

# Mitutoyo Corporation

## SurfTest SJ Series SerialCommunication

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## 1-1 Connecting SJ-201

1-1-1. Connect the SurfTest SJ-201 to your PC, using the specified RS-232C cable.

1-1-2. The communication configuration is hard-wired, so please configure SurfTest SJ-201 communications as follows:

Baud rate	:19200 bps
Data length	:8 bits
Stop bit	:1 bit
Parity	:E
X flow control	:None

1-1-3. When using this software, set SurfTest SJ-201 to remote mode, referring to the user's manual.

## 1-2 Using the Software SJ-201

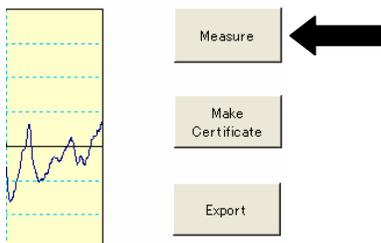
1-2-01. Configure the parameters on the SJ-201.

1-2-02. Set the SJ-201 to remote mode. Parameters cannot be configured in remote mode.

1-2-03. Start the "SJ-201Excel" program in the SurfTest SJ Tools start menu.



1-2-04. On the test report sheet, click the Measurement button.



1-2-05.The SerialCommunication program launches.

1-2-06.If "Disconnected" is shown, you should verify the COM port to which the measurement device is connected. After that, please select the COM port manually from COM 01 to COM 20 in the list, and click the "Reconnect" button.

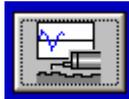


1-2-07.The program next checks the model information of the connected instrument. If an unsupported instrument is connected, a message box is displayed; click the OK button to exit the program.

1-2-08.If communication with the SJ-201 is successful, upon launch the program reads the SJ-201 measurement parameter settings.

1-2-09.Select measurement parameters. The selected parameters are sent to SJ-201 and saved there when measurement begins. You can still undo any parameter selections you have made until you press the Start Measurement button.

1-2-10.Press the Start Measurement button .



1-2-11.When the measurement is finished, the results of the selected parameters are displayed. At this time, all the files needed to prepare the test report are saved to the PC.

1-2-12.Measurement profile can select presence of tilt compensation. When tilt compensation is not necessary, please exclude a check.



1-2-13.Remove the check from the Save CSV Data checkbox to display the calculation results, without saving data to the PC necessary to create a test report.



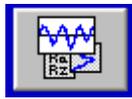
1-2-14.Measurement will halt if the Stop Measurement button is pressed, or if an over-range error is detected.

1-2-15.Ten pieces of saved data can be read besides the just measured data.

1-2-16.Select either the just measured data (MAIN) or the saved data (RAM1 to 10) from the Data item.



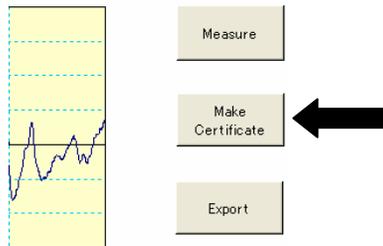
1-2-17.Click the data read button. The measurement conditions, result evaluation and data for issuing a certificate will be updated.



1-2-18.Press the Exit button to quit out of the SerialCommunication program.

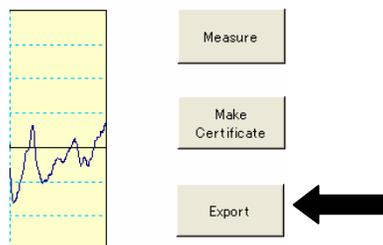


1-2-19.Press the Prepare Report button to create a new test report in Excel format using the new measurement data you have acquired. This may take some time.

