

eMG Expansion

(iPECS eMGSW-TRA-01-005)

5 Sep, 2019

REVISION HISTORY

ISSUE	DATE	DESCRIPTION OF CHANGES
1.0	28-Oct-16	eMG800 & Firewall case added
1.1	25-Jul-19	Add eMG100 (remove eMG80E)
1.2	30-Aug-19	How to use VM, MEMU, MISU of slave system
1.3	5-Sep-19	Exceptional case in Program(DB) attributes

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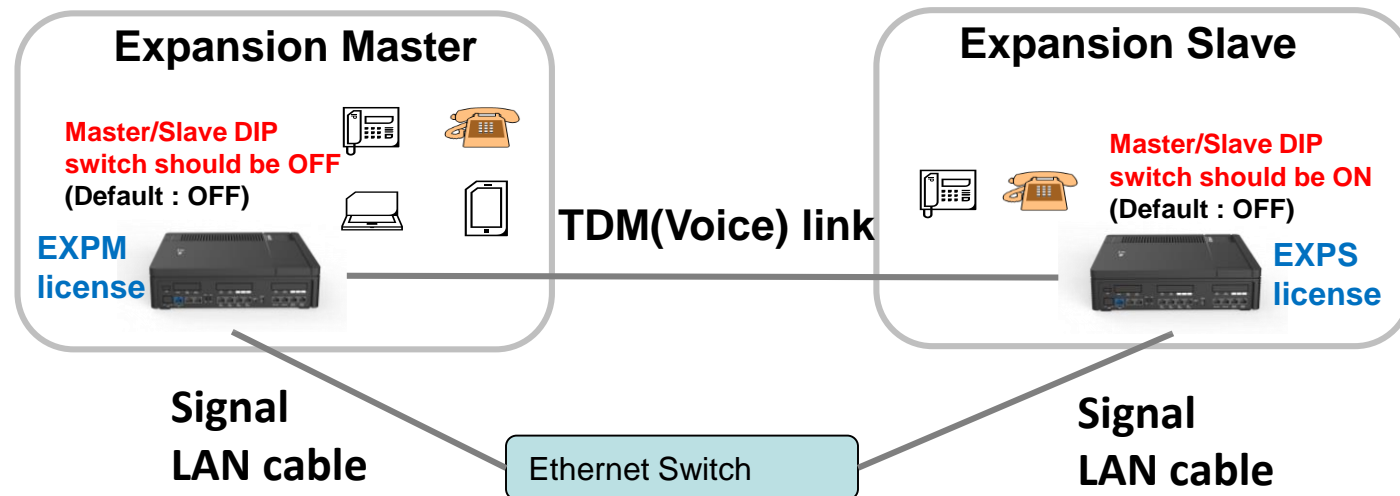
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eMG100 Expansion

General

- eMG100 expansion is support by TNET feature
 - TDM voice connection is connected by TDM link



- IP device (IP phone, UCS client, IPCR, Application) should be installed in the master.
- Data communication could be broken when master/slave DIP switch is ON but TDM link is not connected (clock is not provided by master).
- TDM link should be shorter than 50cm.
(Pin connection is different with normal LAN cable)

eMG100 Expansion

Master system

The screenshot shows the IPECS eMG100 Web Admin interface. The left sidebar contains a menu with categories like System ID & Numbering Plans, Station Data, Board Based Data, CO Line Data, System Data, Station Group Data, ISDN Line Data, SIP Data, Tables Data, Networking Data, H.323 Routing Table, T-NET Data, Zone Data, Device Login, UCS Data, Hotel Data, Green Mode, and Initialization. The 'T-NET Data' category is expanded, showing sub-items: T-NET Basic Attributes(330), T-NET CM attributes(331), T-NET LM attributes(332), T-NET FoPSTN Table (333), T-NET Control Contact(334), and T-NET Music/Alarm(335-336). The 'T-NET Basic Attributes(330)' sub-item is selected. The main content area shows a 'Favorite PGM' field with 'T-NET Basic Attributes(330)' and a table with the following data:

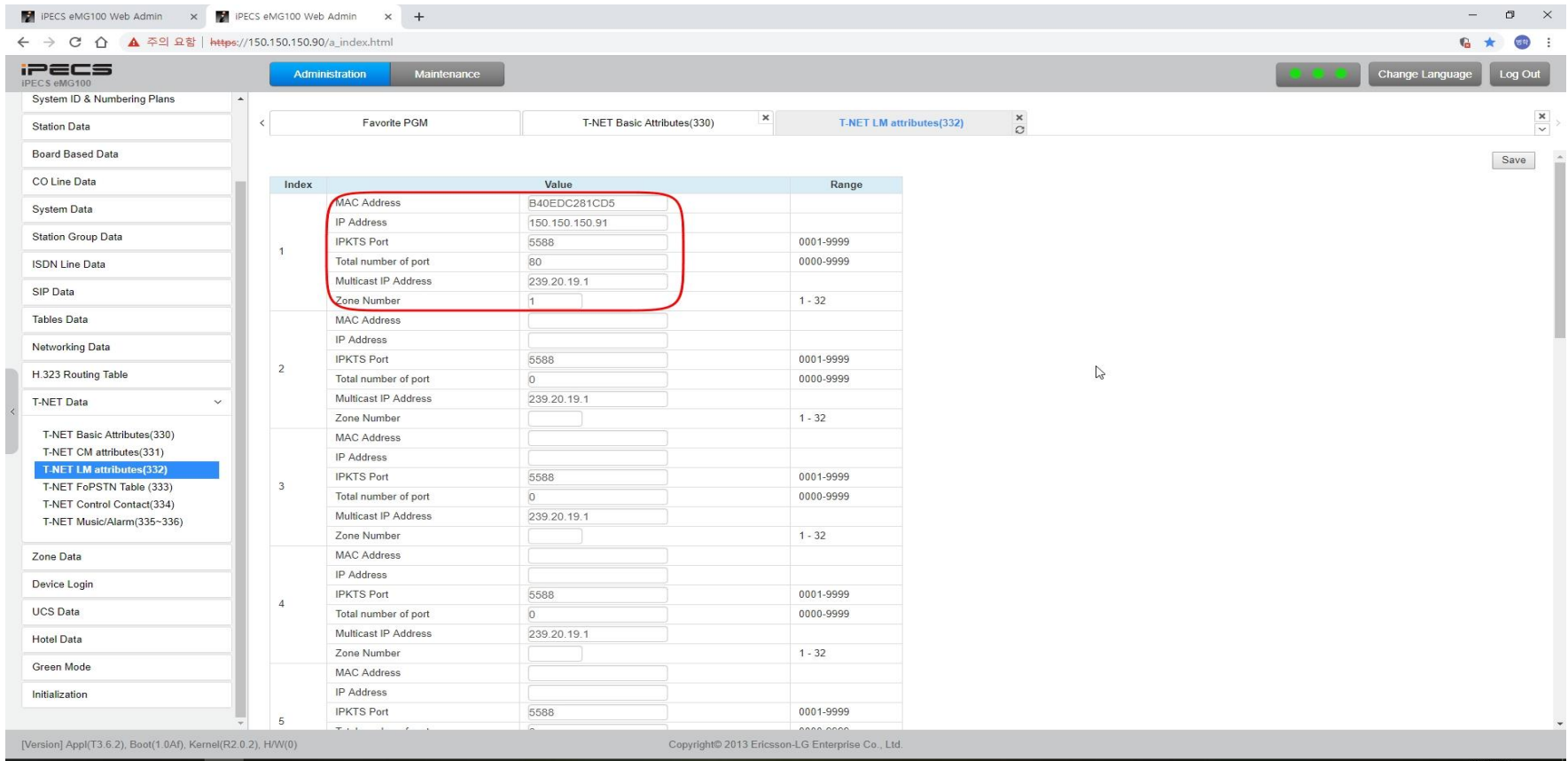
Order	Attribute	Value
1	T-NET Enable	ON

At the bottom of the interface, there is a footer with the text: [Version] Appl(T3.6.2), Boot(1.0A1), Kernel(R2.0.2), H/W(0) and Copyright© 2013 Ericsson-LG Enterprise Co., Ltd.

- Set “T-NET Enable” to ON as above (eMG100-EXPM license should be installed)
Temp license could be used for demonstration
(Temp license activated TNLS license that could be used for expansion)

