

# AMI Porting guide

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# 目錄

---

1. Introduction
2. First Chapter
3. AMI-AST2500 Configuration
  - i. Packages
  - ii. Features
  - iii. Development Kits
  - iv. Basic
    - i. AST2500
    - ii. AST2500EVB
    - iii. General
  - v. IPMI
  - vi. KVM
  - vii. MCTP
4. PMC file in PMCP
  - i. Device Connection editor
  - ii. AMI Configuration
  - iii. Bridge Cfg
  - iv. Chassis Cfg
  - v. Dual Image Config
  - vi. FW Firewall Config
  - vii. Lan Channel x Cfg
  - viii. LANx Config Params
  - ix. IPMB Chann Cfg
  - x. Login Audit Config
  - xi. Misc Configuration
  - xii. Sol Config Params
  - xiii. Trigger Event Config
  - xiv. User Cfg
  - xv. Watchdog Configuration
  - xvi. FRU Cfg

# AMI RR10 Porting guide

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使用專案 FRB Purley (Artemis) 做為範例

## 開發流程

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- AMI-AST2500 Configuration
- PMC file in PMCP

# AMI-AST2500 Configuration

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- Packages
- Features
- Basic
- Development Kits
- Device
- IPMI
- KVM
- MCTP
- Media
- Platform
- Smash
- Software
- Test Tools
- WSMAN

# Packages

## 勾選需要的Package

```
/home/ken/AMI-AST2500/configs/ast2500evb.json - AMI-AST2500 Configuration
> Main > Packages

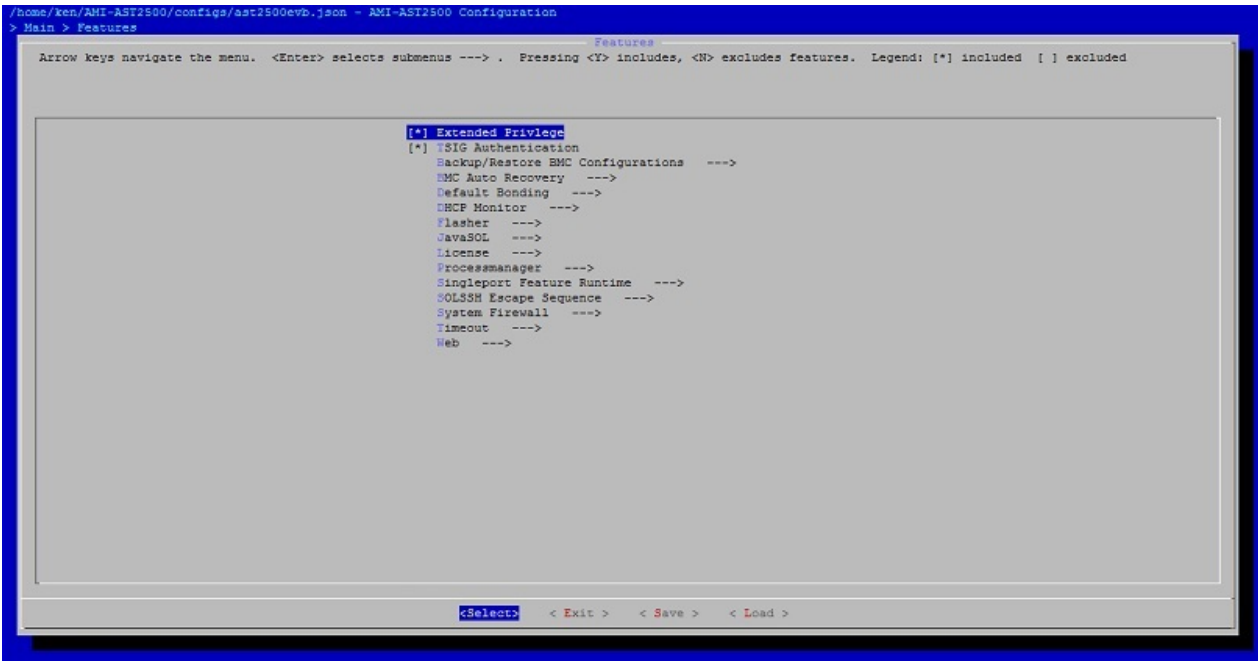
Packages
Arrow keys navigate the menu. <Enter> selects submenus ---> . Pressing <Y> includes, <N> excludes features. Legend: [*] included [ ] excluded

-- libnmap-2.0.0
-- libmodhapi-2.28.0
-- libncml-2.8.0
-- libncsiconf-2.0.0
-- libnetwork-2.16.0
-- libnss_ad-2.3.0
-- libnss_ipmi-2.0.0
-- libnss_ldap-2.4.0
-- libnss_radius-2.3.0
[*] libnss_rvduusers-2.2.0
[*] libntpconf-2.2.0
-- libocmsmcp-2.0.0
[ ] libocmsystemlog-1.4.0
-- libopenagml-2.0.0
-- libopenradius-2.1.0
-- libpanhelper-2.3.0
-- libpdkapp-3.3.0
-- libpeci-2.0.0
-- libphyconf-2.0.0
-- libpmibus-2.0.0
-- libprocmanager-2.3.0
-- libpmtach-2.0.0
-- libqcm-2.5.0
[*] libqcmclient-2.2.0
-- libracessioninfo-2.7.0
-- libradiusconf-2.8.0
-- libreset-2.0.0
-- librtlog-2.1.0
-- libsafesystem-2.3.0
-- libsession-2.2.0

<Select> < Exit > < Save > < Load >
```

# Features

FRB Purley (Artemis) 所需設定的features如下



## Development Kits

```

/home/ken/AMI-AST2500/configs/ast2500evb.json - AMI-AST2500 Configuration
> Main > Development Kits
                                     Development Kits
Arrow keys navigate the menu. <Enter> selects submenus ---> . Pressing <Y> includes, <N> excludes features. Legend: [*] included [ ] excluded

APML --->
Disable MTD Support --->
Driver Logging --->
IPMI Library (libipmi) interface specific support --->
UART Route --->

<Select> < Exit > < Save > < Load >