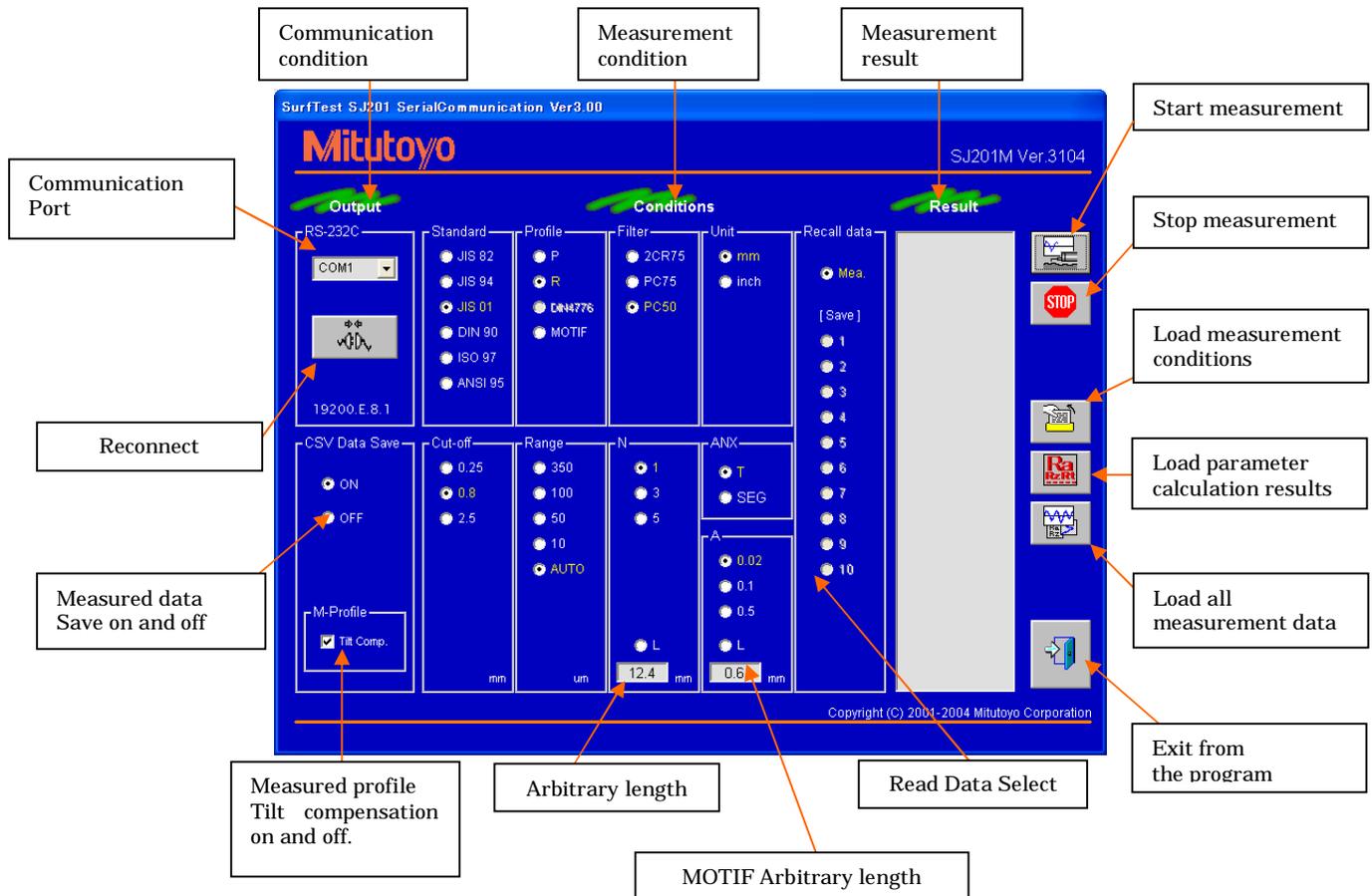


1-2-20.Use the Excel Print function to print out the test report.

1-2-21.Press the Export button to save the current report without the Excel macro. The file is saved using the same procedure as that followed for an Excel worksheet.



## 1-3 Description of a screen SJ-201



**Communication condition** : Sets the communication settings for the SJ main unit, and also sets data storing conditions.

**Communication port** : Displays the currently used port and selects the communication port of PC for re-connection.

**Reconnect**: Gets connected to with this button after choosing the communication port when it is not connected.

**Measured data Save on and off** : Set this off when only the calculation results display is necessary.

**Tilt compensation on and off** : If the check is removed, the measured profile tilt compensation is not performed. The evaluation profile is not affected.

**Measurement condition** : Selects main measurement conditions. Set other measurement conditions with the SJ main unit.

**Read data select** : Selects the data to be recalled to the PC from between the previous measured data and the stored data.

**Arbitrary length** : Select L for the arbitrary length measurement.

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**Measurement result** : Measurement results for the parameters specified in the SJ main unit are displayed.

### **Function buttons**

**Start measurement** : Starts measurement. Note that buttons other than STOP are not available.

**Stop measurement** : Stops measurement.

**Load measurement conditions** : Loads the measurement conditions stored in the main unit and it reflects on the status of Measurement condition select buttons.

**Load parameter calculation results** : Loads the measurement results stored in the main unit and displays them in the Measurement result list.

