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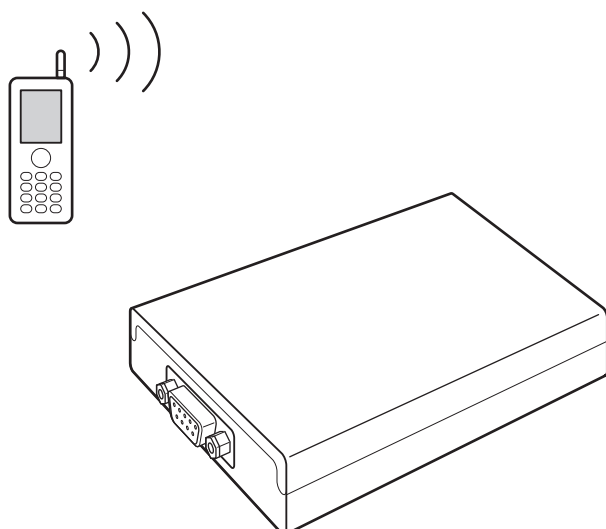
TCS-NET GSM PHONE CONTROL INTERFACE

Owner's Manual

Model name:

TCS-NET GSM Phone Control Interface

TCB-IFGSM1E



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Thank you very much for purchasing TOSHIBA TCB-IFGSM1E.
Please read this owner's manual carefully before using your TCB-IFGSM1E.
After reading this manual, keep it available to all users for future reference.

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1 Precautions for safety

DANGER

-
- DO NOT ATTEMPT TO INSTALL THIS SYSTEM BY YOURSELF. THIS SYSTEM REQUIRES A QUALIFIED INSTALLER.
 - DO NOT ATTEMPT TO REPAIR THE TCB-IFGSM1E. THE UNIT SHOULD BE PROFESSIONALLY REPAIRED.
 - OPENING OR REMOVING THE COVER OF THE TCB-IFGSM1E WILL EXPOSE YOU TO DANGEROUS VOLTAGES.
 - TURNING OFF THE POWER SUPPLY WILL NOT PREVENT POTENTIAL ELECTRIC SHOCK.
-

WARNING

WARNINGS ABOUT INSTALLATION

- Be sure to ask a dealer or a store specialized in electrical work to install this system.
- If this system is improperly installed, it may cause some problems such as electric shock and fire.

WARNINGS ABOUT OPERATION

- Do not spill water or other liquid on the TCB-IFGSM1E. If the unit is wet, it may cause electric shock.
- Do not replace, damage or alter the installed AC adapter. This may cause fire, electric shock or breakdown.
- Check the AC adapter for dust. If it is not plugged properly, insert the plug firmly as far as it will go. Improper connection may cause electric shock or fire due to accumulated dust.
- When the TCB-IFGSM1E is not used for a long time period, unplug the AC adapter for safety. The AC adapter may be covered with dust, which may result in overheat or fire.
- Remove dust from the AC adapter occasionally. Failure to do so may result in fire.
- Unplug the AC adapter if there is a burnt odor or any other abnormality. Using the TCB-IFGSM1E continuously with an abnormality may cause fire, electric shock or breakdown. Contact the installer.
- Do not use TCB-IFGSM1E for any purposes other than for the air conditioners specified in this manual.

WARNINGS ABOUT MOVEMENT AND REPAIR

- Do not attempt to move or repair the TCB-IFGSM1E unit.
 - Do not disassemble the unit.
 - Always ask the dealer to move the unit for reinstalling it in another place. Improper installation may cause electric shock or fire.
 - Whenever the system does not work, ask the dealer for repair or check. If the system is repaired or modified improperly, it may cause electric shock or fire.
-

2 Features

The following remote control is enabled by sending a short message service (SMS) from your GSM (global system for mobile communications) mobile phone.

