

E&M VoIP Gateway FAQ



AddPac

AddPac Technology

Sales and Marketing

Question Lists (Cont..)

1. Does E&M VoIP gateways work as media gateway which convert between standard SIP trunks toward IP PBX and analog E&M trunk to other TDM PBX via E&M transmission equipment?
2. VoIP Channel Setup Configuration Between Legacy SIP Call Manager (ex. Broadsoft, Asterisk, etc) and E&M VoIP Gateway.
3. Does E&M VoIP gateways support trunk overflow? When the first E&M trunk is busy, can the call overflow automatically to the second trunk?
4. Does E&M VoIP gateways support trunk overflow? When the first E&M trunk is busy, can the call overflow automatically to the second trunk?
5. When the first E&M trunk is detected as faulty, can it be blocked for further tests? meanwhile the calls overflow to the second trunk in same trunk group or overflow trunk group?.
6. Do your E&M VoIP gateways support both Immediate start and Wink start signal?
7. The two LAN ports have different and independent IP's?

Question Lists

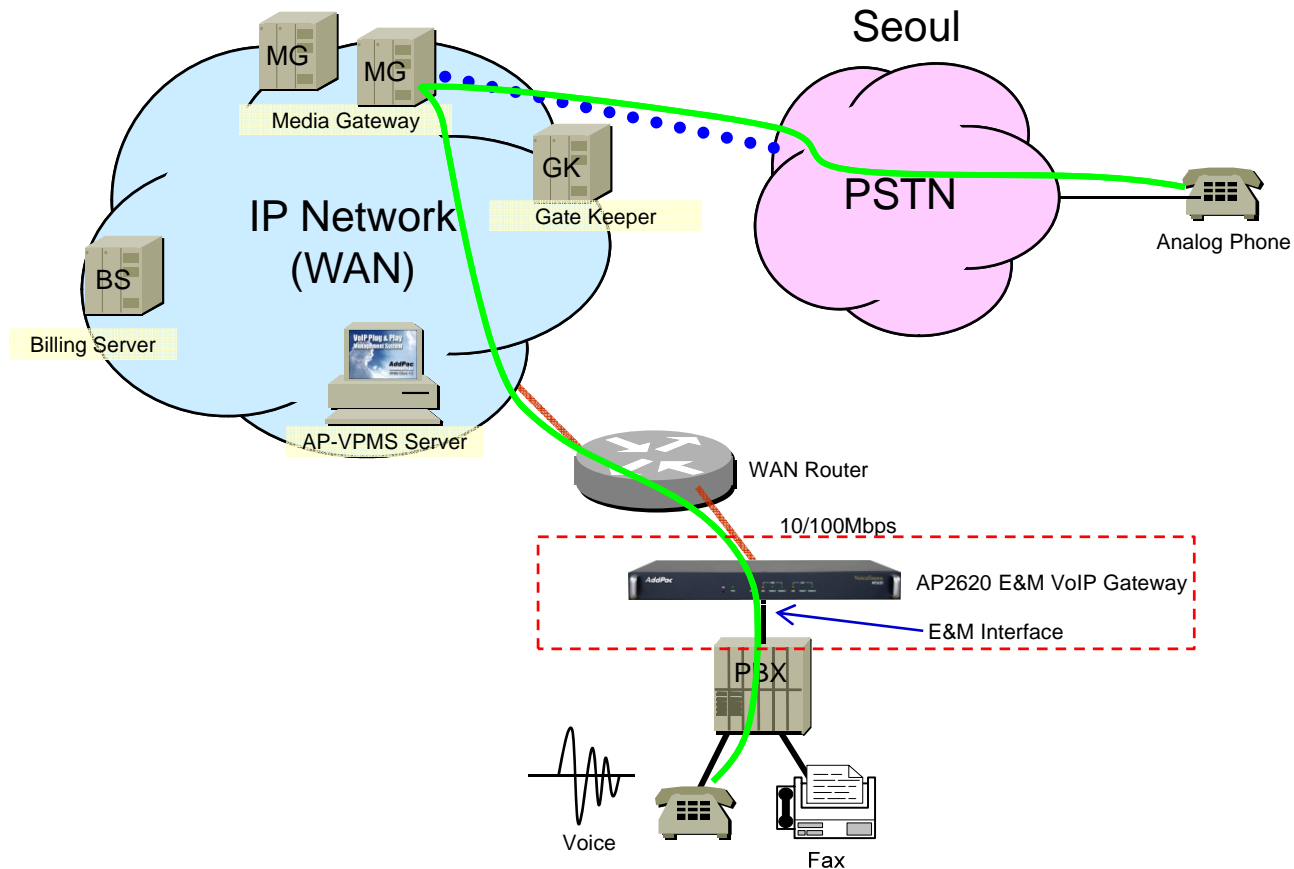
8. Does the unit has forced ventilation with fans?
9. Booting, is the software already loaded in Flash or is an SD Card?
10. E&M Type Pin Assignment?

Question 1

Q) Does E&M VoIP gateways work as media gateway which converts between standard SIP trunks toward IP PBX and analog E&M trunk to other TDM PBX via E&M transmission equipment?

A) Yes, It works as media gateway.