**Load measurement profile** : Loads the measurement profile stored in the main unit

and stores in the PC as data for the inspection report. The tilt compensation validity is reflected on the measured profile.

**Exit from the program** : Ends the SJ Serial Communication.

## 2-1 Connecting SJ-301

2-1-1. Connect the SurfTest SJ-301 to your PC, using the specified RS-232C cable.

2-1-2. The communication configuration is hard-wired, so please configure SurfTest SJ-301 series communications as follows:

Baud rate	:28800 bps
Data length	:8 bits
Stop bit	:1 bit
Parity	:E
X flow control	:None

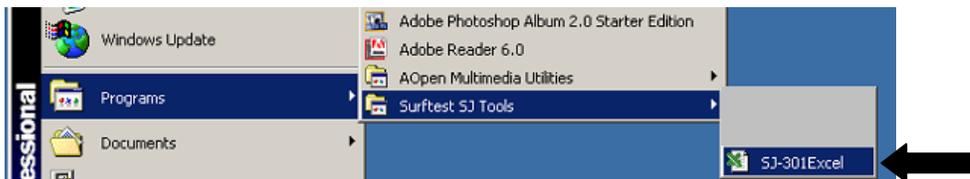
2-1-3. When using this software, set SurfTest SJ-301 series to remote mode, referring to the user's manual.

## 2-2 Using the Software SJ301

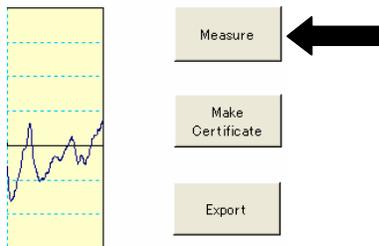
2-2-01. Configure the parameters on the SJ-301.

2-2-02. Set the SJ-301 to remote mode. Parameters cannot be configured in remote mode.

2-2-03. Start the "SJ-301Excel" program in the SurfTest SJ Tools start menu.



2-2-04. On the test report sheet, click the Measurement button.



2-2-05.The SerialCommunication program launches.

2-2-06.If "Disconnected" is shown, you should verify the COM port to which the measurement device is connected. After that, please select the COM port manually from COM 01 to COM 20 in the list, and click the "Reconnect" button.

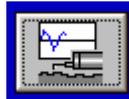


2-2-07.The program next checks the model information of the connected instrument. If an unsupported instrument is connected, a message box is displayed; click the OK button to exit the program.

2-2-08.If communication with the SJ-301 is successful, upon launch the program reads the SJ-301 measurement parameter settings.

2-2-09.Select measurement parameters. The selected parameters are sent to SJ-301 and saved there when measurement begins. You can still undo any parameter selections you have made until you press the Start Measurement button.

2-2-10.Press the Start Measurement button .



2-2-11.When the measurement is finished, the results of the selected parameters are displayed. At this time, all the files needed to prepare the test report are saved to the PC.

2-2-12.Measurement profile can select presence of tilt compensation. When tilt compensation is not necessary, please exclude a check.

2-2-13.Remove the check from the Save CSV Data checkbox to display the calculation results, without saving data to the PC necessary to create a test report.



2-2-14.Measurement will halt if the Stop Measurement button is pressed, or if an over-range error is detected.

2-2-15.The saved data in the Compact Flash card can be read through a card slot of PC.

2-2-16.Choose the data saved in the Compact Flash card on the file management screen.

2-2-17.The chosen file name is highlighted when it is clicked.

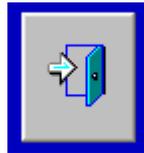
2-2-18.The tilt compensation for the measured profile can be turned on and off.



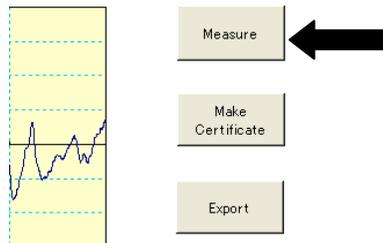
2-2-19.All the necessary data including the measurement conditions, and evaluation results is read when the READ button is clicked.



2-2-20.Press the Exit button to quit out of the SerialCommunication program.

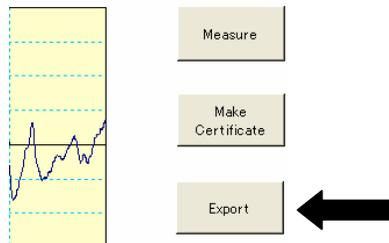


2-2-21.Press the Prepare Report button to create a new test report in Excel format using the new measurement data you have acquired. This may take some time.