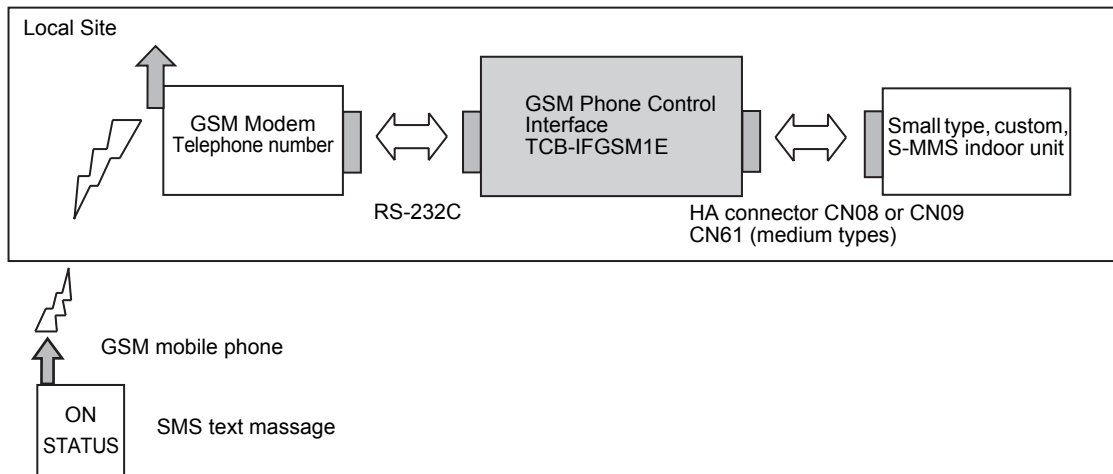
- Air conditioner ON/OFF control
- Air conditioner ON/OFF status monitoring
- Auto-sending of an SMS notification message in the event of an air conditioner alarm and alarm monitoring (S-MMS and DI, SDI models only)

This system is equipped with the following security function.

- The air conditioner receives commands only from the registered GSM phone number and sends air conditioner information SMS messages only to the registered GSM phone number.

Messages consisting of alphanumeric characters and symbols are sent and received by SMS message.

The overall system configuration is shown below.



3 Before use

- To use this GSM remote monitoring system, you must subscribe to the GSM mobile phone equipped with the SMS message function for operation and to the GSM telephone service of GSM modem. The cost for communication with the GSM modem will be charged separately. Write down the subscribed GSM modem telephone number, PIN, and PUK number as follows and keep it at hand.

GSM modem telephone number:
PIN:
PUK number:

WARNING

Keep these numbers in secret. If the GSM modem telephone number and/or PIN are known to the third party, he/she may maliciously operate the air conditioner with impersonation.

- The following air conditioner models are available in this system.

DAISEIKAI		RAS-B**GKVP-E
		RAS-B**GKCV-E
		RAS-B10SKVP-E
		RAS-B13SKVP-E
		RAS-B16SKVP-E
		RAS-10SKVP-ND
		RAS-13SKVP-ND
		RAS-16SKVP-ND
		RAS-10SKVR-E
		RAS-13SKVR-E
		RAS-16SKVR-E
		RAS-18SKVR-E
		RAS-22SKVR-E
		RAS-**SKV-E
		RAS-**PKVP-E
		RAS-**PKVP-ND
	RAS-M**PKVP-E	
	RAS-M**PKVP-ND	
Inverter	High wall	RAS-**GKV-E2
Inverter Multi	High wall	RAS-M**GKV-E2
		RAS-M**GKCV-E2
	Duct	RAS-M**GDV-E
		RAS-M**GDCV-E
S-MMS, S-HRM, Mini-SMMS, DI, SDI		

- Ask the dealer or the installer about whether the GSM modem, GSM Phone Control Interface TCB-IFGSM1E, and the target air conditioner are supplied with power and their connections and initial settings are completed.
- Be familiar with how to create, send, and receive an SMS message using your GSM mobile phone in advance.

