

E&M VoIP Gateway Device Selection



AddPac

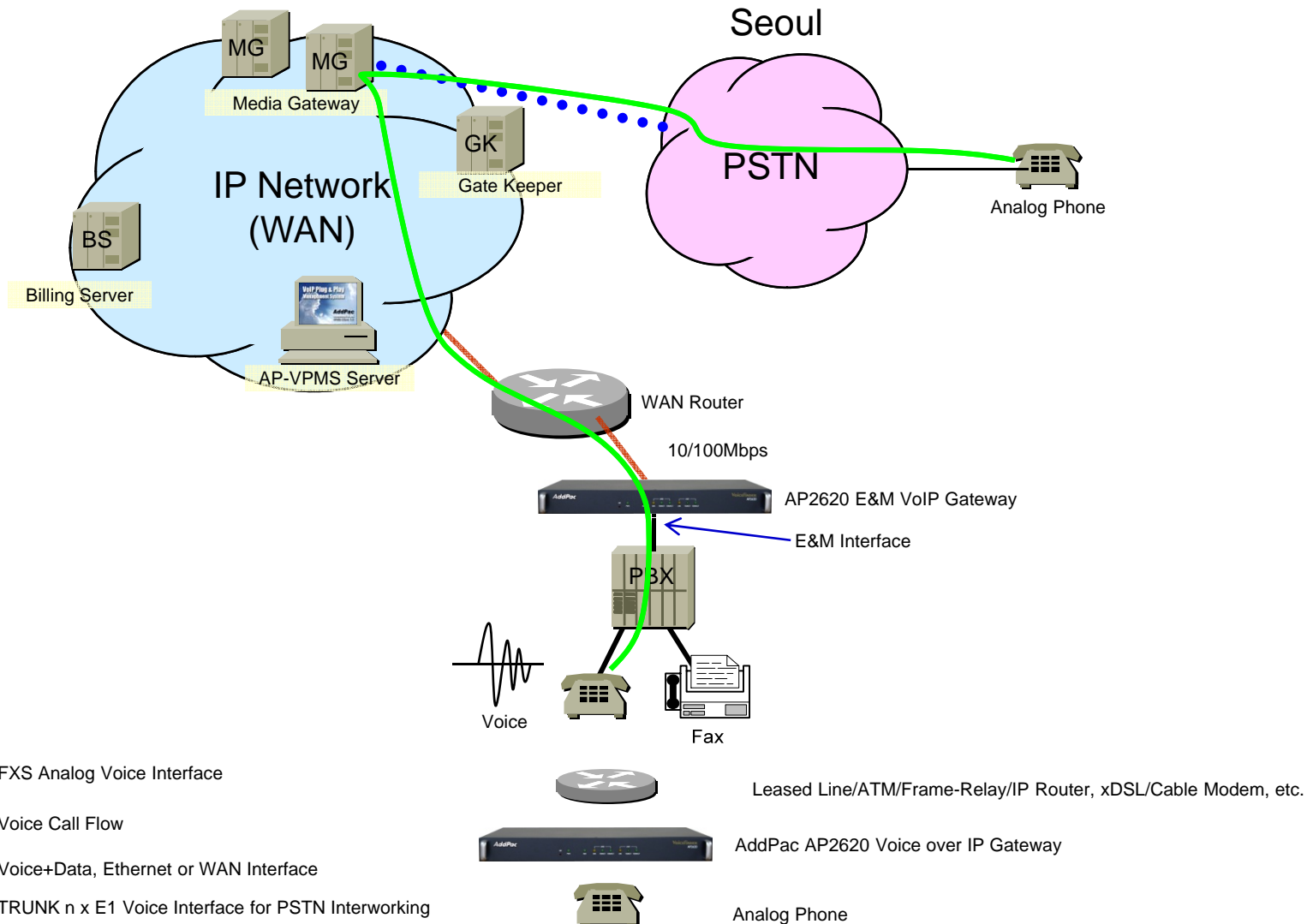
AddPac Technology

2010, Sales and Marketing



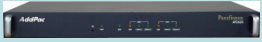

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 - 1-Port Digital E1 + 4-Port E&M
 - 8-Port FXS + 8-Port E&M

E&M VoIP Gateway Service Diagram




E&M VoIP Gateways (~24Port)

