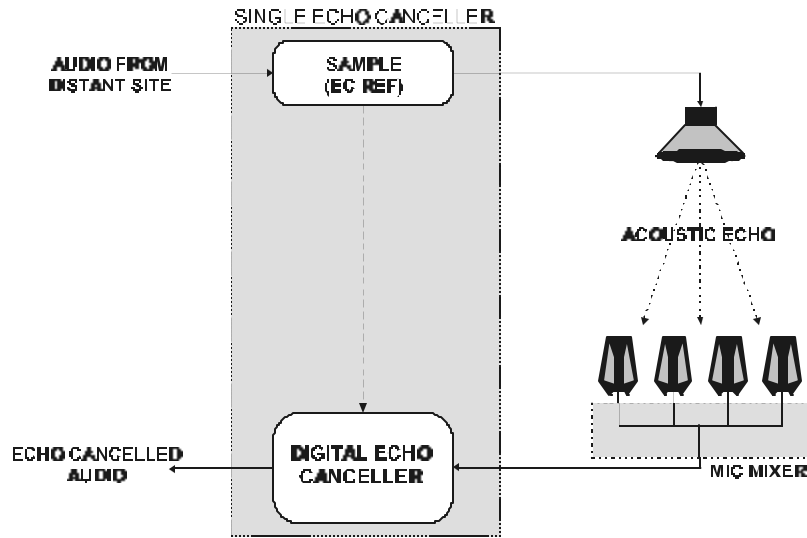


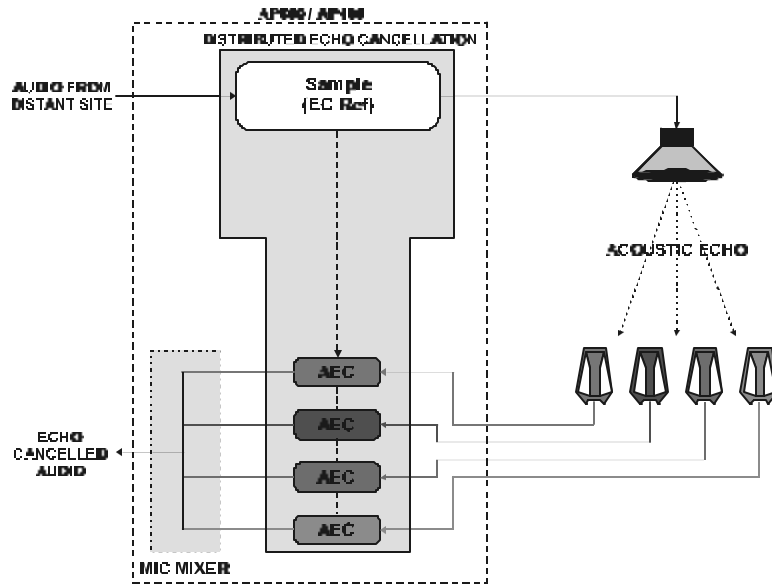
Distributed Echo Cancellation™

- Single Echo Cancellation vs. Distributed Echo Cancellation.
- Advantages of Distributed Echo Cancellation

Single Echo Canceller



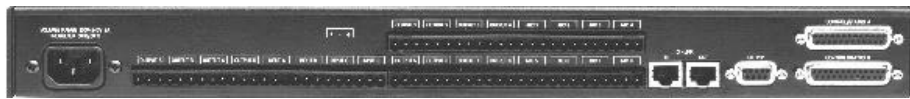
Distributed Echo Cancellation™



Advantages of Distributed Echo Cancellation™

- One echo canceller per microphone
- Faster convergence
- Plug and play operation
- Allows operation in a greater variety of environments
- Better duplex
- More tolerant to changes in the environment

Audio Perfect™ 800



- Distributed Echo Cancellation
- Eight mic/line inputs
- Four line inputs
- 12 line outputs
- 12 x 12 routing Matrix
- Two internal sub-mix busses
- All inputs/outputs can be have independent gain control & mute
- RS232 control & programming
- Contact closure control

Audio Perfect™ 400



- Distributed Echo Cancellation
- Four mic/line inputs
- Four line inputs
- Eight line outputs
- 8 x 8 routing Matrix
- Built in telephone interface
- One internal sub-mix busses
- All inputs/outputs can be have independent gain control & mute
- RS232 control & programming
- Contact closure control
- Built in 5W amp

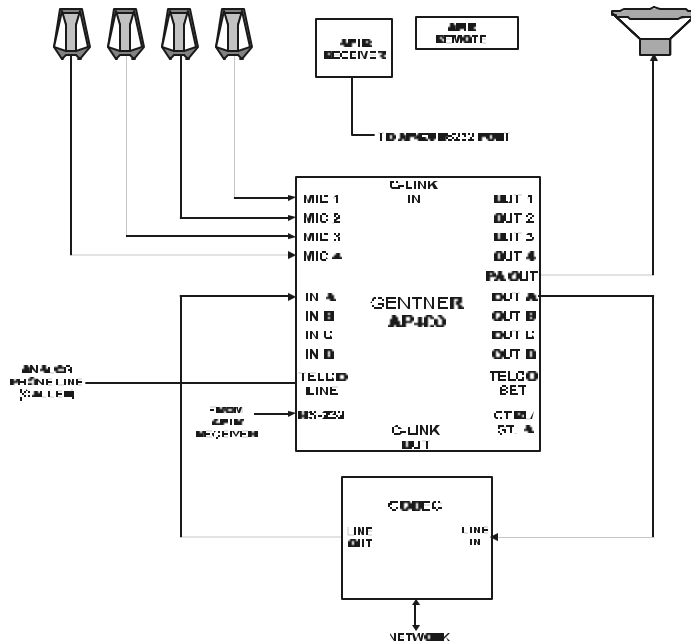
Audio Perfect™ 10



- Analog telephone interface for Audio Perfect system
- Digital telco echo cancellation
- RS232 DTMF dialing capability
- Remote on/off control via RS232 or contact closure
- Selectable auto answer/disconnect
- G-link to AP800 and AP400

Application #1

- 4 microphones
- Audio / Video conference system
- Single AP400



Application #1 Routing Matrix for AP400 Device ID 30

		To Codec Transmt				To PA System (Amp/Speakers)			To Telco Transmt (Phone Line)				
Routing Matrix Setup		Outputs				G-Link			Sub bus	Outputs			
		A	B	C	D	Telco	X	Y	Z	1	2	3	4
From Codec Receive	Input A		X	X	X	X		X					
	Input B	X		X	X	X		X					
	Input C	X	X		X	X		X					
	Input D	X	X	X	X	X		X					
From Telco Receive	Telco Receive	X	X	X	X			X					
Mic Inputs From Other AP's	G-Link X Bus	X	X	X		X							
Line Inputs From Other AP's	G-Link Y Bus	X	X	X	X	X							
	G-Link Z Bus												
	Sub-bus												
Mic 1	Mic / Line 1*	G	G	G		G	G				N		
Mic 2	Mic / Line 2*	G	G	G		G	G					N	
Mic 3	Mic / Line 3*	G	G	G		G	G						N
Mic 4	Mic / Line 4*	G	G	G		G	G						N

* G = Gated N = Non-Gated

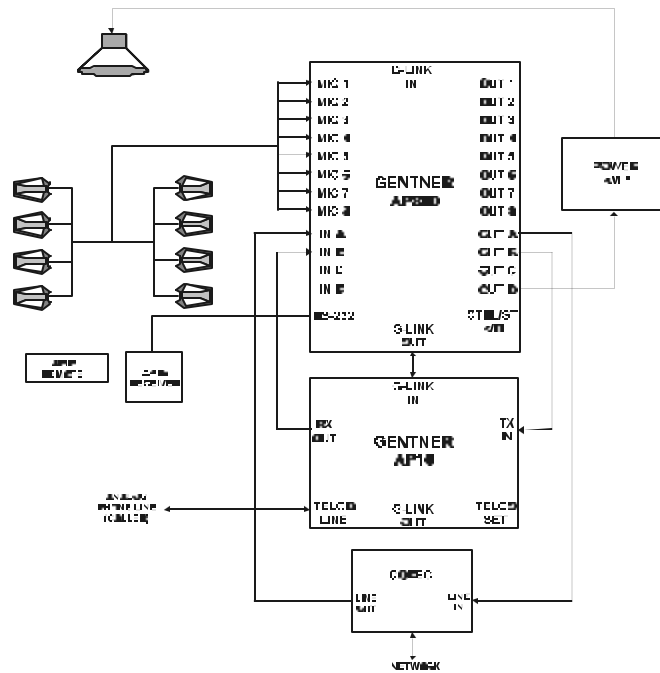
Echo Cancellation Setup	Outputs				Outputs				G-Link EC Ref
	A	B	C	D	1	2	3	4	
Define EC Ref & PA (Speaker Output)				X					
Define G-Link EC Ref									