4 Initial settings

- Make the following settings on your GSM mobile phone.
- In the following example, you do not need to enter the < and > symbols. You just enter the value enclosed in < and >.
- The phone number specified at SETPERMIT is the phone number to control an air conditioner which is connected to the GSM Modem. Enter the telephone number as <GSM phone number> or <"+ + "Country code" + "GSM phone number" (omit the first zero of the GSM phone number, if it starts from zero)> for domestic transmission, or <"International access code" + "Country code" + "GSM phone number" (omit the first zero of the GSM phone number, if it starts from zero)> for international transmission. For the details, ask your mobile network operator.
- It replies to the SETPERMIT, INFOTEL commands and the operations to the air conditioner from mobile by sending SMS messages to the phone number specified at INFOTEL. Enter the telephone number as <GSM phone number> or <"+ + "Country code" + "GSM phone number" (omit the first zero of the GSM phone number, if it starts from zero)>. "+ + Country code may not be necessary for local transmission. For the details, ask your mobile network operator.
- NAME can be up to 19 characters of English alphabets and Arabic numerals (spaces cannot be included).

NOTE

Maximum length of SMS is 160 characters. Pay attention on it when you set SETPERMIT, INFOTEL or NAME at first time.

When your message becomes more than 160 characters long, divide it into plural SMS to send.

- (a) Create an SMS message for setting the setting permitted GSM phone number of the target air conditioner.

```
SETPERMIT < >
```

Enter the GSM phone number in < > as a string of numbers. Space character can be included.

Up to five GSM phone numbers can be entered by inserting a new line at the end of the message above.

```
SETPERMIT < >
SETPERMIT < >
SETPERMIT < >
```

When a PIN is provided, be sure to enter it in <***> before <GSM phone number>. PIN is a 4-digit to 8-digit code. Space character can be included. Be sure to enter PIN for all GSM phone numbers.

```
SETPERMIT < *** > < >
SETPERMIT < *** > < >
SETPERMIT < *** > < >
```

- (b) Create an SMS message for setting the destination GSM phone number for notification. Create the following INFOTEL message that includes the mobile phone number to control the air conditioner following (a).

```
SETPERMIT < >
SETPERMIT < >
INFOTEL < >
```

Enter the GSM phone number in INFOTEL < > as a string of numbers. Space character can be included.

Up to five GSM phone numbers can be entered by inserting a new line at the end of the message above.

```
INFOTEL < >
INFOTEL < >
INFOTEL < >
INFOTEL < >
```

When a PIN is provided, be sure to enter it in <***> before <GSM phone number>. PIN is a 4-digit to 8-digit code. Space character can be included. Be sure to enter PIN for all GSM phone numbers.

```
INFOTEL <***>< >
INFOTEL <***>< >
INFOTEL <***>< >
```

- (c) Enter the name of the specified air conditioner in < > following (b). Use alphanumeric characters for the name. This setting is necessary to identify air conditioners when two or more GSM remote monitoring systems. Make this setting even when one system is used.

```
NAME < >
```

When a PIN is provided, be sure to enter it in <***> before <name>. PIN is a 4-digit to 8-digit code. Space character can be included.

```
NAME <***>< >
```

- (d) After you have created these SMS message, send them to the GSM modem telephone number used in this system.

After a while, the following SMS message is sent to the GSM phone number that was set in the SMS message for setting the destination GSM phone number.

- Response SMS message to indicate successful initial settings
Name of specified air conditioner:
INITIAL SET OK
- Response SMS message to indicate unsuccessful initial settings
Name of specified air conditioner:
INITIAL SET NG

When an SMS message that includes "INITIAL SET OK" is received, the initial settings are completed.

REQUIREMENT

If an SMS message that includes "INITIAL SET NG" is received, an invalid message that includes unspecified characters was sent. Check the sent messages, and try to send messages until "OK" response SMS message is received. When a PIN is provided, check whether the correct PIN code was entered.

