

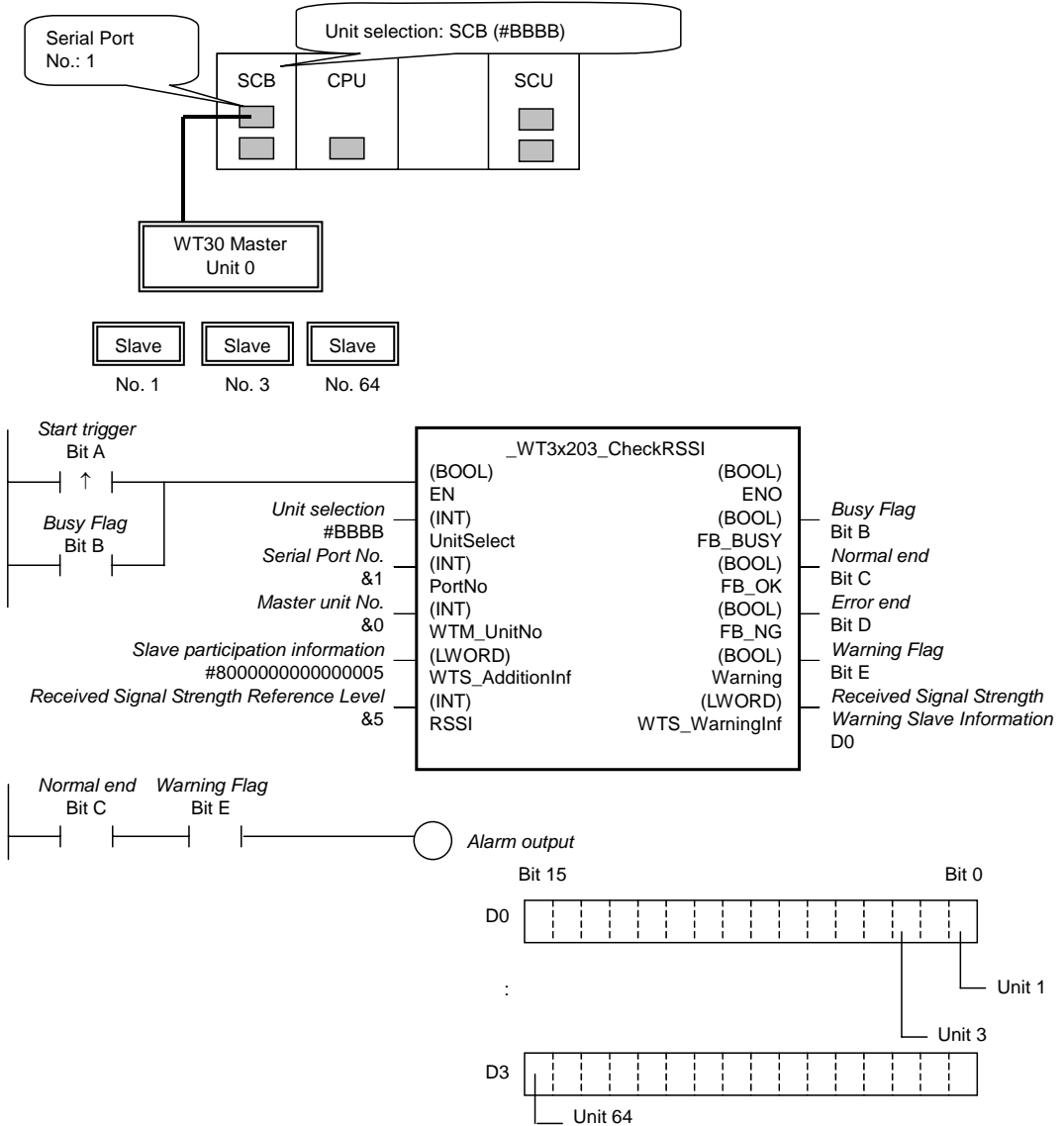
WT3x 203	Check Receiving Signal Strength: _WT3x203_CheckRSSI
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Basic function	Checks whether the signal strength received by the slave is above a reference level.																													
Symbol		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="text-align: center; border: 1px solid black;">_WT3x203_CheckRSSI</td> <td style="width: 30%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>(BOOL) EN</td> <td></td> <td>(BOOL) ENO</td> <td></td> </tr> <tr> <td>(INT) UnitSelect</td> <td></td> <td>(BOOL) FB_BUSY</td> <td>Busy Flag</td> </tr> <tr> <td>(INT) PortNo</td> <td></td> <td>(BOOL) FB_OK</td> <td>Normal end</td> </tr> <tr> <td>(INT) WTM_UnitNo</td> <td></td> <td>(BOOL) FB_NG</td> <td>Error end</td> </tr> <tr> <td>(LWORD) WTS_AdditionInf</td> <td></td> <td>(BOOL) Warning</td> <td>Warning Flag</td> </tr> <tr> <td>(INT) RSSI</td> <td></td> <td>(LWORD) WTS_WarningInf</td> <td>Received Signal Strength Warning Slave Information</td> </tr> </table>		_WT3x203_CheckRSSI			(BOOL) EN		(BOOL) ENO		(INT) UnitSelect		(BOOL) FB_BUSY	Busy Flag	(INT) PortNo		(BOOL) FB_OK	Normal end	(INT) WTM_UnitNo		(BOOL) FB_NG	Error end	(LWORD) WTS_AdditionInf		(BOOL) Warning	Warning Flag	(INT) RSSI		(LWORD) WTS_WarningInf	Received Signal Strength Warning Slave Information
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(INT) RSSI		(LWORD) WTS_WarningInf	Received Signal Strength Warning Slave Information																											
File name	Lib\FBL\omronlib\WirelessTerminal\WT30_WT3x203_CheckRSSI10.cxf																													
Applicable models	Master	WT30-M01-FLK																												
	Slave	WT30-SID16/SMD16/SMD16-1																												
	CPU Unit	CS1*-CPU**H Unit version 3.0 or higher CJ1*-CPU**H Unit version 3.0 or higher CJ1M-CPU** Unit version 3.0 or higher CP1H CP1L (except 10 points CPU)																												