eMG100 Expansion

Master system



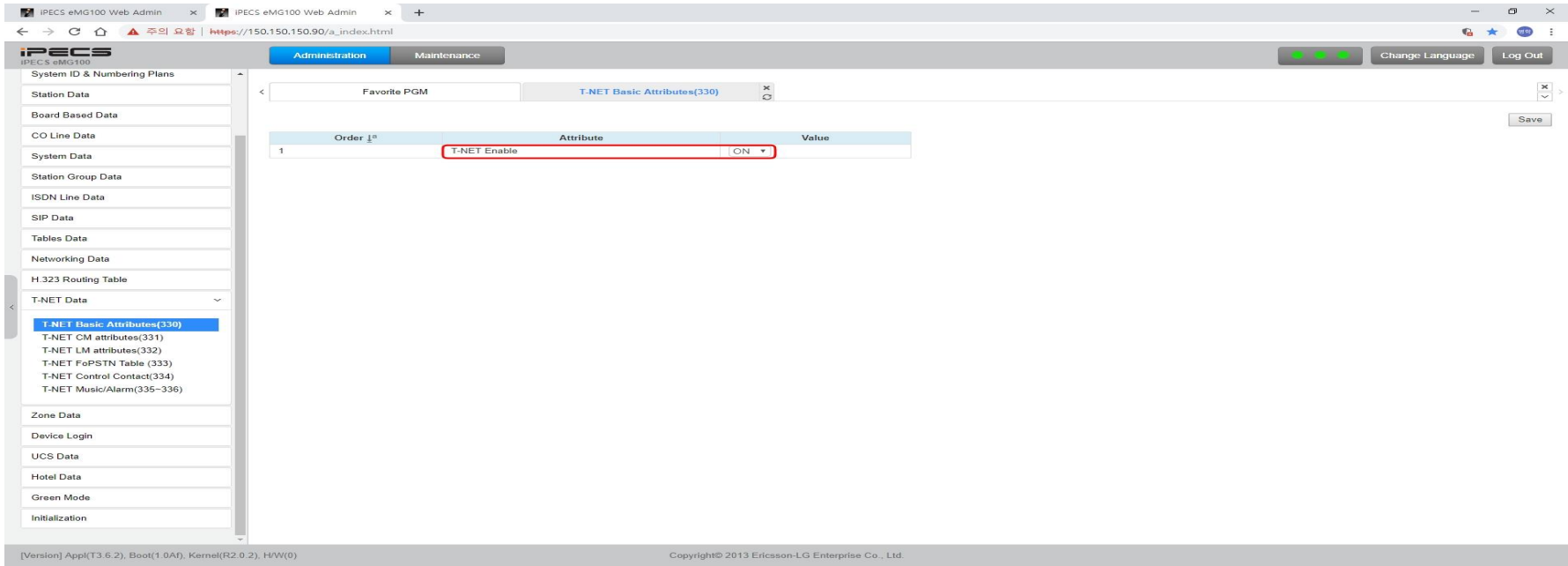
The screenshot shows the IPECS eMG100 Web Admin interface. The left sidebar contains a menu with categories like System ID & Numbering Plans, Board Based Data, CO Line Data, System Data, Station Group Data, ISDN Line Data, SIP Data, Tables Data, Networking Data, H.323 Routing Table, T-NET Data, Zone Data, Device Login, UCS Data, Hotel Data, Green Mode, and Initialization. The main content area displays the 'T-NET LM attributes(332)' configuration page. The page has a table with 5 rows of configuration data. The first row is highlighted with a red box, indicating the MAC Address, IP Address, and Total number of port fields.

Index	Value	Range
1	MAC Address: B40EDC281CD5	
	IP Address: 150.150.150.91	
	IPKTS Port: 5588	0001-9999
	Total number of port: 80	0000-9999
	Multicast IP Address: 239.20.19.1	
	Zone Number: 1	1 - 32
2	MAC Address:	
	IP Address:	
	IPKTS Port: 5588	0001-9999
	Total number of port: 0	0000-9999
	Multicast IP Address: 239.20.19.1	
	Zone Number:	1 - 32
3	MAC Address:	
	IP Address:	
	IPKTS Port: 5588	0001-9999
	Total number of port: 0	0000-9999
	Multicast IP Address: 239.20.19.1	
	Zone Number:	1 - 32
4	MAC Address:	
	IP Address:	
	IPKTS Port: 5588	0001-9999
	Total number of port: 0	0000-9999
	Multicast IP Address: 239.20.19.1	
	Zone Number:	1 - 32
5	MAC Address:	
	IP Address:	
	IPKTS Port: 5588	0001-9999
	Total number of port: 0	0000-9999
	Multicast IP Address: 239.20.19.1	
	Zone Number:	1 - 32

- Assign MAC, IP and Total number of port for the slave system.
The “Total number of port” should be larger than assigned ports in T-Net CM attribute of the slave system.

