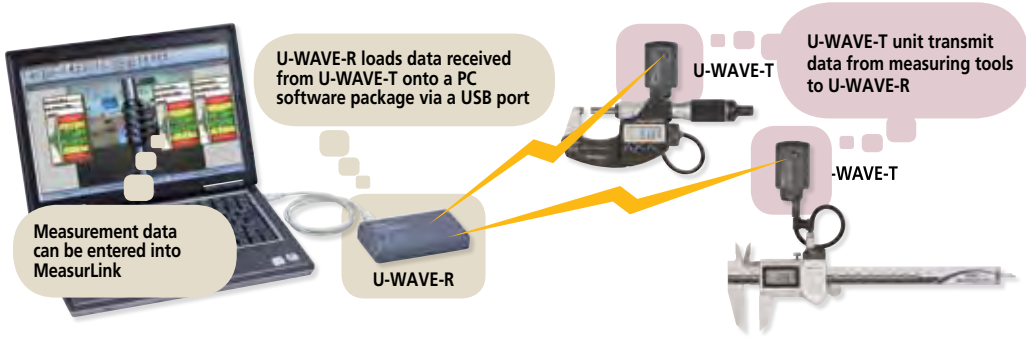
U-WAVE

Measurement Data Wireless Communication System

MeasurLink® ENABLED
Data Management Software by Mitutoyo



The **U-WAVE** system enables easy wireless data communication from a measuring tool to a PC using the Digimatic protocol. Measurement efficiency is improved by eliminating the long and cumbersome data cables. The user friendly interface allows data to be loaded into any software product that accepts keyboard input, such as Excel* or Notepad.

1 U-WAVE-R · Registered Design (Japan)

Major Specifications of U-WAVE-R

Model	**U-WAVE-R**
Order No.	**02AZD810D***
Power supply	USB bus power system
Number of **U-WAVE-R** units that can be connected to one PC	Up to 16
Number of **U-WAVE-T** units that can be connected	Up to 100
External dimensions	5.51″ x 3.15″ x 1.24″ (140 x 80 x 31.6mm)
Mass	.29 lbs (130g)

*Detailed information on conformity standards of wireless communication specification is given below.

2 U-WAVE-T · Registered Design (Japan)

U-WAVE-T sends measurement data to **U-WAVE-R**.

Actual size

Standard accessory: driver

Major specifications of U-WAVE-T

Model	**U-WAVE-T** (IP67 model)	**U-WAVE-T** (Buzzer)
Order No.	**02AZD730D***	**02AZD880D***
Protection Rating	IP67	–
Data reception indication	LEDs	LEDs and Buzzer
Power supply	Lithium battery CR2032✳1	
Battery life	Approx. 400,000 transmissions	
External dimensions	1.73″ x 1.17″ x .73″ (44 x 29.6 x 18.5 mm)	
Mass	.05 lbs (23g)	

*Detailed information on conformity standards of wireless communication specification is given below.

Installation Bracket Kit

Order No. 02AZE200

(optional)

500 Series Caliper

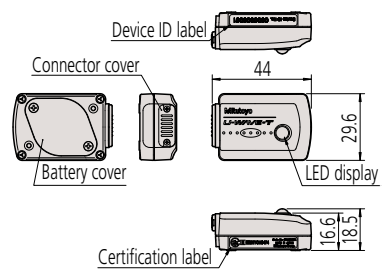
293 Series Micrometer

543 Series Indicator

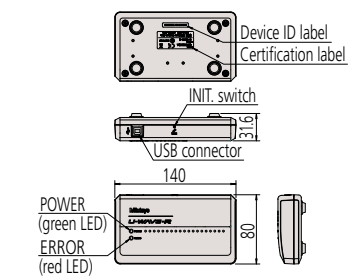
Dimensions of Each Part

Unit: mm

U-WAVE-T



U-WAVE-R



Specifications of wireless communication

Conformity standards	·European conformity standards* EN 50371:2002 EN 300 440-1 V1.3.1 EN 300 440-2 V1.1.2 EN 301 489-01 V1.6.1 EN 301 489-03 V1.4.1 ·U.S.A. conformity standards 47 CFR Part 15.247:(Subpart :C) 47 CFR Part 15,(Subpart :B) ·Canada conformity standards RSS-210 (Issue 7) RSS-Gen (Issue 2) ICES 003 (Issue 4)

Wireless standards	Conform to IEEE802.15.4
Wireless communication distance	Approx. 60ft (within visible range)
Wireless communication speed	250 kbps
Transmission output	1 mW (0 dBm) or less
Modulation method	DS-SS (direct sequence spread spectrum) Resistant to interfering signal or noise.
Communication frequency	2.4 GHz band (ISM band: universal frequency)
Used band	15 channels (2.405 to 2.475GHz at intervals of 5MHz) The noise search function can avoid interference with other communication devices.

Note: In accordance with wireless regulations the use of this product is permitted in Japan, Europe (a total of 32 countries including 27 EU members, 4 EFTA members and Turkey), U.S.A. and Canada. This product must not be used in other countries or areas.
· This product is not compatible with the conventional Mu-WAVE, for which communication specifications are different.
* Japan conformity standards: ARIB STD-T66

U-WAVE

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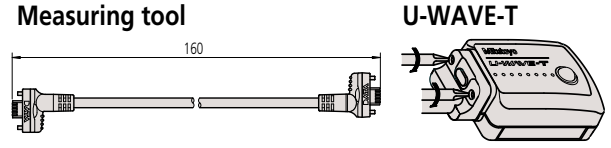
Measurement Data Wireless Communication System

List of U-WAVE-T Connecting Cables

Select one from cables **A** to **G**, referring to the part number of connecting cable for wired connection in your measuring tool catalog or manual. If you are unsure which cable is appropriate, check the cable connectors, the shapes of terminal on the measuring tool side, or the codes of compatible measuring tool for cables **A** to **G** below.
It is not possible to connect to EF and EH counters.