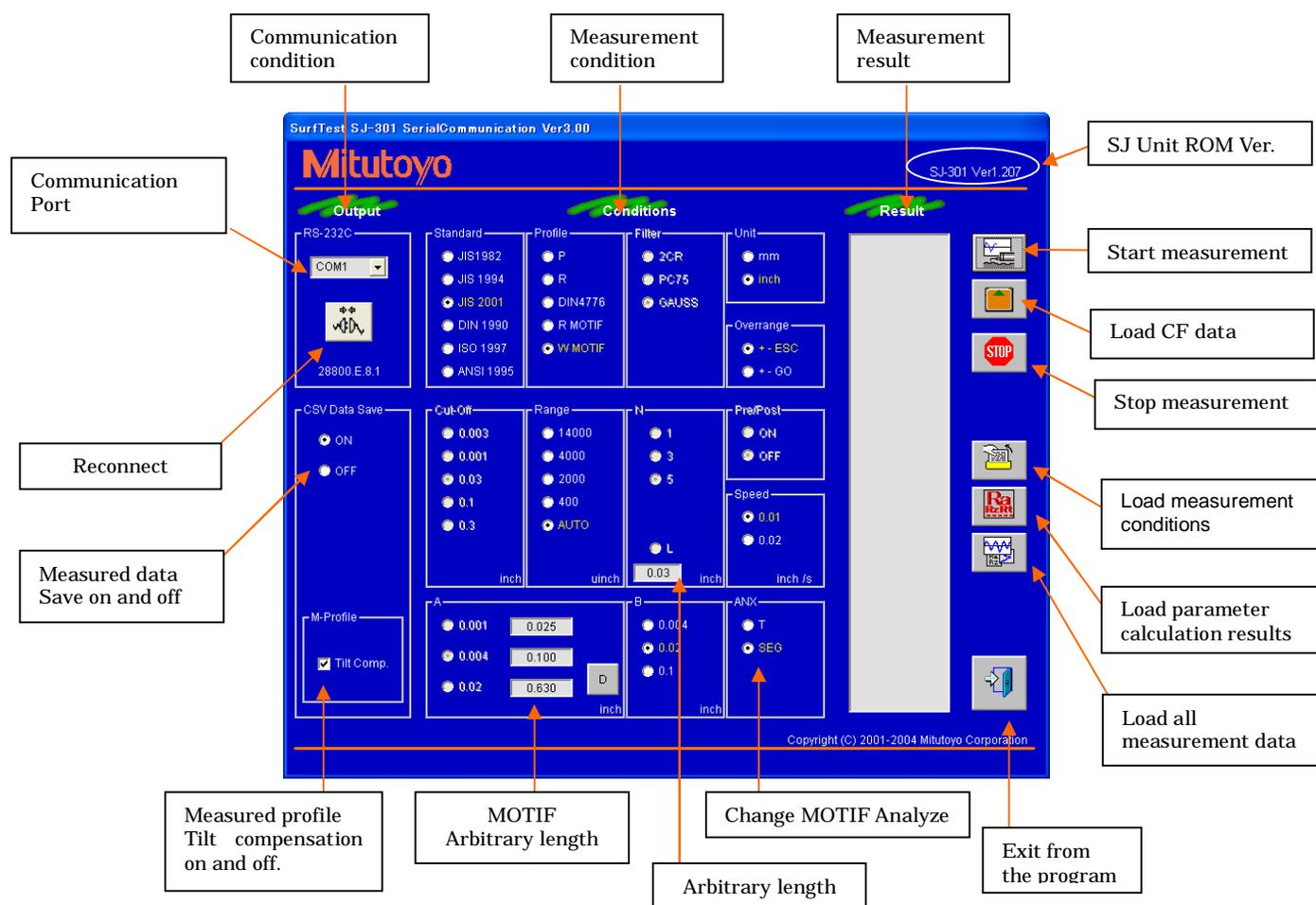


2-2-22.Use the Excel Print function to print out the test report.

2-2-23.Press the Export button to save the current report without the Excel macro. The file is saved using the same procedure as that followed for an Excel worksheet.



