



DATA COLLECTION SYSTEMS



# DataSure®

## WIRELESS DATA COLLECTION

### 100% DATA COLLECTION: ERROR-FREE AND FAST

The DataSure Wireless Data Collection System allows real-time, 100% error-free data collection. From simple installations to systems covering thousands of square feet, data can be collected and analyzed much faster than with manual inspection and data entry.

With manual inspection data collection, the repetitive hand movements required to pick up tools, measure parts, put tools down, and then record results is time consuming. Furthermore, hand writing or keying in data leads to mistakes that result in scrap, excess inventory, and even rejected parts.

With DataSure, just measure and send for fast and error-free data.

DataSure also eliminates problems associated with data cables including placement, installation, safety and high cost. DataSure makes it easy to bring a precision measuring tool to the work, rather bringing the work to the tool.

DataSure is a full shop wireless solution. It works not only with Starrett tools, but also Mitutoyo, Sylvac, CDI Tools, Mahr, Tesa and other brands.



### DATA SURE® TECHNICAL OVERVIEW

- Transmission users receive confirmation at the tool
- End Node radios store up to 10 readings in the event that the main system is down or busy
- Base system handles up to 100 tools, with 25 to 40 tools in a typical installation
- Each radio's range is approximately 65 feet (20 meters). Adding Routers can increase range in 100 foot increments.
- The DataSure system features a license-free 916MHz ISM band radio and a self-configuring and self-healing network
- Data acquisition from tools can be initiated by operator or host control
- Network, tool and end node battery status are all automatically monitored and recorded on screen and stored in the system's database
- The multi-mode software feature allows one tool to be connected to a Gateway for simple installations, or up to 20 multiplexers and 100 tools for complex shop environments
- Rechargeable routers are ideal for mobile applications and large-component data collection environments such as aircraft assembly hangars, large casting foundries, and auto body stamping facilities
- Easy-to-use included software offers user configurable names for tools and groups
- DataSure's flexibility means it can output data directly to the main application screen, your SPC software, a local or networked database, and CSV file format
- IP67 rating on end nodes
- Remote client access from another PC on your LAN

Contact Starrett for the DataSure Cost Calculator, application profiles, white papers, FAQ's and more at +1 (978) 249-3551.

### DATA SURE HARDWARE

DataSure starts with superior engineering, state-of-the-art technology and rugged durability. End Nodes, Routers and Gateways are built to perform reliably in almost any environment. Sturdy construction and heavy duty materials help them withstand the rigors of everyday use under demanding conditions.

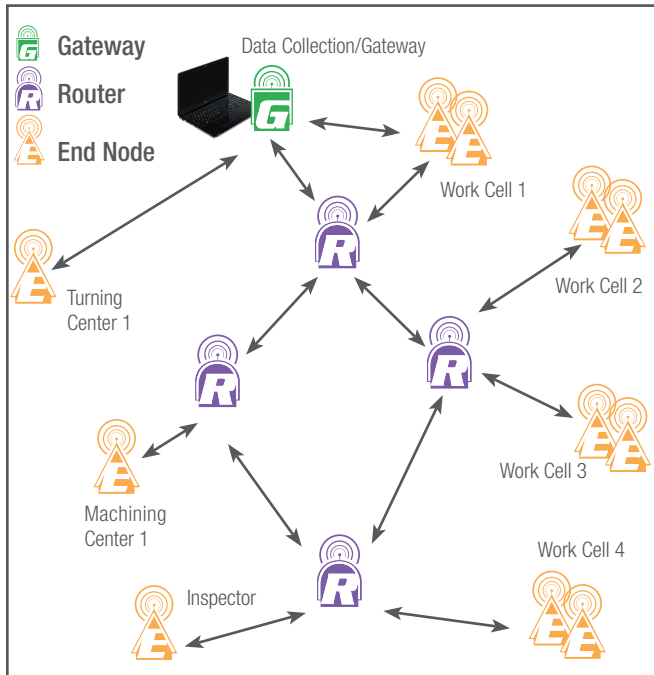


# DataSure® WIRELESS DATA COLLECTION

## DATA SURE® SHOP-FLOOR

The illustration (below) demonstrates how a large, multi-workstation shop might be networked with DataSure.

Tools at various locations collect data. The End Nodes send data to the nearest Router, and then to the Gateway, or directly to the Gateway if that is the best path. The Gateway sends a signal back through the same path to the End Node to confirm receipt of the data.



