

# MODEL : STAR 505R ACCESS CONTROLLER

## OWNER'S MANUAL

Please read this instruction manual carefully

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# IMPORTANT SAFETY INSTRUCTIONS

When using your door access controller, basing safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons including following:

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product
3. Do not use liquid cleaners, or aerosol cleaners. Use a damp cloth for cleaning. if necessary, use a mild soap.
4. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
5. This product should be operated only from the type of power source indicated on the marking label. if you are not sure of the type of power supply to your home, consult your dealer or local power company.
6. Never push objects of any kind into this product though the cabinet slots as they may touch voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
7. To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. incorrect reassembly can cause electric shock when the appliance is subsequently used.
8. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
  - a. When the power supply cord or plug is damaged or frayed.
  - b. If liquid has been spilled into the product
  - c. If the product has exposed to rain or water.
  - d. If the product does not operate normally by following the operating instructions.  
Adjust only those controls, that are covered by the operating instructions. Improper adjustment of other controls in damage and will often require extensive work by a qualified technician to restore the to normal operation.
  - e. If the product exhibit a distinct change in performance.

# STAR 505R Access Controller

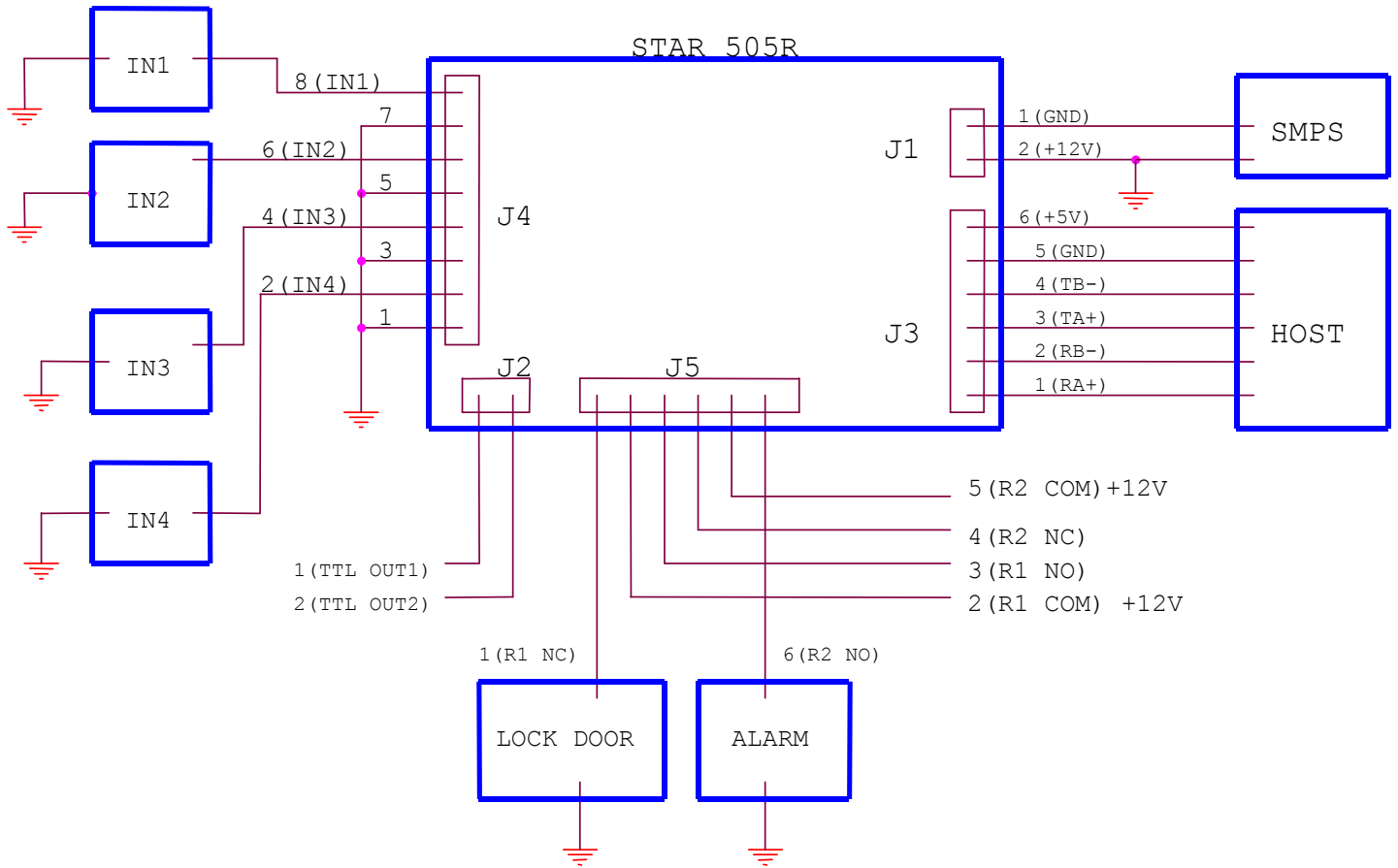
## 1. General

STAR 505R is an intelligent one door Access Controller based on powerful 8 bit Microprocessor to meet a simple and cost-effective access control market requirement. It is designed for low cost but high security as well as convenience and reliability. User friendly device allows you to register max 4,000 ID numbers (10,000 ID numbers option) and easy to add or to delete ID numbers and it has 1,500 transaction buffers (2,500 option). Built in 10cm RF reader and PIN pad gives you various operating modes such as RF card and RF + 4 digit PIN Number. Independent 5 Input ports can detect exit button, door status, PIR sensor, Fire sensor and Temper switch and you can program related output sources and active timing from the front keypads. It is possible to use as standalone or network communication via RS-422. All control setting values such as ID numbers, Inputs/Outputs, Real time clock and Time schedule can be Download/Upload from/to the host computer and all event transaction reports to the Host. The modern design and easy installation will provide you an accurate access control for single door and 3 LED indicators informs you all system operating status at real time. STAR505R will give you field proven reliability and cost-effective solution anywhere the access controls and high security is required.