## 2-3 Description of a screen SJ-301



### Some functions differ depending on the SJ main unit ROM version.

ROM Ver.	Range	CutOff0.08um	R MOTIF	W MOTIF	MOTIF Arbitrary length	ANX
1.10 0 >	± 300 μ m	×	ISO97	×	×	×
1.100 =<	± 350 μ m				×	×
1.207 =<	± 350 μ m					

: available, × : not available

### Function buttons

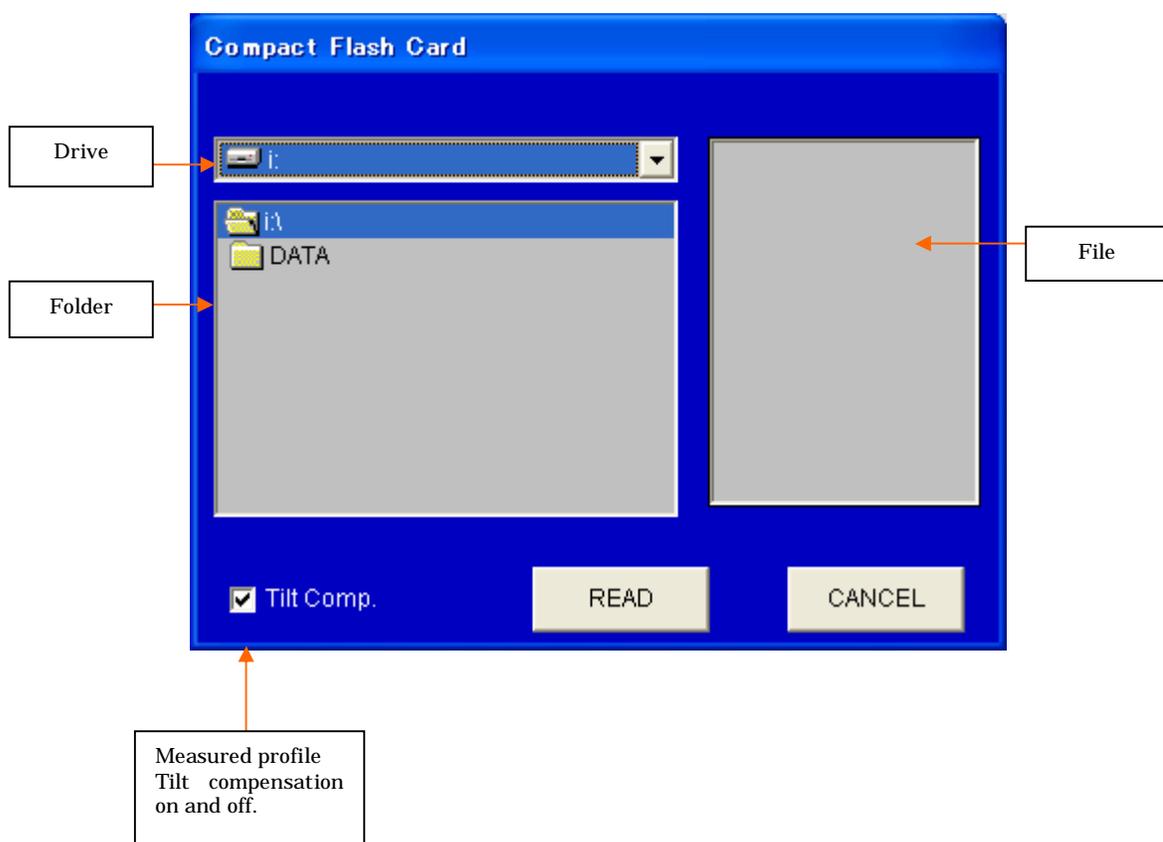
**Load CF data:** Loads the measured data stored in the SJ main unit.

For the operating procedure, refer to 3-4 Compact Flash Card.

**Caution:** SerialCommunication does not have a function to store the measured data in the compact flash card.

\*For detailed information about other functions, refer to the SJ 201 user's manual.

## 2-4 Read Compact Flash Card



### Measured data stored in the compact flash card connected to the PC can be loaded.

Measured data includes the measurement condition, measurement results, measured profile and evaluation profile.

If the SJ main unit is not connected, a message “not connected” appears. And if only the CF card is used, press OK to clear the “not connected”, then press the CF button.

### Function buttons

**Drive** : Chooses the compact flash card reader.

**Folder** : Chooses the DATA folder.

**File** : Displays only the files of which extensions are “SMB”. Note that the measured data of a different model can not be loaded.

**Tilt compensation on and off** : If the check is removed, the tilt compensation for the measured profile is not performed. However it does not reflect on the evaluation profile.

**NOTE**

Data of a Compact Flash card are read by a Compact Flash card reader connected to a personal computer. Please prepare Compact Flash card reader.