AP400 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters										
Program Parameter	Selection Range											
Preset	1 - 6											
Lock Front Panel	On, Off											
Set Passcode	Any 5 Front Panel Keys											
Device ID No.	0 - 7											
Unit ID No.	Factory Programmed											
Mixer Mode	Master-Single /Linked, Slave											
RS232 Baud Rate	9.6, 19.2, 38.4 kbps											
RS232 Flow Control	On, Off											
Modem Mode	On, Off											
Clear Modem Password	Enter											
Timeout	0 - 15 (10)											
Auto Answer	On, Off											
Auto Disconnect	Off, Loop Drop, Call Prog, LD + CP											
*Telco Adapt Mode	Auto, Burst											
*Hook Duration	50 ms, 500 ms											
*Receive Reduction	On, Off											
Input Channel		1	2	3	4	A	B	C	D	Telcc	S1	
Program Parameter	Selection Range											
Input Gain Adjust	-20dB to 20 dB (0)											
Subbus Attenuation	0dB to -20dB (-6dB)											
Input Type	Mic 55dB, Mic 25dB, Line											
Microphone Activation	Auto, Override On/Off, Manual On/Off											
Mute	On, Off											
Phantom Power	On, Off											
AGC	On, Off											
High-Pass Filter	On, Off											
EQ	On, Off											
*Low Band EQ	-12dB to 12 dB (0)											
*Mid Band EQ	-12dB to 12 dB (0)											
*High Band EQ	-12dB to 12 dB (0)											
Chairman Mic	On, Off											
Adaptive Ambient	On, Off											
Echo Cancellation	On, Off											
NLP	Off, Soft, Medium, Aggressive											
Output Channel		1	2	3	4	A	B	C	D	Telcc	S1	
Program Parameter	Selection Range											
Output Gain Adjust	-20dB to 20 dB (0)											
Mute	On, Off											
NOM	On (A - C, Telco) or Off (1 - 4, D)											

Application #2

- 8 microphones
- Audio / Video conference system
- Single AP800 with AP10



Application #2 Routing Matrix for AP800 Device ID 10

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
From Codec Receive	Input A		X	X	X		X											
From AP10 Receive	Input B	X		X	X		X											
	Input C	X	X		X		X											
	Input D	X	X	X	X		X											
Mic Inputs From Other AP's	G-Link X Bus	X	X	X														
Line Inputs From Other AP's	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
	Sub-bus S1 In																	
	Sub-bus S2 In																	
Mic 1	Mic / Line 1*	G	G	G		G						N						
Mic 2	Mic / Line 2*	G	G	G		G						N						
Mic 3	Mic / Line 3*	G	G	G		G						N						
Mic 4	Mic / Line 4*	G	G	G		G						N						
Mic 5	Mic / Line 5*	G	G	G		G						N						
Mic 6	Mic / Line 6*	G	G	G		G						N						
Mic 7	Mic / Line 7*	G	G	G		G						N						
Mic 8	Mic / Line 8*	G	G	G		G						N						

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref									
	A	B	C	D	1	2	3	4		5	6	7	8					
Define EC Ref 1				X														
Define EC Ref 2																		
Define G-Link EC Ref																		

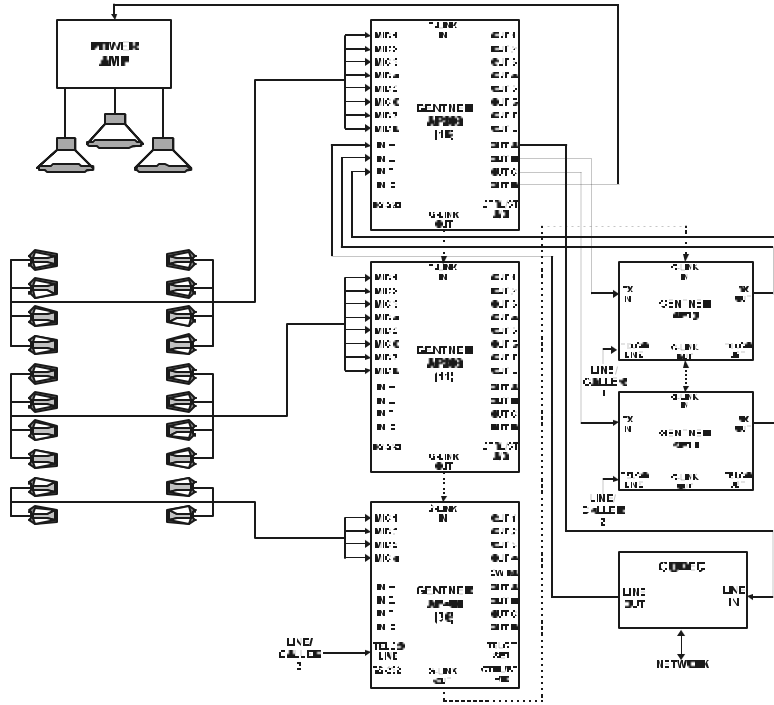
AP800 Parameters Worksheet																
System Wide Parameters																
Program Parameter	Selection Range															
Preset	1 - 6															
Lock Front Panel	On, Off															
Set Passcode	Any 5 Front Panel Keys															
Device ID No.	0 - 7															
Unit ID No.	Factory/Programmed															
Mixer Mode	Master-Single/Linked, Slave, Dual															
RS232 Baud Rate	9.6, 19.2, 38.4 kbps															
RS232 Flow Control	On, Off															
Modem Mode	On, Off															
Clear Modem Password	Enter															
Timeout	0 - 15 (0)															
Auto Mix Parameters																
Program Parameter	Selection Range															
PA Adaptive	On, Off															
Maximum No. of Mics	Off, 1-8 (4)															
First Mic Priority	On, Off															
Last Mic Mode	Last On, Off or Mic 1															
Gate Ratio	0 - 50 dB (15)															
Off Attenuation	0 - 50 dB (12)															
Hold Time	.1 - 8.0 seconds (.3)															
Decay Rate	Slow, Medium, Fast															
Manual Ambient	0dB to -70dB (-30)															
Input Channel																
Program Parameter	Selection Range	1	2	3	4	5	6	7	8	A	B	C	D	S1	S2	
Input Gain Adjust	-20dB to 20 dB (0)															
Subbus Attenuation	0dB to -20dB (6dB)															
Input Type	Mic 55dB Mic 25dB Line															
Microphone Activation	Auto, Override On/Off, Manual On/Off															
Mute	On, Off															
Phantom Power	On, Off															
AGC	On, Off															
High-Pass Filter	On, Off															
EQ	On, Off															
Low Band EQ	-12dB to 12 dB (0)															
Mid Band EQ	-12dB to 12 dB (0)															
High Band EQ	-12dB to 12 dB (0)															
Chairman Mic	On, Off															
Adaptive Ambient	On, Off															
EC Reference	1, 2															
Echo Cancellation	On, Off															
N/P	Off, Soft, Medium, Aggressive															
Output Channel																
Program Parameter	Selection Range	1	2	3	4	5	6	7	8	A	B	C	D			
Output Gain Adjust	-20dB to 20 dB (0)															
Mute	On, Off															
NGM	On(A-C) or Off(1 - 4, D)															

Linking AP Products

- **Linking Guidelines**
 - Link up to 8 AP800s
 - Link up to 8 AP400s
 - For a total of up to 64 microphones
 - Link up to 16 AP10s
- **G-Link Cable**
 - Maximum G-link cable distance is 20 feet
 - Category five twisted pair, 10BaseT LAN
 - Use provided cable whenever possible
- **G-Link Notes**
 - First unit in network should be set to Master-Linked and all others to Slave
 - Change device ID on like units
 - Use G-link terminators on first and last unit in network

Application #3

- Linking multiple AP units for systems requiring more than 8 microphones
- Audio / Video conference system
- Two AP800s, one AP400 and two AP10s



Application #3 Routing Matrix for AP800 Device ID 10

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
From Codec Receive	Input A		X	X	X		X											
From AP10 #1 Receive (Caller 1)	Input B	X		X	X		X											
From AP10 #2 Receive (Caller 2)	Input C	X	X		X		X											
	Input D	X	X	X	X		X											
Mics 9 -20 in	G-Link X Bus	X	X	X														
AP400 telco in (Caller 3)	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
	Sub-bus S1 In																	
	Sub-bus S2 In																	
Mic 1	Mic / Line 1*	G	G	G		G					N							
Mic 2	Mic / Line 2*	G	G	G		G					N							
Mic 3	Mic / Line 3*	G	G	G		G						N						
Mic 4	Mic / Line 4*	G	G	G		G							N					
Mic 5	Mic / Line 5*	G	G	G		G								N				
Mic 6	Mic / Line 6*	G	G	G		G									N			
Mic 7	Mic / Line 7*	G	G	G		G										N		
Mic 8	Mic / Line 8*	G	G	G		G											N	