Product	AP1700	AP2610	AP2620	AP2120N
				
Available Modules	AP-FXS4 AP-FXO4 AP-FXS2O2 AP-E&M4 AP-E1	AP-FXS4 AP-FXO4 AP-FXS2O2 AP-E&M4	AP-FXS4 AP-FXO4 AP-FXS2O2 AP-E&M4 AP-E1	AP-N1-FXS8 AP-N1-FXO8 AP-N1-FXS4O4 AP-E&M8
Analog Ports	Up to 8	Up to 4	Up to 8	Up to 16
Signaling	SIP, H.323	SIP, H.323	SIP, H.323	SIP, H.323
Digital E1/T1	Up to 2E1	N/A	Up to 2E1	N/A
E&M	Support	Support	Support	Support
Module Slot	Two(2)	One(1)	Two(2)	Two(2)
LAN Port	2	2	2	2
Console	1	1	1	1
Power	Single PSU	Single PSU	Single PSU	Single PSU

E&M VoIP Gateways (~32Port)


Product	AP2640	AP2650
		
Available Modules	AP-FXS8 AP-FXO8 AP-FXS4O4 AP-E&M8 AP-E1	AP-FXS8 AP-FXO8 AP-FXS4O4 AP-E&M8 AP-E1
Analog Ports	Up to 32	Up to 32
Signaling	SIP, H.323	SIP, H.323
Digital E1/T1	Up to 2E1	Up to 2E1
E&M	Support	Support
Module Slot	Four(4)	Four(4)
LAN Port	2	2
Console	1	1
Power	Single PSU	Dual PSU

Large Capacity E&M VoIP Gateway

Product	AP3100P 
Available VoIP Modules	AP-FXS4, AP-FXO4 AP-FXS2O2, AP-E&M4
Analog Ports	Up to 60 (4Port Module x 15)
Signaling	SIP, H.323
CPU Redundancy (Dual CPU)	N/A
E&M	Support
Module Slot for VoIP Module	15 Slots
LAN Port	2
Console	1
Dual Power Supply (Option)	Support









VoIP Modules



Target :
AP2610, AP2620, AP1700,
AP3100P





VoIP Modules

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Target	VoIP Modules	Module Features	Module Picture
AP1700,AP2610 AP2620,AP3100P	AP-FXS4	4-Port FXS Module	
AP1700,AP2610 AP2620,AP3100P	AP-FXO4	4-Port FXO Module	
AP1700,AP2610 AP2620,AP3100P	AP-FXS2O2	2-Port FXS&2-Port FXO Module	
AP1700,AP2610 AP2620,AP3100P	AP-E&M4	4-Port E&M Module	
AP1700,AP2610 AP2620,AP3100P	AP-FXS3O1	3-Port FXS&1-Port FXO Module	
AP1700, AP2620	AP-E1	1-Port Digital E1/T1 Module	

Additional VoIP Modules

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Target	Voice Modules	Module Features	Module Picture
AP2610, AP2620	AP-MP3	1-Pair Audio-In/Out Port, Direct MIC-In, Headphone High Quality Audio Band IP Broadcasting	
AP2610 AP2620	AP-AUDIO2	2-Pair Audio-In/Out Ports Voice Band IP Broadcasting	
AP2610, AP2620	AP-AUD1S3	1-Pair Audio-In/Out Ports, FXS Analog Interface Voice Band IP Broadcasting	
AP2610, AP2620	AP-AUD1S2O1	1-Pair Audio-In/Out Ports, FXS 2-Ports, FXO 1-Port Voice Band IP Broadcasting	



Target :
AP2120N, AP2640, AP2650

VoIP Modules

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Target	VoIP Modules	Module Features	Module Picture
AP2120N AP2640 AP2650	AP-FXS8	8-Port FXS Module	
AP2120N AP2640 AP2650	AP-FXO8	8-Port FXO Module	
AP2120N AP2640 AP2650	AP-FXS4O4	4-Port FXS&4-Port FXO Module	
AP2120N AP2640 AP2650	AP-E&M8	8-Port E&M Module	
AP2640 AP2650	AP-E1	1-Port Digital E1/T1 Module	
AP2640 AP2650	AP-2E1	2-Port Digital E1/T1 Module	



