



Toshiba Carrier BMS-SM1280HTLUL Service Manual

Smart manager / central remote control

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FILE No. A10-030-1

Revision 1: Sep. 2012

~~SMART MANAGER /~~
~~CENTRAL REMOTE CONTROL~~
TOSHIBA
Carrier
SERVICE MANUAL

Model name:

SMART MANAGER

BMS-SM1280HTLUL

CENTRAL REMOTE CONTROL
BMS-CM1281TLUL
PRINTED IN JAPAN, Ser. No. 21-BLS



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Related Manuals for Toshiba Carrier BMS-SM1280HTLUL

[Control Systems Toshiba Carrier BMS-SM1280HTLUL Owner's Manual](#)

Smart manager (web type) (44 pages)

[Control Systems Toshiba BMS-SM1280HTLE Service Manual](#)

Smart manager (53 pages)

[Control Systems Toshiba BMS-SM1280HTLE Owner's Manual](#)

Smart manager (web type) (44 pages)

[Control Systems Toshiba BMS-SM1280HTLE Network Configuration Manual](#)

Smart manager (8 pages)

[Control Systems Toshiba BMS-TP5121PWE Owner's Manual](#)

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[Control Systems Toshiba TOSDIC-CIE DS Manual](#)

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[Control Systems Toshiba TOSDIC-CIE DS Function Manual](#)

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[Control Systems Toshiba TOSDIC-CIE DS Instruction Manual](#)

(55 pages)

[Control Systems Toshiba TOSDIC-CIE DS Instruction Manual](#)

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Summary of Contents for Toshiba Carrier BMS-SM1280HTLUL

[Page 1](#) FILE No. A10-030-1 Revision 1: Sep. 2012 SMART MANAGER / CENTRAL REMOTE CONTROL SERVICE MANUAL Model name: SMART MANAGER BMS-SM1280HTLUL CENTRAL REMOTE CONTROL BMS-CM1281TLUL PRINTED IN JAPAN, Sep. 2012, TBLS...

[Page 2: Table Of Contents](#)

Contents SAFETY PRECAUTIONS3 1 PRODUCT OVERVIEW.

[Page 3: Safety Precautions](#)

SAFETY PRECAUTIONS Important safety-related information is described on the product and in this Service Guide. Read the following description on labels and symbols carefully and follow their directions. [Explanation of labels] Label Explanation Indicates that the repair engineer and other third-party individuals in the vicinity may be DANGER exposed to immediate risk of death

or serious injury if operation is not performed correctly.

[Page 4](#) Revision 1: Sep. 2012 WARNING Do not allow unauthorized personnel other than repair engineers to enter areas where fault diagnosis and repair work is conducted. Unauthorized persons may suffer injury from tools and disassembled parts. Restricted area Connect lead wires with crimping terminals and turn the closed end upwards to avoid exposure to water.

[Page 5: Product Overview](#)

PRODUCT OVERVIEW This product is an air-conditioning control system to control and monitor the operation state of air conditioners in a building by using a computer with the mouse at a customer site. The system enables intensive management, operation control, and energy-saving operation for the air conditioners of up to 128 groups. The display and operation are available on a Web browser.

[Page 6: System Configuration](#)

SYSTEM CONFIGURATION Alarm output TCC-LINK Operation output Outdoor unit All operation All Stop Indoor unit TCC-LINK RS-485 Ethernet Energy Monitoring Relay I/F Electric energy meter Only Smart Manager can be connected to PC through the Web. The Central Electric energy meter Remote Control cannot be connected.

[Page 7](#) System Devices Configuration EXTENDED SYSTEM Device Name Number of Units Model Remarks Connected Indoor Unit (TCC-LINK based model) Up to 64 units per line Max 128 Up to 128 units in total for 2 lines Energy Monitoring Relay Interface BMS-IFWH5UL Up to 8 electric energy meters per Max 4 BMS-IFWH5UL...

[Page 8: List Of Functions](#)

LIST OF FUNCTIONS Function Details User account Number of user registrations Type of user account Administrator Power user Guest Air conditioner category Category structure 3 levels □ Monitoring air conditioner status Start / Stop □ Operation mode □ Set temperature □...

[Page 9](#) Function Details Billing schedule Number of registrations Singularity settable period Up to 12 months later including current month Number of set points per day 10 settings Interval of set point 1 minute Number of days assigned 45 days per a special day schedule special day schedule Settable parameters Working hours / Non-working hours...