```

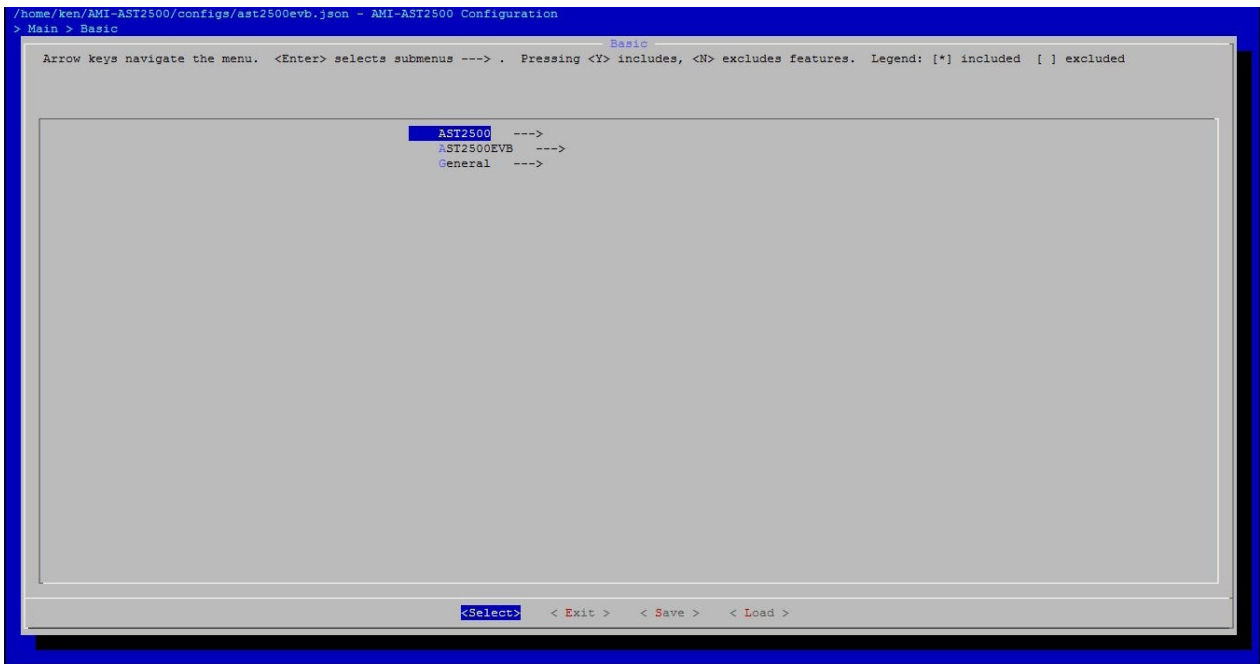
```

UART Route ---> (依所需UART需求做設定)
[*] Enable the default Routing option for UART routing
UART to UART Routing for BMC --->
UART to UART Routing for SOL --->
UART to UART Routing for SYS --->
UART to UART COM(Input/Output) Port Routing for BMC --->
UART to UART COM(Input/Output) Port Routing for SOL --->
UART to UART COM(Input/Output) Port Routing for SYS --->