E&M Module Specification

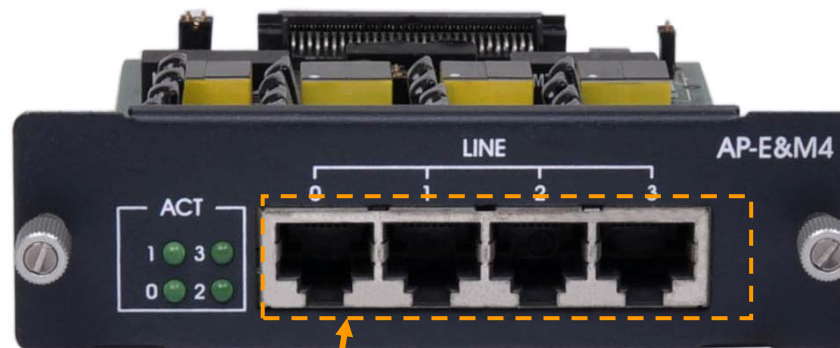
Contents

- Hardware Specification
- 2-Wire E&M Model Pin Assignment
- 4-Wire E&M Model Pin Assignment
- E&M Type I Interface
- E&M Type II Interface
- E&M Type III Interface
- E&M Type IV Interface
- E&M Type Selection(Jumper Selection)
 - E&M 2-Wire Mode
 - E&M 4-Wire Mode

Hardware Specification

High-end
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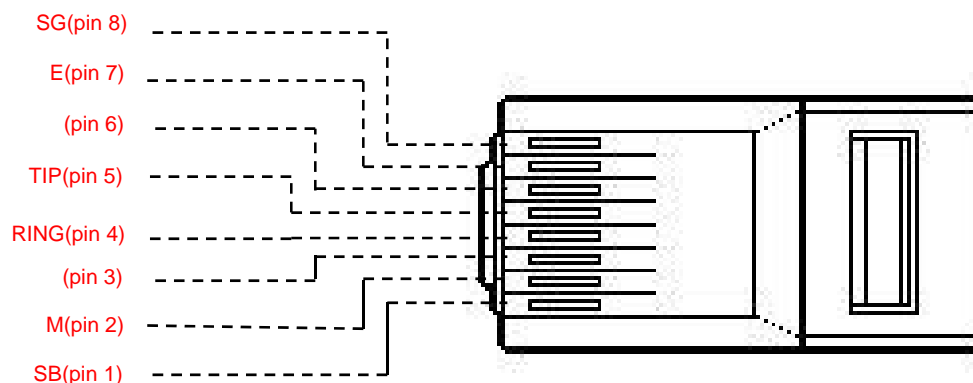
Hardware Module Specification



4-Port E&M Interface (4 x RJ45)

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).

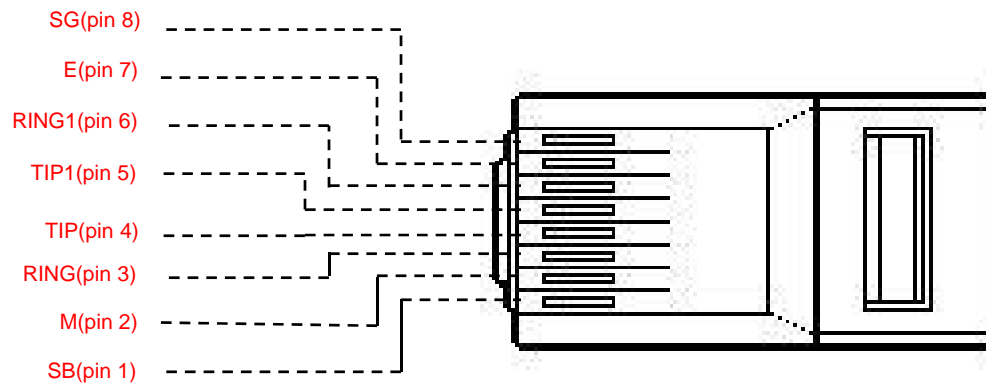
SB (Signal Battery) - Used on E&M Types II, III, IV (Type IV is not supported on AddPac IP-PBX/gateways)

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.