E&M VoIP Gateway Service Diagram



Question 2

Q) VoIP Channel Setup Configuration Between Legacy SIP Call Manager (ex. Broadsoft, Asterisk, etc) and E&M VoIP Gateway

A) We support WEB and CLI based configuration both.
(CLI : Cisco Style Command Line Interface, Telnet, RS232C Console)

[Smart WEB Configuration : Example]

Basic > Server SIP

The image displays two overlapping screenshots of the Smart Web Manager configuration interface. The background screenshot shows the 'Protocol' configuration page, where 'SIP(Session Initiation Protocol)' is selected. The foreground screenshot shows the 'SIP (Session Initiation Protocol)' configuration page, where the 'Server SIP' sub-section is expanded. Red dashed boxes highlight the 'Protocol' menu in both screenshots and the 'Server SIP' configuration fields in the foreground.

Smart Web Manager
www.addpac.com

System +

Protocol

- SIP(Session Initiation Protocol)
- H.323(ITU H.323 Protocol)

Apply

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System +

Basic -

Protocol

- Server SIP**
- Server H.323
- SIP Registration
- H.323 Registration
- E1/T1 Trunk
- FXS Extension
- FXO/EnM Extension
- E1/T1 Extension
- DTMF/CODEC
- VoIP Dial Plan
- FXO DialPlan
- Static Route
- Hot Line

Advanced -

- Port Control
- Fax
- Service
- Filtering
- Security

SIP (Session Initiation Protocol)

Use SIP Server Yes No

Primary SIP Server 5060 Server address and Port (default 5060)

Secondary SIP Server 5060 Server address and Port (default 5060)

Local Domain Name (SIP userpart of authentication)

SIP Signaling Port 5060 (default 5060, between 1 to 65535)

Register Expiration 60 (in seconds, default 60, between 10 to 86400)

Session Re-Fresh INVITE UPDATE

Session Expire Time 1800 (in seconds, default 1800, between 30 to 86400, 0 = disable)

Min-SE 1800 (in seconds, default 1800, between 30 to 86400)

Apply

Question 3

Q) Does E&M VoIP gateways support trunk overflow? When the first E&M trunk is busy, can the call overflow automatically to the second trunk?

A) Support WEB and CLI based configuration.

[Smart WEB Configuration : Example]

Basic > FXO/E&M Extension

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System

- Language
- WAN Setup
- LAN Setup
- NAT
- NTP
- System Time
- File Browser

Basic

- Protocol
- Server SIP
- Server H.323
- SIP Registration
- H.323 Registration
- E1/T1 Trunk
- FXS Extension
- FXO/EnM Extension**
- E1/T1 Extension
- DTMF/CODEC
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- FXO DialPlan
- Static Route
- Hot Line

FXO/EnM Extension

Port Information

Port	P0	P1	P2	P3
SLOT 0	EnM	EnM	EnM	EnM
SLOT 1				

FXS
 FXO/E&M
 E1/T1

FXO/Enm Extension Configuration

Pots Num	Port	Numbers	Preference	HuntStop	Forward Digits	Control
2024	0/0	010T	1	X	0	<input type="checkbox"/>
2025	0/1	010T	1	X	0	<input type="checkbox"/>
2026	0/2	010T	1	X	0	<input type="checkbox"/>
2027	0/3	010T	1	X	0	<input type="checkbox"/>

E&M 4 Ports (0/0 ~ 0/3)

Phone numbers started with '010' will be routed to Idle E&M port.

* FXO/Enm Extension - Assigned Pots Tag Number : 2024 - 2535

Question 4

Q) E&M handshaking signal(Seizure acknowledgement), by trunk seizure, outgoing trunk send M signal, it expects E signal from opposite side. If it does not receive the E signal in return, the E&M trunk is marked as faulty.

A) Case 1 : **E&M Port Idle State (M and E signal both Idle)**

For outgoing call start, if E&M port can't receive E signal active after E&M port send M signal active, this E&M port return to idle call state by "no ack" or "no answer" call fail.

Case 2 : **E&M Port Call Active State (M and E signal both active)**

For call clear, if E&M port can't receive E signal idle after E&M port send M signal idle, this E&M port is changed to disconnecting state, and this port don't accept new arrival call anymore. And then, for E&M port recovery, this E&M port send M signal active and M signal idle repeatedly till E signal state is change to Idle state.

Question 5

Q) When the first E&M trunk is detected as faulty, can it be blocked for further tests? meanwhile the calls overflow to the second trunk in same trunk group or overflow trunk group?.

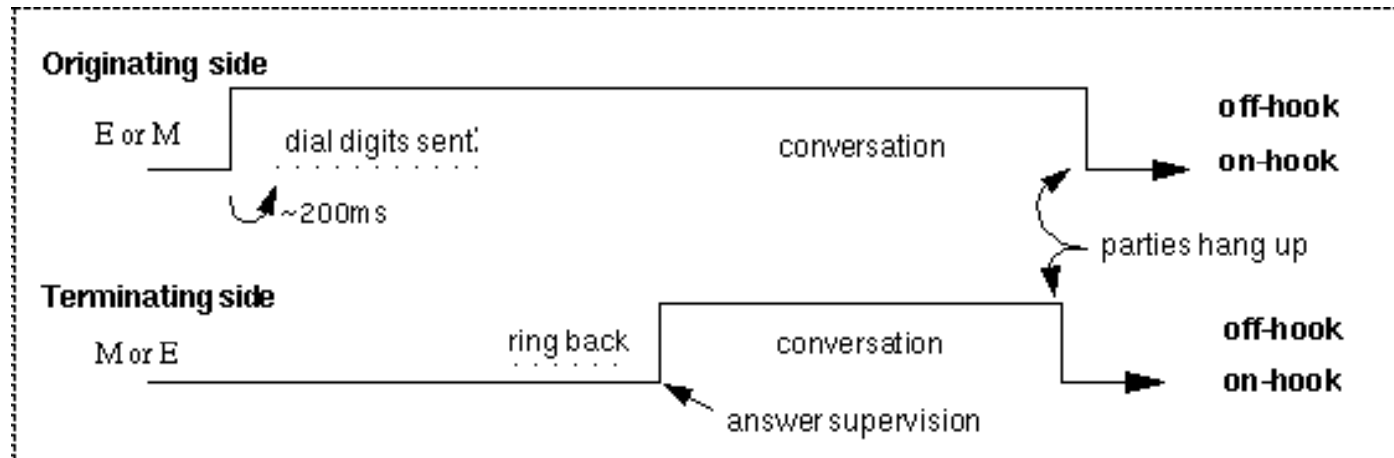
A) This function is not implemented in E&M VoIP Gateway yet. But we already have developed this kind of function in GSM VoIP Gateway Products. If user want it, we can easily porting to E&M VoIP Gateway.