eMG100 Expansion

Slave system



- Set “T-NET Enable” to ON as above (eMG100-EXPS license should be installed)
Temp license could be used for demonstration
(Temp license activated TNLS license that could be used for expansion)
 - EXPS: “TNET enable” is automatically ON (PGM132) for all extensions and CO lines(It is not turned OFF)
License is checked on master system not on slave (except VMIU/VOIU license)
 - TNLS: “TNET enable” should be set ON (PGM132) by manually for each device
License is check on each system

eMG100 Expansion

Slave system

The screenshot shows the iPECS eMG100 Web Admin interface. The left sidebar contains a navigation menu with categories like System ID & Numbering Plans, Station Data, Board Based Data, CO Line Data, System Data, Station Group Data, ISDN Line Data, SIP Data, Tables Data, Networking Data, H.323 Routing Table, T-NET Data, Zone Data, Device Login, and UCS Data. The 'T-NET Data' category is expanded, showing sub-items like T-NET Basic Attributes(330), T-NET CM attributes(331) (selected), T-NET LM attributes(332), T-NET FoPSTN Table(333), T-NET Control Contact(334), and T-NET Music/Alarm(335~336). The main content area displays the 'T-NET CM attributes(331)' configuration table. A red box highlights the configuration fields for CM 1 (Active), CM 2, and IPKTS Port Number.

Order	Attribute	Value	Range
1	Register Enable	ON	
2	CM Server Type	eMG/UCP	
3	CM 1 (Active)	IP Address : 150.150.150.90 MAC Address : B40EDC281CC8	
4	CM 2	IP Address : 0.0.0.0 MAC Address :	
5	IPKTS Port Number	5588	0001-9999
6	Total number of port	80	0000-9999
7	Polling Count	5	00-99
8	Polling Interval	2	00-99
9	Zone Number		1 - 32
10	Register LM device directly	OFF	

- Select CM server type of master system.
- Assign MAC, IP and Total number of port for the slave system.

eMG100 Expansion

VMIU of slave system

- VMIU of slave system could be used optionally
Recommend to use only a VMIU that is on master
- If VMIU of slave system is used then system greeting/User greeting/prompt should be loaded on slave system
 - MEMU/MEMU2 expand memory space of each VMIU
(MEMU/MEMU2 could be connected on both master and slave system)
 - “VM Device Slot Seq.” should be set to use VMIU of slave
 - Device base: PGM 437
 - Zone base: PGM439
 - Device base have a priority than zone base

eMG100 Expansion

MISB of slave system

- MISU of slave system could be used optionally
Recommend to use only a MISU that is on master
- If the MISU of slave is registered to master system then the MISU is used for below case (it follow PGM 334~336)
 - MOH/BGM for slave device
 - Door open on slave device
 - Relay control for slave device

VOIB48/BRIB/PRIB(E1/T1)/Virtual MCIB of slave system

It is not supported on expansion slave

Program(DB) attributes

Program attributes of master are used for all devices even though that is connected to the slave system

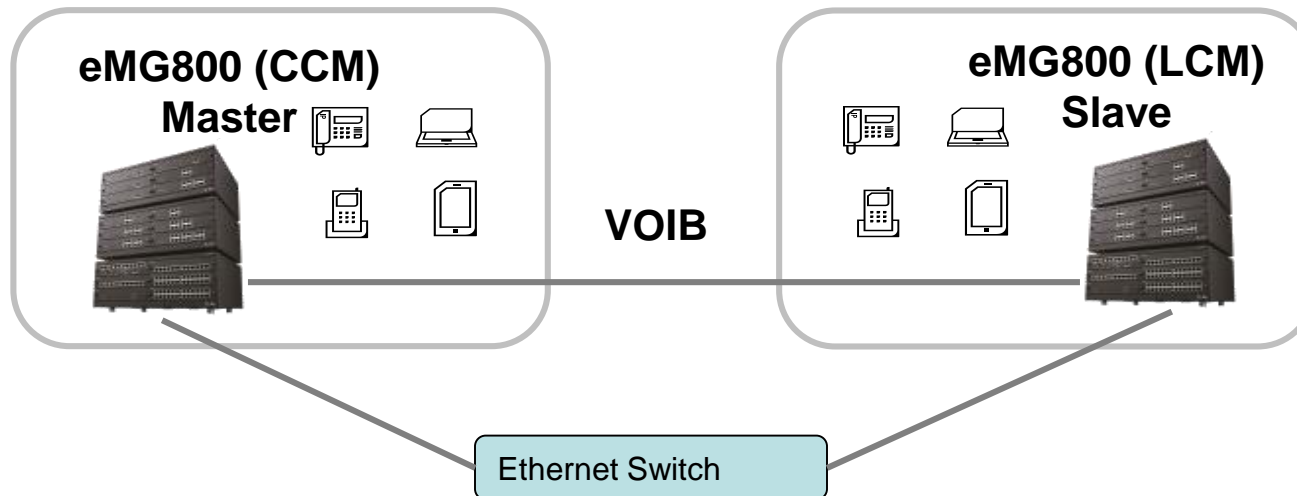
Except for below program

- TNET Data – PGM330~336
- Static route table (PGM254)
- Access control list (PGM255)

