MITSUBISHI

PROGRAMMABLE CONTROLLER

MELSEC-A

Mitsubishi General Use PC User's Manual

A6TEL Modem Interface Module

Thank you for buying the Mitsubishi General Use PC MELSEC-A Series.
Before use, please read this manual carefully and correctly operate the module with a sufficient understanding of the A series PC functions and performance.
Please place this manual in a location where it is available to end users.

MODEL	A6TEL-U-E
MODEL CODE	13J860

MITSUBISHI ELECTRIC

IB (NA) 66694-A (9709) MEE

●SAFETY PRECAUTIONS●

(Read these precautions before using.)

When using Mitsubishi equipment, thoroughly read this manual and the associated manuals introduced in the manual. Also pay careful attention to safety and handle the module properly.
These precautions apply only to Mitsubishi equipment. Refer to the CPU module user's manual for a description of the PC system safety precautions.
These ● SAFETY PRECAUTIONS ● classify the safety precautions into two categories: "DANGER" and "CAUTION"

⚠DANGER	**Procedures which may lead to a dangerous condition and cause death or serious injury if not carried out properly.**
⚠CAUTION	**Procedures which may lead to a dangerous condition and cause superficial to medium injury, or physical damage only, if not carried out properly.**

Depending on circumstances, procedures indicated by ⚠**CAUTION** may also be linked to serious results.
In any case, it is important to follow the directions for usage.
Store this manual in a safe place so that you can take it out and read it whenever necessary. Always forward it to the end user.

[DESIGN PRECAUTIONS]

⚠DANGER

- When performing the data change, program change, and status control of the PC in operation, configure an interlock circuit in a sequence program so the safety of the overall system is always maintained.
  Also, determine the troubleshooting method when data communication error occurs between the peripheral device and the PC CPU.

⚠CAUTION

- Do not place a modem or RS-232C cable in the proximity of load carrying wire except for the main circuit, high-voltage wire, and PC.

[INSTALLATION PRECAUTIONS]

⚠CAUTION

- Do not directly touch the conducted area and electric parts of this module. It may cause malfunctioning or breakdowns.
- Tighten the add-on connecting screws with the specified torque. If the add-on connecting screws are loose, it may result in fallout or malfunctions.
- Tightening the add-on connecting screws too far may cause damages to the screws and/or the module, resulting in fallout or malfunctions.

[WIRING PRECAUTIONS]

⚠CAUTION

- Installing a modem on the power distribution panel may cause malfunctioning due to a noise. It is recommended to install modems to outside the power distribution panel.

[STARTING AND MAINTENANCE PRECAUTIONS]

⚠CAUTION

- Never disassemble or modify the module. This may cause breakdowns, malfunctioning, injury, and/or fire.
- When performing on-line operations to the PC CPU moodule in operation with the peripheral device connected (especially changing the program or changing the condition of forceful output), an extreme caution is needed with careful reading of the manuals, especially during remote accessing. Mis-operation will cause a hardware damage or an accident.

[DISPOSAL PRECAUTIONS]

⚠CAUTION

- When disposing of this product, treat it as industrial waste.

Revisions

* The manual number is noted at the lower left of the back cover.

Print Date	*Manual Number	Revision
Sep. 1997	IB (NA) 66694-A	First printing

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About This Manual

The following product manuals are available.

Related Manual

Manual Name	Manual No.
type SW3IVD-GPPA (GPP) Operating Manual (Same package)	IB-66691 (13J906)
type SW3IVD-GPPA (A6TEL) Operating Manual (Same package)	IB-66693 (13J908)

1. Overview

This manual describes the functional overview of the A6TEL Modem Interface Module (abbreviated as A6TEL from here on), the specification and the function.

A6TEL is a modem interface module used for connecting an A series PC CPU module and a modem.
A6TEL may be installed to the CPU module (add-on connection) or connected by cable.