## END NODE

The DataSure End Node plugs directly into digital tools. It sends measurement data and verifies receipt at the Gateway with a green light. The smaller 2nd Generation End Node has IP67 dust and water protection.



### END NODE FEATURES

- User feedback LEDs
- On-tool data storage
- Adapts to most tools



1500-3A-1N

Power	Range ft.	m	Size in	mm
CR2450 lithium	65	20	2.2 x 2.0 x 0.49	55.3 x 43.2 x 17.8

## SOFTWARE

DataSure Advanced Wireless Data Collection Software connects and manages your tools, network, data and third party SPC applications.

## GATEWAY

The DataSure Gateway is the central point for data collection and tool management and plugs directly into a PC through a USB port.

### GATEWAY FEATURES

- USB
- Sends data to application or database
- Multi-file export features
- Unique system ID



1500-1-N

Power	Range ft.	m	Size in	mm
USB	100	30	7.0 x 5.5 x 2.5	178 x 140 x 63.5

## ROUTER

Each DataSure Router extends the system's range in increments of 100 feet (30 meters). They ensure system robustness by providing alternate signal paths in noisy environments.

### ROUTER FEATURES

- Range extender
- Transmits around interference
- Wall mount or mobile



1500-2-N

Power	Range ft.	m	Size in	mm
AC, NiMH	100	30	7.0 x 5.5 x 2.5	178 x 140 x 63.5



1500-3A-24N on 795.1



# DataSure®

WIRELESS DATA COLLECTION

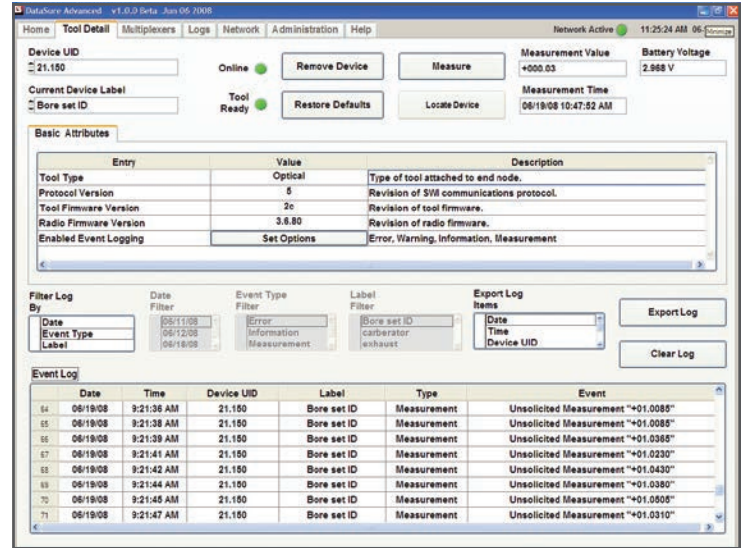
## DATA SURE® SOFTWARE

DataSure Advanced Wireless Data Collection Software connects and manages your tools, network, data and third party SPC applications.

- Monitors your wireless network, tools, system status, end node battery voltages and tools measurements all from one screen
- Measurements can be initiated and viewed directly from the home page
- Data can be exported in CSV format
- Data is stored on a local or network database with programmable, scheduled backup
- Remote personnel can configure tools, export data and monitor activity via intranet with no additional software
- Virtual multiplexers allow data to be directed from specific tools to multiple software applications
- Each radio end node can be personalized with a descriptive name
- Drag and Drop tools on multiplexers
- Fast and easy label changes for tools
- Fast response for measurement
- System OS Requirements: Windows® 2000, XP Home and Pro with SP2, SP3, Vista SP1, Vista SP2, Windows® 7 32 bit, Windows® 7 64 bit, Windows® 8, Windows® 10
- Data can also connect directly to your SPC application via com port or DDE (Dynamic Data Exchange) link



781XTZ-2



DataSure Advanced Wireless Data Collection Manager Software provides a powerful, intuitive interface and works well with many popular SPC applications.





# DataSure® WIRELESS DATA COLLECTION

A wide variety of End Nodes are available, allowing DataSure to interface with electronic measuring tools from virtually all major manufacturers

## ADDING DATA SURE® TO YOUR FACILITY

To add DataSure to your facility, simply contact us. We will work with you to specify a system for your application.

We will add new End Nodes and Output Connectors to those listed below as needed. Please call to discuss your requirements.

Note that new End Nodes or Routers for a current system must be made to match the Group Number of your existing components.