[Page 10: Product Specification](#)

PRODUCT SPECIFICATION □ BMS-SM1280HTLUL (SMART MANAGER) BMS-CM1281TLUL (CENTRAL REMOTE CONTROL) Central Controller 5.51" (140) Power supply Use the supplied power unit. Power consumption Operating 32 to 104 °F (0 to 40 °C), 0.75" 1.77" temperature / humidity 10 to 90% RH (19) (45) 7.09"...

[Page 11](#) □ BMS-IFWH5UL (Energy Monitoring Relay Interface) 9.68" (246) Power supply 120 VAC, 60 Hz 9.21" (234) Power consumption 0.236"-Ø7/32" Operating temperature / 32 to 104 °F (0 to 40 °C), (6-Ø5.5) humidity 10 to 90% RH mounting holes (no condensation) Storage temperature -4 to 140 °F (-20 to +60 °C) 2.59"...

[Page 12: Installation Of The Smart Manager / Central Remote Control](#)

INSTALLATION OF THE Smart Manager / Central Remote Control CAUTION • Do not twist communication wires (used between indoor unit and outdoor unit and used for central control) and input / output wires with power wires or bundle them together with power wires in a metal tube. Doing so may cause malfunction.

[Page 13](#) □ Power Unit Installation Method and Orientation There are five installation methods for this power unit as shown below: surface mount and wall mounts. Use the attached screws. No good REQUIREMENT Do not install the unit in any of the following places. •...

[Page 14](#) □ Combining the Central Controller and Power Unit You can combine the central controller and power unit using the supplied brackets as follows in order to control them as one unit Power unit Bracket Panel Combination method Fix the brackets and the central controller box together using the screws on the box.

[Page 15: Connection Of Power Cables / Earth Wires / Communication Cables](#)

CONNECTION OF POWER CABLES / EARTH WIRES / COMMUNICATION CABLES Connect power cables, communication cables, and earth wires to the specified terminals on the terminal block. REQUIREMENT Attach a ring tongue terminal to the end of each wire except those for digital input and output. TCC-LINK U1 and U2 The power terminals on the central have no polarity.

[Page 16](#) Length of stripped power cable Length of stripped TCC-LINK Length of stripped RS-485 Length of stripped digital Input / communication cable communication cable Output communication wire 1.38" (35) 1.38" (35) 1.38" (35) 0.24" 1.38" (35) 2.16" (55) 2.16" (55) Attach a round pressure terminal to Attach the supplied clamp filter to the LAN cable.

[Page 17](#) <Specifications for Wiring> Use the following materials to connect signal lines and power lines (locally procured) Line Type / Wire size / Length 2-core shield wire For TCC-LINK AWG16 (1.25 mm²), 3200 ft (1000 m) max. (total length including air conditioner area) AWG14 (2.00 mm²), 6500 ft (2000 m) max.

[Page 18: Product Connection Diagram](#)

PRODUCT CONNECTION DIAGRAM BMS-IFWH5UL • BMS-IFDD03UL (Energy Monitoring Relay Interface, Digital Input / Output Relay Interface) Installation Method and Orientation Installation Space and Maintenance Space There are five installation methods for this relay interface A side space for connecting through cable inlets as shown below: surface mount and wall mounts.

[Page 19](#) 7-2. Digital Input / Output Relay Interface (BMS-IFDD03UL) Connect power cables, earth wires, and communication cables to the specified terminals on the terminal block. To connect 2 cables, change the preset cable clamp to the provided one and fix the cables with the cable clamp as shown in the figure.

[Page 20: Switches For Setting](#)

Revision 1: Sep. 2012 SWITCHES FOR SETTING 8-1. Smart Manager (BMS-SM1280HTLUL) Central Remote Control (BMS-CM1281TLUL) The settings switch is installed on the rear of the Smart Manager / Central Remote Control. Must be set to OFF Normal All stop 2 Normal All stop 2 Synchronization of...

[Page 21](#) <DS23> Factory setting: All OFF <1> Smart Manager / Central Remote Control main / sub selection DS23 OFF: Main 2 3 4 5 6 7 8 ON: Sub Normally, this bit is set to OFF. When two Smart Manager / Central Remote Control units are used as a main unit and a sub unit with the same mode setting, set this bit to OFF (Main) for one unit and to ON (Sub) for the other unit.

[Page 22](#) Factory setting: All OFF <DS24> DS24 2 3 4 5 6 7 8 <1> to <4> Always OFF Always set this bit to OFF. <5> Control group Selection line OFF: LINE 1 ON: LINE 2 * Set a line number for which the control group selection is used. <6>...