```



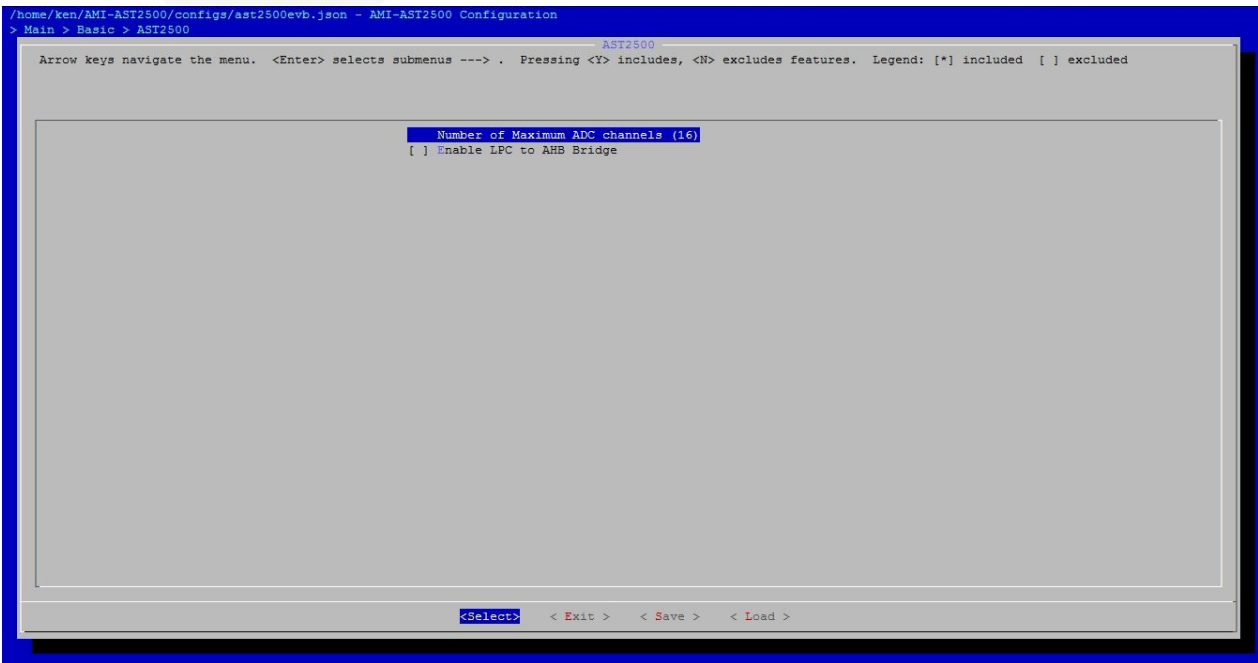
# Basic



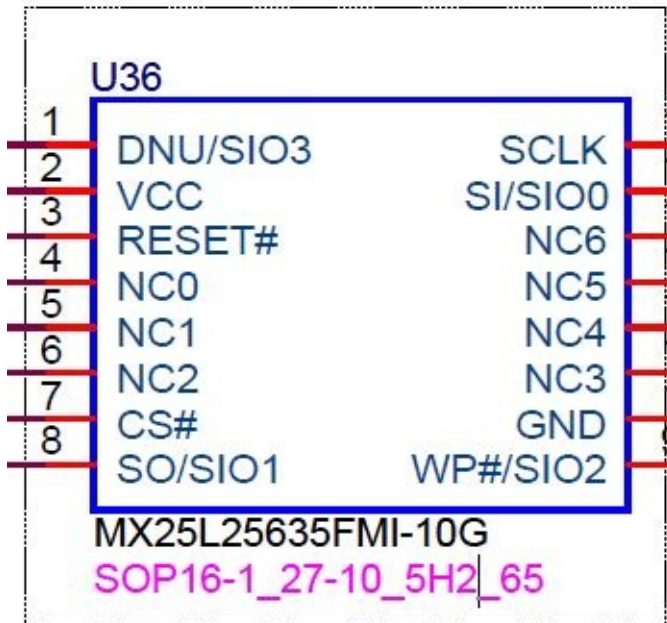
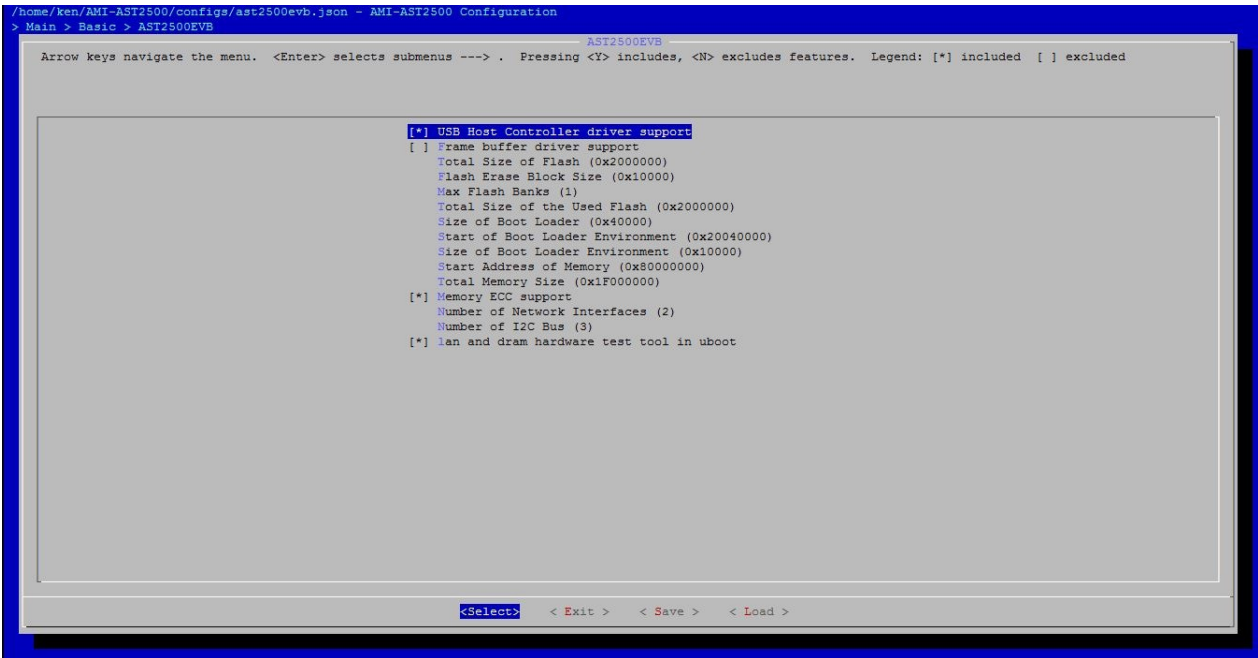
# AST2500



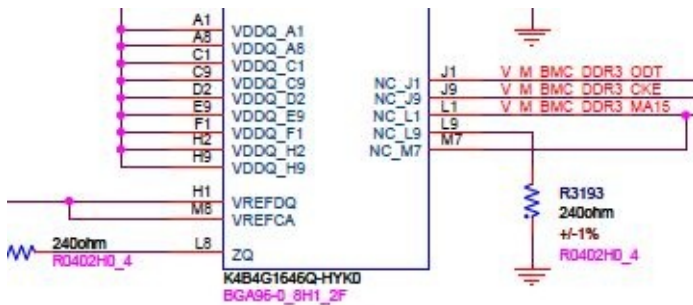
如圖所示，專案 FRB Purley (Artemis) 有16條ADC 所以Number of Maximum ADC channels為(16).



# AST2500EVB



如電路圖所示，SPI Flash大小為32MB 所以Total Size of Flash為 (0x2000000)