## 2. Specification

|                              |  |
|------------------------------|--|
| .CPU                         | : 8 bit Microprocessor   |
| .Memory                      | : Program memory (32KB ROM)<br>Data memory (64KB RAM; battery backup)                            |
| .Card holders/Event buffers: | 4,000 Card holders/1,500 Event buffers<br>(10,000/2,500 option)                                  |
| .Reader Ports/Data format    | : 1 port/Wiegand format  |
| .Inputs/Outputs              | : Isolation Inputs(4ea)<br>Relay Outputs(2ea; COM,NO,NC)<br>TTL Outputs(2ea)                     |
| .Communication               | : RS-422 port, address selectable(DIP switch)<br>Baud Rate : 4800bps, 9600bps(default), 19200bps |
| .Display                     | : 1 x LCD module, 2lines x 16ch, 65.6 x 13.8mm view<br>area                                      |
| .Keypads                     | : 16 Numeric keypad  |
| .Self Diagnostic             | : Yes  |
| .LED indicators              | : 3 LEDs (RED, GREEN, YELLOW)  |
| .Power                       | : DC 12V, 250mA  |
| .Operating Environment       | : 0°C ~ +60°C, 10% ~ 90% humidity  |
| .Reset                       | : power on reset   |
| .Terminal Block              | : Screw clamp  |

### 3. Connection



## TABLE FOR WIRE COLORS

### <J1> POWER

| NO | FUNCTION | COLOR |
|----|----------|-------|
| 1  | GND      | BLACK |
| 2  | +12V     | RED   |

### <J2> TTL OUTPUT

| NO | FUNCTION | COLOR                  |
|----|----------|------------------------|
| 1  | TTL OUT1 | ORANGE WITH WHITE LINE |
| 2  | TTL OUT2 | BROWN WITH WHITE LINE  |

### <J3> COMMUNICATION

| NO | FUNCTION | COLOR                 |
|----|----------|-----------------------|
| 1  | RA(+)    | YELLOW                |
| 2  | RB(-)    | GRAY                  |
| 3  | TA(+)    | BLUE                  |
| 4  | TB(-)    | BROWN                 |
| 5  | GND      | BLACK WITH WHITE LINE |
| 6  | +5V      | RED WITH WHITE LINE   |

### <J4> INPUT

| NO | FUNCTION | COLOR                 |
|----|----------|-----------------------|
| 1  | GND      | NC                    |
| 2  | IN4      | ORANGE                |
| 3  | GND      | NC                    |
| 4  | IN3      | YELLOW WITH RED LINE  |
| 5  | GND      | NC                    |
| 6  | IN2      | GREEN                 |
| 7  | GND      | NC                    |
| 8  | IN1      | GREEN WITH WHITE LINE |