Question 6

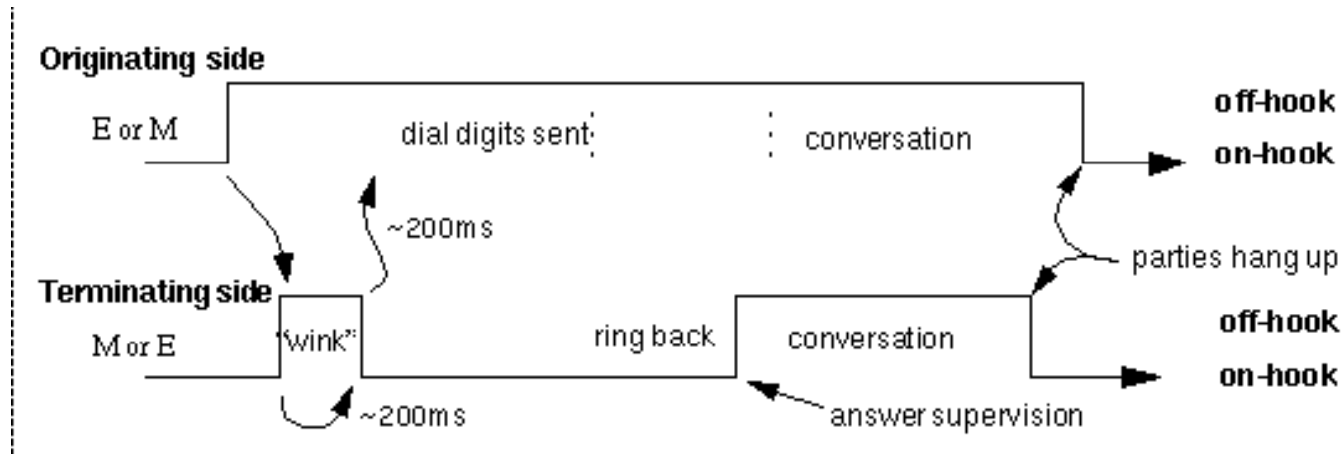
Q) Do your E&M VoIP gateways support both Immediate start and Wink start signal?

A) Support Immediate start, Wink start signal and delay dial.

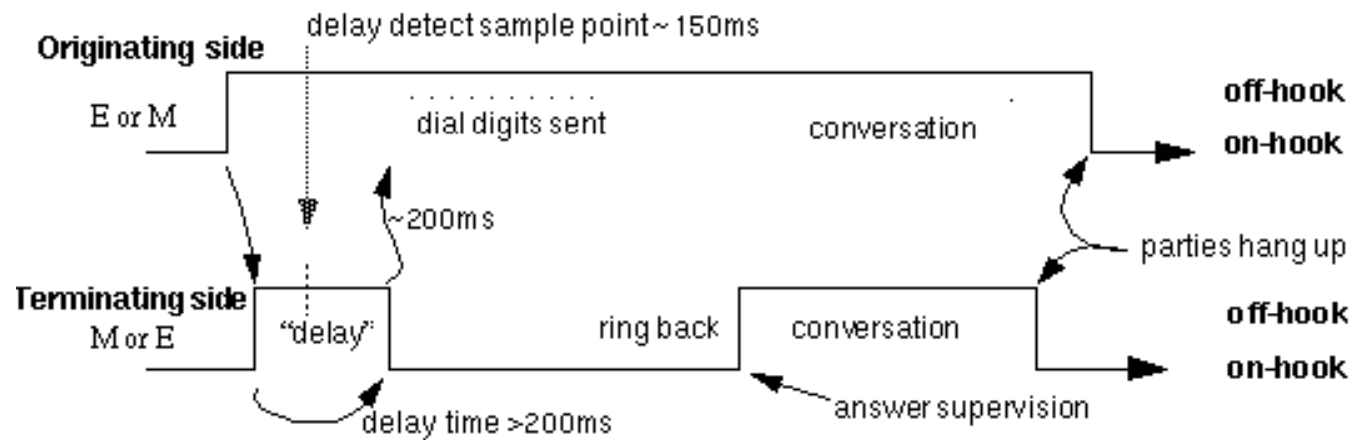
E&M Signalling - Immediate Start



E&M Signalling – Wink Start



E&M Signalling – Delay Dial



Question 7

Q) The two LAN ports have different and independent IP's?