If no response SMS message is received, the transmit SMS message may not have arrived at the GSM modem telephone number or the destination GSM phone number setting may be incorrect or there may be a problem with the local site including the GSM modem. Refer to Chapter 6 Troubleshooting.

Nevertheless, if an SMS message including "INITIAL SET OK" is not received yet, contact the installer.



5 Usual operation

- (a) To operate the air conditioner, send the following SMS message to the GSM modem telephone number used in this system.

ON

- (b) To stop the air conditioner, send the following SMS message to the GSM modem telephone number used in this system.

OFF

After the (a) or (b) SMS message is sent, the following SMS message is returned.

- When this SMS message was sent before initial settings
INITIAL UNCOMPLETED
- When the characters in the sent SMS message are different from those above
Name of specified air conditioner:
CHARACTER SETTING ERROR
- When the SMS message was received successfully
Name of specified air conditioner:
SETTING OK
- When the SMS message was not received due to a problem of the local site
Name of specified air conditioner:
SETTING NG

- (c) To monitor the air conditioner ON/OFF status, send the following SMS message to the GSM modem telephone number used in this system.

STATUS

The following SMS message is returned.

- When there is no alarm
(During operation)
Name of specified air conditioner:
STATUS ON
(During operation stop)
Name of specified air conditioner:
STATUS OFF
- When there is an alarm (S-MMS/DI/SDI)
Name of specified air conditioner:
STATUS ON ALARM
Name of specified air conditioner:
STATUS OFF ALARM

- (d) When an alarm has occurred in S-MMS or DI or SDI, the following SMS message is sent.

Name of specified air conditioner: ALARM

- (e) Deleting registered GSM phone number

To delete the registered setting permitted GSM phone number, send the following message to the GSM modem telephone number used in this system.

Any operations from the GSM phone number deleted here is invalid.

DEL SETPERMIT<++++>

++++: GSM phone number to be deleted

To delete the registered destination GSM phone number, send the following SMS message to the GSM modem telephone number used in this system.

DEL INFOTEL <++++>

++++: GSM phone number to be deleted

- When the GSM phone number is deleted correctly, the following SMS message is returned.
Name of specified air conditioner:
INITIAL SET OK

- If incorrect characters are used or specified GSM phone number does not exist, the following SMS message is returned.
Name of specified air conditioner:
INITIAL SET NG
Send a correct SMS message.

(f) Requesting registered GSM phone numbers
To request the registered setting permitted GSM phone numbers, send the following SMS message to the GSM modem telephone number used in this system.

READ INFOTEL

The following SMS message is returned from the GSM modem.

Name of specified air conditioner: READ
INFOTEL
+++++,*****,<<<<<<<<<>>>>>>>>>,+++++
+++++
("+++++,"*****,"<<<<<<<<<,">>>>>>>>,"
and "+++++," are registered destination
GSM phone numbers separated by commas
and sent from the local site.)

If no GSM phone number is registered, the following SMS message is returned.
Name of specified air conditioner: READ
INFOTEL NONE

To request the registered destination GSM phone numbers, send the following SMS message to the GSM modem telephone number used in this system.

READ SETPERMIT

The following SMS message is returned from the GSM modem.

Name of specified air conditioner: READ
SETPERMIT
+++++,*****,<<<<<<<<>>>>>>>>>,+++++
+++++
("+++++,"*****,"<<<<<<<<<,">>>>>>>>,"
and "+++++," are registered setting
permitted GSM phone numbers separated by
commas and sent from the local site.)

(g) Deleting a PIN number

When a registered PIN number is no longer required because the registered contents of the SIM card have been changed, send the following SMS message to the GSM modem telephone number used in this system.
*** is the PIN to be deleted.

DEL PIN <***>

6 Troubleshooting

WARNING

- Unplug the AC adapter if there is a burnt odor or any other abnormality. Using the TCB-IFGSM1E continuously with an abnormality may cause fire, electric shock or breakdown. Contact the dealer or installer.