### <J5> RELAY

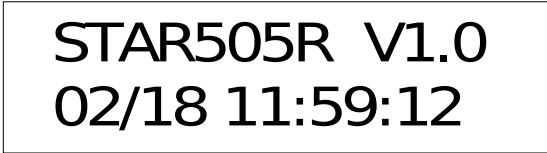
| NO | FUNCTION | COLOR                  |
|----|----------|------------------------|
| 1  | R1 NC    | BLUE WITH WHITE LINE   |
| 2  | R1 COM   | GRAY WITH RED LINE     |
| 3  | R1 NO    | WHITE WITH RED LINE    |
| 4  | R2 NC    | PURPLE WITH WHITE LINE |
| 5  | R2 COM   | WHITE                  |
| 6  | R2 NO    | PURPLE                 |

## 4. Operation

### ⚠ CAUTION: Factory Setting

(Initial) MASTER CARD (master password: 0000), two unregistered cards and two registered cards.(password: 0000, Time Schedule: 00, Access Door:1) See 4.1.4 *ID Registration* for more detail.

When user power on STAR505R, user see the following on LCD, where *02/18 11:59:11* means *Month/Day Hour: Minute: second*. Hence the following is not exactly same with the LCD, of which user see. Now, user can test normal operation (*Normal mode*) and change setting in STAR505R (*Setup mode*)



STAR505R V1.0  
02/18 11:59:12

<Fig 1> STAR505R Normal State

### Normal Mode

1. When user get registered card near STAR505R, user will see the green LED on, the RELAY1 active, and the following on LCD about three seconds.



STAR505R V1.0  
APPROVAL

<Fig 2> Normal Operation

2. When user get unregistered card near STAR505R, user will see the yellow LED on, the RELAY2 active, and the following on LCD about three seconds.

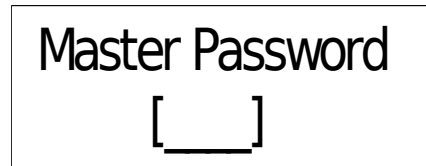


STAR505R V1.0  
UNREGISTERED ID

<Fig 3> Abnormal Operation

### Setup Mode

When user get (initial) MASTER CARD near STAR505R, user see the following on LCD.



<Fig 4> Wait state for  
Master password

Now press Master password (four digit). Default master password is 0000. If Master Card and Master Password are matched, User will see, for a few second, the following message<sup>1</sup>, and then user is in setup mode.



<Fig 5> Comm address

In setup mode, there are four setup menus. By default, user is in Setup Menu 1. The change between setup menu is done by pressing Function key<sup>2</sup>.

**SETUP MENU 1:** General Setup Menu (mode selection, time setting, password change (not used in STAR505R), anti pass back (not used in STAR505R) setup, baud rate change, event clear, master ID change, system initialization, card ID clear, and time schedule clear)



<Fig 6> setup menu 1

---

<sup>1</sup> It says the ID number of this STAR505R is 01. This ID number is necessary, when several STAR505Rs are connected to host.

<sup>2</sup> **F1:** setup menu 1, **F2:** setup menu2, **F3:** setup menu3, **F4:** setup menu4



**SETUP MENU 2:** Time schedule and In/Out Setup



<Fig 7> setup menu 2

**SETUP MENU 3:** ID Registration and deletion



<Fig 8> setup menu 3

**SETUP MENU 4:** Self-Diagnostic



<Fig 9> setup menu 4

- ⚠ CAUTION:** (1) 'F1', 'F2', 'F3', and 'F4': Main Setup menu change  
(2) Keypad digit '4', '6', '2' and '8' used as cursor.  
    ~ to change submenu, ID list, etc.  
    ~ '2' and '8' used only in Time Schedule setup (see 4.2)  
(3) 'ESC': used to escape from a state to upper state.  
(4) 'ENT': used to enter the menu or to confirm the change.

**4.1 Setup Menu 1: General setup menu**

*4.1.1 Mode selection:* The state is to change operation mode.

MODE SELECTION  
RF ONLY

Submenu

(1)

MODE SELECTION  
->RF ONLY

(2)

MODE SELECTION  
->RF + PIN

Submenu (1) mode: users are required to use RF-Card in normal operation

Submenu (2) mode: users are required to use RF-Card and 4-digit password

(See 4.3.1 ID REGISTRATION).