A) Two LAN is different and independent IP for

- Primary LAN Port Backup
- Static Routing, NAT
- etc

[Smart WEB Configuration : Example]

System > WAN Setup

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System

- Language
- WAN Setup**
- LAN Setup
- NAT
- NTP
- System Time
- File Browser

Basic

- Protocol
- Server SIP
- Server H.323
- SIP Registration
- H.323 Registration
- E1/T1 Trunk
- FXS Extension
- FXO/EnM Extension
- E1/T1 Extension
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- VoIP Dial Plan
- FXO DialPlan
- Static Route
- Hot Line

WAN & Tunneling Setup

WAN Setup

Hostname

Static IP

IP Address A.B.C.D
Network Mask A.B.C.D
Default Router A.B.C.D
DNS Server Primary DNS Server
 Secondary DNS Server

PPPoE(ADSL)

User name
Password

Authentication (No Authentication)
 PAP (PPP Authentication Protocol)
 CHAP(Challenge Handshake Authentication Protocol)

DHCP

VLAN ID

Auto

WAN Link Control

Manual

Speed 100 10
Duplex full half

[Smart WEB Configuration : Example] System > LAN Setup

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System

- Language
- WAN Setup
- **LAN Setup**
- NAT
- NTP
- System Time
- File Browser

Basic

- Protocol
- Server SIP
- Server H.323
- SIP Registration
- H.323 Registration
- E1/T1 Trunk
- FXS Extension
- FXO/EnM Extension
- E1/T1 Extension
- DTMF/CODEC

LAN Setup

None -

IP Share (IP Connect) -

IP Address A.B.C.D (default 192.168.10.1)

Network Mask A.B.C.D (default 255.255.255.0)

Static

Enable DHCP Server

Default Lease time (in seconds, default 43200, 1 day)

Address Range -

DNS Server A.B.C.D

Apply

Question 8

Q) Does the unit has forced ventilation with fans??

A) Yes, we support cool fans with low fan noise.



Question 9

Q) Booting, is the software already loaded in Flash or is an SD Card?

A)

- Use Flash
- S/W Upgraded by FTP

```
Press RETURN to get started.

Welcome, APOS(tm) Kernel Version 8.41.089.
Copyright (c) 1999-2006 AddPac Technology Co., Ltd.

Login: root
Password:
Router> ena
Router# show ver
Router# show version
APOS(tm) Kernel version 8.41.089
Copyright (c) 1999-2008 AddPac Technology Co., Ltd.

Router uptime is 0 days 06:33:30
Router current time is Fri Oct 22 12:12:20 2011
System image file is "flash:/ap2620_g2_v8_41_089.bin"

AP2620_G2 System software Revision 8.41.089
Released at Fri Mar 25 17:50:57 2011
Program is 3472160 bytes, checksum is 0x1bb482cd

32BIT RISC Processor With 264MHz Clock
64 Mbytes System Memory
512 Kbytes System Boot Flash Memory
4 Mbytes System Flash Memory
Real-time clock device with EEPROM
1 RS232 Serial Console Interface
2 FastEthernet/IEEE 802.3 Interface
Maximum number of mbufs is 3072, 511 mbuf is free.
System CPU utilize is 0 percent.
Heap Memory is 65536 kbytes, 42524 kbytes is used, free is 23012 kbytes.

Router#
```

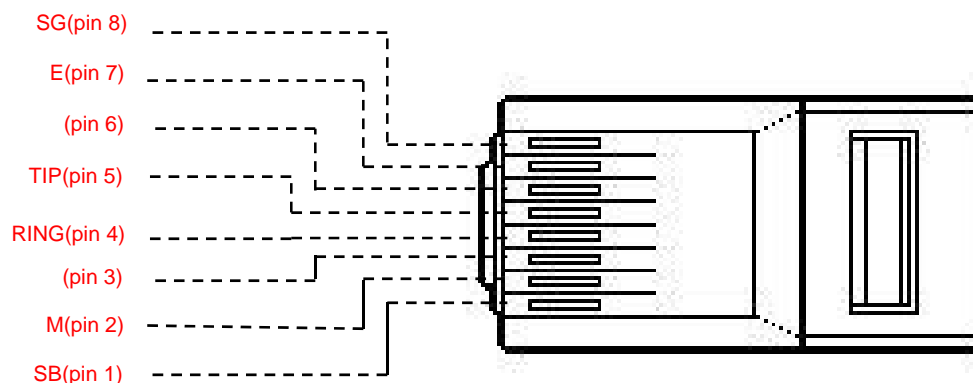
Question 10

Q) E&M Type Pin Assignment?

A) We support 2 Wire and 4 Wire E&M Type model

E&M 2 Wire Model

RJ45 Pin Assignment



E (Ear or Earth) - Signal wire from trunking (CO) side to signaling side.

M (Mouth or Magnet) - Signal wire from signaling side to trunking (CO) side.

SG (Signal Ground) - Used on E&M Types II, III, IV (Type IV is not supported on AddPac IP-PBX/gateways).

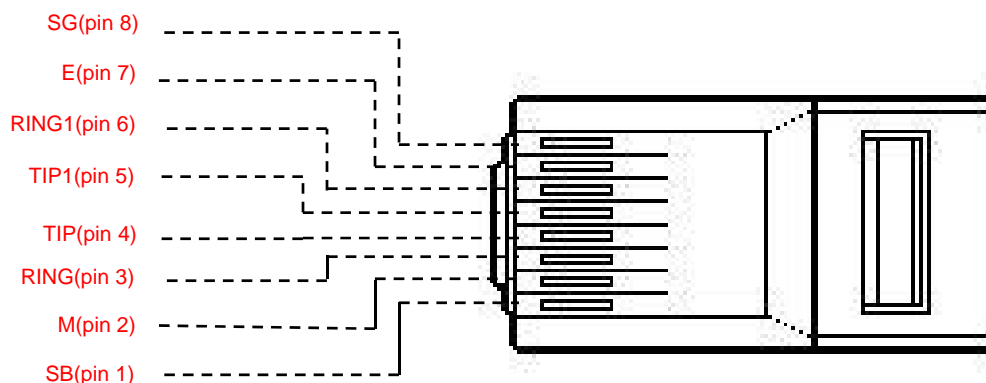
SB (Signal Battery) - Used on E&M Types II, III, IV (Type IV is not supported on AddPac IP-PBX/gateways)

T / R (Tip/Ring) - T / R leads carry audio between the signaling unit and the trunking circuit. On a 2-wire audio operation circuit, this pair carries the full-duplex audio path.