### DataSure Gateway, Routers

Cat. No.	EDP	Description
1500-1-N	12051	Gateway, USB, 917MHz
1500-2-N	12059	Router, 916MHz, 120/240 VAC
PT62742	62024	Gateway or Router Mounting Bracket

### DataSure End Nodes, Connectors and Accessories

Cat. No.	EDP	Tool Type	Description
1500-3A-2N	12531	Micrometer	End Node, Starrett 795 Series
1500-3A-3N	12532	Micrometer	End Node, Starrett 3rd Gen., 733 Style Micrometer Head
1500-3A-9N	12538	Micrometer	End Node, Mitutoyo 500-6XX, 500-7XX Series
1500-3A-10N	12539	Micrometer	End Node, Mitutoyo 293-2XX, 293-3XX Series
1500-3A-24N	72536	Micrometer	End Node, Starrett 795.1 Series
1500-3A-18N	12565	Micrometer/Slide Caliper	End Node, Starrett Proximity 770B Micrometers, 798 Calipers, and 781 3-Button
1500-3A-1N	12530	Slide Caliper	End Node, Starrett Opto, 797 Series, 781 2-Button
1500-3A-23N	72662	Slide Caliper	End Node, Starrett EC799 Slide Caliper
1500-3A-7N	12536	Slide Caliper/Indicator	End Node, Mitutoyo with and without Absolute Encoder
1500-3A-4N	12533	Indicator	End Node, Starrett 2700 Series
1500-3A-21N	00046	Indicator	End Node, Starrett 2900 Series
1500-3A-13N	12542	Indicator	End Node, Mitutoyo 543-5XX Series
1500-3A-5N	12534	Other	End Node, Starrett Cat. No. 2000 Series
1500-3A-15N	12544	Other	End Node, Starrett 782, 781, 797 Series, TESA-CAL, TESA Intramik
1500-3A-6N	12535	Other	End Node, Mitutoyo 6-Pin Round
1500-3A-8N	12537	Other	End Node, RS232, DB9 Tools with TX, RX, GND
1500-3A-11N	12540	Other	End Node, Marposs E4N
1500-3A-12N	12541	Other	End Node, Universal 10-pin connector
1500-3A-14N	12543	Other	End Node, Mahr-Federal with µMaxum and XL
1500-3A-16N	12545	Other	End Node, Mahr-Federal EX
1500-3A-20N	69854	Other	End Node, TESA Microhite
PT62785-0	12188	Accessory	Mushroom Head Fastener Kit to Attach End Nodes to Tool (Two pair included with each end node)

### DataSure Replacement Output Connectors

Cat. No.	EDP	Tool Type	Description
PT63298-2N	12547	Micrometer	Replacement Output Connector, Starrett 795 Series
PT63706-22N	73325	Micrometer	Replacement Output Connector, Starrett 780 Bore Gage
PT63473-24N	73327	Micrometer	Replacement Output Connector, Starrett 795.1 Series
PT63305-9N	12554	Micrometer	Replacement Output Connector, Mitutoyo 500-6XX, 500-7XX Series
PT63306-10N	12555	Micrometer	Replacement Output Connector, Mitutoyo 293-2XX, 293-3XX Series
PT63300-4N	12549	Indicator	Replacement Output Connector, Starrett 2700 Ind.
PT63536-21N	73324	Indicator	Replacement Output Connector, Starrett 2900
PT63389-18N	12562	Slide Caliper	Replacement Output Connector, Starrett 798 Calipers, Proximity 781 3-Button
PT63660-23N	12547	Slide Caliper	Replacement Output Connector, Starrett EC799 Caliper
PT63297-1N	12546	Other	Replacement Output Connector, Starrett Opto, 797 Series, 781 2-Button
PT63299-3N	12548	Other	Replacement Output Connector, Starrett 3rd Gen., 733 Style Micrometer Head
PT63301-5N	12550	Other	Replacement Output Connector, Starrett 2000/2001/3752 Series
PT63302-6N	12551	Other	Replacement Output Connector, Mitutoyo 6-Pin Round
PT63303-7N	12552	Other	Replacement Output Connector, Mitutoyo without Absolute and with Absolute
PT63310-14N	12559	Other	Replacement Output Connector, Mahr Federal Umaxum Indicator
PT63312-16N	12561	Other	Replacement Output Connector, Mahr Federal Ex
PT63304-8N	12553	Other	Replacement Output Connector, RS232, DB9 Tools with TX, RX, GND
PT63307-11N	12556	Other	Replacement Output Connector, Digimatic W/D-Sub 9 Pin
PT63308-12N	12557	Other	Replacement Output Connector, Universal Mitutoyo 10 Pin
PT63309-13N	12558	Other	Replacement Output Connector, Absolute Digimatic
PT63311-15N	12560	Other	Replacement Output Connector, Opto/Duplex
PT63533-20N	73320	Other	Replacement Output Connector, TESA Microhite