eMG800 Expansion

Configuration

- eMG800 expansion is support by TNET feature



- WTIB should be installed in master system (not in slave)
- IP device (IP phone, UCS client, IPCR, Application) & VOIP trunk is need to be installed in master.
- Could you use expansion slave system to expand TDM port (DTIB/SLIB/LCOB/BRIB/PRIB etc.)

eMG800 Expansion

Master system

The screenshot shows the iPECS eMG800 Web Admin interface. The browser address bar displays https://192.168.150.106/a_index.html. The interface includes a sidebar with navigation options: System ID & Numbering Plans, Station Data, Board Based Data, CO Line Data, System Data, Station Group Data, ISDN Line Data, SIP Data, Tables Data, Networking Data, and T-NET Data. The T-NET Data section is expanded, showing T-NET Basic Attributes(330) selected. The main content area displays a table with the following data:

Order 1 ^a	Attribute	Value
1	T-NET Enable	ON ▼

Buttons for 'Favorite PGM', 'T-NET Basic Attribute...', and 'T-NET CM attributes(331)' are visible at the top of the main content area. A 'Save' button is located at the bottom right of the table. The footer of the interface shows the version information: [Version] Appl(R1.0.2), Boot(A.0Aa), Kernel(-), H/W(0) and the copyright notice: Copyright Ericsson-LG Enterprise Co., Ltd. 2013.

- Enable TNET in eMG800 master system (eMG800-EXPM license should be installed)

eMG800 Expansion

Master system

Board Based Data

CO Line Data

System Data

Station Group Data

ISDN Line Data

SIP Data

Tables Data

Networking Data

H.323 Routing Table

T-NET Data

T-NET Basic Attributes(330)

T-NET CM attributes(331)

T-NET LM attributes(332)

T-NET FoPSTN Table (333)

T-NET Control Contact(334)

T-NET Music/Alarm(335~336)

Zone Data

Device Login

< Favorite PGM T-NET CM attributes(331) x

Save

Order 1 ^a	Attribute	Value	Range
1	Register Enable	ON	
2	CM Server Type	eMG/UCP	
3	CM 1	IP Address : 0.0.0.0 MAC Address :	
4	CM 2	IP Address : 0.0.0.0 MAC Address :	
5	IPKTS Port Number	5588	0001-9999
6	Total number of port	0	0000-9999
7	Polling Count	5	00-99
8	Polling Interval	2	00-99
9	Zone Number	1	1 - 32

[Version] Appl(R2.0.8), Boot(1.0Ca), Kernel(R1.1.4), H/W(1) Copyright Ericsson-LG Enterprise Co., Ltd. 2013.

- Assign zone number for master system (eg, 1)

eMG800 Expansion

Master system

The screenshot shows the iPECS eMG800 Administration interface. The left sidebar contains a menu with categories: Board Based Data, CO Line Data, System Data, Station Group Data, ISDN Line Data, SIP Data, Tables Data, Networking Data, H.323 Routing Table, and T-NET Data. Under T-NET Data, 'T-NET LM attributes(332)' is selected. The main area displays a configuration table for T-NET LM attributes(332). The table has columns for Index, Value, and Range. A red box highlights the MAC Address, IP Address, and Total number of port fields for Index 1. The values are b40edcbf55fa, 192.168.150.113, and 600 respectively. The Range for Total number of port is 000-999. The Zone Number is 2, with a Range of 1 - 32. The table also shows fields for IPKTS Port (5588) and Multicast IP Address (239.20.19.1). A 'Save' button is located at the top right of the table area.