T1/R1 (Tip-1/Ring-1) - Used on 4-wire audio operation circuits only. The 4-wire implementation provides separate paths for receiving and sending audio signals.

E&M 4 Wire Model

RJ45 Pin Assignment



E (Ear or Earth) - Signal wire from trunking (CO) side to signaling side.

M (Mouth or Magnet) - Signal wire from signaling side to trunking (CO) side.

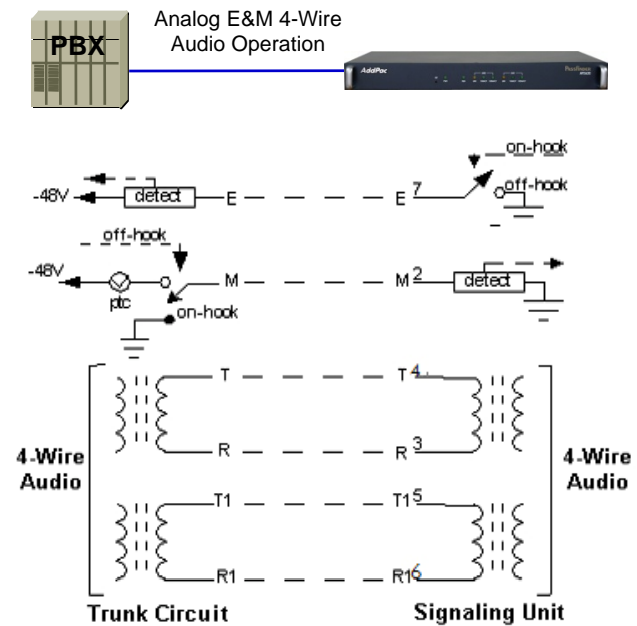
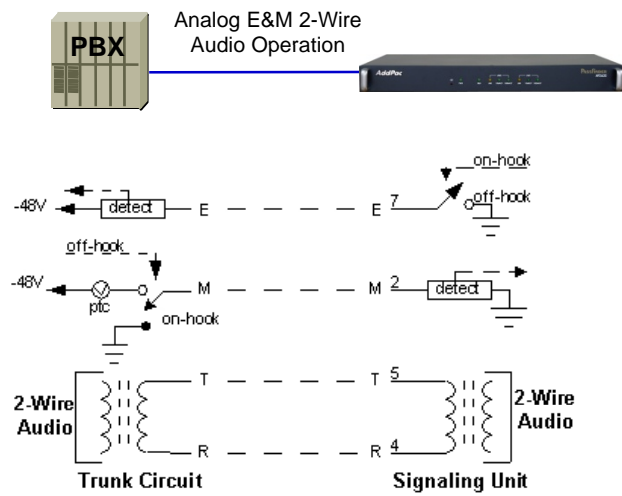
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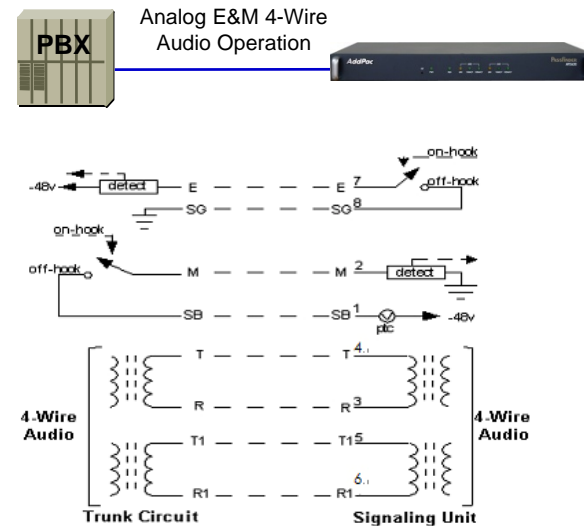
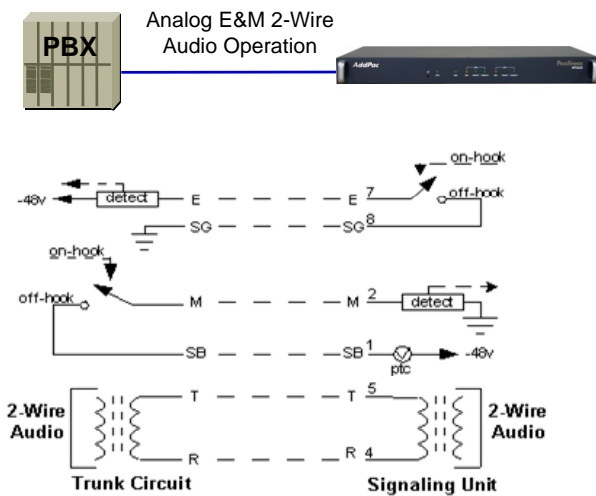
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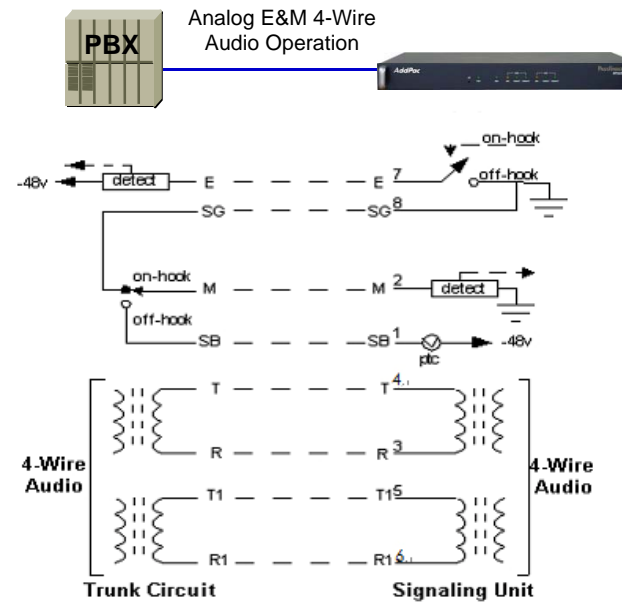
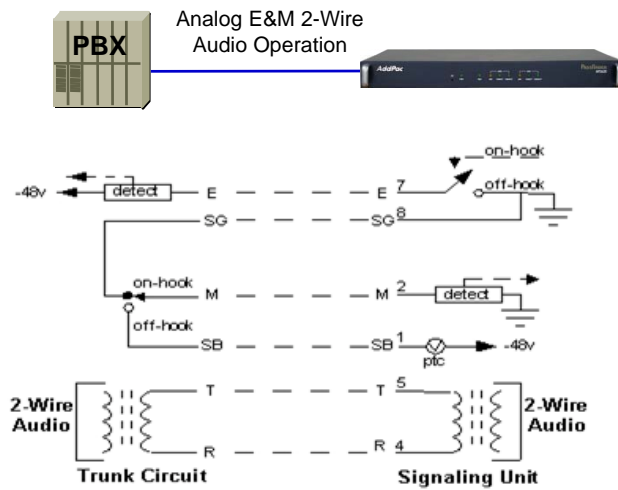
E&M Type I Interface