From seven types of cables (**A** to **G**), select one compatible with your measuring tool.



When connected with U-WAVE-T Select one of the USB input tool direct from table below to fit the connector (A to G) and also select either standard type (fig.1) or foot switch type (fig.2) dependent on usage.
Note: Not connectable to these Mitutoyo products: Litematic VL, Linear Gage Counter EF/EH, Surftest SJ-500.


Fig.1 Standard type connecting cable

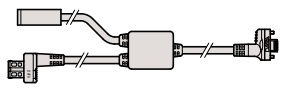
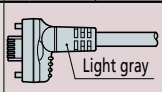
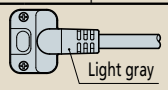
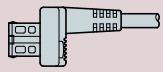
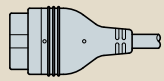
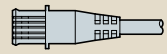
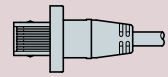
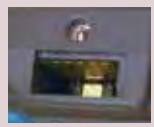


Fig.2 Connecting cable for foot switch

Reference Order No. of connecting cable		A	B	C	D	E	F	G
	1m	05CZA624	05CZA662	959149	936937	937387	905338	21EAA194
	2m	05CZA625	05CZA663	959150	965014	965013	905409	21EAA190

		A	B	C	D	E	F	G
For standard	Order No.	02AZD790A	02AZD790B	02AZD790C	02AZD790D	02AZD790E	02AZD790F	02AZD790G
For foot switch	Order No.	02AZE140A	02AZE140B	02AZE140C	02AZE140D	02AZE140E	02AZE140F	02AZE140G

Cable type	**A** water-proof model with output button	**B** water-proof model with output button	**C** With data-out button type	**D** 10-pin plain type	**E** 6-pin round	**F** Plain type straight	**G** Plain type straight water-proof model
Connector shape on the measuring tool side	 Light gray	 Light gray					
Socket shape on the measuring tool							
Codes of major compatible measuring tools and instruments	[Digimatic Caliper] **CD67-S_PM** **CD-PMX** **CD-PM/GM** **CDC-P_PMX** **CDN-P_PMX** **CFC-G/GL/GC/GU** [Digimatic Caliper] **NTD-PMX** [Digimatic Depth Gage] **VDS-PMX** [Digital Scale and DRO Systems] **SD-G**	[Digimatic Micrometer] **MDE-MJ** **MDC-MJ/MJT** [Digimatic Micrometer] The code suffix is -MJ. **BLM-M** **OMV-M** **OMP-M** **PDM-M** **IMP-M** **VM-M** [Digimatic Micrometer Heads] **MHN-M/MJ/MJN** [Digimatic Holtest] **HTD-R** [Digimatic Depth Gage] **DMC-M**	[Digimatic Caliper] **CD-CX/-C** **CD-S_C** **CDC-CX/C** **CDN-CX/C** [Digimatic Caliper] **NTD-CX/C** [Digimatic Depth Gage] **VDS-DCX** [Digital Scale and DRO Systems] **SD-D, SDV-D**	[Digimatic Indicator] **ID-H/F** [Linear Height] **QMH-S** [Linear Gage/Counter] **EB,EC-D** [µ-checker] **Digital µ-checker** [Laser Scan Micrometer] **LSM-9506** [Reference Gage] **HDM-C** [Coating Thickness Gage] **DGE-745/755** [Form Measurement] **SJ-201/301/401**	[Digimatic Micrometer] **MDQ-M** **MDC-M** **CLM1-QM/DK** **PDM-QM** **PMU-DM** **BD-M** [Digimatic Holtest] **HTD** [Reference Gage] **HDM-DM** [Hardness Testing Machines] **HM-100/200** **HV-100** **HR-500** **HH-411**	[Digimatic Caliper] **CD, CFC-P/-L/-C/-U** [Digimatic Height Gages] **HD-AX, HDM-AX** **HDS-H_C/-C** **HDM-A** **HDF-N** [Digimatic Indicator] **ID-C/_RB/_A/_GB** **ID-S/U** [Digimatic Depth Gage] **Digimatic model (ID-C)** [Digital Scale and DRO Systems] **SD-E, SDV-E** **SD-F, SDV-F** [Portable Hardness Testing Instruments] **HH-300**	[Digimatic Indicator] **ID-N** **ID-B**

Note on Wireless Communication Environment

Although the communication range for **U-WAVE** is approximately 60ft line-of-sight, performance may be affected by obstacles or environmental factors.

Item	Contents
Concrete wall	Communication is not possible into a room completely enclosed.
Metal partition	Communication speed may drop or communication may be interrupted.
Wireless LAN, communication device such as ZigBee Bluetooth, and microwave oven	Communication speed may drop or communication may be interrupted. Maintain the set frequency and installation distance if at all possible.
Medical instrument	Do not use this product near a medical instrument such as a laser knife or electronic scale.

Cautions

- **Safety Caution:** Do not use this device near medical equipment that might malfunction due to radio interference.
- **Caution on radio law:** This device is certified as a 2.4 GHz band wide-band low-power data communication system based on the Radio Regulations in Japan, Europe, U.S.A. and Canada. It is prohibited by law to disassemble or modify this device or peel off the certification label from it.