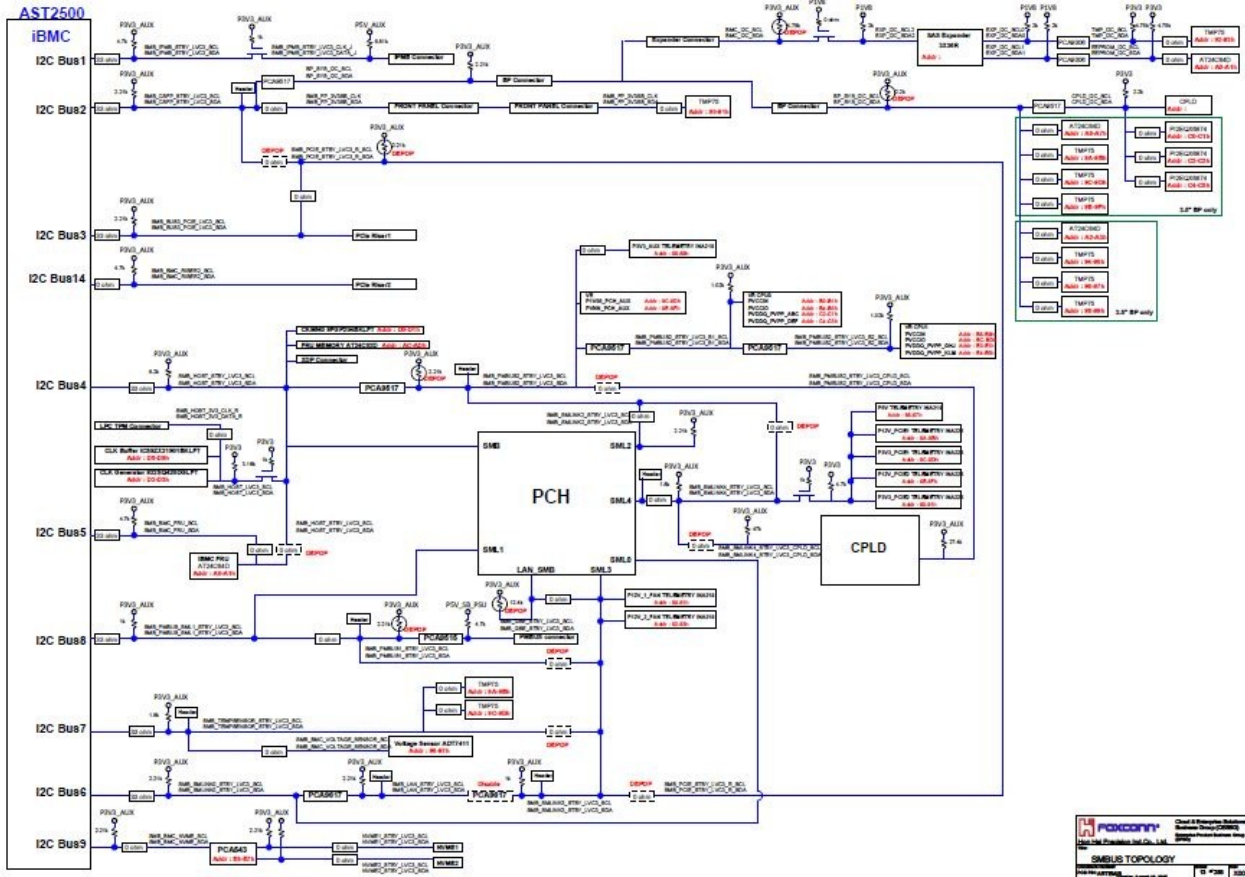


如電路圖所示，Memory大小為512MB，扣掉VGA RAM

使用 所以Total Memory Size為 (0x1F000000)

Memory ECC support (開啟ECC support)

Number of Network Interfaces (2) (網路界面數量)



Number of I2C Bus (9) (9條I2C bus)

## General

```
/home/ken/AMI-AST2500/configs/ast2500evb.json - AMI-AST2500 Configuration
> Main > Basic > General

General
Arrow keys navigate the menu. <Enter> selects submenus ---> . Pressing <Y> includes, <N> excludes features. Legend: [*] included [ ] excluded

TTY to be used console (ttyS4)
Baudrate for TTY to be used as console (38400)
Login Shell for Remote Terminal (/usr/local/bin/smashclp)
Prefix to be used for default host name (3 chars) (AMI)
Default domain name ()
[*] Set default network config to DHCP
[*] Faster Boot Support
[ ] Boot from MMC
[ ] Disable Ping Support
[*] Advanced IP Routing

<Select> < Exit > < Save > < Load >
```

Baudrate for TTY to be used as console (38400) Baudrate設為38400

[\*] Set default network config to DHCP 預設DHCP

[\*] Faster Boot Support enable Faster Boot

# IPMI

```

/home/ken/AMI-AST2500/configs/ast2500evb.json - AMI-AST2500 Configuration
> Main > IPMI
                                     IPMI
Arrow keys navigate the menu. <Enter> selects submenus ---> . Pressing <Y> includes, <N> excludes features. Legend: [*] included [ ] excluded

[ ] VDD Status Check
SEL --->
Cached Sensor Reading Support --->
[*] ELDM IPMI Command Support
[ ] Data Transfer Command Support
IPMI Response Auto Timeout --->
IPv6 --->
Internal Sensor Support --->
IPMI Configuration Version Check --->
Allow VLAN Priority Set In VLAN Disabled State --->
IPMI Send Message Response Header --->
Interface Specific Message Handling Support --->
Multiple BMC --->
IPMI Thread Monitor --->
Disable Empty Password Login --->
IPMI Configurations Directory Path --->
Configuration Flushing Support --->
Delayed LAN Setting Support --->
Support for more than 256 sensors --->
IPMI Command handling during flashing --->
IPMI Interface Thread Priority --->
DCMI Version --->
HPM --->
KCS OBF Bit --->
Node Manager --->
User Password Encryption --->

<Select> < Exit > < Save > < Load >

```

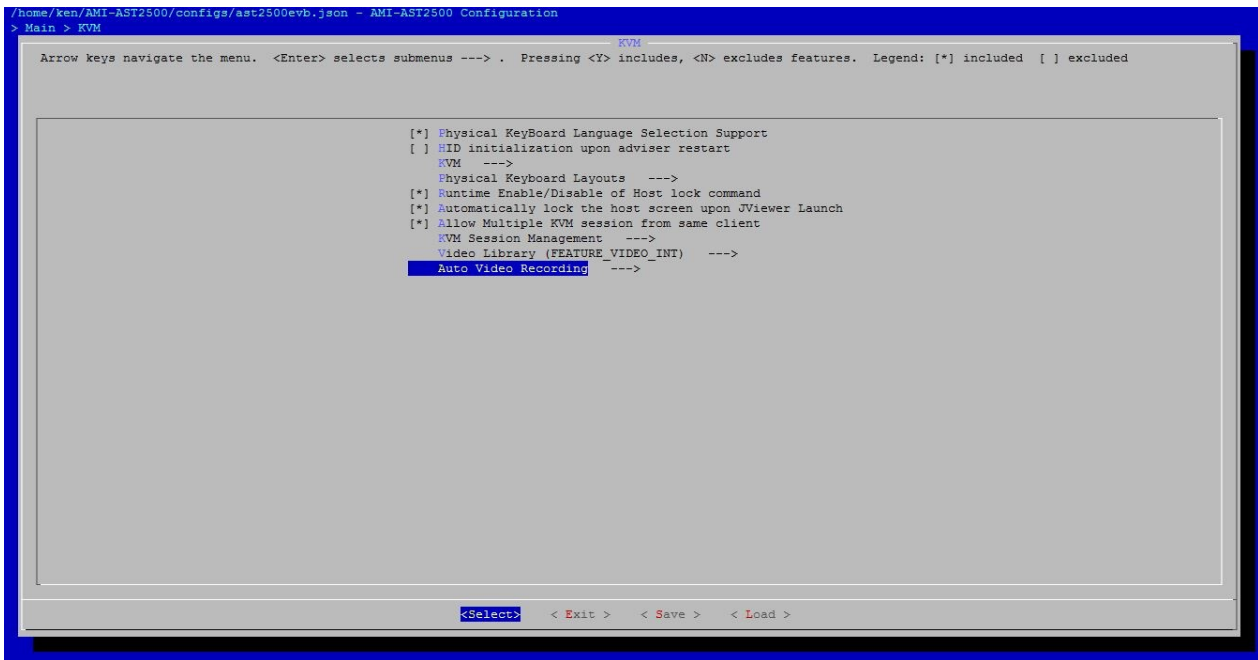
SEL ---> (Enable Circular SEL Policy)

IPv6 ---> (Enable IPv6)

Disable Empty Password Login ---> (Eisable Empty)