Refer to the following for sending and receiving SMS messages.

- When an SMS message including "INITIAL SET NG" (after the initial setting SMS message is sent) or "CHARACTER SETTING ERROR" (during usual operation) is received, a message with unspecified characters was sent. Check the message content again and try to send a message until "OK" response SMS message is received.

<For example>

- When INFOTEL, SETPERMIT, NAME, ON, OFF, DEL or READ are misspelled or typed in lower case letters.
- When the registered NAME exceeds 19 characters, or contains any spaces or characters other than English alphabets and arabic numerals.
- When the registered GSM phone number contains any characters other than "+" and arabic numerals.
- When no response SMS message is returned, check the destination GSM modem telephone number, the set destination GSM phone number, and the set setting permitted GSM phone number of the sent SMS message.

<For example>

Followings are the examples of causes when the GSM phone number is "XXXXXXXXXX".

Number registering patterns:

Pattern1: XXXXXXXXXXXX

Pattern2: "+" + "Country code" + "XXXXXXXXXX", or

Pattern3: "International access code" + "Country code" + "XXXXXXXXXX".

(In Pattern2 and 3, omit the first zero of the GSM phone number, if it starts from zero).

- Cause1) When the registered PIN and the sent number do not match.
When the registered PIN is "1111" and the sent number is "1112<XXXXXXXXXX>", TCB-IFGSM1E will not reply to the GSM phone.
- Cause2) When TCB-IFGSM1E is in Australia and SMS is sent from a GSM phone within Australia, if the SETPERMIT number is not registered as Pattern1: XXXXXXXXXXXX or Pattern2: +61XXXXXXXXXX (61 is the Australian country code), TCB-IFGSM1E will not reply to the GSM phone.
- Cause3) When SMS is sent from a GSM phone within New Zealand, if the SETPERMIT number is not registered as Pattern3: 0064XXXXXXXXXX ("00" is the international access code of New Zealand and "64" is the country code of New Zealand), TCB-IFGSM1E will not reply to the GSM phone.
- Cause4) The registered GSM phone numbers set by INFOTEL are neither Pattern1 nor 2.

If the problem still remains, the following possible causes are considered. Contact the dealer or installer.

- When no SMS message is returned in response to the initial setting SMS message or status SMS message, the transmit SMS message may not have arrived at the GSM modem telephone number or there may be a problem with the local site including power interruption.
- When an SMS message including "SETTING NG" is received, a problem has occurred in the local site.

7 Specification

Media used		Global System for Mobile Communications (2G digital mobile phone communication system)
Operation	Air conditioner control items	Air conditioner ON/OFF control is designated by mobile phone SMS message.
	Air conditioner status acquisition items	Air conditioner ON, OFF, and alarm status is notified by mobile phone SMS message. (Auto-notification is provided only when CN61 is used.)
	Operation/notification target GSM phone number	Up to 5 numbers can be registered initially.
	Accessible GSM phone number	Up to 5 numbers can be registered initially.
TCB-IFGSM1E hardware	Power supply	7-19 VDC No external power supply is required when S-MMS, DI or SDI is used.
	Power consumption	1.1 W at 19V input
	RS-232C connector	Supports communication specifications (9600bps, non-parity, 8 bits, 1 stop bit, flow control provided/none) D-sub 9-pin male connector Protocol: Supports ETSI GSM 07.05, GSM 07.07, GSM 03.40, GSM 03.38 standard compliant SMS-related AT commands.
	CN3/CN4 connector (connection to air conditioner)	Photocoupler HA connector specification, 12 VDC power input, alarm input 4-pin/6-pin connector
	Operating temperature/humidity	0 to 40°C, 20 to 85% RH
	Storage temperature	-10 to 60°C
	Chassis material	Plastic (nonflammable ABS resin UL-94V0)
	Dimensions	32 (H) × 80 (W) × 125 (D) mm
	Mass	150 g