* G = Gated N = Non-Gated

Echo Cancellation Setup		Outputs								G-Link EC Ref				
		A	B	C	D	1	2	3	4	5	6	7	8	
Define EC Ref 1					X									
Define EC Ref 2						X								
Define G-Link EC Ref														

Application #3 Routing Matrix for AP800 Device ID 11

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
Input A		X	X	X		X												
Input B		X		X	X	X												
Input C		X	X		X		X											
Input D		X	X	X	X		X											
G-Link X Bus		X	X	X														
G-Link Y Bus		X	X	X	X													
G-Link Z Bus																		
Sub-bus S1 In																		
Sub-bus S2 In																		
Mic 9	Mic / Line 1*	G	G	G		G						N						
Mic 10	Mic / Line 2*	G	G	G		G						N						
Mic 11	Mic / Line 3*	G	G	G		G						N						
Mic 12	Mic / Line 4*	G	G	G		G						N						
Mic 13	Mic / Line 5*	G	G	G		G							N					
Mic 14	Mic / Line 6*	G	G	G		G								N				
Mic 15	Mic / Line 7*	G	G	G		G									N			
Mic 16	Mic / Line 8*	G	G	G		G											N	

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref	
	A	B	C	D	1	2	3	4		
Define EC Ref 1				X						X
Define EC Ref 2										
Define G-Link EC Ref										

Application #3 Routing Matrix for AP400 Device ID 30

Routing Matrix Setup		Outputs				G-Link			Sub-bus	Outputs								
		A	B	C	D	Telco	X	Y		Z	1	2	3	4				
Input A		X	X	X	X	X		X										
Input B		X		X	X	X		X										
Input C		X	X		X	X		X										
Input D		X	X	X	X	X		X										
From Telco Receive (Caller 3)	Telco Receive	X	X	X	X			X										
Mic 1-16 in	G-Link X Bus	X	X	X		X												
Codec and Callers 1 & 2 in	G-Link Y Bus	X	X	X	X	X												
	G-Link Z Bus																	
	Sub-bus																	
Mic 17	Mic / Line 1*	G	G	G		G	G					N						
Mic 18	Mic / Line 2*	G	G	G		G	G						N					
Mic 19	Mic / Line 3*	G	G	G		G	G							N				
Mic 20	Mic / Line 4*	G	G	G		G	G										N	

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs				Outputs				G-Link EC Ref	
	A	B	C	D	1	2	3	4		
Define EC Ref & PA (Speaker Output)				X						X
Define G-Link EC Ref										

AP800 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																							
Program Parameter	Selection Range									Program Parameter	Selection Range														
Preset	1 - 6									PA Adaptive	On, Off														
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)														
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off														
Device ID No.	0 - 7									Last Mic Mode	Last On, Off or Mic 1														
Unit ID No.	Factory Programmed									Gate Ratio	0 - 50 dB (15)														
Mixer Mode	Master-Single/Linked, Slave, Dual	Master-Linked								Off Attenuation	0 - 50 dB (12)														
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)														
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast														
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)														
Clear Modem Password	Enter																								
Timeout	0 - 15 (10)																								
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2										
Program Parameter	Selection Range																								
Input Gain Adjust	-20dB to 20 dB (0)																								
Subbus Attenuation	0dB to -20dB (6dB)																								
Input Type	Mic 55dB Mic 25dB Line																								
Microphone Activation	Auto, Override On/Off, Manual On/Off																								
Mute	On, Off																								
Phantom Power	On, Off																								
AGC	On, Off																								
High-Pass Filter	On, Off																								
EQ	On, Off																								
Low Band EQ	-12dB to 12 dB (0)																								
Mid Band EQ	-12dB to 12 dB (0)																								
High Band EQ	-12dB to 12 dB (0)																								
Chairman Mic	On, Off																								
Adaptive Ambient	On, Off																								
EC Reference	1, 2																								
Echo Cancellation	On, Off																								
NLP	Off, Soft, Medium, Aggressive																								
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D												
Program Parameter	Selection Range																								
Output Gain Adjust	-20dB to 20 dB (0)																								
Mute	On, Off																								
NGM	On(A-C) or Off (1 - 4, D)																								

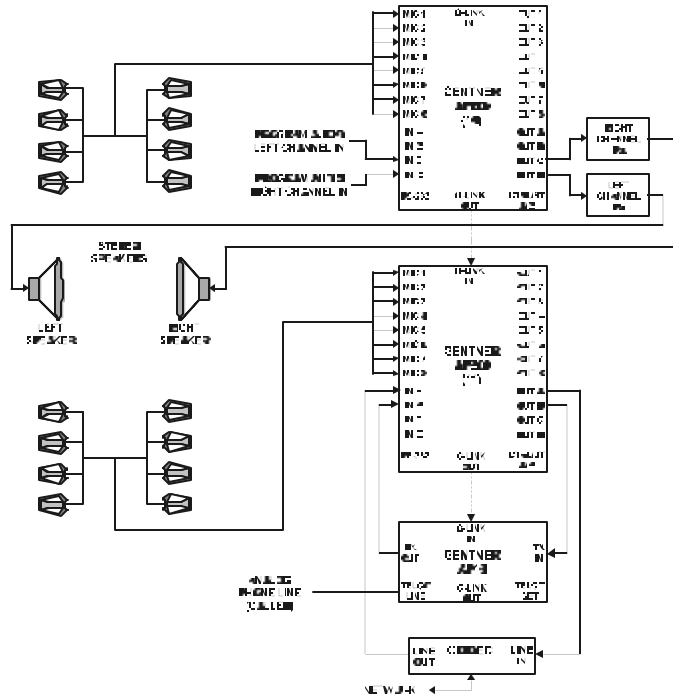
AP800 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																							
Program Parameter	Selection Range									Program Parameter	Selection Range														
Preset	1 - 6									PA Adaptive	On, Off														
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)														
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off														
Device ID No.	0 - 7	1								Last Mic Mode	Last On, Off or Mic 1														
Unit ID No.	Factory Programmed									Gate Ratio	0 - 50 dB (15)														
Mixer Mode	Master-Single/Linked, Slave, Dual	Slave								Off Attenuation	0 - 50 dB (12)														
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)														
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast														
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)														
Clear Modem Password	Enter																								
Timeout	0 - 15 (10)																								
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2										
Program Parameter	Selection Range																								
Input Gain Adjust	-20dB to 20 dB (0)																								
Subbus Attenuation	0dB to -20dB (6dB)																								
Input Type	Mic 55dB Mic 25dB Line																								
Microphone Activation	Auto, Override On/Off, Manual On/Off																								
Mute	On, Off																								
Phantom Power	On, Off																								
AGC	On, Off																								
High-Pass Filter	On, Off																								
EQ	On, Off																								
Low Band EQ	-12dB to 12 dB (0)																								
Mid Band EQ	-12dB to 12 dB (0)																								
High Band EQ	-12dB to 12 dB (0)																								
Chairman Mic	On, Off																								
Adaptive Ambient	On, Off																								
EC Reference	1, 2																								
Echo Cancellation	On, Off																								
NLP	Off, Soft, Medium, Aggressive																								
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D												
Program Parameter	Selection Range																								
Output Gain Adjust	-20dB to 20 dB (0)																								
Mute	On, Off																								
NGM	On(A-C) or Off (1 - 4, D)																								

AP400 Parameters Worksheet												
System Wide Parameters						Auto Mix Parameters						
Program Parameter	Selection Range					Program Parameter	Selection Range					
Preset	1 - 6					PA Adaptive	On, Off					
Lock Front Panel	On, Off					Maximum No. of Mics	Off, 1-8 (4)					
Set Passcode	Any 5 Front Panel Keys					First Mic Priority	On, Off					
Device ID No.	0 - 7					Last Mic Mode	Last On, Off, or Mic 1					
Unit ID No.	Factory Programmed					Gate Ratio	0 - 50 dB (15)					
Mixer Mode	Master-Single /Linked, Slave		Slave			Off Attenuation	0 - 50 dB (12)					
RS232 Baud Rate	9.6, 19.2, 38.4 kbps					Hold Time	1 - 8.0 seconds (.3)					
RS232 Flow Control	On, Off					Decay Rate	Slow, Medium, Fast					
Modem Mode	On, Off					Manual Ambient	0dB to -70dB (-30)					
Clear Modem Password	Enter											
Timeout	0 - 15 (10)											
Auto Answer	On, Off											
Auto Disconnect	Off, Loop Drop, Call Prog, LD + CP											
*Telco Adapt Mode	Auto, Burst											
*Hook Duration	50 ms, 500 ms											
*Receive Reduction	On, Off											
Input Channel			1	2	3	4	A	B	C	D	Telco	S1
Program Parameter	Selection Range											
Input Gain Adjust	-20dB to 20 dB (0)											
Subbus Attenuation	0dB to -20dB (-6dB)											
Input Type	Mic 55dB, Mic 25dB, Line											
Microphone Activation	Auto, Override On/Off, Manual On/Off											
Mute	On, Off											
Phantom Power	On, Off											
AGC	On, Off											
High-Pass Filter	On, Off											
EQ	On, Off											
*Low Band EQ	-12dB to 12 dB (0)											
*Mid Band EQ	-12dB to 12 dB (0)											
*High Band EQ	-12dB to 12 dB (0)											
Chairman Mic	On, Off											
Adaptive Ambient	On, Off											
Echo Cancellation	On, Off											
NLP	Off, Soft, Medium, Aggressive											
Output Channel			1	2	3	4	A	B	C	D	Telco	S1
Program Parameter	Selection Range											
Output Gain Adjust	-20dB to 20 dB (0)											
Mute	On, Off											
NOM	On (A - C, Telco) or Off (1 - 4, D)											