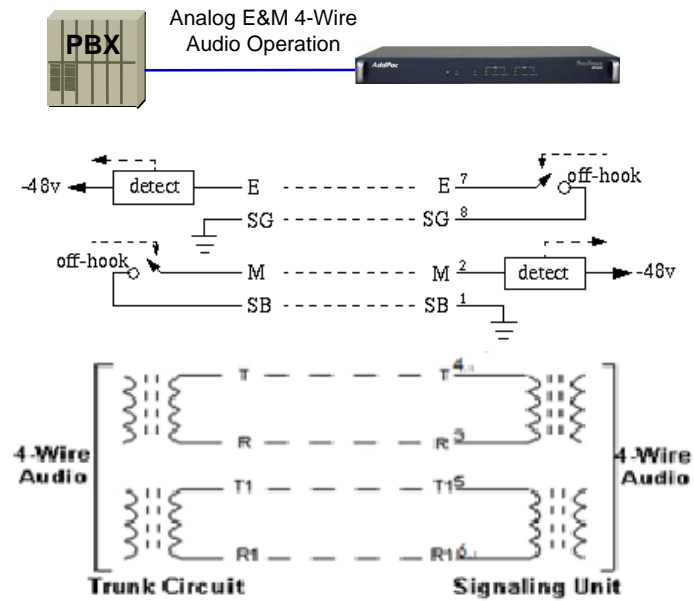
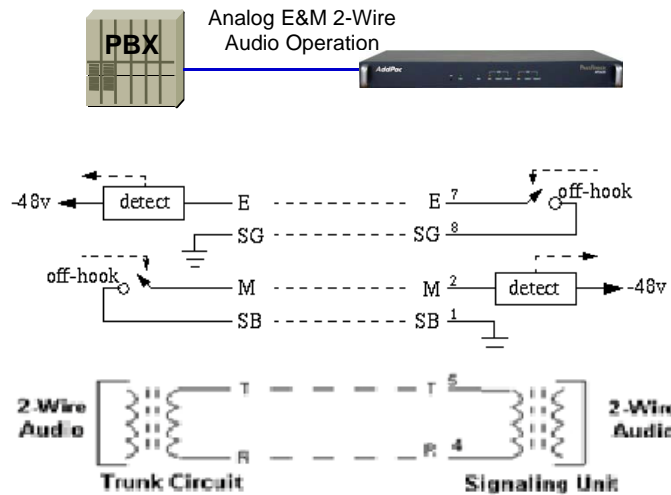
E&M Type II Interface