#### *4.1.2. Time Setting*

TIME SETTING  
01/30 12:12:12

Submenu

YYYYMMDDhhmmss

Note)

YYYY: Year MM: Month DD: Day hh: Hour mm: Minute ss: second

W: week (1:Sunday, 2:Monday, . . . , 7:Saturday )

(ex) 2000 02 18 23 59 00 1

*4.1.3. Password change* : Although this mode is in mode setting, this mode is not used in STAR505R.

PASSWORD CHAGE

*4.1.4. Anti Pass Back Setup* : Although this mode is in mode setting, this mode is not used in STAR505R.

APB SETUP  
NOT USE

*4.1.5. Baud Rate* : When STAR505R communicate with host, baud rate determine the speed. ( Default Baud rate of STAR505R is 9600 )

BAUD RATE  
9600

Submenu

1)

BAUD RATE  
->4800

2)

BAUD RATE  
->9600

3)

BAUD RATE  
->19200

*4.1.6. Event Clear* : Remove all event which is stored in memory.

EVENT CLEAR

Submenu

1)

EVENT CLEAR  
1 - Yes, 0 - No

*4.1.7. Master ID (Card and Password) change:*

MASTER ID CHANGE

- Wait for a RF-CARD, which should be registered as a master card.

Scanning...

- Wait for Master password

00342860

< Scanned Card ID number

< wait for password

After Master Password is entered, 'Master Card Registered' message appear a few second. Now, Master Id and Password is changed.

#### 4.1.8. *System Initialize* : Initialization of all setting value

SYS INITIALIZE

- To initialize enter '1', if not, enter '0'

SYS INITIALIZE  
1 - Yes, 0 - No

*4.1.9. Card ID clear* : remove all card ID which is stored in memory.

CARD ID CLEAR

- To clear all ID enter '1', if not, enter '0'

CARD ID CLEAR  
1 - Yes, 0 - No

*4.1.10. Time schedule clear* : remove all time schedule in memory.

TIME SCHE CLEAR

- To clear all ID enter '1', if not, enter '0'

TIME SCHE CLEAR  
1 - Yes, 0 - No

## 4.2. Setup menu 2

4.2.1. *Time schedule* : Register or change time schedule.

TIME SCHEDULE

- Time Schedule setting

T/S : 01 HOL 1  
00:00 - 00:00

(Note)

- The first line shows (1) Time Schedule number: 01-10.  
(2) Week: MON, . . . SUN, HOL.  
(3) Index: 1 –5
- Five index gives flexibility for setting time schedule, because user can set in maximum five disconnected time schedule.
- The second line show time for each schedule, which is in first line.

(Example)

If time schedule set like below, then user, who is registered with T/S #01(see 4.3.1 ID registration), are allowed to access only in 9:00-12:00, 13:00-17:00(Monday) and 18:00-19:00(Sunday).

*(T/S : 01 MON 1) 09:00 - 12:00*

(T/S : 01 MON 2) 13:00 - 17:00  
(T/S : 01 SUN 1) 18:00 - 19:00  
the other case 00:00 - 00:00

4.2.2. *In/Out define* : set output for each input.

IN/OUT DEFINE

- The relation between In and Out

Index No.:01  
03 00 00 00 00

Note)

- 1) The relation between Index number and Input is in the table on the below.
- 2) Index number 9-13 is not used in STAR505R.
- 3) The second line show for each index the output status. (see table)  
(00: no operation, 99: always on, 01-98: operation on the given seconds. )
- 4) Input1(EXIT), Input2(CONTACT), Input3(PIR) and Input4(FIRE)
- 5) Relay1(LOCK DOOR) and Relay2(ALARM)



(Table 1) *The relation between Index, Input and Output(default)*

| <i>Index</i> | <i>Input</i> | <i>Relay1</i> | <i>Relay2</i> | <i>TTL1</i> | <i>TTL2</i> | <i>Internal Buzzer</i> |
|--------------|--------------|---------------|---------------|-------------|-------------|------------------------|
| 01           | Input1       | 03            | 00            | 00          | 00          | 00                     |
| 02           | Input2       | 00            | 00            | 00          | 00          | 00                     |
| 03           | Input3       | 00            | 00            | 03          | 00          | 00                     |
| 04           | Input4       | 99            | 99            | 99          | 99          | 99                     |
| 05           | Temper S/W   | 00            | 99            | 99          | 99          | 99                     |
| 06           | Valid ID     | 03            | 00            | 00          | 00          | 00                     |
| 07           | Invalid ID   | 00            | 03            | 00          | 00          | 00                     |
| 08           | Invalid T/S  | 00            | 03            | 00          | 00          | 00                     |
| 09-13        | Not Used     |               |               |             |             |                        |

## 4.3 Setup menu 3

### 4.3.1 ID Registration

#### ID REGISTRATION

- Wait for an ID-CARD which will be registered.