Application #4

- System with stereo speakers
- Audio / Video conference system
- Two AP800s and one AP10



Application #4 Routing Matrix for AP800 Device ID 10

Routing Matrix Setup	Outputs				G-Link			Sub-bus		Outputs							
	A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
Input A	X	X	X		X												
Input B	X		X	X		X											
From left channel program	X	X		X		X				X							
From right channel program	X	X	X	X		X				X							
G-Link X Bus	X	X	X	X													
Codec and AP10 receive audio in	X	X	X	X						X							
G-Link Z Bus																	
Sub-bus S1 In																	
Sub-bus S2 In																	
Mic 1	G	G			G												
Mic 2	G	G			G					N							
Mic 3	G	G			G						N						
Mic 4	G	G			G							N					
Mic 5	G	G			G								N				
Mic 6	G	G			G									N			
Mic 7	G	G			G										N		
Mic 8	G	G			G											N	

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref	
	A	B	C	D	1	2	3	4		
Define EC Ref 1				X	X					
Define EC Ref 2					X					
Define G-Link EC Ref										

Application #4 Routing Matrix for AP800 Device ID 11

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
Codec receive audio in	Input A	X	X	X		X												
AP10 receive audio in	Input B	X		X	X	X												
	Input C	X	X		X		X											
	Input D	X	X	X	X		X											
Mics 1 - 8 in	G-Link X Bus	X	X	X														
Program audio in	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
	Sub-bus S1 In																	
	Sub-bus S2 In																	
Mic 9	Mic / Line 1*	G	G	G		G					N							
Mic 10	Mic / Line 2*	G	G	G		G					N							
Mic 11	Mic / Line 3*	G	G	G		G						N						
Mic 12	Mic / Line 4*	G	G	G		G							N					
Mic 13	Mic / Line 5*	G	G	G		G								N				
Mic 14	Mic / Line 6*	G	G	G		G									N			
Mic 15	Mic / Line 7*	G	G	G		G										N		
Mic 16	Mic / Line 8*	G	G	G		G											N	

* G = Gated N = Non-Gated

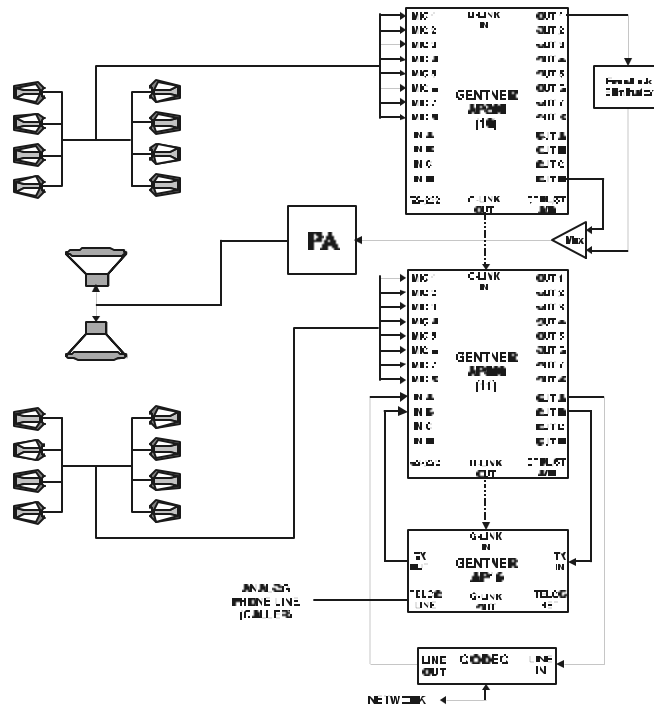
Echo Cancellation Setup	Outputs								G-Link EC Ref									
	A	B	C	D	1	2	3	4		5	6	7	8					
Define EC Ref 1				X														X
Define EC Ref 2																		
Define G-Link EC Ref																		

AP800 Parameters Worksheet															
System Wide Parameters						Auto Mix Parameters									
Program Parameter	Selection Range					Program Parameter	Selection Range								
Preset	1 - 6					PA Adaptive	On, Off								
Lock Front Panel	On, Off					Maximum No. of Mics	Off, 1-8 (4)								
Set Passcode	Any 5 Front Panel Keys					First Mic Priority	On, Off								
Device ID No.	0 - 7					Last Mic Mode	Last On, Off or Mic 1								
Unit ID No.	Factory/Programmed					Gate Ratio	0 - 50 dB (15)								
Mixer Mode	Master-Single/Linked, Slave, Dual					Master-Linked	Off Attenuation	0 - 50 dB (12)							
RS232 Baud Rate	9.6, 19.2, 38.4 kbps						Hold Time	.1 - 8.0 seconds (.3)							
RS232 Flow Control	On, Off						Decay Rate	Slow, Medium, Fast							
Modem Mode	On, Off						Manual Ambient	0dB to -70dB (-30)							
Clear Modem Password	Enter														
Timeout	0 - 15 (10)														
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2
Program Parameter	Selection Range														
Input Gain Adjust	-20dB to 20 dB (0)														
Subbus Attenuation	0dB to -20dB (6dB)														
Input Type	Mic 55dB Mic 25dB, Line														
Microphone Activation	Auto, Override On/Off, Manual On/Off														
Mute	On, Off														
Phantom Power	On, Off														
AGC	On, Off														
High-Pass Filter	On, Off														
EQ	On, Off														
Low Band EQ	-12dB to 12 dB (0)														
Mid Band EQ	-12dB to 12 dB (0)														
High Band EQ	-12dB to 12 dB (0)														
Chairman Mic	On, Off														
Adaptive Ambient	On, Off														
EC Reference	1, 2														
Echo Cancellation	On, Off														
NLP	Off, Soft, Medium, Aggressive														
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D		
Program Parameter	Selection Range														
Output Gain Adjust	-20dB to 20 dB (0)														
Mute	On, Off														
NGM	On (A-C) or Off (1 - 4, D)														

AP800 Parameters Worksheet															
System Wide Parameters							Auto Mix Parameters								
Program Parameter	Selection Range						Program Parameter	Selection Range							
Preset	1 - 6						PA Adaptive	On, Off							
Lock Front Panel	On, Off						Maximum No. of Mics	Off, 1-8 (4)							
Set Passcode	Any 5 Front Panel Keys						First Mic Priority	On, Off							
Device ID No.	0 - 7	1					Last Mic Mode	Last On, Off or Mic 1							
Unit ID No.	Factory Programmed						Gate Ratio	0 - 50 dB (15)							
Mixer Mode	Master-Single/Linked, Slave, Dual	Slave					Off Attenuation	0 - 50 dB (12)							
RS232 Baud Rate	9.6, 19.2, 38.4 kbps						Hold Time	.1 - 8.0 seconds (.3)							
RS232 Flow Control	On, Off						Decay Rate	Slow, Medium, Fast							
Modem Mode	On, Off						Manual Ambient	0dB to -70dB (-30)							
Clear Modem Password	Enter														
Timeout	0 - 15 (10)														
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2
Program Parameter	Selection Range														
Input Gain Adjust	-20dB to 20 dB (0)														
Subbus Attenuation	0dB to -20dB (6dB)														
Input Type	Mic 55dB, Mic 25dB, Line														
Microphone Activation	Auto, Override On/Off, Manual On/Off														
Mute	On, Off														
Phantom Power	On, Off														
AGC	On, Off														
High-Pass Filter	On, Off														
EQ	On, Off														
Low Band EQ	-12dB to 12 dB (0)														
Mid Band EQ	-12dB to 12 dB (0)														
High Band EQ	-12dB to 12 dB (0)														
Chairman Mic	On, Off														
Adaptive Ambient	On, Off														
EC Reference	1, 2														
Echo Cancellation	On, Off														
NLP	Off, Soft, Medium, Aggressive														
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D		
Program Parameter	Selection Range														
Output Gain Adjust	-20dB to 20 dB (0)														
Mute	On, Off														
NOM	On(A-C) or Off (1 - 4, D)														

Application #5

- Overall sound reinforcement
- Audio / Video conference system
- Two AP800s and one AP10
- Sound reinforcement note:
 - Never route a microphone to the output that it is using as its EC reference!