User Password Encryption ---> (針對Password加密)

# KVM



```

[*] Physical KeyBoard Language Selection Support

[*] Runtime Enable/Disable of Host lock command

[*] Automatically lock the host screen upon JViewer Launch

[*] Allow Multiple KVM session from same client

Auto Video Recording --->

  [*] Pre-Event Video Recording

  [*] Post-Event Video Recording

  [*] Remote Storage Space Support

```

# MCTP

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FRB Purley (Artemis) no suport



## PMC file in PMCP

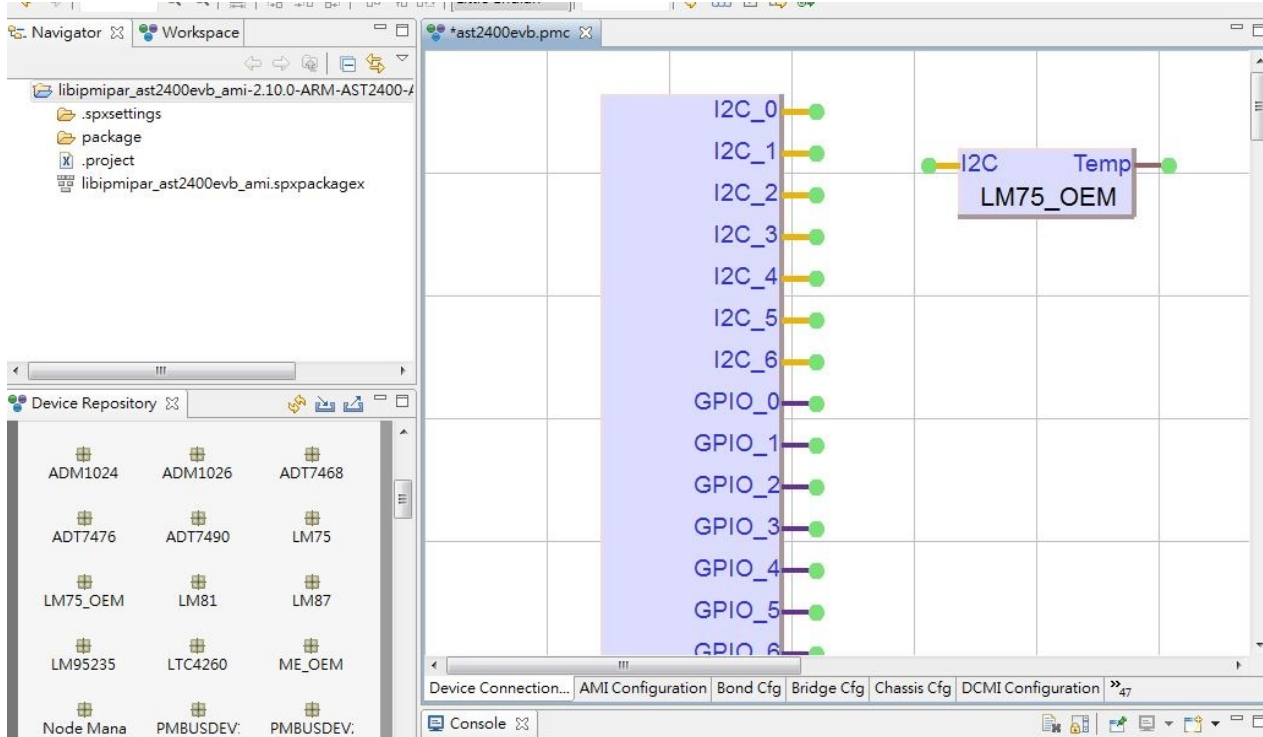
---

1. Device Connection editor
2. AMI Configuration
3. Bridge Cfg
4. Chassis Cfg
5. Dual Image Config
6. FW Firewall Config
7. Lan Channel x Cfg
8. LANx Config Params
9. IPMB Chann Cfg
10. Login Audit Config
11. Misc Configuration
12. Sol Config Params
13. Trigger Event Config
14. User Cfg
15. Watchdog Configuration
16. FRU Cfg

