

E-SolyGate (Soly-Ref2002-C) User Manual



Product Name : E-SolyGate
Model Name : Soly-Ref2002-C

 **HBrain Inc.**



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FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measure:

- Reorient or relocated the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- Shielded cables must be used to comply with FCC regulations.

WARNING (Part 15, Section 15.21)

Changes or modifications not expressly approved by the Hbrain Inc could void the user's authority to operate the equipment.



Safety Warning Signs

1. Do not drop or physical impact or shock to the E-SolyGate, especially keep it out of children's use.
2. Do not try to open or reassemble the E-SolyGate.
 - > We are not responsible for any malfunctions in disassembled E-SolyGate by customer.
3. Pull the power plug out, before installing, assembling and dissembling system part.
 - > Otherwise, there is a risk of electric shock.
4. Plug in, after installing system part.
 - > Otherwise, there is a risk of electric shock.

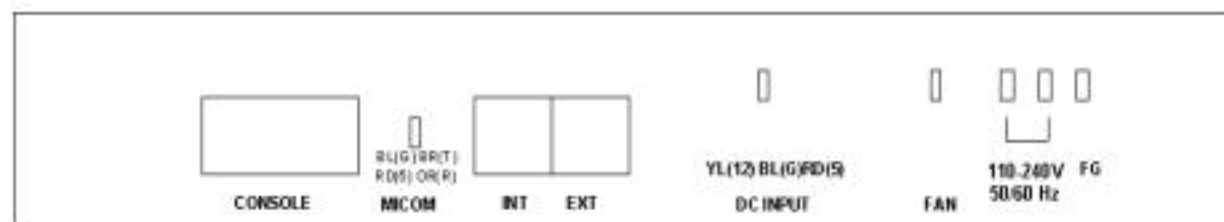


View of E-SolyGate

1-1. Front View



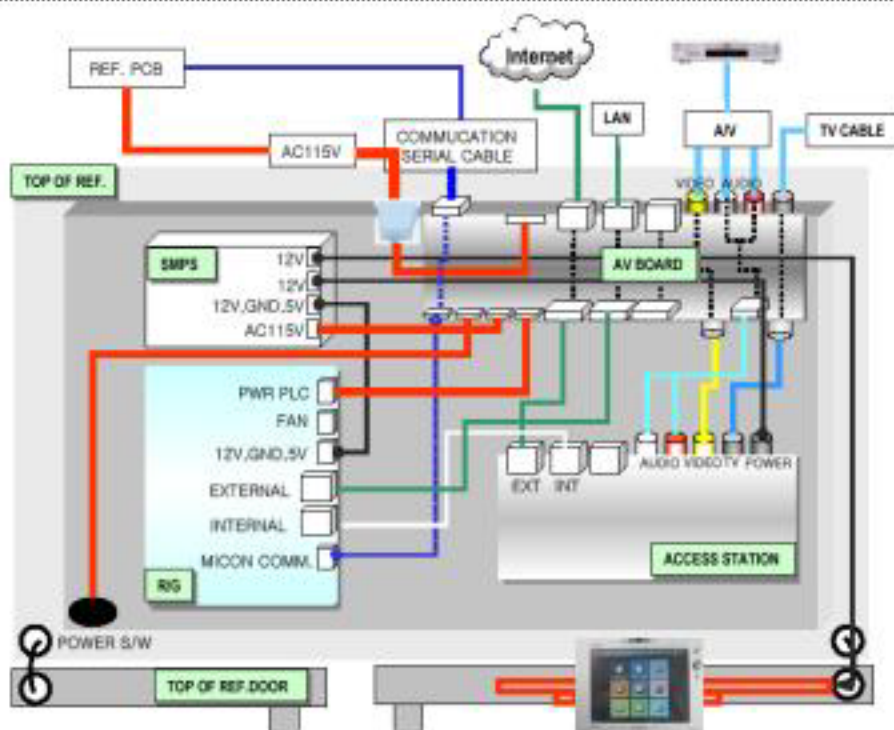
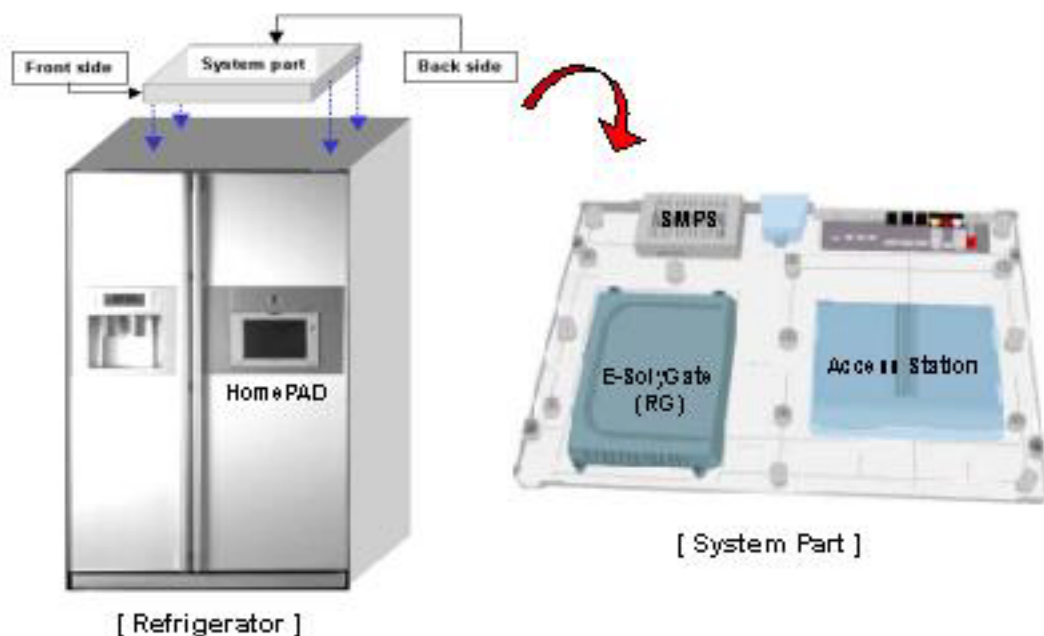
1-2. Back View





System Configuration

The internet fridge has HomePDA, Gateway, Access Station modules for residential home networking.



[Configuration]



E-SolyGate Feature



E-SolyGate



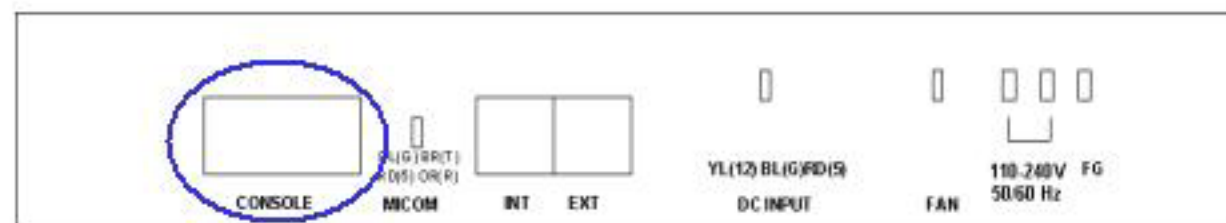
Function	Description
Processor	MPC850DCZT50A – 50MHz
Memory	64MB Flash / 64MB RAM
I/O	* CONSOLE : RS-232C Port, 9600bps, N, 1Stop * MICOM : TTL Level, 4800bps, N, 1Stop * INT, EXT : 10 Base-T Ethernet * FAN : Reserved
Switch	RST, SER
LED	* RUN, * EXT, * INT, * PKD
Power	* DC Power Input : +5V DC / 1.5A +12V DC / 0.8A * AC Power Input : L-N, 110-240V AC, 50/60 Hz For Power Line Communication Output Level: 7Vp-p Bit rate: 5kbps
Size	250 X 180 X 40 mm
Safety	UL, cUL
EMC	FCC Part 15 Class B