Application #5 Routing Matrix for AP800 Device ID 10

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
Input A		X	X	X		X												
Input B		X		X	X		X											
Input C		X	X		X		X											
Input D		X	X	X			X											
Mics 9 - 16 in	G-Link X Bus	X	X	X	X					X								
Codec and AP10 receive audio in	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
	Sub-bus S1 In																	
	Sub-bus S2 In																	
Mic 1	Mic / Line 1*	G	G	G		G				G								
Mic 2	Mic / Line 2*	G	G	G		G				G	N							
Mic 3	Mic / Line 3*	G	G	G		G				G		N						
Mic 4	Mic / Line 4*	G	G	G		G				G			N					
Mic 5	Mic / Line 5*	G	G	G		G				G				N				
Mic 6	Mic / Line 6*	G	G	G		G				G					N			
Mic 7	Mic / Line 7*	G	G	G		G				G						N		
Mic 8	Mic / Line 8*	G	G	G		G				G							N	

* G = Gated N = Non-Gated

Echo Cancellation Setup		Outputs								G-Link EC Ref				
		A	B	C	D	1	2	3	4	5	6	7	8	
Define EC Ref 1					X									
Define EC Ref 2														
Define G-Link EC Ref					X									

Application #5 Routing Matrix for AP800 Device ID 11

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs								
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8	
Codec receive audio in	Input A		X	X	X	X													
AP10 receive audio in	Input B	X	X	X	X	X													
	Input C	X	X		X	X													
	Input D	X	X	X	X	X													
Mics 1 - 8 in	G-Link X Bus	X	X	X															
	G-Link Y Bus	X	X	X	X														
	G-Link Z Bus																		
	Sub-bus S1 In																		
	Sub-bus S2 In																		
Mic 9	Mic / Line 1*	G	G	G		G					N								
Mic 10	Mic / Line 2*	G	G	G		G					N								
Mic 11	Mic / Line 3*	G	G	G		G						N							
Mic 12	Mic / Line 4*	G	G	G		G							N						
Mic 13	Mic / Line 5*	G	G	G		G								N					
Mic 14	Mic / Line 6*	G	G	G		G									N				
Mic 15	Mic / Line 7*	G	G	G		G										N			
Mic 16	Mic / Line 8*	G	G	G		G											N		

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref										
	A	B	C	D	1	2	3	4		5	6	7	8						
Define EC Ref 1				X															X
Define EC Ref 2																			
Define G-Link EC Ref																			

AP800 Parameters Worksheet																							
System Wide Parameters										Auto Mix Parameters													
Program Parameter	Selection Range											Program Parameter	Selection Range										
Preset	1 - 6											PA Adaptive	On, Off										
Lock Front Panel	On, Off											Maximum No. of Mics	Off, 1-8 (4)										
Set Passcode	Any 5 Front Panel Keys											First Mic Priority	On, Off										
Device ID No.	0 - 7											Last Mic Mode	Last On, Off or Mic 1										
Unit ID No.	Factory/Programmed											Gate Ratio	0 - 50 dB (15)										
Mixer Mode	Master-Single/Linked, Slave, Dual	Master-Linked										Off Attenuation	0 - 50 dB (12)										
RS232 Baud Rate	9.6, 19.2, 38.4 kbps											Hold Time	1 - 8.0 seconds (.3)										
RS232 Flow Control	On, Off											Decay Rate	Slow, Medium, Fast										
Modem Mode	On, Off											Manual Ambient	0dB to -70dB (-30)										
Clear Modem Password	Enter																						
Timeout	0 - 15 (10)																						
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2								
Program Parameter	Selection Range																						
Input Gain Adjust	-20dB to 20 dB (0)																						
Subbus Attenuation	0dB to -20dB (6dB)																						
Input Type	Mic 55dB Mic 25dB Line																						
Microphone Activation	Auto, Override On/Off, Manual On/Off																						
Mute	On, Off																						
Phantom Power	On, Off																						
AGC	On, Off																						
High-Pass Filter	On, Off																						
EQ	On, Off																						
Low Band EQ	-12dB to 12 dB (0)																						
Mid Band EQ	-12dB to 12 dB (0)																						
High Band EQ	-12dB to 12 dB (0)																						
Chairman Mic	On, Off																						
Adaptive Ambient	On, Off																						
EC Reference	1, 2																						
Echo Cancellation	On, Off																						
NLP	Off, Soft, Medium, Aggressive																						
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D										
Program Parameter	Selection Range																						
Output Gain Adjust	-20dB to 20 dB (0)																						
Mute	On, Off																						
NGM	On (A-C) or Off (1 - 4, D)																						

AP800 Parameters Worksheet															
System Wide Parameters							Auto Mix Parameters								
Program Parameter	Selection Range						Program Parameter	Selection Range							
Preset	1 - 6						PA Adaptive	On, Off							
Lock Front Panel	On, Off						Maximum No. of Mics	Off, 1-8 (4)							
Set Passcode	Any 5 Front Panel Keys						First Mic Priority	On, Off							
Device ID No.	0 - 7	1					Last Mic Mode	Last On, Off or Mic 1							
Unit ID No.	Factory Programmed						Gate Ratio	0 - 50 dB (15)							
Mixer Mode	Master-Single/Linked, Slave, Dual	Slave					Off Attenuation	0 - 50 dB (12)							
RS232 Baud Rate	9.6, 19.2, 38.4 kbps						Hold Time	.1 - 8.0 seconds (.3)							
RS232 Flow Control	On, Off						Decay Rate	Slow, Medium, Fast							
Modem Mode	On, Off						Manual Ambient	0dB to -70dB (-30)							
Clear Modem Password	Enter														
Timeout	0 - 15 (10)														
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2
Program Parameter	Selection Range														
Input Gain Adjust	-20dB to 20 dB (0)														
Subbus Attenuation	0dB to -20dB (6dB)														
Input Type	Mic 55dB, Mic 25dB, Line														
Microphone Activation	Auto, Override On/Off, Manual On/Off														
Mute	On, Off														
Phantom Power	On, Off														
AGC	On, Off														
High-Pass Filter	On, Off														
EQ	On, Off														
Low Band EQ	-12dB to 12 dB (0)														
Mid Band EQ	-12dB to 12 dB (0)														
High Band EQ	-12dB to 12 dB (0)														
Chairman Mic	On, Off														
Adaptive Ambient	On, Off														
EC Reference	1, 2														
Echo Cancellation	On, Off														
NLP	Off, Soft, Medium, Aggressive														
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D		
Program Parameter	Selection Range														
Output Gain Adjust	-20dB to 20 dB (0)														
Mute	On, Off														
NOM	On(A-C) or Off(1 - 4, D)														

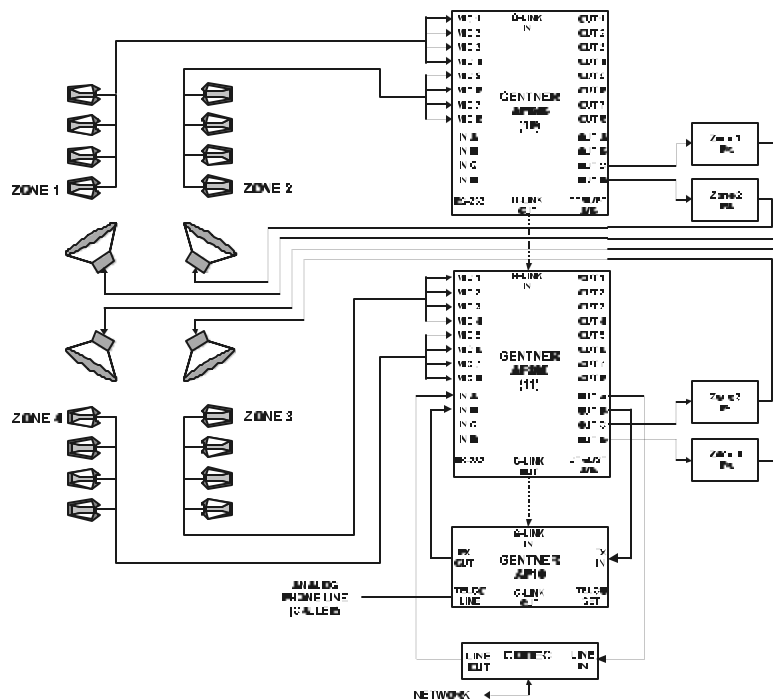
Application #6

- Zoned sound reinforcement
 - Four, four mic zones
- Audio / Video conference system
- Two AP800s and one AP10

AP Zoning Guidelines

The Audio Perfects acoustic echo cancellers can also be used for microphone feedback control in a zoned reinforcement application. To take advantage of this feature the zones must be setup within the following guidelines:

- No more than two zones per AP800 and one zone per AP400
- The PA output of a given zone must be on the same unit as the mics from that zone
- Microphones in a given zone must all be on the same unit