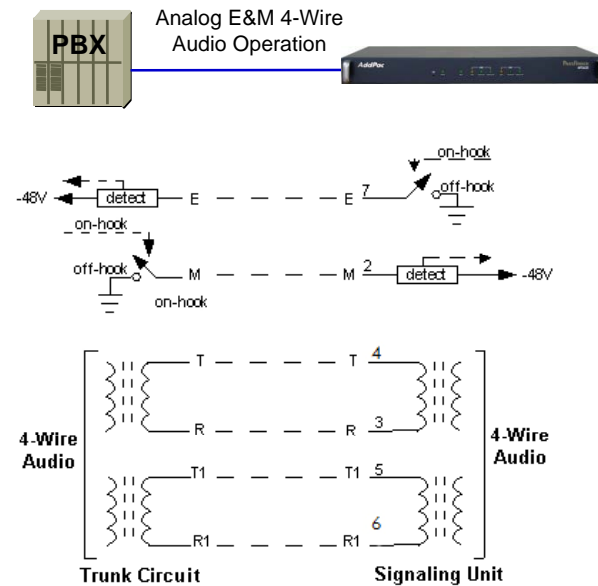
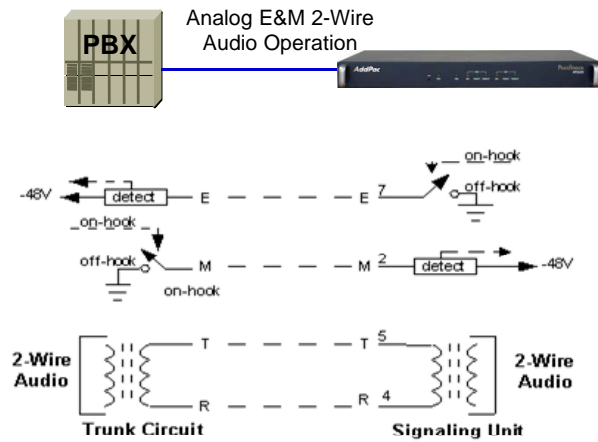
E&M Type III Interface



E&M Type IV Interface

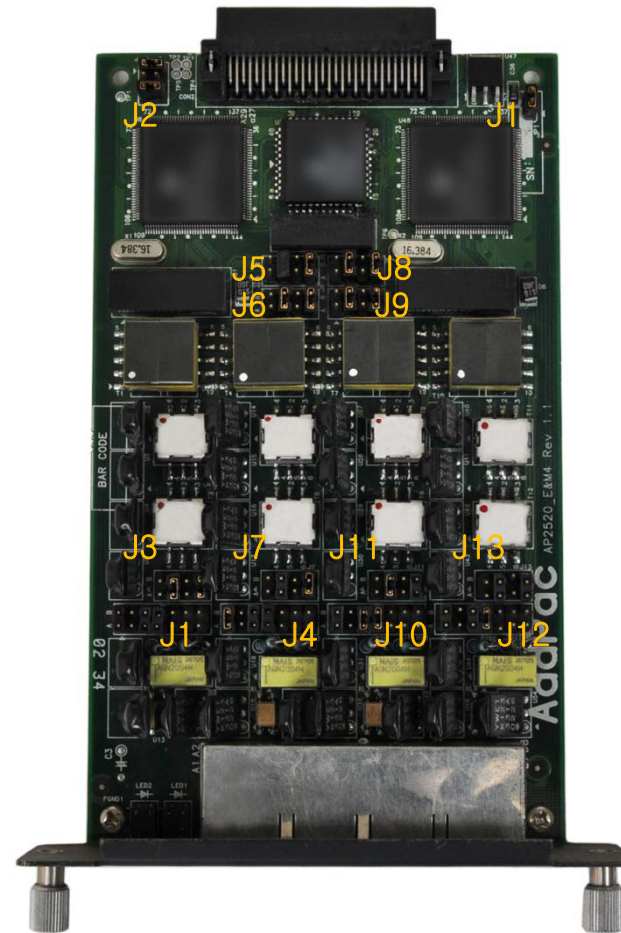
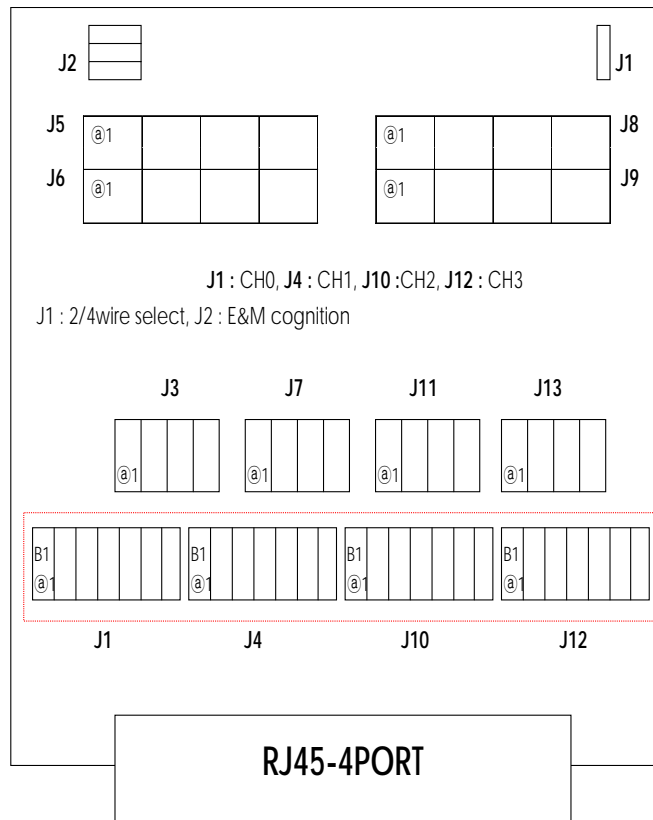