Function of E-SolyGate

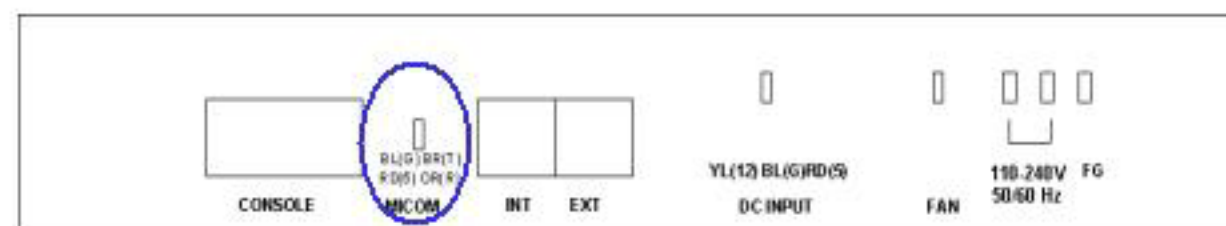
1) Console

- ❖ Used for factory setting or service
- ❖ Connected to PC by Serial Cable
- ❖ 9600bps, 8 data bit, No Parity, 1 Stop Bit, No Flow Control



2) Micom

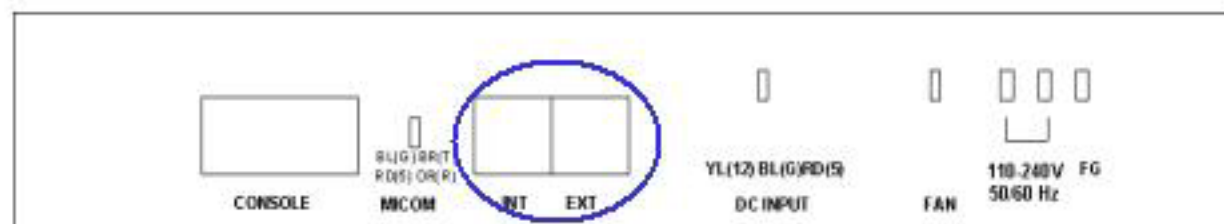
- ❖ Used for communication with refrigerator's controller
 - Black Line: Black Line: GND
 - Brown Line: TX Signal
 - Red Line: 5VDC of Refrigerator's controller
 - Orange Line: RX Signal





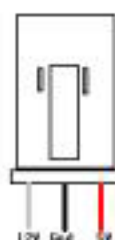
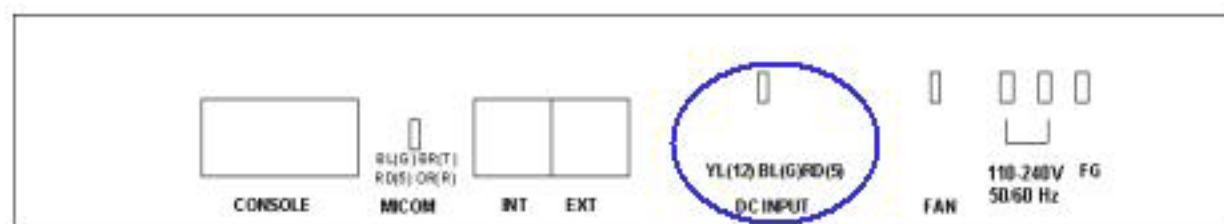
3) Internal/External LAN Port

- ◆ INT Port connect Internet or Local Area Network.
- ◆ Connect additional Network Devices(like PC) to Internet or Local Area Network by EXT Port.