Application #6 Routing Matrix for AP800 Device ID 10

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs								
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8	
Input A		X	X	X		X													
Input B		X		X	X	X													
Input C		X	X		X		X												
Input D		X	X	X	X		X												
Mics 9-16 in (Zones 3 & 4)	G-Link X Bus	X	X	X	X				X	X									
Codec and AP10 receive audio in	G-Link Y Bus	X	X	X	X														
	G-Link Z Bus																		
Zones 1, 3 & 4 attenuated	Sub-bus S1 In				X														
Zones 2, 3 & 4 attenuated	Sub-bus S2 In				X														
Mic 1 Zone 1	Mic / Line 1*	G	G			G			G		N								
Mic 2 Zone 1	Mic / Line 2*	G	G			G			G		N								
Mic 3 Zone 1	Mic / Line 3*	G	G			G			G		N								
Mic 4 Zone 1	Mic / Line 4*	G	G			G			G			N							
Mic 5 Zone 2	Mic / Line 5*	G	G			G			G				N						
Mic 6 Zone 2	Mic / Line 6*	G	G			G			G					N					
Mic 7 Zone 2	Mic / Line 7*	G	G			G			G						N				
Mic 8 Zone 2	Mic / Line 8*	G	G			G			G							N			

* G = Gated N = Non-Gated

Echo Cancellation Setup		Outputs								G-Link EC Ref				
		A	B	C	D	1	2	3	4	5	6	7	8	
Define EC Ref 1					X									
Define EC Ref 2				X										
Define G-Link EC Ref														

Application #6 Routing Matrix for AP800 Device ID 11

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs								
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8	
Codec receive audio in	Input A	X	X	X	X	X													
AP10 receive audio in	Input B	X		X	X	X													
	Input C	X	X		X	X													
	Input D	X	X	X	X	X													
Mics 1 - 8 in (Zones 1 & 2)	G-Link X Bus	X	X	X	X				X	X									
	G-Link Y Bus	X	X	X	X														
	G-Link Z Bus																		
Zones 1, 2 & 3 attenuated	Sub-bus S1 In				X														
Zones 1, 2 & 4 attenuated	Sub-bus S2 In				X														
Mic 9 Zone 3	Mic / Line 1*	G	G			G			G		N								
Mic 10 Zone 3	Mic / Line 2*	G	G			G			G		N								
Mic 11 Zone 3	Mic / Line 3*	G	G			G			G		N								
Mic 12 Zone 3	Mic / Line 4*	G	G			G			G			N							
Mic 13 Zone 4	Mic / Line 5*	G	G			G			G				N						
Mic 14 Zone 4	Mic / Line 6*	G	G			G			G					N					
Mic 15 Zone 4	Mic / Line 7*	G	G			G			G						N				
Mic 16 Zone 4	Mic / Line 8*	G	G			G			G							N			

* G = Gated N = Non-Gated

Echo Cancellation Setup		Outputs								G-Link EC Ref				
		A	B	C	D	1	2	3	4	5	6	7	8	
Define EC Ref 1					X									
Define EC Ref 2				X										
Define G-Link EC Ref														

AP800 Parameters Worksheet

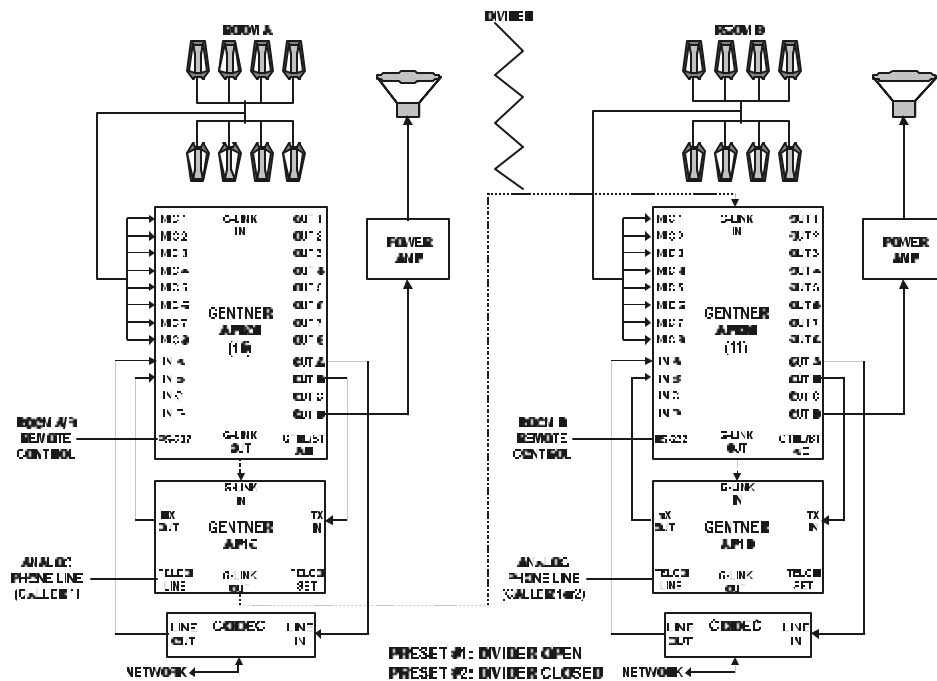
System Wide Parameters		Auto Mix Parameters																	
Program Parameter	Selection Range									Program Parameter	Selection Range								
Preset	1 - 6									PA Adaptive	On, Off								
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)								
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off								
Device ID No.	0 - 7									Last Mic Mode	Last On, Off or Mic 1								
Unit ID No.	Factory Programmed									Gate Ratio	0 - 50 dB (15)								
Mixer Mode	Master-Single/Linked, Slave, Dual	Master-Linked								Off Attenuation	0 - 50 dB (12)								
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)								
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast								
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)								
Clear Modem Password	Enter																		
Timeout	0 - 15 (10)																		
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2				
Program Parameter	Selection Range																		
Input Gain Adjust	-20dB to 20 dB (0)																		
Subbus Attenuation	0dB to -20dB (6dB)																		
Input Type	Mic 55dB Mic 25dB Line																		
Microphone Activation	Auto, Override On/Off, Manual On/Off																		
Mute	On, Off																		
Phantom Power	On, Off																		
AGC	On, Off																		
High-Pass Filter	On, Off																		
EQ	On, Off																		
Low Band EQ	-12dB to 12 dB (0)																		
Mid Band EQ	-12dB to 12 dB (0)																		
High Band EQ	-12dB to 12 dB (0)																		
Chairman Mic	On, Off																		
Adaptive Ambient	On, Off																		
EC Reference	1, 2	2	2	2	2														
Echo Cancellation	On, Off																		
NLP	Off, Soft, Medium, Aggressive																		
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D						
Program Parameter	Selection Range																		
Output Gain Adjust	-20dB to 20 dB (0)																		
Mute	On, Off																		
NOM	On (A-C) or Off (1 - 4, D)																		

AP800 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																	
Program Parameter	Selection Range									Program Parameter	Selection Range								
Preset	1 - 6									PA Adaptive	On, Off								
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)								
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off								
Device ID No.	0 - 7	1								Last Mic Mode	Last On, Off or Mic 1								
Unit ID No.	Factory Programmed									Gate Ratio	0 - 50 dB (15)								
Mixer Mode	Master-Single/Linked, Slave, Dual	Slave								Off Attenuation	0 - 50 dB (12)								
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)								
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast								
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)								
Clear Modem Password	Enter																		
Timeout	0 - 15 (10)																		
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2				
Program Parameter	Selection Range																		
Input Gain Adjust	-20dB to 20 dB (0)																		
Subbus Attenuation	0dB to -20dB (6dB)																		
Input Type	Mic 55dB Mic 25dB Line																		
Microphone Activation	Auto, Override On/Off, Manual On/Off																		
Mute	On, Off																		
Phantom Power	On, Off																		
AGC	On, Off																		
High-Pass Filter	On, Off																		
EQ	On, Off																		
Low Band EQ	-12dB to 12 dB (0)																		
Mid Band EQ	-12dB to 12 dB (0)																		
High Band EQ	-12dB to 12 dB (0)																		
Chairman Mic	On, Off																		
Adaptive Ambient	On, Off																		
EC Reference	1, 2	2	2	2	2														
Echo Cancellation	On, Off																		
NLP	Off, Soft, Medium, Aggressive																		
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D						
Program Parameter	Selection Range																		
Output Gain Adjust	-20dB to 20 dB (0)																		
Mute	On, Off																		

Application #7

- Dividable room
 - Preset 1 is room combined with two zone reinforcement
 - Preset 2 is room separate
- Audio / Video conference system
- Two AP800s and two AP10s
- G-Link order is critical