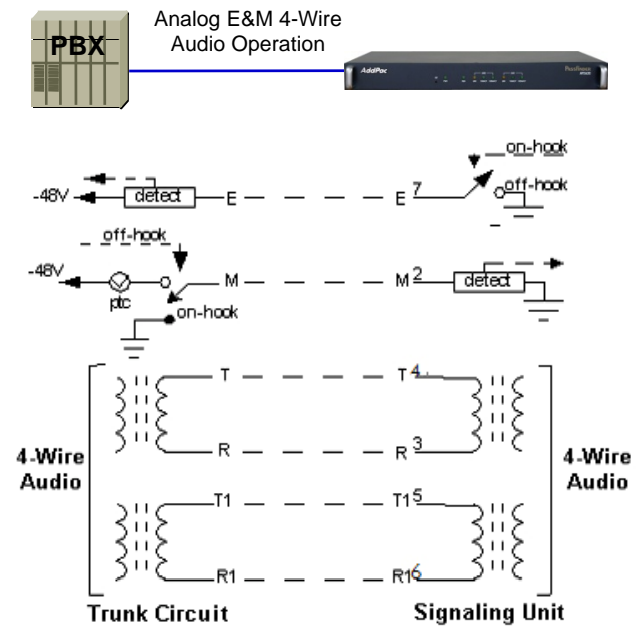
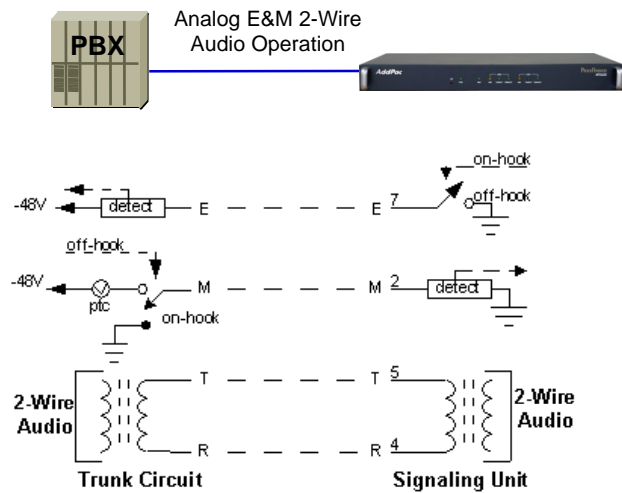
SG (Signal Ground) - Used on E&M Types II, III, IV (Type IV is not supported on AddPac IP-PBX/gateways).

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

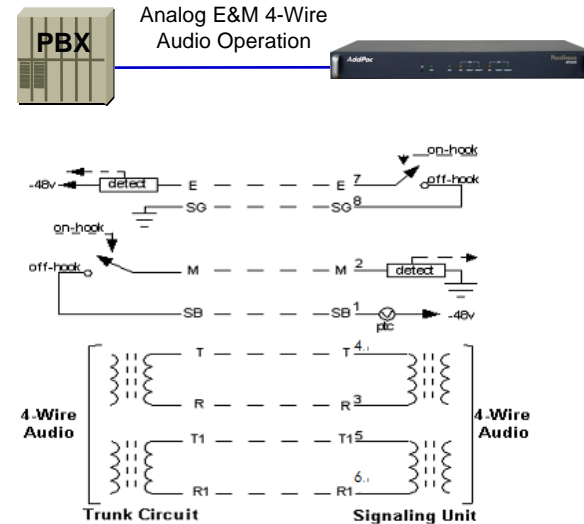
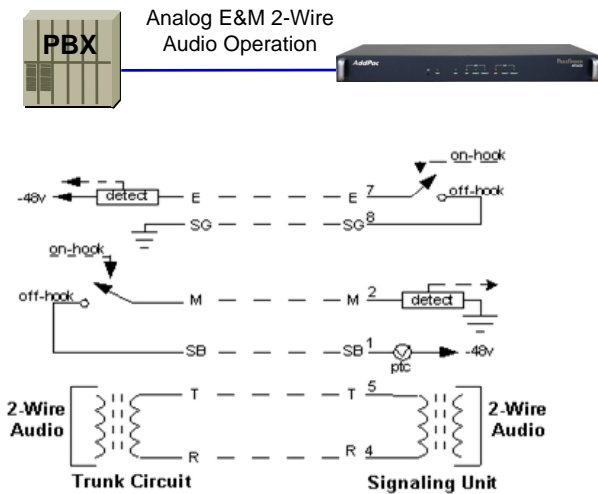
T / R (Tip/Ring) - T / R leads carry audio between the signaling unit and the trunking circuit. On a 2-wire audio operation circuit, this pair carries the full-duplex audio path.