## 3-1 Connecting SJ-400

3-1-1. Connect the SurfTest SJ-400 to your PC, using the specified RS-232C cable.

3-1-2. The communication configuration is hard-wired, so please configure SurfTest SJ-400 communications as follows:

Baud rate	:28800 bps
Data length	:8 bits
Stop bit	:1 bit
Parity	:E
X flow control	:None

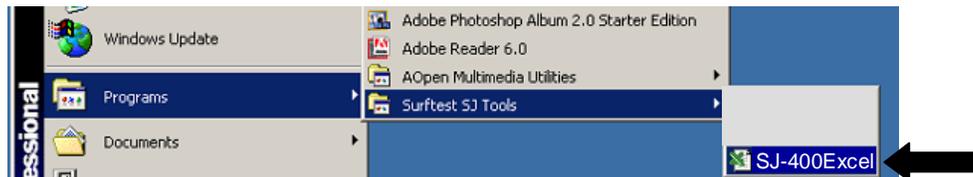
3-1-3. When using this software, set SurfTest SJ-400 to remote mode, referring to the user's manual.

## 3-2 Using the Software SJ-400

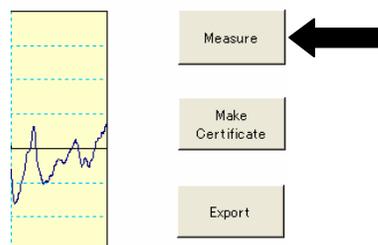
3-2-01. Configure the parameters on the SJ-400.

3-2-02. Set the SJ-400 to remote mode. Parameters cannot be configured in remote mode.

3-2-03. Start the "SJ-400Excel" program in the SurfTest SJ Tools start menu.



3-2-04. On the test report sheet, click the Measurement button.



3-2-05.The SerialCommunication program launches.

3-2-06.If "Disconnected" is shown, you should verify the COM port to which the measurement device is connected. After that, please select the COM port manually from COM 01 to COM 20 in the list, and click the "Reconnect" button.

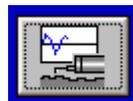


3-2-07.The program next checks the model information of the connected instrument. If an unsupported instrument is connected, a message box is displayed; click the OK button to exit the program.

3-2-08.If communication with the SJ-400 is successful, upon launch the program reads the SJ-400 measurement parameter settings.

3-2-09.Select measurement parameters. The selected parameters are sent to SJ-400 and saved there when measurement begins. You can still undo any parameter selections you have made until you press the Start Measurement button.

3-2-10.Press the Start Measurement button .



3-2-11.When the measurement is finished, the results of the selected parameters are displayed. At this time, all the files needed to prepare the test report are saved to the PC.

3-2-12.Measurement profile can select presence of tilt compensation. When tilt compensation is not necessary, please exclude a check.

3-2-13.Remove the check from the Save CSV Data checkbox to display the calculation results, without saving data to the PC necessary to create a test report.



3-2-14.Measurement will halt if the Stop Measurement button is pressed, or if an over-range error is detected.

3-2-15.The saved data in the Compact Flash card can be read through a card slot of PC.

3-2-16.Choose the data saved in the Compact Flash card on the file management screen.

3-2-17.The chosen file name is highlighted when it is clicked.

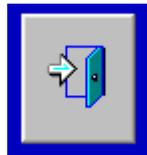
3-2-18.The tilt compensation for the measured profile can be turned on and off.



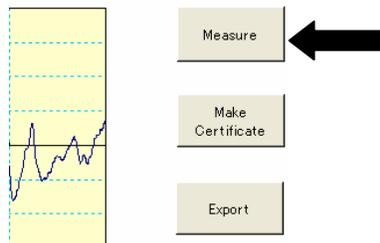
3-2-19.All the necessary data including the measurement conditions, and evaluation results is read when the READ button is clicked.



3-2-20.Press the Exit button to quit out of the SerialCommunication program.

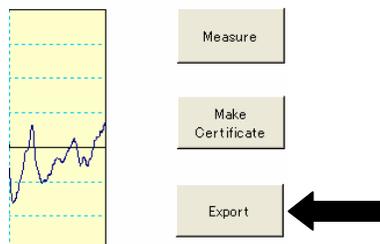


3-2-21.Press the Prepare Report button to create a new test report in Excel format using the new measurement data you have acquired. This may take some time.