[Page 23](#) <DS25> Factory setting: All OFF <1> Always OFF DS25 • Always set this bit to OFF. 2 3 4 <2> Synchronization of zone setting data OFF: With synchronization ON: Without synchronization This bit specifies whether to perform synchronous communication of zone setting data between Smart Manager / Central Remote Controls.

[Page 24](#) 8-2. Energy Monitoring Relay Interface (BMS-IFWH5UL) The following settings are necessary to use Energy Monitoring Relay Interfaces. Address setting SW1 Address set switch When two or more Energy Monitoring Relay Interfaces are used, set a different address for each unit to avoid address duplication.

[Page 25](#) 8-3. Digital Input / Output Relay Interface (BMS-IFDD03UL) The following settings are necessary to use Digital Input / Output Relay Interfaces. Address setting SW1 Address set switch When two or more Digital Input / Output Relay Interfaces are used, set a different address for each unit to avoid address duplication.

[Page 26: Mode Setting For Smart Manager / Central Remote Control](#)

MODE SETTING FOR Smart Manager / Central Remote Control □ Operation mode You can switch the functional mode of the smart manager / central remote control between the central control mode and remote control mode. The mode is switched with the dip switch DS23-<6>. OFF side:

Central control mode This Smart Manager / Central Remote Control is used as a central control unit.

[Page 27: Zone Setting](#)

ZONE SETTING □ What is zone? • A zone is a control unit consisting of a combination of any indoor units and the settings of indoor units in a zone can be configured collectively. • You can make up to 64 zones pairing any of up to 64 groups in a line. By using lines 1 and 2, you can set up to 128 zones in total.

[Page 28: Changing Return-Back Time / Temperature Settings](#)

CHANGING RETURN-BACK TIME / TEMPERATURE SETTINGS □ What is return-back? When the return-back function is activated, the temperature setting exceeding the return-back temperature will automatically be adjusted to the return-back temperature after a certain period of time to prevent extremely high / low temperature setting.

[Page 29: Test Run](#)

TEST RUN Start the system to perform operation check by following the procedure below.
12-1. Preparation Item Details Procedure Preparation Discuss with a customer to determine details of the Refer to the Owner's manual of the Setting following. File Creation Software. •...

[Page 30](#) 12-2. Operation Check Complete the test run of air conditioners before operation check. Item Details Procedure Start-up check • Turn on the all air conditioners. For further details, refer to the Installation • Turn on the all interfaces. manual of each device. •...

[Page 31: Troubleshooting](#)

TROUBLESHOOTING About the check codes If there is a problem with the air handling unit or if the controller detects anything unusual with the system, a check code is displayed in the warning list on the computer screen or the LCD of the controller. Check code Description Action...

[Page 32](#) 13-1. Trouble with Connection (Target model of this section is Smart Manager (SM1280HTLUL) which can be connected to a PC through the Web.) 13-1-1. Logon screen is not displayed. Cause Solution The controller is not turned on. Turn on the controller. The HUB is not turned on.

[Page 33](#) 13-2. Trouble with Web Screen (Target model of this section is Smart Manager (SM1280HTLUL) which can be connected to a PC through the Web.) 13-2-1. Takes long time to display. Cause Solution The network is busy. Connection via an intra-company LAN may slow the Web screen display due to a busy network.

[Page 34](#) 13-2-6. After logon, the dialog message "Login has been disabled." appears. Cause Solution The user account has been deleted. The message appears if the user account used for the logon is deleted. Log on with another user account. 13-2-7. The buttons or other elements are not displayed. Cause Solution Trouble due to browsers.

[Page 35](#) 13-2-10. The operation state does not match that displayed on the remote controller. Cause Solution The inputs in the setting file are incorrect. Check if the address set in the setting file matches that in the air conditioner. To show the address set in the air conditioner, press the [UNIT] button on the remote controller.

[Page 36](#) 13-3. Other Troubles (Target model of this section is Smart Manager (SM1280HTLUL) which can be connected to a PC through the Web.) 13-3-1. The date or time change is not applied. Cause Solution The internal processing of the controller is prioritized. The internal processing of the controller may be given priority over a setting operation from the browser.

[Page 37](#) 13-3-6. Clicking [OK] or [Cancel] does not close the window or takes some time for the window to close. Cause Solution Operating schedule is displayed and set. If many operating schedules are displayed and set, closing the operating schedule window takes some time after [OK] or [Cancel] is clicked. Wait for the window to close without performing any operation.