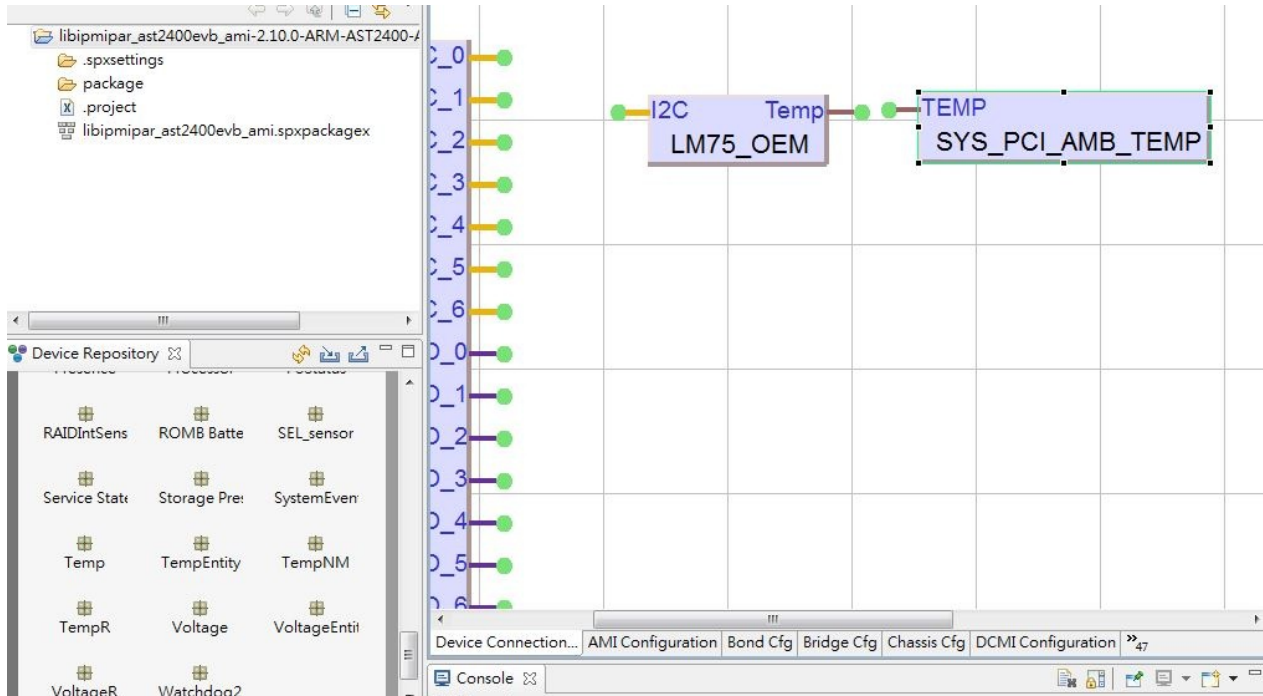
# Device Connection editor

EX:Add LM75 sensor

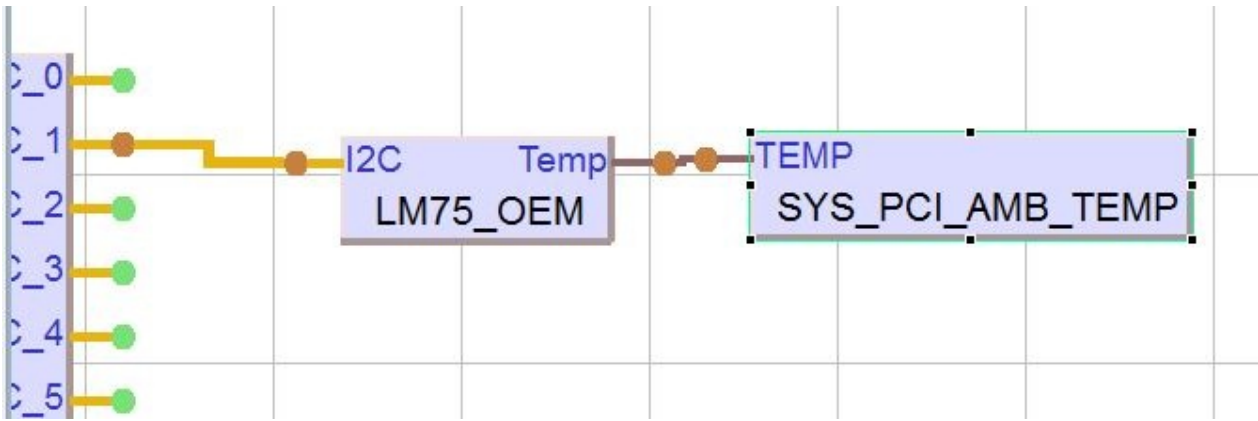
## 1. Add HW monitor



## 2. Add sensor



## 3. Connect HW monitor and sensor



4. Edit HW monitor and sensor

The screenshot shows the 'Edit HW monitor and sensor' step. It features two overlapping windows for configuring the 'LM75\_OEM' and 'SYS\_PCI\_AMB\_TEMP' sensors. The top window is partially obscured by the bottom one. To the right, two property tables are visible, corresponding to the selected sensors.

Name	Value
<b>Device</b>	
Device Name	LM75_OEM
App Type	UNKNOWN
Slave Address	0x9a
Initialize device (values 0/1)	0
Simulate (values 0/1)	0
Simulate temperature	0x32
Power On Delay	0
System Reset Delay	0

Name	Value
<b>Device</b>	
Sensor Number	142
Sensor Name	SYS_PCI_AMB_
Device ID	FAN_LED
Power On Delay	0
System Reset Delay	0
Monitor interval	1
Monitor State	MonitorOnstandb
Normal Maximum Tempera	0
Nominal Temperature	0x9e
Normal Minimum Temperat	0
<b>SDR</b>	
SDR Version	0x51
Software ID/Slave Address	0x20
Sensor Owner LUN	0x00
Entity ID	0x37
Entity Instance	0x1
Sensor Initialization	0x7f
Sensor Capabilities	0x68
Assertion mask	0x2204
Deassertion mask	0x2204
Settable Readable Thresho	0x1212
Analog Data Format	Unsigned
Rate Unit	None
Modifier Unit	None
PercentRequired	NO



## Bridge Cfg

In the PMC File select Bridge Cfg Tab View. The Below Screenshot gives you a clear view of the configurable parameters in Bridge Configurations and the other parameters are added using “Manage Template” option which is explained below,

Name	Value	Description
<b>▲ Bridge Management Configuration</b>		
Bridge State	0x1	Bridge State
ICMB Address	0x10	ICMB Address
ICMB Proxy Address	0x10	ICMB Proxy Address
IPMB Proxy Address	0x20	IPMB Proxy Address
Proxy LUN	0x1	Proxy LUN
<b>▲ ICMB Status1 1</b>		
Run Command	0	Run Command
Bad Command	0	Bad Command
Spurious Response	0	Spurious Response
<b>▲ ICMB Status2 1</b>		
Sent Information	0	Sent Information
Received Information	0	Received information
Other Address	0	Other Address
Run Packet	0	Run Packet
Bad Checksum	0	Bad Checksum
UNK Type	0	UNK Type
Not Start	0	Not Start
Restart Status	0	Restart Status
ARB Wins	0	Arb Wins
ARB Losses	0	Arb Losses

## Chassis Cfg

In the PMC File select Chassis Cfg Tab View. The Below Screenshot gives you a clear view of the configurable parameters in Chassis Configurations and the other parameters are added using "Manage Template" option which is explained below,

Name	Value	Description
<b>Chassis Configuration</b>		
System Restart Cause	Unknown	System Restart Cause
Power Restore Policy	AlwaysPowerUp	Power Restore policy
Power Cycle Interval	2	Set the Power Cycle Interval in se
Service Partition Scan	0	System Service Partition Scan
<b>ChassisCapabilities 1</b>		
Provides Front Lockout	Disable	Disable/Enable Front Panel Lockou
Provides Intrusion	Disable	Disable/Enable Chassis intrusion
FRU Info Address	32	FRU Info Address
SDR Device Address	0x20	SDR Device Address
SEL Device Address	0x20	SEL Device Address
SM Device Address	0x20	SM Device Address
Chassis Bridge Function	0x20	Chassis Bridge Function
<b>AMIOptions 1</b>		
AMI Boot Option Data1	0x0	AMI Boot Option Data1
AMI Boot Option Data2	0x0	AMI Boot Option Data2
<b>ChasisPowerState 1</b>		
Power State Restore Policy	AlwaysPowerUp	Power State Restore policy
Power State Control Fault	Disable	Power State Control Fault
Power State Fault	NotDetected	Power State Fault
Power State Interlock	Disable	Power State Interlock
Power State OverLoad	Disable	Power State OverLoad
Power State System Power	On	Power State System Power
Last Power On via IPMI Cmd	Disable	Power State System Power

# Dual Image Config

This function provides higher level function to get dual image configuration.