Application #7 Routing Matrix for AP800 Device ID 10, Preset 1

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
Codec A receive audio in	Input A		X	X	X		X											
AP10 A receive audio in	Input B	X		X	X		X											
	Input C	X	X		X		X											
	Input D	X	X	X	X		X											
Room/zone B mics 9-16 in	G-Link X Bus	X	X	X					X									
Codec B & AP10 B in	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
Room/zone B mics 9-16 attenuated	Sub-bus S1 In				X													
	Sub-bus S2 In																	
Mic 1 Rm A	Mic / Line 1*	G	G	G		G					N							
Mic 2 Rm A	Mic / Line 2*	G	G	G		G						N						
Mic 3 Rm A	Mic / Line 3*	G	G	G		G							N					
Mic 4 Rm A	Mic / Line 4*	G	G	G		G								N				
Mic 5 Rm A	Mic / Line 5*	G	G	G		G									N			
Mic 6 Rm A	Mic / Line 6*	G	G	G		G										N		
Mic 7 Rm A	Mic / Line 7*	G	G	G		G											N	
Mic 8 Rm A	Mic / Line 8*	G	G	G		G												N

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref									
	A	B	C	D	1	2	3	4		5	6	7	8					
Define EC Ref 1				X														
Define EC Ref 2																		
Define G-Link EC Ref																		

Application #7 Routing Matrix for AP800 Device ID 11, Preset 1

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
Codec B receive audio in	Input A		X	X	X		X											
AP10 B receive audio in	Input B	X		X	X		X											
	Input C	X	X		X		X											
	Input D	X	X	X	X		X											
Room/zone A mics 1-8 in	G-Link X Bus	X	X	X					X									
Codec A and AP10 A in	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
Room/zone A mics 1-8 attenuated	Sub-bus S1 In				X													
	Sub-bus S2 In																	
Mic 9 Rm B	Mic / Line 1*	G	G	G		G					N							
Mic 10 Rm B	Mic / Line 2*	G	G	G		G						N						
Mic 11 Rm B	Mic / Line 3*	G	G	G		G							N					
Mic 12 Rm B	Mic / Line 4*	G	G	G		G								N				
Mic 13 Rm B	Mic / Line 5*	G	G	G		G									N			
Mic 14 Rm B	Mic / Line 6*	G	G	G		G										N		
Mic 15 Rm B	Mic / Line 7*	G	G	G		G											N	
Mic 16 Rm B	Mic / Line 8*	G	G	G		G												N

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref									
	A	B	C	D	1	2	3	4		5	6	7	8					
Define EC Ref 1				X														
Define EC Ref 2																		
Define G-Link EC Ref																		

AP800 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																							
Program Parameter	Selection Range									Program Parameter	Selection Range														
Preset	1 - 6	1								PA Adaptive	On, Off														
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)														
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off														
Device ID No.	0 - 7	1								Last Mic Mode	Last On, Off or Mic 1														
Unit ID No.	Factory/Programmed									Gate Ratio	0 - 50 dB (15)														
Mixer Mode	Master-Single/Linked, Slave, Dual	Master-Linked								Off Attenuation	0 - 50 dB (12)														
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)														
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast														
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)														
Clear Modem Password	Enter																								
Timeout	0 - 15 (10)																								
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2										
Program Parameter	Selection Range																								
Input Gain Adjust	-20dB to 20 dB (0)																								
Subbus Attenuation	0dB to -20dB (6dB)																								
Input Type	Mic 55dB Mic 25dB Line																								
Microphone Activation	Auto, Override On/Off, Manual On/Off																								
Mute	On, Off																								
Phantom Power	On, Off																								
AGC	On, Off																								
High-Pass Filter	On, Off																								
EQ	On, Off																								
Low Band EQ	-12dB to 12 dB (0)																								
Mid Band EQ	-12dB to 12 dB (0)																								
High Band EQ	-12dB to 12 dB (0)																								
Chairman Mic	On, Off																								
Adaptive Ambient	On, Off																								
EC Reference	1, 2																								
Echo Cancellation	On, Off																								
NLP	Off, Soft, Medium, Aggressive																								
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D												
Program Parameter	Selection Range																								
Output Gain Adjust	-20dB to 20 dB (0)																								
Mute	On, Off																								
NGM	On(A-C) or Off(1 - 4, D)																								

AP800 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																							
Program Parameter	Selection Range									Program Parameter	Selection Range														
Preset	1 - 6	1								PA Adaptive	On, Off														
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)														
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off														
Device ID No.	0 - 7	1								Last Mic Mode	Last On, Off or Mic 1														
Unit ID No.	Factory/Programmed									Gate Ratio	0 - 50 dB (15)														
Mixer Mode	Master-Single/Linked, Slave, Dual	Slave								Off Attenuation	0 - 50 dB (12)														
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)														
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast														
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)														
Clear Modem Password	Enter																								
Timeout	0 - 15 (10)																								
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2										
Program Parameter	Selection Range																								
Input Gain Adjust	-20dB to 20 dB (0)																								
Subbus Attenuation	0dB to -20dB (6dB)																								
Input Type	Mic 55dB Mic 25dB Line																								
Microphone Activation	Auto, Override On/Off, Manual On/Off																								
Mute	On, Off																								
Phantom Power	On, Off																								
AGC	On, Off																								
High-Pass Filter	On, Off																								
EQ	On, Off																								
Low Band EQ	-12dB to 12 dB (0)																								
Mid Band EQ	-12dB to 12 dB (0)																								
High Band EQ	-12dB to 12 dB (0)																								
Chairman Mic	On, Off																								
Adaptive Ambient	On, Off																								
EC Reference	1, 2																								
Echo Cancellation	On, Off																								
NLP	Off, Soft, Medium, Aggressive																								
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D												
Program Parameter	Selection Range																								
Output Gain Adjust	-20dB to 20 dB (0)																								
Mute	On, Off																								
NGM	On(A-C) or Off(1 - 4, D)																								

Application #7 Routing Matrix for AP800 Device ID 10, Preset 2

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
Codec A receive audio in	Input A	X	X	X		X												
AP10 A receive audio in	Input B	X		X	X		X											
	Input C	X	X		X		X											
	Input D	X	X	X	X		X											
	G-Link X Bus	X	X	X														
	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
	Sub-bus S1 In																	
	Sub-bus S2 In																	
Mic 1	Mic / Line 1*	G	G	G		G							N					
Mic 2	Mic / Line 2*	G	G	G		G							N					
Mic 3	Mic / Line 3*	G	G	G		G							N					
Mic 4	Mic / Line 4*	G	G	G		G							N					
Mic 5	Mic / Line 5*	G	G	G		G								N				
Mic 6	Mic / Line 6*	G	G	G		G									N			
Mic 7	Mic / Line 7*	G	G	G		G										N		
Mic 8	Mic / Line 8*	G	G	G		G											N	

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref				
	A	B	C	D	1	2	3	4		5	6	7	8
Define EC Ref 1				X									
Define EC Ref 2													
Define G-Link EC Ref													

Application #7 Routing Matrix for AP800 Device ID 11, Preset 2

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
Codec B receive audio in	Input A	X	X	X		X												
AP10 B receive audio in	Input B	X		X	X		X											
	Input C	X	X		X		X											
	Input D	X	X	X	X		X											
	G-Link X Bus	X	X	X														
	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
	Sub-bus S1 In																	
	Sub-bus S2 In																	
Mic 9	Mic / Line 1*	G	G	G		G							N					
Mic 10	Mic / Line 2*	G	G	G		G							N					
Mic 11	Mic / Line 3*	G	G	G		G							N					
Mic 12	Mic / Line 4*	G	G	G		G							N					
Mic 13	Mic / Line 5*	G	G	G		G								N				
Mic 14	Mic / Line 6*	G	G	G		G									N			
Mic 15	Mic / Line 7*	G	G	G		G										N		
Mic 16	Mic / Line 8*	G	G	G		G											N	

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref				
	A	B	C	D	1	2	3	4		5	6	7	8
Define EC Ref 1				X									
Define EC Ref 2													
Define G-Link EC Ref													

AP800 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																	
Program Parameter	Selection Range									Program Parameter	Selection Range								
Preset	1 - 6	2								PA Adaptive	On, Off								
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)								
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off								
Device ID No.	0 - 7									Last Mic Mode	Last On, Off or Mic 1								
Unit ID No.	Factory Programmed									Gate Ratio	0 - 50 dB (15)								
Mixer Mode	Master-Single/Linked, Slave, Dual	Master-Single								Off Attenuation	0 - 50 dB (12)								
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)								
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast								
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)								
Clear Modem Password	Enter																		
Timeout	0 - 15 (10)																		
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2				
Program Parameter	Selection Range																		
Input Gain Adjust	-20dB to 20 dB (0)																		
Subbus Attenuation	0dB to -20dB (6dB)																		
Input Type	Mic 55dB Mic 25dB Line																		
Microphone Activation	Auto, Override On/Off, Manual On/Off																		
Mute	On, Off																		
Phantom Power	On, Off																		
AGC	On, Off																		
High-Pass Filter	On, Off																		
EQ	On, Off																		
Low Band EQ	-12dB to 12 dB (0)																		
Mid Band EQ	-12dB to 12 dB (0)																		
High Band EQ	-12dB to 12 dB (0)																		
Chairman Mic	On, Off																		
Adaptive Ambient	On, Off																		
EC Reference	1, 2																		
Echo Cancellation	On, Off																		
NLP	Off, Soft, Medium, Aggressive																		
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D						
Program Parameter	Selection Range																		
Output Gain Adjust	-20dB to 20 dB (0)																		
Mute	On, Off																		
NGM	On(A-C) or Off(1 - 4, D)																		