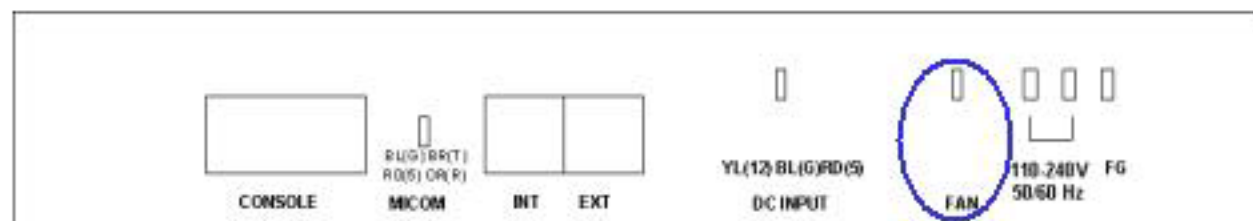
4) DC Input

- ◆ Supply operating power to Gateway.
 - a. Yellow Line: +12VDC/0.8A
 - b. Black Line: GND
 - c. Red Line: +5VDC/1.5A



5) FAN Control

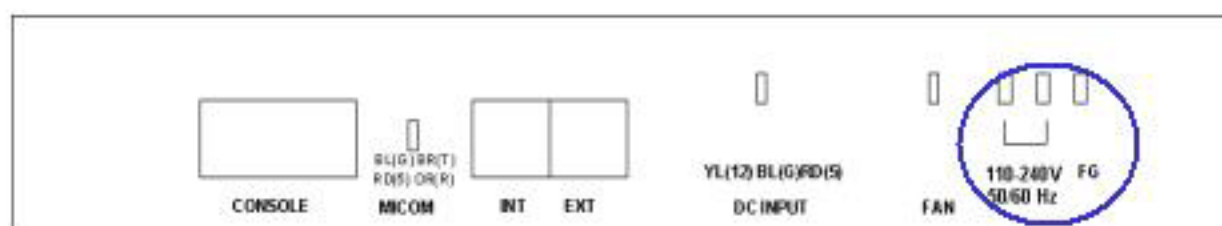
- ◆ Reserved





6) PowerLine Communication

- ❖ AC 110-240V PowerLine for PowerLine Communication.
- ❖ For controlling control device through PowerLine.
- ❖ It is only for communication, not supply electric power to gateway.
- ❖ L-N, 110-240VAC, 50/60Hz



7) Front Side LEDs

- ❖ Switch
 - a. RST: System restart
 - b. SER: Reserved
- ❖ LED
 - a. RUN: Normally blinking
 - b. EXT: LED On when use EXT Ethernet port
 - c. INT: LED On when use INT Ethernet port
 - d. PKD: LED On when there is valid LonTalk packet on power line





Installing and Starting

1) Boot the system

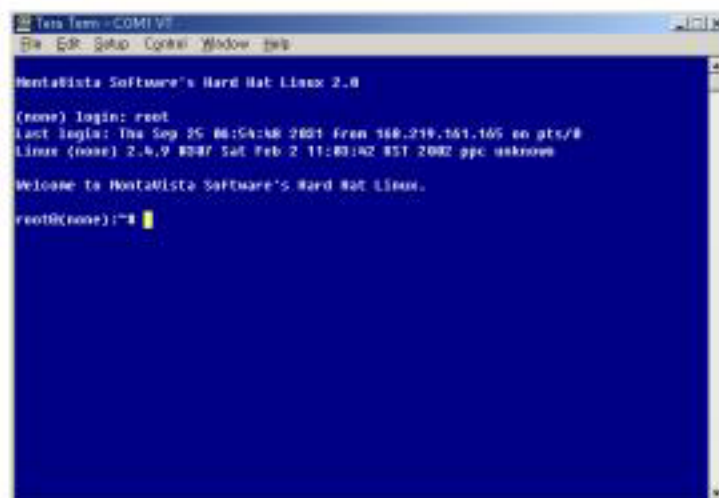
- ❖ Connect cables to the ports on the back side of Gateway
 - a. Connect PC to Gateway console with Serial Cable.
 - b. Connect Gateway to Microm Port with 4wire communication cable.
 - c. Connect Network cable to INT Port.
 - d. Supply +5/+12V power to Gateway.