Name	Value	Description
<b>Dual Image Cfg</b>		
Firmware Upload Selector	Auto - Inactive Firmware	Firmware Upload Selector



## FW Firewall Config

1. In the PMC File select FW Firewall Configuration Tab View. If you don't find any configuration in Firmware Firewall Configuration Tab in PMC File, then you need to add the templates by using "Manage Template" option. This option will be displayed by doing a right click operation on FW Firewall Configuration Tab View as explained below.
2. If you want to add Firewall Configurations then right click on FW Firewall Configuration Tab View, two options will be displayed, · Load Default Values · Manage Templates
3. Select Manage Templates option to open the Manage Templates pop-up as shown in the screenshot below.

Name	Value	Description
<b>FW Firewall Configuration</b>		
<b>Firewall Configs 1</b>		
Net Function	255	Net Function
Command	255	Command
Config	0	Config
<b>Firewall Configs 2</b>		
Net Function	255	Net Function
Command	255	Command
Config	0	Config
<b>Firewall Configs 3</b>		
Net Function	255	Net Function
Command	255	Command
Config	0	Config
<b>Firewall Configs 4</b>		
Net Function	255	Net Function
Command	255	Command
Config	0	Config
<b>Firewall Configs 5</b>		
Net Function	255	Net Function
Command	255	Command
Config	0	Config
<b>Firewall Configs 6</b>		
Net Function	255	Net Function
Command	255	Command



## Lan Channel x Cfg

In the PMC File select LAN Channel Configuration Tab View (we have three LAN Channel Configuration LAN Channel 1 Configuration, LAN Channel 2 Configuration and LAN Channel 3 Configuration).For all the three configurations the values will be different but the configuration parameters are similar. The Below Screenshot gives you a clear view of the configurable parameters in LAN Channel Configurations.

Name	Value	Description
<b>LAN Channel 1 Information</b>		
Channel number	0x1	Channel number
Channel Type	LAN_RMCP_CHANNEL1_TYPE	Channel Type
Channel medium	0x4	Channel medium
Channel protocol	0x1	Channel protocol
Session Support	MultiSession	Enable / Disable Session support
Total Active Session	0x0	Total number of Active Sessions
Auth type Callback	0	Authentication Type for Callback
Auth type Operator	0	Authentication Type for Operator
Auth type User	0	Authentication Type for User
Auth type Admin	0	Authentication Type for Administrator
Protocol Vendor ID	0xf21b00	Protocol Vendor ID in 0x000000 format
Auxillary Info	0	Auxillary Information in word
Message2RQ	0	Enable message to receive msg C
Channel access mode	AlwaysAvailable	Select Access mode
Access mode Supported	5	Access mode supported by this c
Alerting	Enable	Enable or Disable Alerting
Per Msg	Disable	Enable or Disable per message au
User Auth	Enable	Enable or Disable user authentica
Max Privelege	4	Maximum privilege supported
Allow SetUsrAccess	Allow	Allow set user access command
Allow SetChannel	Allow	Allow set channel access comma
Session Limit	15	Session Limit
Login Status NUP	0	Login Status NUP

## LANx Config Params

In the PMC File select LAN Configuration Tab View (we have Three Configuration Tab Views for this, LAN 1 Config params, LAN 2 Config params and LAN 3 Config params). The Below Screenshot gives you a clear view of the configurable parameters in LAN Configurations,

Name	Value	Description
<b>LAN Config Params</b>		
OEM Auth Type	Disable	Enable/Disable OEM authentication
St Password Auth Type	Disable	Enable/Disable Straight password
MD5 Auth Type	Enable	Enable/Disable MD5 authentication
MD2 Auth Type	Disable	Enable/Disable MD2 authentication
None Auth Type	Disable	Enable/Disable None authentication
IP Address	0.0.0.0	IP Address in X.X.X.X format in de
IP Address Src	DHCP	Source for obtain
MAC address	0x0:0x0:0x0:0x0:0x0:0x0	MAC Address in XX:XX:XX:XX:XX
Subnet Mask	0.0.0.0	Subnet Mask in X.X.X.X format in c
Primary RMCP Port	623	Primary RMCP Port
Secondary RMCP Port	0	Secondary RMCP Port
BMC ARP	Enable	Enable/Disable BMC generated AR
Gratuitous ARP	Disable	Enable/Disable BMC generated Gr
ARP Interval	0	ARP Interval
Default Gateway IP	0.0.0.0	Default Gateway in X.X.X.X forma
Default Gateway MAC	0x0:0x0:0x0:0x0:0x0:0x0	Default Gateway MAC address in
Backup Gateway IP	0.0.0.0	Gateway IP in X.X.X.X format in de
Backup Gateway MAC	0x0:0x0:0x0:0x0:0x0:0x0	Backup Gateway MAC address in
Community String	AMI	Community String for PET Trap
VLANID	0	Virtual LAN ID
VLAN Priority	0	VLAN Priority
Generate Event	1	Generate Event on User Lock out
Bad Password Threshold Number	0	The number of attempts the user c

## IPMB Chann Cfg

Name	Value	Description
<b>▲ ICMB Channel Information</b>		
Channel number	0x3	Channel number
Channel Type	ICMB_CHANNEL_TYPE	Channel Type
Channel medium	0x2	Channel medium
Channel protocol	2	Channel protocol
Session Support	Disable	Enable / Disable Session support
Total Active Session	0x0	Total number of Active Sessions
Auth type Callback	0	Authentication Type for Callback
Auth type Operator	0	Authentication Type for Operator
Auth type User	0	Authentication Type for User
Auth type Admin	0	Authentication Type for Administra
Protocol Vendor ID	0xf21b00	Protocol Vendor ID in 0x000000 fo
Auxillary Info	0	Auxillary Information in word
Message2RQ	1	Enable message to receive msg Q
Channel access mode	AlwaysAvailable	Select ChannelAccess modes
Access mode Supported	0	Access mode supported by this cl
Alerting	Disable	Enable or disable alerting
Per Msg	Disable	Enable or Disable per message au
User Auth	Disable	Enable or Disable user authenticat
Max Privelege	0	Maximum privilege supported
Allow SetUsrAccess	Block	Allow set user access command
Allow SetChannel	Block	Allow set user access command
Session Limit	0	Session Limit
Login Status NUP	0	Login Status NUP
...	...	...