E&M Type V Interface



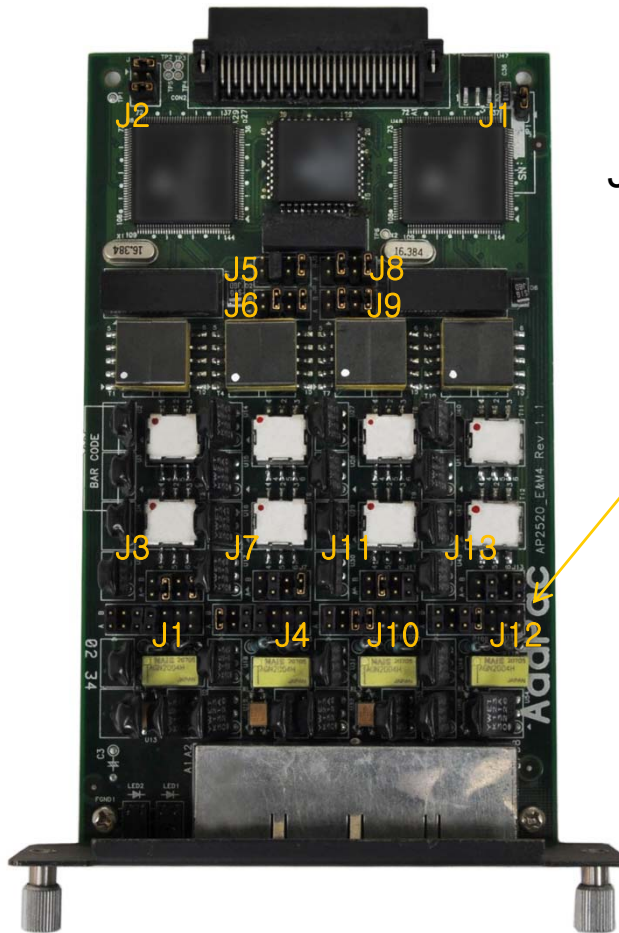
E&M Type Selection

E&M Card Jumper Layout



E&M Type Selection

E&M Card Type 1,2,3,5 Selection using Jumper J1,J4,J10,J12



J1(CH#0),J4(CH#1),J10(CH#2),J12(CH#3)

B1				
ⓐ1				
B1				
ⓐ1				
B1				
ⓐ1				
B1				
ⓐ1				

● E&M Type 1 Setting Example

● E&M Type 2 Setting Example

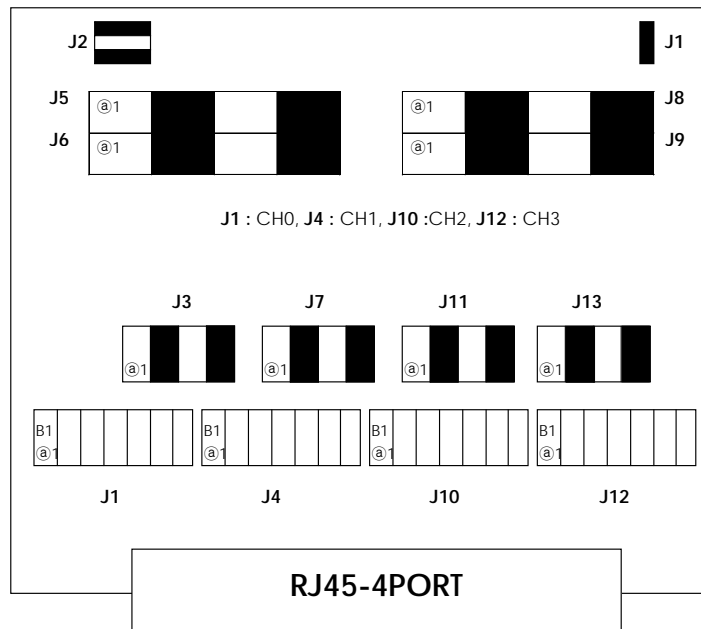
● E&M Type 3 Setting Example

● E&M Type 4 Setting Example

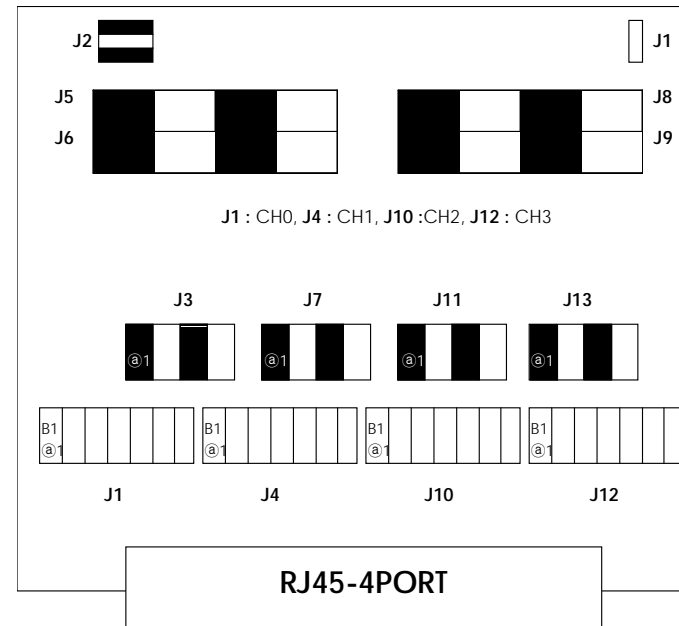
● E&M Type 5 Setting Example

E&M Type Selection

E&M 2-Wire Mode



E&M 4-Wire Mode



- J3, J5 : CH0 2Wire, 4Wire Selection
- J7, J6 : CH1 2Wire, 4Wire Selection
- J11, J9 : CH2 2Wire, 4Wire Selection
- J13, J8 : CH3 2Wire, 4Wire Selection



* 2Wire Setting : A2, B2 Connection
A4, B4 Connection



* 4Wire Setting : A1, B1 Connection
A3, B3 Connection



Thank you!

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