in the mapping step.)

7. Click Add

8. When all channels are assigned, click Exit.
◆ Variable Inspection Routine – Mapping

➢ To Map U-WAVE Gage

The technique is the same as for any other direct gage input into MeasurLink.

<table>
<thead>
<tr>
<th>Feature No</th>
<th>Part ID</th>
<th>Feature ID</th>
<th>Revision</th>
<th>Output to Chart</th>
<th>Output to Database</th>
</tr>
</thead>
<tbody>
<tr>
<td>F214</td>
<td>Part XYZ</td>
<td>Thickness</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>F213</td>
<td>Part XYZ</td>
<td>Outside Diameter</td>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>F212</td>
<td>Part XYZ</td>
<td>Inside Diameter</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
System Requirements

◆ Desktop PC / MeasurLink Client

Requirements for the MeasurLink Client can vary slightly depending on the PDA NAVI system architecture used. Architecture diagrams are provided in the Appendix section of this manual.

- MeasurLink Real-Time or Real-Time PLUS version 6.1 or higher.
- Microsoft Windows XP service pack 2 or higher

Support

◆ Direct U.S. Support

Call 888 - Mitutoyo
Installation

MeasurLink® Real-Time / Real-Time PLUS

MeasurLink Real-Time / Real-Time PLUS 6.1 should be installed on the computer where you are adding the Mitutoyo U-WAVE wireless gage multiplexer. If not, follow the instructions that come with the MeasurLink Real-Time (PLUS) programs and perform a regular installation. No special requirements are needed for the Mitutoyo U-WAVE gage multiplexer.

If using an earlier version of the MeasurLink Real-Time (PLUS) programs you must go to the MeasurLink Web site

www.measurlink.com

Support > Down loads > register for the user ID and password > then in the down loads section go to the Service Packs folder. Down load (save) the MeasurLink 6.1.xx program, do not try and run it across the internet. After the down load is finished, then run the update program at the MeasurLink computer.
◆ U-WAVEPAK Installation on MeasurLink Real-Time

➢ To Install U-WAVEPAK

1. Insert the U-WAVEPAK CD into the CD drive of the computer.
   If Windows Explorer does not open to the CD disk, use Windows Explorer to get to the C drive > Setup folder

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drivers</td>
<td></td>
<td>File Folder</td>
</tr>
<tr>
<td>MFC</td>
<td></td>
<td>File Folder</td>
</tr>
<tr>
<td>PDF Manual</td>
<td></td>
<td>File Folder</td>
</tr>
<tr>
<td>Setup</td>
<td></td>
<td>File Folder</td>
</tr>
</tbody>
</table>
2. Double Click **Setup.exe**

3. Select English and click **OK**

4. Click on **Next**
5. Read the License Agreement, and if you agree, select **I accept the agreement** and select **Next**. (Otherwise cancel and exit the setup.)

![License Agreement dialog box](image1)

6. Click **Next** to accept the default location for the program installation or Browse for another location.

![Select Destination Location dialog box](image2)
7. Select a name for the U-WAVE Start Menu Folder.

8. Add a check to create a U-WAVE icon on the desktop.
9. Review the install parameters you selected and click Install.

![Image of Installation Parameters]

10. Progress bar during the install.

![Image of Installation Progress Bar]
11. Click **Finish**. The installation of the software is complete.

![Image of Finish button]

12. Leave the CD in the CD drive.

**U-WAVE Wireless Receiver**

➢ **To Install U-WAVE® Wireless Receiver**

1. Plug the Wireless Receiver into a USB port on the computer.

2. Select **No, not this time** & click **Next**.

![Image of hardware wizard]
3. Select **Install from a list or specific location (Advanced)** & click **Next**.

4. **Browse** out to the U-WAVE CD to the Drivers folder, select **COM_U-WAVE**, then **OK** and **Next**.
5. Select \text{Continue Anyway}.

The software you are installing for this hardware:

Mitutoyo U-WAVE

has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.

---

Found New Hardware Wizard

Please wait while the wizard installs the software...