## Login Audit Config

In the PMC File select Login Audit Configuration Tab View. This Login Audit Configuration Parameters are configurable in PMC File and the parameters in this configuration are shown in the screenshot given below:

Name	Value	Description
<b>Login Audit Configuration</b>		
Web Login Event	Disable	Enable/Disable Web login event
Web Logout Event	Disable	Enable/Disable Web logout event
Web Auto-Logout Event	Disable	Enable/Disable Web auto-logout event
Web Login Failed Event	Disable	Enable/Disable Web Login Failed event
IPMI Login Event	Disable	Enable/Disable IPMI login event
IPMI Logout Event	Disable	Enable/Disable IPMI logout event
IPMI Auto Logout Event	Disable	Enable/Disable IPMI auto-logout event
IPMI Login Failed Event	Disable	Enable/Disable IPMI Login Failed event
TELNET Login Event	Disable	Enable/Disable TELNET login event
TELNET Logout Event	Disable	Enable/Disable TELNET logout event
TELNET Auto Logout Event	Disable	Enable/Disable TELNET auto-logout event
TELNET Login Failed Event	Disable	Enable/Disable TELNET Login Failed event
SSH Login Event	Disable	Enable/Disable SSH login event
SSH Logout Event	Disable	Enable/Disable SSH logout event
SSH Auto Logout Event	Disable	Enable/Disable SSH auto-logout event
SSH Login Failed Event	Disable	Enable/Disable SSH Login Failed event
KVM session started event	Disable	Enable/Disable KVM session started event
KVM session finished event	Disable	Enable/Disable KVM session finished event
KVM Authentication Failed Event	Disable	Enable/Disable KVM Authentication Failed event
KVM permission failed Event	Disable	Enable/Disable KVM permission failed event

## Misc Configuration

Name	Value	Description
<b>MISC Cfg</b>		
System log hostname	0.0.0.0	Set the System log host name
Syslog Port	0	system log port no
Syslog enable/disable	Disable	system log enable/disable
SNMP Port	0	snmp port no
Time Zone	America/New_York	Set the Time Zone

## Sol Config Params

In the PMC File, select SOL Configuration Tab View. The Configurable SOL Parameters in PMC File are given below in the Screenshot. We have three tab views for SOL Configuration (SOL 1 Config Param, SOL 2 Config Param and SOL3 Config Param). For all the SOL Configuration the parameters are same and can be configured in the same way as one another.

Name	Value	Description
<b>SOL1 Configuration</b>		
SOL Enable	Enable	Enable/Disable SOL Payload
SOL Encryption	DoNotForce	Enable forcing Encryption
SOL Authentication	DoNotForce	Enable forcing Authentication
SOL Max Privelege	User	Maximum Privelege for SOL
Char Threshold	96	Character Accumulate Threshold
Char Interval	12	Character Accumulate Interval
SOL Retry Count	7	SOL Retry Count
SOL Retry Interval	50	SOL Retry Interval
Non Volatile Bit Rate	8	Non Volatile Bit Rate
Volatile Bit Rate	8	Volatile Bit Rate
SOL Payload Channel	1	SOL Payload Channel
SOL Payload Port	623	SOL Payload Port



## Trigger Event Config

In the PMC File select Trigger Event Configuration Tab View. This Trigger Event Flags are configurable in PMC File and the parameters in this configuration is shown below in the screenshot, In this case all the configuration parameters are displayed in Trigger Event Configuration Tab View. It is not necessary for doing the Manage Template to add configurations as such we have done for SMBUS Channel Configurations. For example, if you want to enable the Critical Condition Trigger Event then that can be done in the PMC File as shown below. In the above screenshot it is already in the disable state. Click on Value Field of Critical Flag Parameter, Enter the Value as 1 and save the configurations using CTRL+S key and generate the configuration O/P by using Generate Configuration O/P Option in MDS. Similarly the other parameters are changeable.

Name	Value	Description
<b>Trigger Event Configuration</b>		
Critical Flag	0	Critical Flag
Non Critical Flag	0	Non Critical Flag
Non Recoverable Flag	0	Non Recoverable Flag
Fan Troubled Flag	0	Fan Troubled Flag
WatchDog Timer Expire Flag	0	WatchDog Timer Expire Flag
System DC On Flag	0	System DC On Flag
System DC Off Flag	0	System DC Off Flag
System Reset Flag	0	System Reset Flag
LPC Reset Flag	0	LPC Reset Flag
Specific Date and Time Flag	0	Specific Date and Time Flag
Specific Date And Time	0x0	Specific Date and Time

## User Cfg

Name	Value	Description
<b>User Config</b>		
<b>User Configuration 1</b>		
Id	USER_ID	ID for this User (1431520594 - USI
User Id	1	User Id for this User
User Name	Admin	User Name for this user
Password	Admin	Password for this user
Max Password Size	16	Max Password size for the user
EmailID		Email ID for forgot password optio
User Status	Enable	Disable/Enable this user
Fixed User Status	Enable	Disable/Enable fixed user
Email Format	AMI-Format	Email Format for the User
Shell type	0	Shell type for this user
Extended privilege	3	User Enhanced or Extended Privile
User Password Configured	Enable	Allow Default Empty Password



## Watchdog Configuration

In the PMC File select Watchdog Configuration Tab View. The watch dog timer configurable parameters are shown in the below screenshot.

Name	Value	Description
<b>▲ Watchdog Cfg</b>		
Timer Logging	Disable	Disable or Enable Timer use logging
Timer Stopping	DoNotStop	Stopping the Timer
Timer Usage	Reserved	Timer Usage
Pre Timeout Interrupt	None	Pre Timeout Interrupt
Pre Timeout Action	NoAction	Pre Timeout Action
Pre Timeout Interval	0	Pre Timeout Interval
Timer OEM Flag	LeaveAlone	LeaveAlone or Clear Timer OEM Flag
Timer SMS/OS Flag	LeaveAlone	LeaveAlone or Clear Timer SMS/OS F
Timer OS Load Flag	LeaveAlone	LeaveAlone or Clear Timer OS Load F
Timer BIOS POST Flag	LeaveAlone	LeaveAlone or Clear Timer BIOS POS
Timer BIOS FRB2 Flag	LeaveAlone	LeaveAlone or Clear Timer BIOS FRB2
Initial Countdown	0	Initial Countdown

# FRU Cfg

Name	Value	Description
<b>FRU Configuration</b>		