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.

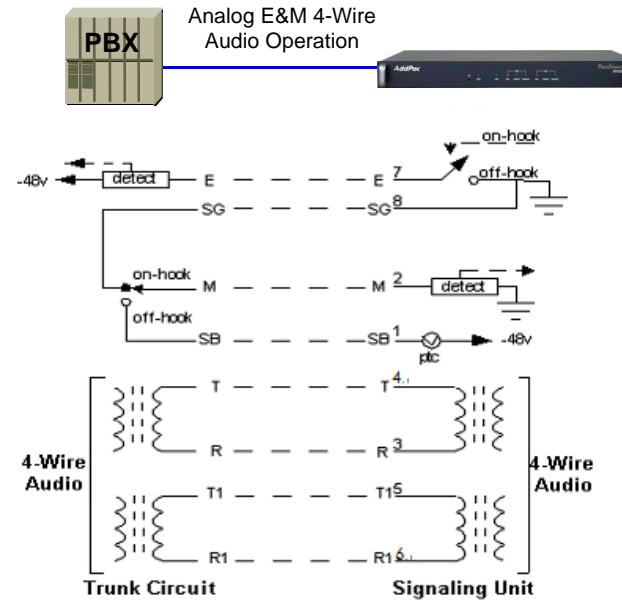
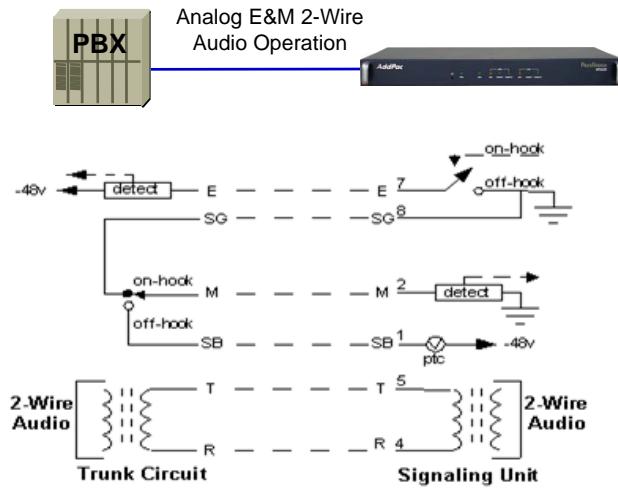
E&M Type I Interface



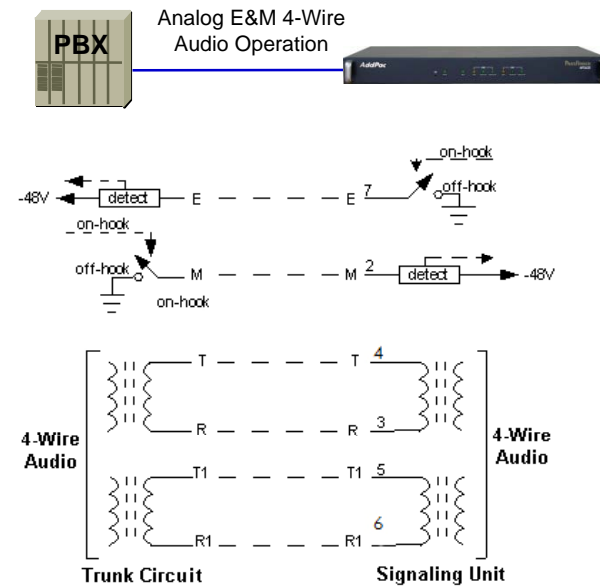
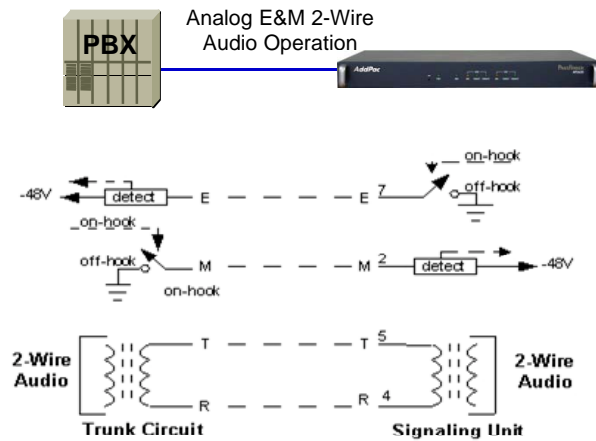
E&M Type II Interface