# DataSure®

## WIRELESS DATA COLLECTION

### ▲ DATA SURE® THROUGHPUT AND ACCURACY STUDY

In a controlled, 100% inspection test to measure the impact of DataSure on throughput and quality assurance, we made three measurements per part and recorded the data on 500 parts.

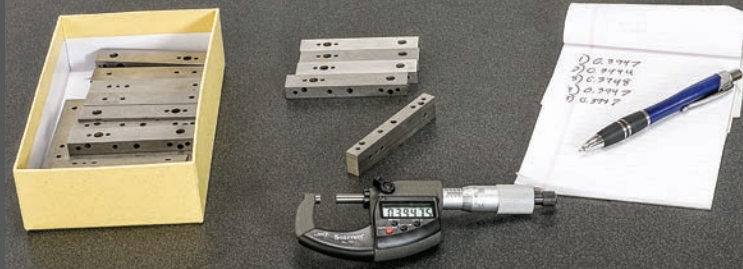
Methods 1 and 2 involve time-consuming hand movements to pickup and put down the tool in order to record data. Measurement with DataSure is fast and direct. The slowest method (#1) required 29 second per part with many errors. With DataSure® the same task was nearly 5 times faster – with no errors.

#### METHOD 1: MEASURE, HANDWRITE RESULTS, REMOTE DATA ENTRY

- 37 time/motion elements, 28.9 sec./part
- 62 entry errors

Factors affecting accuracy and throughput:

- Measurement must stop to handwrite results.
- Illegible handwritten numbers, mistakes noted but not corrected, data written in shorthand and inspector's handwriting misread by the transcriber
- Value can change when the inspector releases the micrometer
- Data entry errors at the PC



#### METHOD 2: MEASURE AND ENTER RESULTS TO PC

- 20 time/motion elements: 15.3 sec./part
- 4 data entry errors

Factors affecting accuracy and throughput:

- Alternating measuring and data entry caused errors
- Caliper not seated correctly when released to key-in data
- Missed data entry, incorrect keystrokes, entry to wrong cell



#### METHOD 3: MEASURE AND ENTER RESULTS DIRECTLY WITH DATA SURE

- 17 time/motion elements: 6.6 sec./part
- 0 entry errors

Factors affecting accuracy and throughput:

- Measurement technique is maintained
- No interpretation or memory errors
- Immediate, direct data entry eliminates errors



# GAGE MULTIPLEXERS

## 7612 AND 7613 4-PORT GAGEMUX USB

### FAST, SIMPLE AND FLEXIBLE

Starrett 4-port gage multiplexers make it fast and easy to connect multiple gages to a PC. Interface is through USB and USB keyboard outputs, as well RS232 ports.

With the 7612 GageMux, no software wedge or other intermediary software is required. The PC "sees" the connection from the 7612 as a keyboard. Simply, open any document on your computer that accepts input, position your cursor, then send the data from the tool. That data will be input at the cursor location.

The 7613 GageMux USB 4-port gage is similar to the 7612 except that it does not have the keyboard function. It requires the Starrett 719 Software Wedge or a similar product to input data into the PC.

From manufacturing methods and materials to a built-in, power-saving mode, the GageMux was designed to be an environmentally friendly product.

### FEATURES AND SPECIFICATIONS

- 4 input ports
- Simple set-up, your PC automatically installs USB driver when GageMux is plugged into PC's USB port – does not require software configuration
- Supports USB 2.0, RS232 and keyboard output
- Operating modes: Static (Normal) mode operation or Dynamic (MIN/MAX/TIR)
- Footswitch input, LED status light on each input, host command operation and set up

#### 7612 and 7613 GageMux, Cables and Accessories

Cat. No.	EDP	Description
7612	69886	GageMux 4 port, USB, RS232 and keyboard output; Includes USB cable and 110V AC power supply
7613	69885	GageMux 4 port, USB and RS232 includes USB cable and 110V AC power supply