2) Login the system

- ❖ After connecting console port on Gateway and serial port of PC, start terminal application like HyperTerminal or Netterm.
- ❖ Select serial ports and other communication parameters.
(9600bps/8 Data Bit/No Parity/1 Stop Bit/No Flow Control)



- ❖ After booting, type root and login as root user.





3) Modification of Network Settings

- ❖ In the prompt type 'cd /etc/network', and type 'vi interface'.
- ❖ In vi editor modify network setting values.

```
Tera Term - COM1 VT
File Edit Setup Control Window Help

MontaVista Software's Hard Hat Linux 2.0

(root) login: root
Last login: Thu Sep 25 06:54:48 2003 From 168.219.161.165 on pts/0
Linux (root) 2.6.9 #287 Sat Feb 2 11:00:42 EST 2002 ppc unknown

Welcome to MontaVista Software's Hard Hat Linux.

root@root:~# cd /etc/network
root@root:/etc/network# vi interfaces
```

- ❖ For using static IP Address, in the area typed 'iface eth0 inet static...', modify network setting values and comment other lines with '#'.
- ❖ For using Dynamic IP Address, uncomment line start with 'iface eth0 inet dhcp...', and comment other lines with '#'
- ❖ Exit vi editor and type 'reboot' command to reboot the system.

```
Tera Term - COM1 VT
File Edit Setup Control Window Help

# See the interfaces(5) manpage for information on what options are
# available.
#####

# We always want the loopback interface.

auto lo
iface lo inet loopback

# An example ethernet card setup: (broadcast and gateway are optional)
#
auto eth0
iface eth0 inet static
    address 168.219.161.162
    network 168.219.161.0
    netmask 255.255.255.0
    broadcast 168.219.161.255
    gateway 168.219.161.1

# A more complicated ethernet setup, with a less common netmask, and a downright
# weird broadcast address: (the "up" lines are executed verbatim when the
# interface is brought up, the "down" lines when it's brought down)
```



4) Starting SMF Framework

- ❖ After system booting up, login and type './smf' in '/usr/local/smf' directory.

```
Tera Term - COM1 VT
File Edit Setup Control Window Help
root@none):/usr/local/smf#
root@none):/usr/local/smf#
root@none):/usr/local/smf#
root@none):/usr/local/smf#
root@none):/usr/local/smf#
root@none):/usr/local/smf#
root@none):/usr/local/smf#
root@none):/usr/local/smf#
root@none):/usr/local/smf#
root@none):/usr/local/smf# ./smf

Service Management Framework 3.0

Designed to comply with OS/1 Service Platform Release 2

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Service Management Framework is a trademark of IBM Corp.
```