E&M Type III Interface

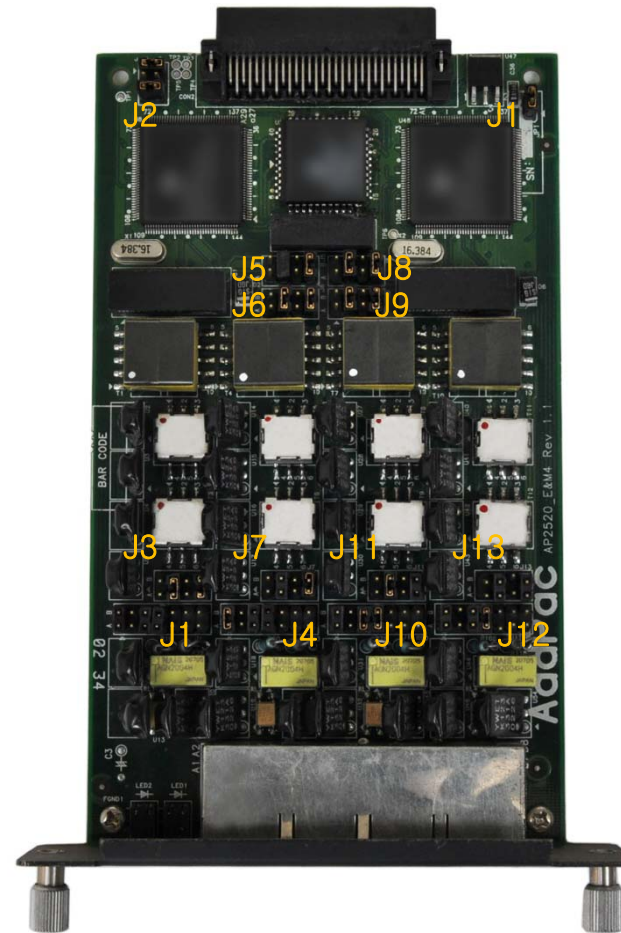
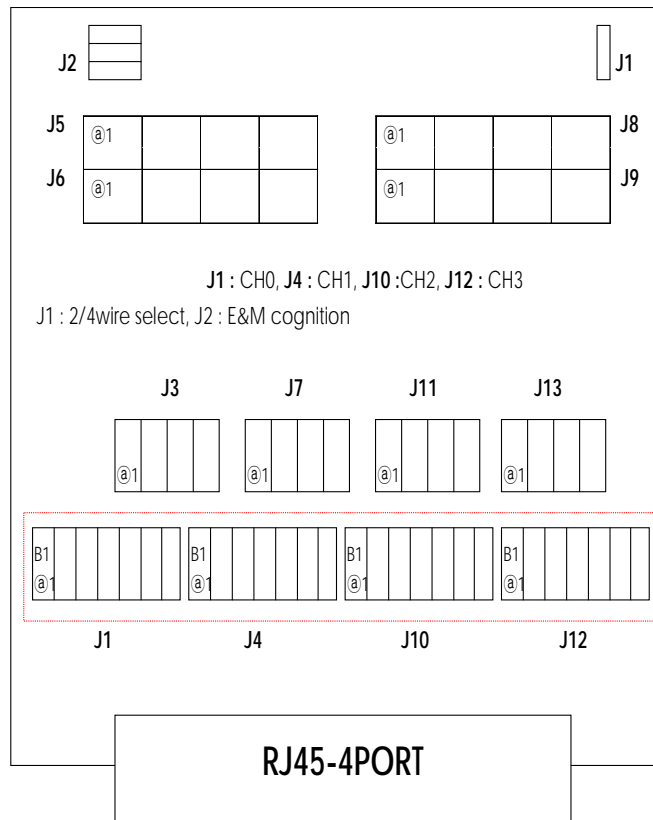