	Serial Communications Units/Boards	CS1W-SCU21-V1, CJ1W-SCU21-V1, CJ1W-SCU41-V1 Unit Version 1.2 or higher CS1W-SCB21-V1 and CS1W-SCB41-V1 Unit Version 1.2 or higher																												
	CX-Programmer	Version 5.0 or higher																												
Conditions for usage	<p>WT30 FA Wireless SS Terminal</p> <ul style="list-style-type: none"> This function block can be used only in RUN mode. This function block cannot be used in TEST or SET mode. <p>Communications Settings</p> <p>The communications settings of the serial port must be the same as those of the WT30 FA Wireless SS Terminal.</p> <ul style="list-style-type: none"> The communications settings of the specified serial port can be set to the default WT30 settings using the Set Communications Port (_WT3x600_SetComm) function block, and the other WT30 settings using the Set Serial Gateway Mode (_SCx604_SetPortGATEWAY) function block. Use Serial Communications Unit (SCU) or Serial Communications Board (SCB) unit version 1.2 or later. <p>CPU Unit Settings</p> <p>PLC Setup: Shared Settings for Communications Instructions in FBs</p> <ul style="list-style-type: none"> Communications Instruction Response Timeout Time (default: 2 s) Number of Retries (default: 3) <p>Shared Resources</p> <ul style="list-style-type: none"> Communications ports (internal logical ports) 																													
Function description	<p>When the start trigger turns ON, the signal strengths received by the slaves connected to the specified master are checked to see if they exceed a reference level.</p> <p>If all of the slaves are receiving signal strengths above the reference level, all zeros are stored for the <i>Received Signal Strength Warning Slave Information</i>.</p> <p>If there are slaves that are not receiving a signal strength as strong as the reference level, the Warning Flag will turn ON and the information on the relevant slaves will be stored in <i>Received Signal Strength Warning Slave Information</i>.</p>																													