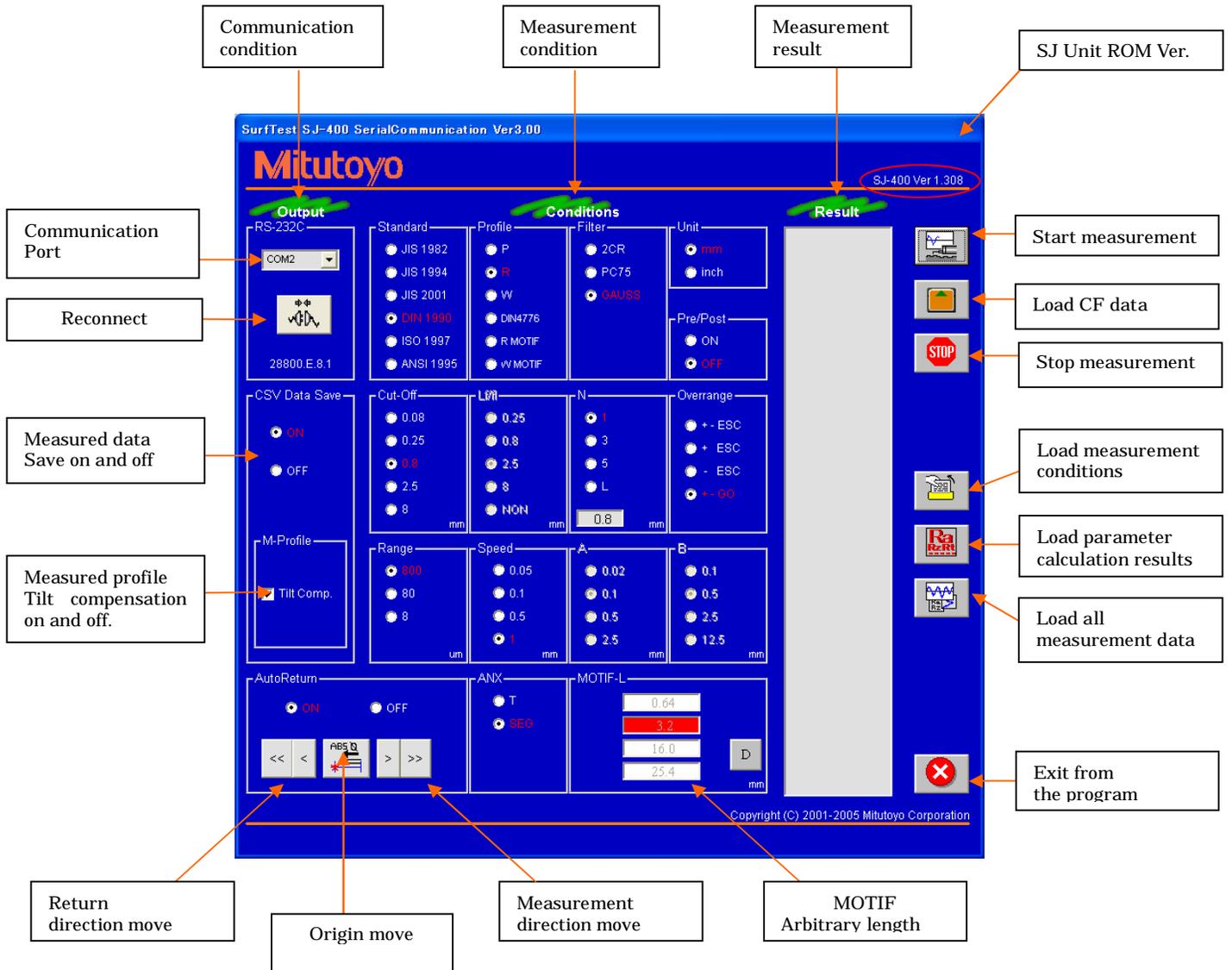


3-2-22.Use the Excel Print function to print out the test report.

3-2-23.Press the Export button to save the current report without the Excel macro. The file is saved using the same procedure as that followed for an Excel worksheet.