5) Test

- ❖ After smf framework initialized and all software bundles installed and running, 'smf>' prompt appears.
- ❖ Software bundles working for their jobs like communication with Micom, so one can test each function.

```
Tera Term - COM1 VT
File Edit Setup Control Window Help
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Service Management Framework is a trademark of IBM Corp.

Found port: /dev/ttyS1
java.lang.NullPointerException

Stack trace:
  java/lang/Throwable.<init>()V
  java/lang/Throwable.<init>(Ljava/lang/String;)V
  java/lang/NullPointerException.<init>(Ljava/lang/String;)V
  secmc/MicomDevice.tx232()S
  secmc/MicomDevice.run()V
  java/lang/Thread.run()V

tx232 error
[MANAGER] Loading Runner.
[MANAGER] Start Manager.

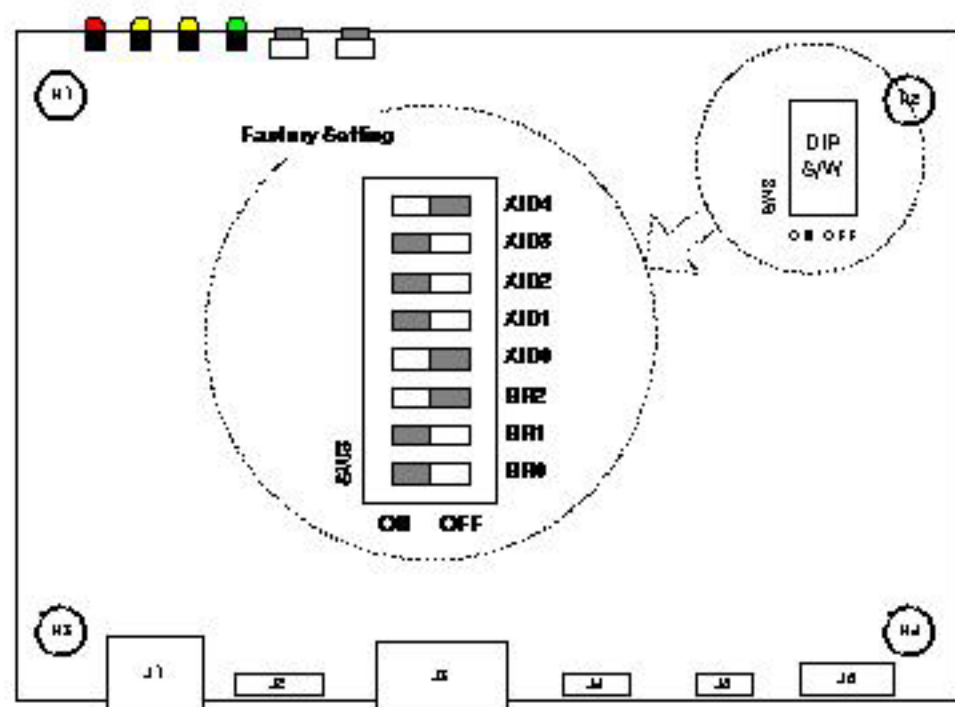
smf> Micom Status Data Notification timeout
Micom Status Data Notification timeout
```



PLC HW Parameter Setting

1) Dip Switch

1-1. Dip Switch location



1-2. Baud Rate Setting

BR 2	BR 1	BR 0	Baud Rate
ON	ON	ON	14,400bps
ON	ON	OFF	1,200bps
ON	OFF	ON	2,400bps
ON	OFF	OFF	9,600bps
OFF	ON	OF	19,200bps
OFF	ON	OFF	38,400bps
OFF	OFF	OF	57,600bps
OFF	OFF	OFF	115,200bps



1-3. PowerLine Transceiver ID Setting

XID4	XID3	XID2	XID1	XID0	NAME	DESCRIPTION
ON	OFF	OFF	OFF	OFF	PL-20A	For Soly-Ref2002-A Model
OFF	ON	ON	ON	ON	PL-20C	For Soly-Ref2002-C Model
OFF	ON	ON	ON	OFF	PL-20N	For Soly-Ref2002-C Model
Others Setting					-	Not Used



Trouble Shooting Guide

- ❖ If you are having problems with the E-SolyGate, please check the following guide
- ❖ If you still have problems, please contact the retail center where you purchased your device.



Run LED Indicator

- **Standard:** After power is supplied, blinks for 1-2 seconds
- **Problem:** Always off or always on.
- **Troubleshooting:** Reboot by pressing the "reset" button.
If it still does not work contact customer service

INT/EXT LED Indicator

- **Standard:** Blinking when data is transmitted
- **Problem:** Always off or always on .
- **Troubleshooting:** Check if all the cables are properly connected to the LAN Port(INT,EXT), or if the cables are damaged
If it still does not work contact customer service