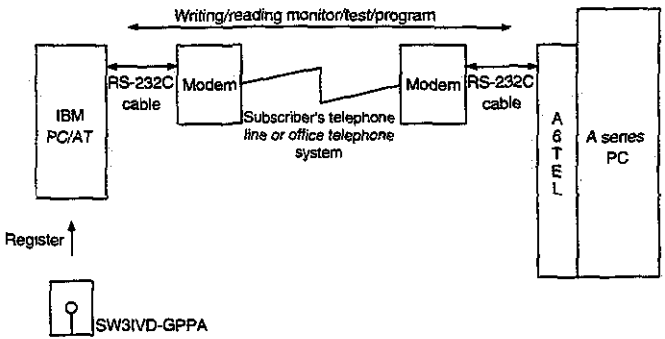
By using the A6TEL, a remote PC can be maintained via telephone line using the GPP function of a peripheral device, and notification from A6TEL to specified telephone or pager can be made when an error has occurred on a PC.
In addition, as A6TEL is equipped with an RS-232C connector for peripheral device connection, communication with the CPU module is possible by connecting peripheral devices while having A6TEL and the CPU module still connected.

When starting A6TEL or communicating with A6TEL via telephone line, the following software package must be registered to the peripheral device.

- SW3IVD-GPPA GPP function software package

2. Overview of A6TEL Functions

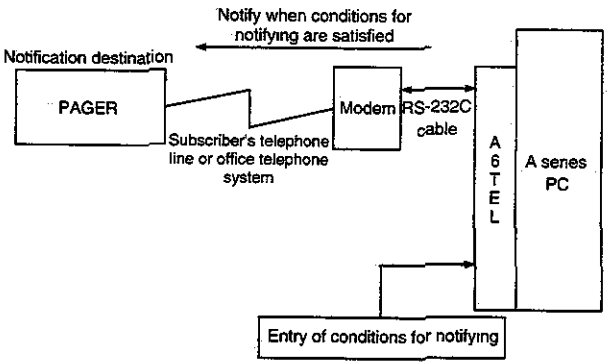
(1) *Remote access function (Connection via telephone line)*
A6TEL can perform communication via IBM PC/AT line to which GPP function is registered. Thus, PC maintenance works, such as confirmation of PC's status and updating programs, can be performed without going to the actual installation site when a trouble occurs on a PC.



(2) Notification processing function

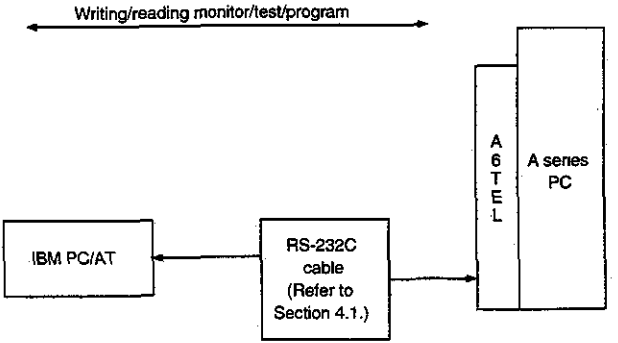
If conditions for notifying are registered to an A6TEL, the A6TEL monitors the PC and notifies to the specified telephone number when the set conditions are satisfied. The user is notified of a PC error or trouble occurrence at the site via telephone line.

(Conditions for notifying are set using the GPP function and registered to A6TEL in advance.)



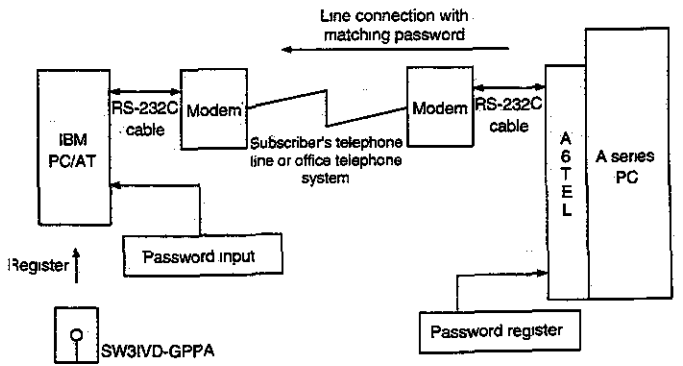
(3) Proximity connection function

A6TEL can communicate with a CPU module using the GPP function, by connecting IBM PC/AT to which GPP function is installed.