Mitutoyo U-WAVE

\[ \text{libwrs.dll} \]

To \text{C:\WINDOWS\system32}

\[ \text{--------------------} \]
6. Driver software is being installed. Select Finish.

7. NOTE: This New Hardware message will appear 3 times, once for the U-WAVE device, once for the virtual com port software, and once to create the U-WAVE com port assignment.

Only if New Hardware did not start automatically:
1. Click Start > Control Panel > Add Hardware and click Next.
2. Select **Search for and install the hardware automatically (Recommended)** and click **Next**. Otherwise refer to the U-WAVE manual.
U-WAVE® Organization

- Location of factory assigned IDs used in setup
- List of gages by Com port number and channel number used by MeasurLink.
- U-WAVE-R wireless signals and gages sending data
Setup for U-WAVE® with MeasurLink®

MeasurLink setup requires some additional steps after installing the U-WAVE software and drivers.

◆ U-WAVEPAK Setup

➢ To Setup U-WAVEPAK

1. Start U-WAVEPAK program using the icon on the desktop if requested (or use Start > All Programs > U-WAVEpak).

2. The first time this program is started, the following screen will be displayed:
   • Add check to Use the driver for Virtual Com Port
   • Leave the check for When starting, this dialog is displayed
     (later removal ok) & click [OK].

3. Click [Setup Start].

4. Complete the Virtual Com Port settings.
NOTE: Complete the Virtual Com Port settings in order shown below.

1. During the installation, Mitutoyo U-WAVE was assigned a com port, select the Mitutoyo U-WAVE (COM_) line.
2. Set the Com port to match the one the installer selected.
3. Click the Add button – The com port parameters are always set to Baud 57600, 0 (no parity), 8 data bits, 1 stop bit. To view the wireless data using the Windows program Hyper Terminal, these settings are required. MeasurLink 6.1 has a built-in device set for these parameters.
4. Click OK.

This process will generally only be required once.
**U-WAVE-R (Receiver) Setup**

- **To Setup U-WAVE-R (Receiver)**

1. If the U-WAVE-R box at the top of this dialog is empty, Click **Edit** in the top right corner to add the **U-WAVE-R** device.

The factory assigned **U-WAVE-R ID** is the Device ID on the U-WAVE-R setting information dialog.
2. The Device ID must match the ID on the **U-WAVE-R** device. Accept all other default values and Click **OK**.

- **Factory assigned U-WAVE-R ID** (Shown in prior picture)
- **DO NOT SELECT INITIALIZE BUTTON**
U-WAVE – T (Transmitter) Setup

To Setup U-WAVE-T (Transmitter)

1. Click the [ADD] button near the top right.

2. In the U-WAVE-T setting Information – Add dialog, type in the Device ID found on the U-WAVE-T device. Change the Channel number as needed, but leave all other defaults.

3. Click [OK] & then [Yes] to confirm processing.
4. The r = registered with the U-WAVE-T device, but the gage is not connected for transmitting data.
5. Connect a gage and turn on. Push the data button **on the U-WAVE-T** (transmitter). There should be two beeps heard and a green light visible two times. Check column S for the “r” (for registered) to change to “c” for connected.

6. Only if the gage did not connect as expected, perform a scan. Press and hold for 10 seconds the data button on the U-WAVE-T. There should be a fast flashing red light followed by a slower flashing red light. Check column S for “c” for connected to be displayed.

7. If there are problems, see the U-WAVE manual about resetting both the U-WAVE-R and the U-WAVE-T devices.

8. Add additional gages as needed. When using two or more U-WAVE-R devices (Receivers) on the same computer, the Group ID is used to automatically connect the U-WAVE-T, wireless transmitters with the U-WAVE-R.
9. **IMPORTANT**: Write down the Com Port assigned to the **U-WAVE-R** device and the channel number (in the 4th column) assigned to the **U-WAVE-T** device. These will be used during MeasurLink Setup.

10. Once all the gages have been assigned, exit from the setup and exit from the U-WAVEPak program.

**IMPORTANT**: Exit is required from both setup and U-WAVEPak to allow MeasurLink to capture data directly from the wireless devices.