<p>FB precautions</p>	<ul style="list-style-type: none"> The FB is processed over multiple cycles. The FB_BUSY output variable can be used to check whether the FB is being processed. FB_OK or FB_NG will be turned ON for one cycle only after processing is completed. Use these flags to detect the end of FB processing. <ul style="list-style-type: none"> Timing Chart <table border="0"> <tr> <td>Start Trigger</td> <td>ON OFF</td> <td></td> </tr> <tr> <td>Busy Flag (FB_BUSY)</td> <td>ON OFF</td> <td></td> </tr> <tr> <td>Normal End (FB_OK) or Error End (FB_NG)</td> <td>ON OFF</td> <td></td> </tr> </table> <div style="border: 1px dashed black; padding: 5px; margin: 10px 0;"> <ul style="list-style-type: none"> All Slaves Receiving Signal Strength Equal to or Greater Than the Reference Value <table border="0"> <tr> <td>Warning Flag (Warning)</td> <td>ON OFF</td> <td></td> </tr> <tr> <td>Received Signal Strength Warning Slave Information (WTS_WarningInf)</td> <td></td> <td></td> </tr> </table> </div> <div style="border: 1px dashed black; padding: 5px; margin: 10px 0;"> <ul style="list-style-type: none"> Some Slaves Are Not Receiving a Signal Strength as Strong as the Reference Value <table border="0"> <tr> <td>Warning Flag (Warning)</td> <td>ON OFF</td> <td></td> </tr> <tr> <td>Received Signal Strength Warning Slave Information (WTS_WarningInf)</td> <td></td> <td></td> </tr> </table> </div>	Start Trigger	ON OFF		Busy Flag (FB_BUSY)	ON OFF		Normal End (FB_OK) or Error End (FB_NG)	ON OFF		Warning Flag (Warning)	ON OFF		Received Signal Strength Warning Slave Information (WTS_WarningInf)			Warning Flag (Warning)	ON OFF		Received Signal Strength Warning Slave Information (WTS_WarningInf)		
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<p>EN input condition</p>	<p>Connect EN to an OR between an upwardly differentiated condition for the start trigger and the FB_BUSY output from the FB.</p>																					
<p>Restrictions Input variables</p>	<ul style="list-style-type: none"> Always use an upwardly differentiated condition for EN. If the input variables are out of range, the ENO Flag will turn OFF and the FB will not be processed. 																					
<p>Output variables</p>	<ul style="list-style-type: none"> The Warning Flag and Received Signal Strength Warning Slave Information are set when the Normal End flag turns ON. This FB requires multiple cycles to process. Always connect an OR including the FB_BUSY output variable to the EN input variable to ensure that the FB is processed to completion (see <i>Symbol</i>). Do not turn the FB_BUSY output variable ON or OFF outside the FB. 																					

Application example

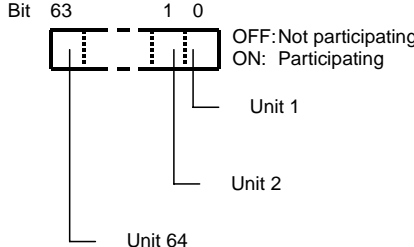
- A WT30 FA Wireless SS Terminal is connected to serial port 1 on a Serial Communications Board (SCB). The signal strength received by the slaves connected to master 0 is checked.