(4) Password registration function

If a password is registered to A6TEL, connection via telephone line is not established unless the set password is entered. This function prevents unnecessary program changes attempted via telephone line. (Password is set up with the GPP function and registered to A6TEL in advance.)



3. Precautions for Use A6TEL

(1) Power supply selection
Power to the A6TEL is supplied from CPU module. If a power module is used as another source, consider the 0.20A consuming current required by A6TEL.

(2) Connection between A6TEL and the CPU module
A CPU module can be connected to A6TEL by add-on connection or using a cable.
However, some restrictions apply when making an add-on connection with a compact-type CPU. (Refer to Section 4.1.)

(3) Telephone line restrictions
- The line with call waiting should not be used because the signal of second call may disturb or even disconnect the original connection.
- Use of another telephone on the same line should be avoided because picking up the other handset may disconnect the line connected.

(4) Peripheral devices and modules that cannot be connected to A6TEL
Programming modules (A7PU, A7PUS, A8PU, etc.), ROM writer module (A6WU) and data access module (A6DU-B) cannot be connected to the A6TEL. (This is because A6TEL cannot supply power to the above modules.)

(5) Precautions when wiring
- If the modem is set inside the power distribution box, it may be disturbed by noise. It is recommended to set the modem outside of the power distribution box. (Refer to Section 4.1 for connection cable.)
- The modem and its RS-232C cable should not be placed near main telephone line, high voltage cable or load line other than PC.
  Noise or surge may disturb the operation.

(6) How to select a function
Function is selected by setting the DIP switch.

[A6TEL DIP switch settings]

Switch No.	Remote access	Notification processing	EEPROM mode	Proximity connection
1	OFF	OFF	ON	OFF
2	OFF	OFF	ON/OFF	ON
3	OFF	ON/OFF	ON/OFF	ON/OFF
4	OFF			

If "ON/OFF" is indicated in the above table, the function can be executed by setting either ON or OFF

4. Specifications

4.1 Performance Specification

The performance specification for A6TEL is shown below:

Table 4.1 Performance specification for A6TEL

Item		Specification
Connecting CPU		All A series CPU's
Connection system	Add-on connection	Following restrictions apply for compact-type CPUs (A1S, A2ASCPU, etc.): • RUN/STOP key of the CPU cannot be installed. • CPU status cannot be confirmed on the LED.
	Cable connection	Cable connection is possible with all A-series CPUs. (For connection cables, refer to the Interface.)
Interface	RS-232C connector	Connection cable for modem and IBM PC/AT • Modem: the cable supplied with the modem • IBM PC/AT: AC30R2*
	RS-422 connector 1	Not used
	RS-422 connector 2	For installation/cable connection to a CPU module Connection cable: AC30R4-PUS (3m (9.84ft.)) (Possible to extend up to 33m (108.27ft) by combining with AC300R4-EX (30m (98.43ft)).
Telephone line used		Analog two-wire system
Number of registered conditions for notification		6 (Store in EEPROM of A6TEL)
Power consumption (5VDC)(A)		0.20 (from CPU module)
External dimensions (mm) [inch]		188 [7.40] (H) × 78 [3.07] (W) × 23 [0.91] (D)
Weight (kg) [lb]		0.25 [0.55]

*: Used for the initial setting, key word registration and notification condition registration.

General specifications are same as the CPU module to which A6TEL is installed or connected. Refer to the User's Manual of the CPU module.