Scanning...

- Wait for Personal Information

00342860

< Scanned Card ID number

— — —

< wait for personal information.

Note)

- (1) The second line shows  
Password + applied time schedule + door access number.
- (2) This Password is used in RF+PIN mode (see 4.1.1 Mode Selection)
- (3) The possible time schedule number is eleven:
  - > #00 means anytime access possible.
  - > #01 - #10 which is set in 4.2.1 Time Schedule.
- (4) Since STAR505R has only one door access, door access number should be '1'.

After Personal Information is entered, 'ID Registered' message appear a few second. Then ID Registration is over for one ID Card. Now STAR505R is waiting for another ID card registration (i.e. 'Scanning' message is appear on LCD).

#### 4.3.2 ID Deletion

**ID DELETE**

- Wait for an ID-CARD number.

**Enter Card No.**

-> \_\_\_\_\_

After the card number to be deleted is entered:

- Card Number is in registered card list.

**ID DELETE**

- Card Number is not in registered card list,  
the following message is appeared for a few second.

**ID Unregistered**

*4.3.3 ID List* : List the ID which is registered.

**ID LIST**

- If registered ID is empty.

**MEMORY  
EMPTY**

- If registered ID is not empty. ( press '3' or '6' to see the other registered ID)

**00342860  
1111 00 03**

Note) As we know, 00342860 is a ID number,  
1111 is a password,  
00 is a time schedule, and  
03 is access door for ID 00342860

## 4.4 Setup menu 4

### 4.4.1. SRAM test




SRAM TEST

- If RAM(KM681000C) is bad, then the message is the following



Memory fail!!! 0  
RAM testing...

- If RAM(KM681000C) is good, the following message is appear on LCD



RAM test pass!!!  
Press any key...

### 4.4.2. Output test : test five output port.

Outputs are On/Off three times.

(output1: relay1, output2: relay2, output3: TTL1, output4: TTL2, output5: Buzzer)

## OUTPUT TEST

- When Output test finished, the following message appear on LCD

OUTPUT 5  
Press any key...

### *4.4.3. LCD test*

## LCD TEST

- When LCD test is over the following message is appear

Last Update  
Press any key...

### *4.4.4. Keypad test*

## KEYPAD TEST

- When KeyPad test start, the following message is appear on LCD  
Now, press keypad then the matched number will disappear.

(note: A-F is correspond to F1-F4, ESC and ENT )

0123456789ABCDEI

#### 4.4.5. Reader test

READER TEST

- Wait for test ID card

Scanning...

- Test Card Number which is read.

Reader 1  
00342860

#### 4.4.6. Input test : test five Input port and DIP switch.

INPUT TEST

- The following show input status

INPUT TEST

1110001 11111

Note)

- 1) The second line show the status of the DIP switch (eight bit) and five inputs.
- 2) DIP switch : '0' mean on and '1' mean off
- 3) Input 1-4 : '0' mean on (active) and '1' mean off(inactive)
- 4) Input 5 (Temper switch): '0' mean off and '1' mean on.

#### 4.4.7. Communication test

To test communication with PC, connect Rx+ and Tx+ and connect Rx- and Tx-.