E&M Type V Interface



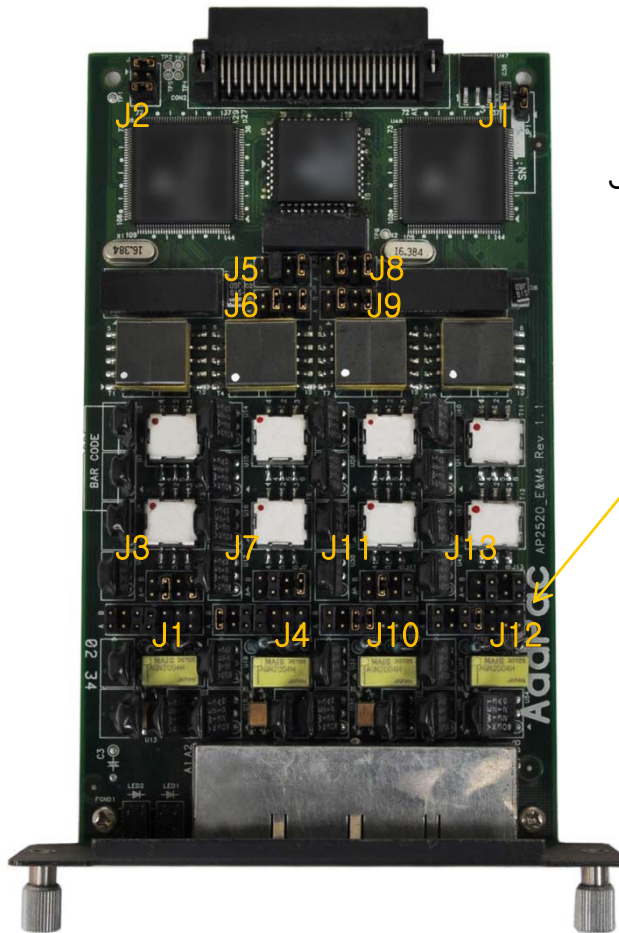
E&M Type Selection

E&M Card Jumper Layout

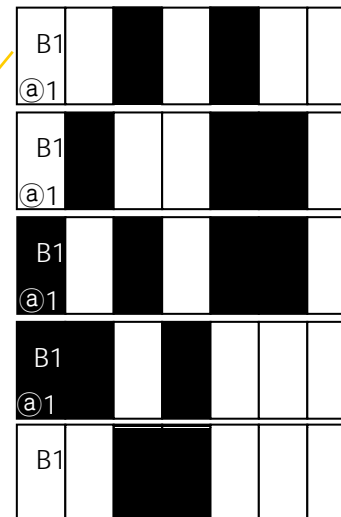


E&M Type Selection

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)