### 3-3 Description of a screen SJ-400



## Some functions differ depending on the SJ main unit ROM Version.

ROM Ver.	Arbitrary position measurement	Direction move	MOTIF Arbitrary length	ANX	JIS 2001
1.100 >	×	×	×	×	×
1.100 =<			×	×	×
1.103 =<				×	×
1.205 =<					×
1.307 =<					

: available, × : not available

### Function buttons

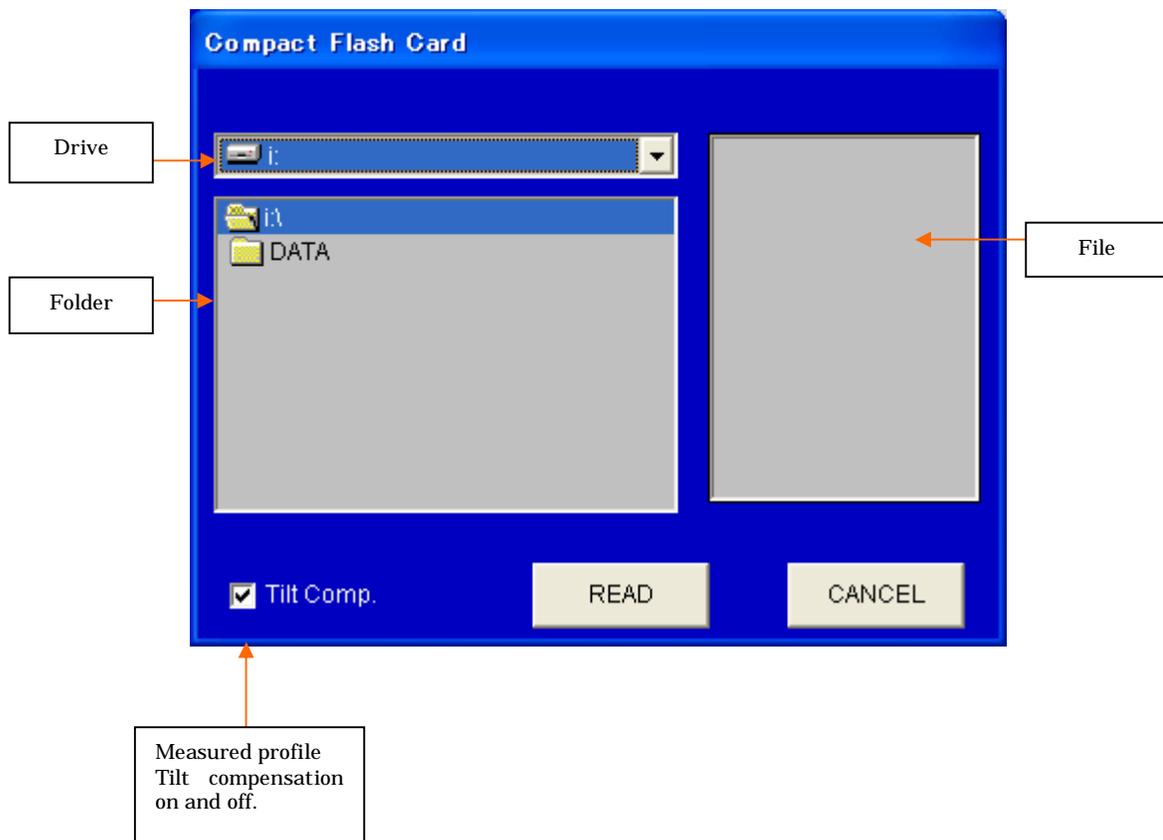
**Measurement direction move:** Moves it in the measurement direction at high or low speed. Note that the speed of the high speed movement depends on the measuring speed.

**Origin move:** Moves it to the origin at high speed.

**Return direction move:** Moves it in the return direction at high or low speed.

\*For detailed information about other functions, refer to the SJ 201/SJ 301 user's manual.

### 3-4 Read Compact Flash Card



#### Measured data stored in the compact flash card connected to the PC can be loaded.

Measured data includes the measurement condition, measurement results, measured profile and evaluation profile.

If the SJ main unit is not connected, a message “not connected” appears. And if only the CF card is used, press OK to clear the “not connected”, then press the CF button.

#### Function buttons

**Drive** : Chooses the compact flash card reader.

**Folder** : Chooses the DATA folder.

**File** : Displays only the files of which extensions are “SMB”. Note that the measured data of a different model can not be loaded.

**Tilt compensation on and off** : If the check is removed, the tilt compensation for the measured profile is not performed. However it does not reflect on the evaluation profile.

**NOTE**

Data of a Compact Flash card are read by a Compact Flash card reader connected to a personal computer. Please prepare Compact Flash card reader.

## 4 Confirmed Operation Environments

[OS] Windows98 / WindowsMe / Windows2000-SP2 / WindowsXP / WindowsVista  
/ Windows7

[AP] Excel97 / Excel2000 / Excel2002 / Excel2003 / Excel2007

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