4.2 Modem Specifications and Models that can be Connected

(1) Modem specification
If a modem is used, choose one with the following specification (Refer to Appendix for modem setting):

Communication	ITU-T V.34/V.32bis/V.32/V.22bis/V.22/V.21
Error detection	Compliant with MNP class 2/4 or ITU-T V.42
Data compression	Compliant with MNP class 5 or ITU-T V.42bis

(2) Models that can be connected (As of January, 1997)

Manufacturer	Model name of modem
AIWA	PV-BF288M2, PV-AF2881WW, PV-PF24, PV-AF24V5, PV-AF144V5, PV-BF144, PV-PFV144
MICRO-CORE	MC288XI, MC288XE
MEICRO-COM	DESKPORTE-W, DESKPORTE33.6S
OMRON	ME2814B2, ME3314B, MD24FL10V, MD24XL10V, ME1414VBII
SUNTAC	MS336AF, MS144AVF, MS288AF
OKI	PCLINK 296SX

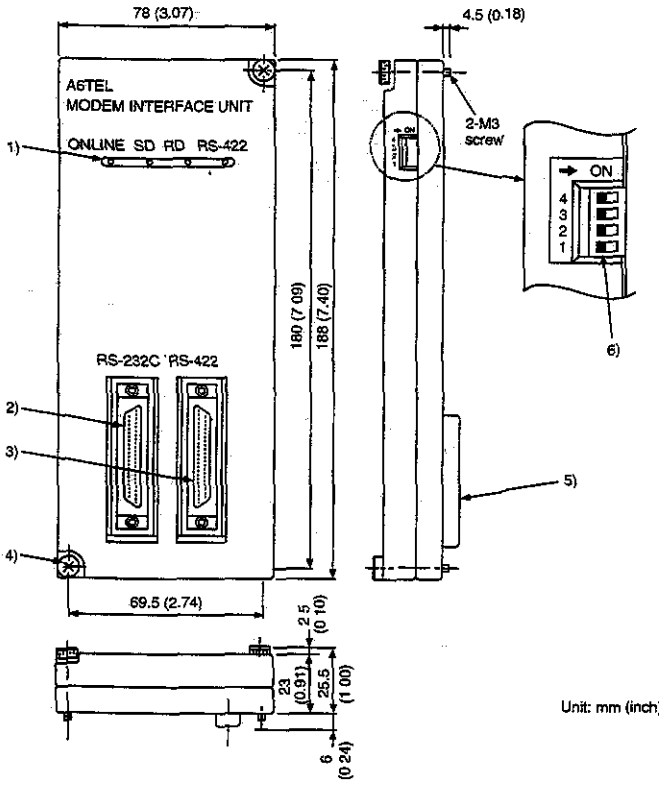
(3) Connection cable
For the connection between A6TEL and a modem, use the RS-232C cable supplied with a modem or the specified cable.
(A6TEL side: 25 pins, D sub-connector).

[A6TEL connector specification]

Pin number	1	2	3	4	5	6	7	8	20
Signal name	FG	SD	RD	RS	CS	DR	SG	CD	ER

(4) Precautions when using a cellular phone
- When the call destination is a cellular phone, it is recommended to use modems that support MNP class-10 error correction function. However, it may not work when the condition of connection is not desirable.
- When a cellular phone is used, it is recommended to select a model capable of automatic receiving.

5. Name of Each Part



1) Status display LED

Name	Status	Condition
ONLINE	OFF	Not connected to telephone line
	ON	Connected to telephone line (normal)
	Flashing	Connected to telephone line (error); Refer to (1) in Chapter 7
SD	OFF	Data not sent from A6TEL
	ON	Data being sent from A6TEL
RD	OFF	Data not received by A6TEL
	ON	Data being received by A6TEL
RS-422	OFF	Peripheral device not connected to RS-422 connector 1
	ON	Peripheral device connected to RS-422 connector 1

2) RS-232C connector
   - Connector for connecting a modem or IBM PC/AT line
     (Be sure to securely tighten the screws to prevent falling out due to vibration, etc.)

3) RS-422 connector 1 (not used)

4) Screws for add-on connection
   - Screws for connection with a CPU module
     (When installing A6TEL to a CPU module, it must be securely fixed with screws to prevent falling out due to vibration, etc.)