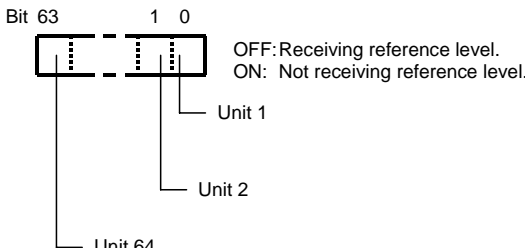
- Slaves 1, 3, and 64 Receiving Signal Strength Equal to or Greater Than the Reference Level
The Normal End Flag (bit C) will turn ON for one cycle when FB execution has been completed and the following values will be stored for the *Received Signal Strength Warning Slave Information*: D3: #0000, D2: #0000, D1: #0000, and D0: #0000.
- Slaves 1 and 3 Above Reference Level and Slave 64 Below Reference Level
When FB execution has been complete, the Normal End Flag (bit C) will turn ON for one cycle, the Warning Flag (bit E) will turn ON for one cycle, and the following values will be stored for the *Received Signal Strength Warning Slave Information*: D3: #8000, D2: #0000, D1: #0000, and D0: #0000.

Variable Tables

Input Variables

Name	Variable name	Data type	Default	Range	Description
EN	EN	BOOL			ON: FB started OFF: FB not started.
Unit selection	UnitSelect	INT	&0	At right.	Specify the Unit and the serial port. Only serial port 2 of CP1H/CP1L M-type CPU unit is possible to use this FB. <ul style="list-style-type: none"> ■ Connected to CPU Unit Unit selection #FFFF Serial port No. Not accessed. (CP1H/CP1L-M: Serial Port2 CP1L-L14/20: Serial Port1) ■ Connected to Serial Communication Board(SCB) Unit selection #BBBB Serial port No. &1: Serial Port 1 &2: Serial Port 2 ■ Connected to Serial Communication Unit(SCU) Unit selection SCU Unit No. (&0 to &15) Serial port No. &1: Serial Port 1 &2: Serial Port 2
Serial Port No.	PortNo	INT	&1	&1 to &2	
Master unit No.	WTM_UnitNo	INT	&0	&0 to &99	Specify the unit number of the master.
Slave participation information	WTS_AdditionInf	LWORD			Specify the slaves that should be participating.  <p>Example when slaves 1 and 64 should be participating: #80000000000000001 (Bits 0 and 63 are ON.)</p>
Received Signal Strength Reference Level	RSSI	INT	&5	&0 to &9	Specify the received signal strength reference level. &5 is recommended.

Output Variables

Name	Variable name	Data type	Range	Description
ENO (May be omitted.)	ENO	BOOL		ON: FB processed normally. OFF: FB not processed or ended in an error.
Busy Flag	FB_BUSY	BOOL		Automatically turns OFF when processing is completed.
Normal end	FB_OK	BOOL		Turns ON for one cycle when processing ends normally.
Error end	FB_NG	BOOL		Turns ON for one cycle when processing ends in an error.
Warning Flag	Warning	BOOL		ON: Some slaves are not receiving the reference level. OFF: All slaves are receiving the reference level.
Received Signal Strength Warning Slave Information	WTS_ErrorInf	LWORD		Outputs information on slaves not receiving the reference level. 

Internal Variables

Internal variables are not output from the FB.

If the NG Flag from the FB turns ON, the following internal variables can be monitored to obtain information on the error.

Name	Variable name	Data type	Range	Description
FINS error code	FINS_ErrorCode	WORD		The FINS error code is output. A code of #0000 is output for a normal end. Refer to the <i>Related Manuals</i> for details on the error codes.
CompoWay/F error code	CompowayF_Error Code	WORD		Outputs the CompoWay/F error code. A code of #0000 is output for a normal end. See below for details on errors.

CompoWay/F Error Codes

Code	Contents	Meaning
#0000	Normal end	
#2203	Operation error	<ul style="list-style-type: none"> The operating mode is incorrect (execution is not possible in the current mode). An error occurred in EEPROM.

Version History

Version	Date	Contents
1.00	2004.12.	Original production

Note

This manual is a reference that explains the function block functions.

It does not explain the operational limitations of Units, components, or combinations of Units and components. Always read and understand the Operation Manuals for the system's Units and other components before using them.