[Page 38](#) 13-3-11. No daily report file is found. Cause Solution The controller was not turned on at the time of meter- If the controller is off at the time of meter-reading, the daily report file of the reading. day is not created. The accumulated operation hours and electricity amount are

added up to the daily report file of the next day, so the values in the daily reports will be correctly summed up.

[Page 39](#) 13-4-4. Lock input does not stop the air conditioner. Cause Solution 1. Check if communication error with the digital input / output relay Communication error with the digital input / output relay interface. interface is detected. 2. Check if communication error with the air conditioner is detected. 1. Check if communication error with the digital input / output relay Communication error with the air conditioner.

[Page 40](#) 13-5. Questions about Functions Questions Answer What is the procedure to create a setting file? Please read the Owner's manual of the Setting File Creation Software. (*1) How many air conditioners can be connected? Up to 128 units of air conditioners can be connected. Note that up to 64 units can be connected per TCC-LINK line.

[Page 41](#) Revision 1: Sep. 2012 Questions Answer Can a schedule be separately set for each air One air conditioner can register only one master schedule while 32 master (*1) conditioner? schedules can be created. An operating schedule can be separately set for each air conditioner. What is the billing schedule? A day is divided into two time frames: on-hours and off-hours, and power is (*1)

[Page 42: Test Run Check](#)

TEST RUN CHECK 14-1. Check Items Before Trial Run Check item Has the electrical work (power supply and communication wiring work) been completed? Key point 1. When the Energy Monitoring Relay Interface or Digital Input / Output Relay Interface is connected, check that the polarity (A / B) of the wiring is correct.

[Page 43](#) 14-2. Procedure of Test Run Check Check item Procedure PC connection check Start the browser software of the PC to be connected. (*1) Enter http://the controller's IP address/index.html in the address bar of the browser, and check that the logon window is displayed. Error message x...

[Page 44](#) Check item Procedure Controller operation 1. Turn on the controller and check that the LCD displays "Line" and "All". check Error message x 1) Check if the controller is turned on. The frame line only is Power supply voltage for this control must be 120 VAC. displayed;...

[Page 45](#) Check item Procedure Air conditioner In the zone window, select all the floors and display the "General" tab. (*1) connection check Check if all the indoor unit operation statuses are obtained (if the units are connected). (Facing test) Error message x...

[Page 46](#) Check item Procedure Digital Input / Output Check the connection when the Digital Input / Output Relay Interface is connected and the locking Relay Interface or fire alarm interlocking is set. connection check Locking interlocking operation check Display "Alarm List" on the PC, and check that the S07:BMS-IFDD communication error is not detected.

[Page 47](#) Check item Procedure Power distribution Operate the air conditioner for several hours with the controller in operation. (*1) check Perform manual meter-reading from the PC. "Option" > "Manual Meter-Reading" > "Go" (Do not select "don't continue data reading".) Wait for approx. 1 minute until a manual meter-reading file is created. Selecting "Option"...

[Page 48: Check Points](#)

CHECK POINTS 15-1. Network Wiring (Target model of this section is Smart Manager (SM1280HTLUL) which can be connected to a PC through the Web.) Check point Check that the LAN cable is connected to the connector on the upper side of the controller, and the connector's LED illuminates. Check that the LAN cable is connected to the PC that is connected to the controller via the network, and check that the PC operates normally.

[Page 49](#) 15-5. Facing Test Check point At both sides of the controller and handy remote controller, perform setting and display check. Before starting the check, discuss and determine the air conditioners checking order and procedure. Check 1: Check that the unit name and operation state match between the controller and the handy remote controller. Check 2: Check that the setting operation from the controller can change the setting in the handy remote controller.

[Page 50](#) Check point Check the RS-485 send circuit of the interface. Error message Enable

the test mode 2 at the interface, and check that communication waveform is output between A and B of the RS-485 terminal block of the interface. □ OK: The RS-485 send circuit of the interface is normal.

[Page 51](#) 15-9.How to Identify Defective Part at S06 (BMS-IFWH Communication Error) or S07 (BMS-IFDD Communication Error) Occurrence Check point Check if the RS-485 LED (Green) is blinking at the Energy Monitoring Relay Interface or the Digital Input / Output Relay Interface. Error message (If blinking) Defective part:...

[Page 52](#) Revision record First issue Jan / 2012 Revision 1 Add CAUTIONS for Monthly Report Sep / 2012 Creation Software for Smart Manager Add reference Add Question and answer on No.35...

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This manual is also suitable for:

Carrier bms-cm1281tlu