#### 7612 and 7613 GageMux Cables

Cat. No.	EDP	Description
795SCM	69892	Connect 795 Micrometer
795.1SCM	01124	Connect 795.1 and 733.1 Micrometer
733SCM	69893	Connect 733 Micrometer and 2600 Indicator
798SCM	69894	Connect 798 Caliper
797SCM	69895	Connect 797 Caliper
EC799BSCM	46000	Connect EC799B Caliper
2000SCM	69907	Connect 2000 Height Gage
2700SCM	69896	Connect 2700 Indicators
2900SCM	68751	Connect 2900 Indicators

#### 7612 and 7613 GageMux Accessories

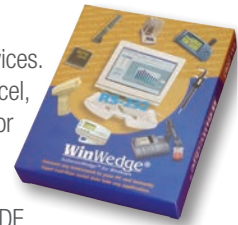
Cat. No.	EDP	Description
7612FTS	69905	Industrial Foot Switch with 6' cable
7612PS	69899	220/50 External Power Supply
719	66490	Software Wedge allows direct input to PC (7613 only)



7612

### 719 SOFTWARE WEDGE™

Data collection software for serial devices. WinWedge captures data directly to Excel, Access or any Windows application or web page. It can even send commands out a COM port so you can control your device through hot keys, buttons, or DDE. Can also be used with any SCU style cable.



719 Software Wedge





# SMARTCABLES™

## SMARTCABLES

### EASY TOOL-TO-PC CONNECTION AND DATA TRANSFER

SmartCable makes it fast and easy to connect a measuring tool to a PC. The interface provides the ability to connect through USB and USB keyboard outputs.

With the SmartCable keyboard output, no software wedge or other intermediary software is required. The PC "sees" the connection from the SmartCable as a keyboard. Simply, open any document on your computer that accepts input, position your cursor, then send the data from the tool. That data will be input at the cursor location.

With SmartCable USB output, requires 719 Software Wedge or a similar product to input the data to the PC.

From manufacturing methods and materials to a built-in, power-saving mode, the SmartCable was designed to be an environmentally friendly product.

### FEATURES AND SPECIFICATIONS

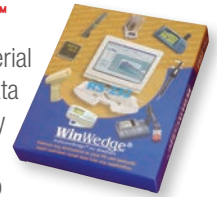
- Simple Set-up, your PC automatically installs USB driver when the SmartCable is plugged into PC's USB port
- Supports USB 2.0, RS232 and Keyboard (optional) output
- Simple plug and play set up – doesn't require software configuration
- Operating modes: Static (Normal) mode operation or Dynamic (MIN/MAX/TIR)
- LED status light

Smart Cable Products		
Cat. No.	EDP	Description
733SCU	69898	SmartCable USB Ouput for 733 Micrometer and 2600 indicator type output
733SCKB	69888	USB cable to PC (In focused window)
795SCU	69897	SmartCable USB Ouput for 795 Micrometer
795SCKB	69887	USB cable to PC (In focused window)
795.1SCU	01126	SmartCable USB Output for 795.1 and 733.1 Micrometer
795.1SCKB	01125	USB cable to PC (In focused window)
797SCKB	69890	USB cable to PC (In focused window)
798SCKB	69889	USB cable to PC (In focused window)
EC799BSCU	46002	SmartCable to USB
EC799BSCKB	46001	USB cable to PC (In focused window)
2000SCKB	69908	USB cable to PC (In focused window)
2700SCKB	69891	USB cable to PC (In focused window)
2900SCU	68712	SmartCable USB Output for 2900
2900SCKB	68839	USB cable to PC (In focused window)
719	66490	Software Wedge allows direct input to PC
PT26441	65893	2700 USB Connection

Direct RS232 9-Pin Connection Cables		
Part No.	EDP	For Use with Starrett Tool Numbers
PT61963	66636	714, 760, 786, 733, 762, 788, 749, 764, 790, 751, 769, 2600-1, 753, 773, 2600-4, 756, 777, 2600-8, 3752
PT62425	67658	2000, 2001
PT62606	68822	797B, 5000, 5001, 5002, 5003, 5004, 5005, 5006, 781; Opto Connection
PT63329	12732	798, USB Connection, 770B, 781B; Proximity Connection

### 719 SOFTWARE WEDGE™

Data collection software for serial devices. WinWedge captures data directly to Excel, Access or any Windows application or web page. Send commands out a COM port so you can control your device through hot keys, buttons, or DDE. Works with all cables and DataSure.



719 Software Wedge



798SCKB



RS232 9-Pin Connection Cable