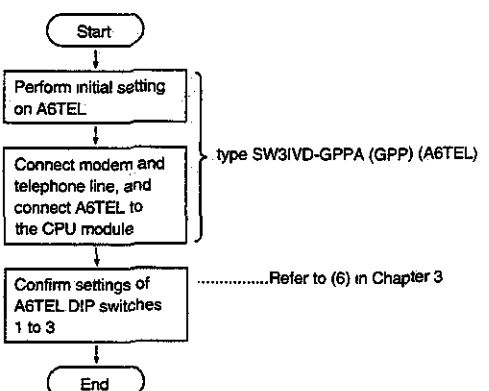
5) RS-422 connector 2
   - Connector for installation/cable connection to a CPU module. (Refer to Section 4.1.)
   - A6TEL can be attached to a panel when A6TEL and CPU are connected with a cable.
     For the dimensions for A6TEL panel installation, refer to Appendix (2).

6) DIP switches

Switch No.	Setting	Description
1	OFF	Telephone line connection mode/proximity connection mode
	ON	EEPROM write mode (For writing initial setting, password and data for notification)
2	OFF	Notification processing execution mode
	ON	Proximity connection enable mode
3	OFF	Remote access enable mode
	ON	Remote access disable mode (Notification processing can be executed.)
4	—	Not used (set to OFF)

6. A6TEL Startup Procedure

A6TEL is started up from a IBM PC/AT to which GPP function is registered. Details of A6TEL startup procedure are described in the SW3IVD-GPPA GPP Function Software Package Operating Manual (A6TEL).



7. Troubleshooting

(1) When the ONLINE LED is flashing:

- Cause: Cannot communicate with the modem normally.
  Cannot communicate with the CPU module normally.
- Action: Match the initial setting data set to the A6TEL to the modem actually connected.
  Confirm the capacity of the power supply module of the PC to which A6TEL is connected or installed. [Refer to (1) in Chapter 3.]

* After taking the above actions, remove the A6TEL from the CPU module and connect it again. (A6TEL reset processing)

(2) When the ONLINE LED does not come on:

- Cause: Modem is not connected.
  Power supply of the modem is turned off.
- Action: Connect the modem to A6TEL and perform the initial setting.

(3) When notification processing cannot be executed:

- Cause: DIP switches 1 to 3 are turned on.
  The ONLINE LED is off or flashing.
  A peripheral device is connected to RS-422 connector 1.
- Action: Set the DIP switches 1 to 3 to off. [Refer to (6) in Chapter 3.]
  Take actions so that ONLINE LED comes on. [Refer to (1) and (2).]
  Disconnect peripheral devices. [Refer to 2) and 3) in Chapter 5.]

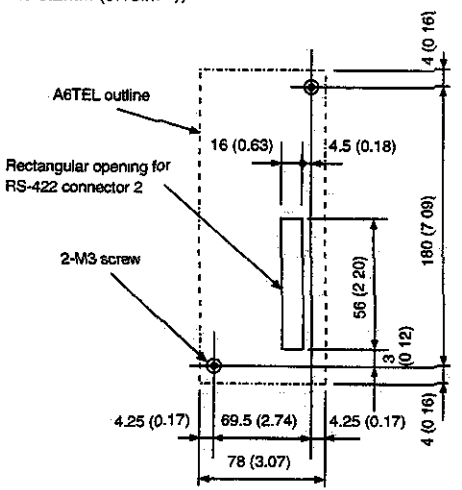
Appendix

(1) Modem setting
Confirm that the modem is set as follows:

Setting item	Setting range
Communication speed	Per modem used
Fixed terminal speed mode	9600 bps
Modem command	Hayes AT command
SI/SO control	No control
Communication method	No protocol
Character length	8 bits
Stop bit	1 bit
Parity bit	None

When a modem capable of switching ER terminal is used, set the ER terminal to the high level.

(2) Panel installation dimensions (Possible with the plate thickness of up to 3.2mm (0.13inch))



Unit: mm (inch)

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