Index	Value	Range
1	MAC Address	b40edcbf55fa
	IP Address	192.168.150.113
	IPKTS Port	5588
	Total number of port	600
	Multicast IP Address	239.20.19.1
	Zone Number	2
2	MAC Address	
	IP Address	
	IPKTS Port	5588
	Total number of port	0
	Multicast IP Address	239.20.19.1
	Zone Number	
3	MAC Address	
	IP Address	
	IPKTS Port	5588
	Total number of port	0
	Multicast IP Address	239.20.19.1
	Zone Number	

- Assign MAC/IP and total port number of eMG800 slave system.
The “total number of port” should be larger than CCM attribute of slave system.
- Assign zone number for slave system (eg, 2)

eMG800 Expansion

Slave system

The screenshot shows the iPECS eMG800 Web Admin interface. The browser address bar displays `https://192.168.150.114/a_index.html`. The interface has a top navigation bar with 'Administration' and 'Maintenance' tabs. On the left, a sidebar menu lists various data categories: Board Based Data, CO Line Data, System Data, Station Group Data, ISDN Line Data, SIP Data, Tables Data, Networking Data, T-NET Data (expanded), Zone Data, and Device Login. Under 'T-NET Data', 'T-NET Basic Attributes(330)' is selected. The main content area shows a table with the following data:

Order	Attribute	Value
1	T-NET Enable	ON

Buttons for 'Favorite PGM', 'T-NET Basic Attribute...', and 'Save' are visible. The footer contains version information: '[Version] Appl(R1.0.2), Boot(A.0Aa), Kernel(-), H/W(0)' and copyright notice: 'Copyright Ericsson-LG Enterprise Co., Ltd. 2013.'

- Enable TNET in eMG800 slave system(eMG800-EXPS license should be installed)
All station and CO device will be registered to master system and license will be checked in master if eMG800-EXPS license is used.
if Temp license is used then TNET should be enabled for all device in PGM 132.
TNET should be enabled for other device (not station and CO line) in PGM 132.

eMG800 Expansion

Slave system

iPECS
iPECS eMG800

Administration Maintenance

Change Language Log Out

Board Based Data

CO Line Data

System Data

Station Group Data

ISDN Line Data

SIP Data

Tables Data

Networking Data

H.323 Routing Table

T-NET Data

T-NET Basic Attributes(330)

T-NET CM attributes(331)

T-NET LM attributes(332)

T-NET FoPSTN Table (333)

T-NET Control Contact(334)

T-NET Music/Alarm(335~336)

T-NET ISDN Clock Priority(337)

Zone Data

Favorite PGM Zone Attribute(439) T-NET LM attributes(332) T-NET CM attributes(331)

Save

Order ↓	Attribute	Value	Range
1	Register Enable	ON	
2	CM Server Type	eMG/UCP	
3	CM 1 (Active)	IP Address : 192.168.150.113 MAC Address : B40EDC281BAF	
4	CM 2	IP Address : 0.0.0.0 MAC Address :	
5	IPKTS Port Number	5588	0001-9999
6	Total number of port	600	0000-9999
7	Polling Count	5	00-99
8	Polling Interval	2	00-99
9	Zone Number	1	1 - 32

- Select master system type
- Assign MAC/IP address of slave system and total number of port that can be registered to master.
- Assign zone number for master system (eg, 1)

eMG800 Expansion

Assign VOIB/VMIB for each zone

3	<input type="checkbox"/>	RTP Relay Rule	If Need ▼
4	<input type="checkbox"/>	1st RTP Relay Device Slot Seq.	19
5	<input type="checkbox"/>	2nd RTP Relay Device Slot Seq.	
6	<input type="checkbox"/>	VM Device Slot Seq.	1: 21 2: 3:

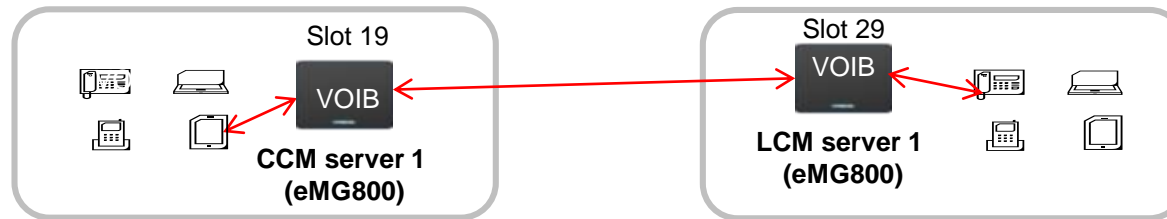
- Assign VOIB and VMIB slot number for zone 1
eg, 19 is VOIB slot number and 21 is VMIB slot number of master(zone 1)

3	<input type="checkbox"/>	RTP Relay Rule	If Need ▼
4	<input checked="" type="checkbox"/>	1st RTP Relay Device Slot Seq.	29
5	<input type="checkbox"/>	2nd RTP Relay Device Slot Seq.	
6	<input checked="" type="checkbox"/>	VM Device Slot Seq.	1: 30 2: 3:

- Assign VOIB and VMIB slot number for zone 2
eg, 29 is VOIB slot number and 30 is VMIB slot number of slave(zone 2)

eMG800 Expansion

Assign VOIB for inter zone (1 <-> 2)



Source Zone Range 1
Destination Zone Range 2

Order ↓ ^a	Check All	Attribute	Value	Range
1	<input type="checkbox"/>	Codec Type	N/A ▼	
2	<input type="checkbox"/>	RTP Relay Rule	FORCED TO DO ▼	
3	<input checked="" type="checkbox"/>	RTP Relay Device Utilization	Separated(SRC to DEST) ▼	
4	<input checked="" type="checkbox"/>	Src. RTP Relay Device Slot Seq	19	Sequence Number
5	<input checked="" type="checkbox"/>	Dest. RTP Relay Device Slot Seq.	29	Sequence Number
6	<input type="checkbox"/>	Max Inter Zone Connection	0	0-1200 (0:No Limit)

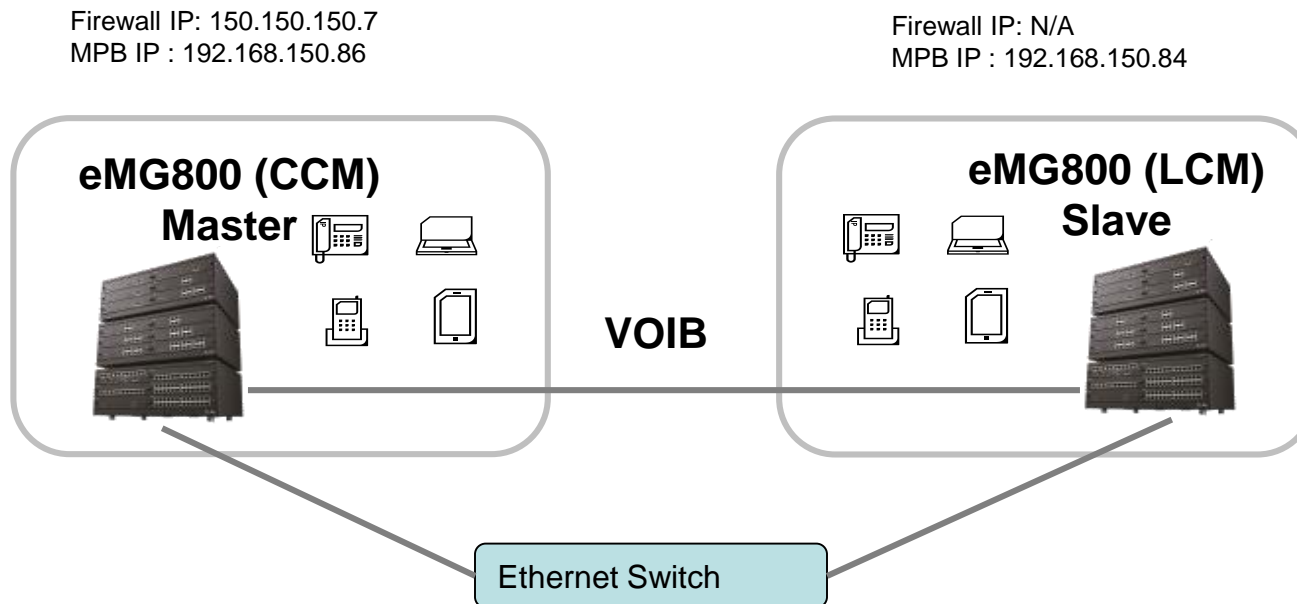
This configuration could be used to expand number of TDM port of eMG800.

- Assign two RTP relay device for inter zone in PGM 441
eg, 19 is VOIB slot number of master(zone 1), 29 is VOIB slot number of slave(zone2)

eMG800 Expansion(Firewall case)

Configuration

- eMG800 expansion is support by TNET feature



Case 1: If you want to route TNET packet traffic through firewall(WAN side) then you need to assign CCM IP address to firewall IP of CCM system("150.150.150.7") in LCM system .