COMM TEST

- The following show the communication is fail

Tx data = 0

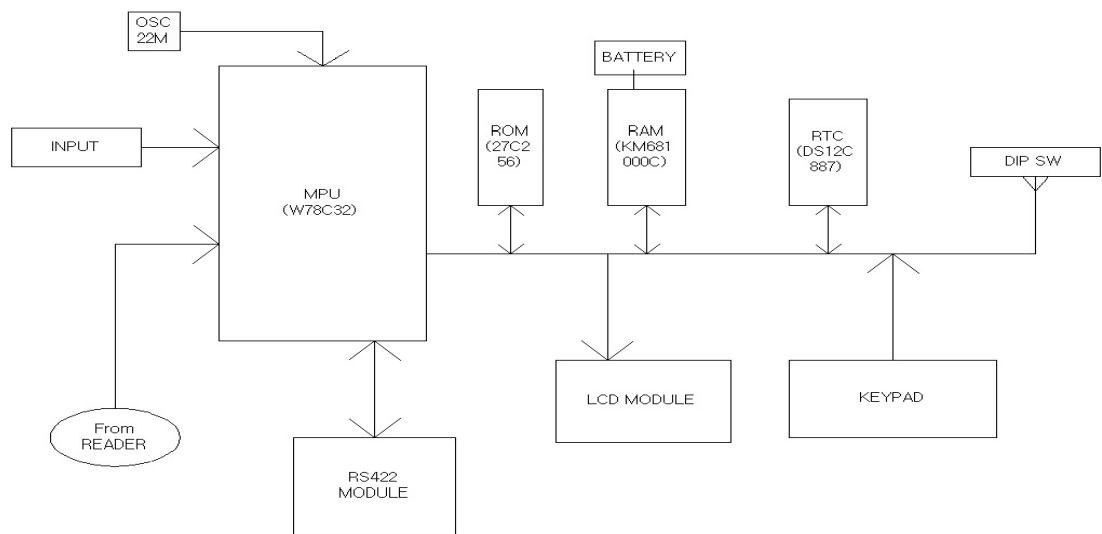
COMM fail

- The following show the communication is success.

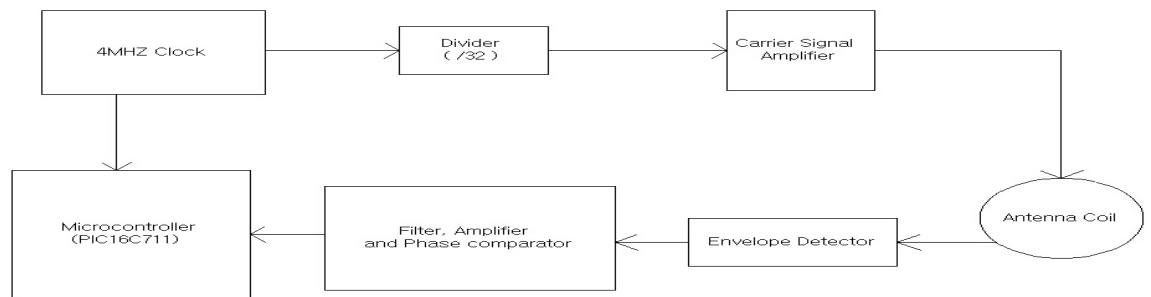
COMM test pass!!  
Press any key...

## **5. BLOCK DIAGRAM**





Block Diagram of STAR505R



Block Diagram of RF Reader

# FCC REGISTRATION INFORMATION

## FCC REQUIREMENTS PART 15

Caution: Any changes or modifications in construction of this device which are not expressly approved by the responsible for compliance could void the user's authority to operate the equipment.

NOTE: This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Note : This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# WARRANTY AND SERVICE

The following warranty and service information applies only to the U.S. For information in other countries, please contact your local distributor.

To obtain in or out of warranty service, please prepay shipment and return the unit to the appropriate facility listed below.

## IN THE UNITED STATES

**RF LOGICS, INC. Service center**

**3026 SCOTT BLVD,**

**SANTA CLARA, CA 95054**

**Tel. : (408) 980-0001**

**Fax.: (408) 980-8060**

**Email:** [webmaster@rflogics.com](mailto:webmaster@rflogics.com)

**Website :** [www.rflogics.com](http://www.rflogics.com)

## OUTSIDE OF THE UNITED STATES

**ID TECK CO., LTD. Service center**

**4F ACE TECHNOTOWER BLDG.**

**684-1 DUNGCHON-DONG, GANSUH-KU**

**SEOUL 157-030, KOREA**

**Tel. : 82-2-659-0055**

**Fax.: 82-2-659-0086**

**Email:** [webmaster@id-teck.com](mailto:webmaster@id-teck.com)

**Website :** [www.id-teck.com](http://www.id-teck.com)

Please use the original container, or pack the unit(s) in a sturdy carton with sufficient packing to prevent damage. Include the following information:

1. A proof-of-purchase indicating model number and date of purchase.
2. Bill-to address
3. Ship-to address
4. Number and description of units shipped
5. Name and telephone number of person to call, should contact be necessary
6. Reason for return and description of the problem.

Damage occurring during shipment is deemed the responsibility of the carrier, and claims should be made directly with the carrier.