● E&M Type 1 Setting Example

● E&M Type 2 Setting Example

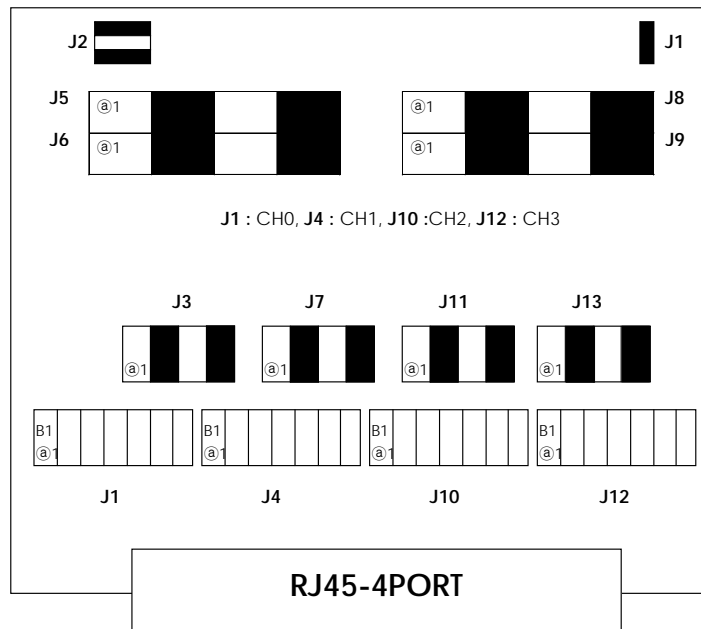
● E&M Type 3 Setting Example

● E&M Type 4 Setting Example

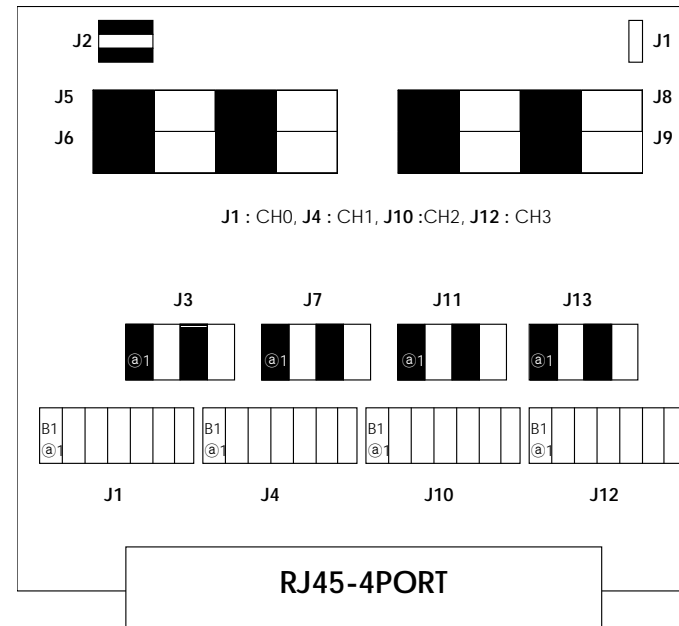
● E&M Type 5 Setting Example

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



Device Selection (example)

- Device Selection (Example)
 - 1-Port Digital E1 + 4-Port E&M
 - ➔ AP2620 Digital/Analog VoIP Gateway
 - 8-Port FXS + 8-Port E&M
 - ➔ AP2120N 16-Port Analog VoIP Gateway

AP2620 Digital/Analog VoIP Gateway









AP2620 Digital/Analog VoIP Gateway

- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Various Analog Interface Module(4-Port FXS, 4-Port FXO, 4-Port E&M, etc) Support
- Various Digital Interface Module (1-Port/2-Port Digital E1, T1)
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- Smart Network Management System for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Light and Compact Design with Internal Power Supply
- Two(2) VoIP Module Slot for 4-Port Analog VoIP Module or 1~2 Port Digital VoIP Module

VoIP Modules

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Target	VoIP Modules	Module Features	Module Picture
AP1700,AP2610 AP2620,AP3100P	AP-FXS4	4-Port FXS Module	
AP1700,AP2610 AP2620,AP3100P	AP-FXO4	4-Port FXO Module	
AP1700,AP2610 AP2620,AP3100P	AP-FXS2O2	2-Port FXS&2-Port FXO Module	
AP1700,AP2610 AP2620,AP3100P	AP-E&M4	4-Port E&M Module	
AP1700,AP2610 AP2620,AP3100P	AP-FXS3O1	3-Port FXS&1-Port FXO Module	
AP1700, AP2620	AP-E1	1-Port Digital E1/T1 Module	

AP2120N 16-Port Analog VoIP Gateway







AP2120N VoIP Gateway

- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Various PSTN Interface Module(8-Port FXS, 8-Port FXO, 8-Port E&M) Support
- IP Broadcasting Terminal Module (Audio 2 Module) Support
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- Smart Network Management System for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Light and Compact Design with Internal Power Supply
- Two(2) VoIP Module Slot for 8-Port Analog VoIP Interface Module

VoIP Modules

DSP

Target	VoIP Modules	Module Features	Module Picture
AP2120N AP2640 AP2650	AP-FXS8	8-Port FXS Module	
AP2120N AP2640 AP2650	AP-FXO8	8-Port FXO Module	
AP2120N AP2640 AP2650	AP-FXS4O4	4-Port FXS&4-Port FXO Module	
AP2120N AP2640 AP2650	AP-E&M8	8-Port E&M Module	



Thank you!

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