Case 2: If you want to route it to local network then you need to assign CCM IP address to firewall IP of CCM system("192.168.150.86") in LCM system and assign "RTP Packet Relay Firewall IP Address" to MPB IP address(("192.168.150.86") in PGM 132 of CCM system.

eMG800 Expansion(Firewall case)

Case 1

CCM system

SIP Data	
Tables Data	
Networking Data	
H.323 Routing Table	
T-NET Data	▼
T-NET Basic Attributes(330)	
T-NET CM attributes(331)	
T-NET LM attributes(332)	
T-NET FoPSTN Table (333)	

Index	Value	Range
1	MAC Address	B061C70B8291
	IP Address	192.168.150.84
	IPKTS Port	5588
	Total number of port	200
	Multicast IP Address	239.20.19.1
	Zone Number	2
2	MAC Address	
	IP Address	
	IPKTS Port	5588
	Total number of port	0
	Multicast IP Address	239.20.19.1
	Zone Number	2

ISDN Line Data

SIP Data	
Tables Data	
Networking Data	
H.323 Routing Table	
T-NET Data	▼
T-NET Basic Attributes(330)	
T-NET CM attributes(331)	
T-NET LM attributes(332)	
T-NET FoPSTN Table (333)	

LCM system

Order 1 ^a	Attribute	Value	Range
1	Register Enable	ON	
2	CM Server Type	eMG/UCP	
3	CM 1 (Active)	IP Address : 150.150.150.7 MAC Address : B40EDC281C43	
4	CM 2	IP Address : 0.0.0.0 MAC Address :	
5	IPKTS Port Number	5588	0001-9999
6	Total number of port	200	0000-9999
7	Polling Count	5	00-99
8	Polling Interval	2	00-99
9	Zone Number	1	1 - 32

It is firewall IP address
of CCM system.

eMG800 Expansion(Firewall case)

Case 2

CCM system

SIP Data	
Tables Data	
Networking Data	
H.323 Routing Table	
T-NET Data	
T-NET Basic Attributes(330)	
T-NET CM attributes(331)	
T-NET LM attributes(332)	
T-NET FoPSTN Table (333)	

Index	Value	Range
1	MAC Address	B061C70B8291
	IP Address	192.168.150.84
	IPKTS Port	5588
	Total number of port	200
	Multicast IP Address	239.20.19.1
	Zone Number	2
2	MAC Address	
	IP Address	
	IPKTS Port	5588
	Total number of port	0
	Multicast IP Address	
	Zone Number	

LCM system

Order	Attribute	Value
1	Register Enable	ON
2	CM Server Type	eMG/UCP
3	CM 1 (Active)	IP Address : 192.168.150.86 MAC Address : B40EDC281C43
4	CM 2	IP Address : 0.0.0.0 MAC Address :
5	IPKTS Port Number	5588
6	Total number of port	200
7	Polling Count	5
8	Polling Interval	2
9	Zone Number	1

It is MPB IP address of CCM system.

eMG800 Expansion(Firewall case)

Case 2

CCM system

PGM132 for VOIU in CCM system

Order <small>↑</small>	Uncheck All	Attribute	Value	Range
1	<input checked="" type="checkbox"/>	Router IP Address	<input type="text"/>	IP Address
2	<input checked="" type="checkbox"/>	Device Codec Type	System Codec ▾	
3	<input checked="" type="checkbox"/>	Firewall IP Address	<input type="text"/>	IP Address
4	<input checked="" type="checkbox"/>	RTP Packet Relay Firewall IP Address	192.168.150.86	IP Address
5	<input checked="" type="checkbox"/>	RTP Security	ON ▾	

It is MPB IP address of CCM system.

Board Based Data

CO Line Data

System Data

Station Group Data

ISDN Line Data

SIP Data

Tables Data

Networking Data

H.323 Routing Table

T-NET Data

Zone Data ▾

< Favorite PGM Inter-Zone Attributes(441) ✕

Enter Source/From Zone Number (1 - 32) :

Enter Destination/To Zone Number (1 - 32) : Load

Source Zone Range 1

Destination Zone Range 2

Order <small>↑</small>	Check All	Attribute	Value	Range
1	<input type="checkbox"/>	Codec Type	N/A ▾	
2	<input type="checkbox"/>	RTP Relay Rule	If Need ▾	
3	<input type="checkbox"/>	RTP Relay Device Utilization	Separated(SRC to DEST) ▾	
4	<input type="checkbox"/>	Src. RTP Relay Device Slot Seq	19	Sequence Number
5	<input type="checkbox"/>	Dest. RTP Relay Device Slot Seq	30	Sequence Number
6	<input type="checkbox"/>	Max Inter Zone Connection	0	0-1200 (0:No Limit)
7	<input type="checkbox"/>	Use Firewall IP	OFF ▾	

Turn off "Use Firewall IP" between zone 1 and 2

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