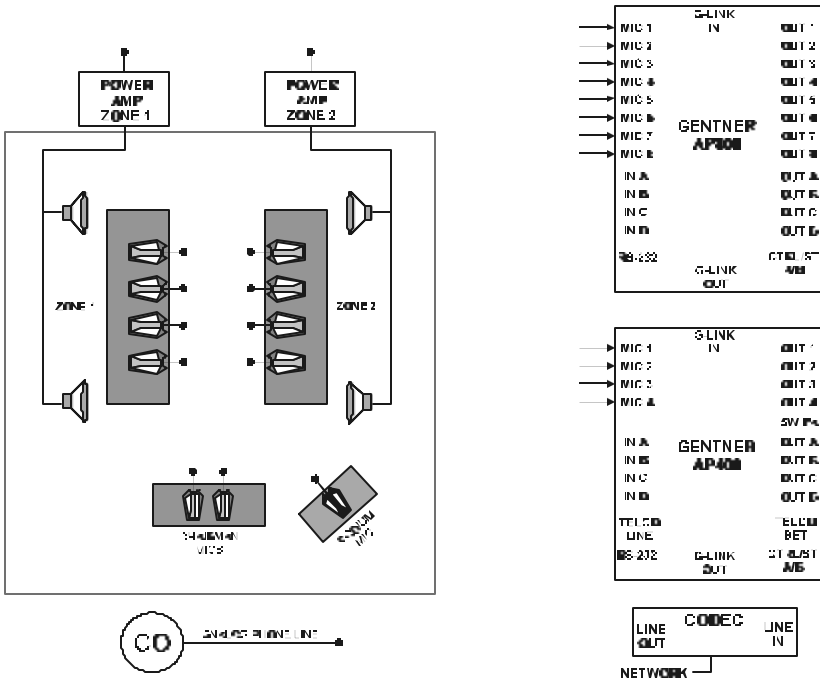
AP800 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																	
Program Parameter	Selection Range									Program Parameter	Selection Range								
Preset	1 - 6	2								PA Adaptive	On, Off								
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)								
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off								
Device ID No.	0 - 7									Last Mic Mode	Last On, Off or Mic 1								
Unit ID No.	Factory Programmed									Gate Ratio	0 - 50 dB (15)								
Mixer Mode	Master-Single/Linked, Slave, Dual	Master-Single								Off Attenuation	0 - 50 dB (12)								
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)								
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast								
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)								
Clear Modem Password	Enter																		
Timeout	0 - 15 (10)																		
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2				
Program Parameter	Selection Range																		
Input Gain Adjust	-20dB to 20 dB (0)																		
Subbus Attenuation	0dB to -20dB (6dB)																		
Input Type	Mic 55dB Mic 25dB Line																		
Microphone Activation	Auto, Override On/Off, Manual On/Off																		
Mute	On, Off																		
Phantom Power	On, Off																		
AGC	On, Off																		
High-Pass Filter	On, Off																		
EQ	On, Off																		
Low Band EQ	-12dB to 12 dB (0)																		
Mid Band EQ	-12dB to 12 dB (0)																		
High Band EQ	-12dB to 12 dB (0)																		
Chairman Mic	On, Off																		
Adaptive Ambient	On, Off																		
EC Reference	1, 2																		
Echo Cancellation	On, Off																		
NLP	Off, Soft, Medium, Aggressive																		
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D						
Program Parameter	Selection Range																		
Output Gain Adjust	-20dB to 20 dB (0)																		
Mute	On, Off																		
NGM	On(A-C) or Off(1 - 4, D)																		

Now it's your turn

- 11 microphone system
 - Two zones of sound reinforcement (table mics)
 - Two chairman mics and one podium mic that are reinforced in both zones
- Audio / Video conference system
- One AP800 and One AP400

Using a pencil, complete the following block diagram and routing matrices for this application. Utilize the defaults as much as possible to minimize routing changes.



Routing Matrix for AP800 Device ID 10

Routing Matrix Setup		Outputs				G-Link			Sub-bus		Outputs							
		A	B	C	D	X	Y	Z	S1	S2	1	2	3	4	5	6	7	8
From Codec Receive	Input A		X	X	X	X												
From AP10 Receive	Input B	X		X	X		X											
	Input C	X	X		X			X										
	Input D	X	X	X	X		X											
Mic Inputs From Other AP's	G-Link X Bus	X	X	X														
Line Inputs From Other AP's	G-Link Y Bus	X	X	X	X													
	G-Link Z Bus																	
	Sub-bus S1 In																	
	Sub-bus S2 In																	
Mic 1	Mic / Line 1*	G	G	G		G					N							
Mic 2	Mic / Line 2*	G	G	G		G					N							
Mic 3	Mic / Line 3*	G	G	G		G						N						
Mic 4	Mic / Line 4*	G	G	G		G							N					
Mic 5	Mic / Line 5*	G	G	G		G								N				
Mic 6	Mic / Line 6*	G	G	G		G									N			
Mic 7	Mic / Line 7*	G	G	G		G										N		
Mic 8	Mic / Line 8*	G	G	G		G											N	

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs								G-Link EC Ref
	A	B	C	D	1	2	3	4	
Define EC Ref 1				X					
Define EC Ref 2									
Define G-Link EC Ref									

Routing Matrix for AP400 Device ID 30

Routing Matrix Setup		Outputs				G-Link			Sub bus	Outputs			
		A	B	C	D	Telco	X	Y		Z	1	2	3
From Codec Receive	Input A		X	X	X	X		X					
	Input B	X		X	X	X		X					
	Input C	X	X		X	X		X					
	Input D	X	X	X	X	X		X					
From Telco Receive	Telco Receive	X	X	X	X			X					
Mic Inputs From Other AP's	G-Link X Bus	X	X	X									
Line Inputs From Other AP's	G-Link Y Bus	X	X	X	X								
	G-Link Z Bus												
	Sub-bus												
Mic 1	Mic / Line 1*	G	G	G		G	G				N		
Mic 2	Mic / Line 2*	G	G	G		G	G					N	
Mic 3	Mic / Line 3*	G	G	G		G	G						N
Mic 4	Mic / Line 4*	G	G	G		G	G						N

* G = Gated N = Non-Gated

Echo Cancellation Setup	Outputs				Outputs				G-Link EC Ref
	A	B	C	D	1	2	3	4	
Define EC Ref & PA (Speaker Output)				X					
Define G-Link EC Ref									

AP800 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																	
Program Parameter	Selection Range									Program Parameter	Selection Range								
Preset	1 - 6									PA Adaptive	On, Off								
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)								
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off								
Device ID No.	0 - 7									Last Mic Mode	Last On, Off or Mic 1								
Unit ID No.	Factory Programmed									Gate Ratio	0 - 50 dB (15)								
Mixer Mode	Master-Single/Linked, Slave, Dual									Off Attenuation	0 - 50 dB (12)								
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)								
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast								
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)								
Clear Modem Password	Enter																		
Timeout	0 - 15 (10)																		
Input Channel		1	2	3	4	5	6	7	8	A	B	C	D	S1	S2				
Program Parameter	Selection Range																		
Input Gain Adjust	-20dB to 20 dB (0)																		
Subbus Attenuation	0dB to -20dB (6dB)																		
Input Type	Mic 55dB, Mic 25dB, Line																		
Microphone Activation	Auto, Override On/Off, Manual On/Off																		
Mute	On, Off																		
Phantom Power	On, Off																		
AGC	On, Off																		
High-Pass Filter	On, Off																		
EQ	On, Off																		
Low Band EQ	-12dB to 12 dB (0)																		
Mid Band EQ	-12dB to 12 dB (0)																		
High Band EQ	-12dB to 12 dB (0)																		
Chairman Mic	On, Off																		
Adaptive Ambient	On, Off																		
EC Reference	1, 2																		
Echo Cancellation	On, Off																		
NLP	Off, Soft, Medium, Aggressive																		
Output Channel		1	2	3	4	5	6	7	8	A	B	C	D						
Program Parameter	Selection Range																		
Output Gain Adjust	-20dB to 20 dB (0)																		
Mute	On, Off																		
NOM	On (A-C) or Off (1 - 4, D)																		

AP400 Parameters Worksheet

System Wide Parameters		Auto Mix Parameters																	
Program Parameter	Selection Range									Program Parameter	Selection Range								
Preset	1 - 6									PA Adaptive	On, Off								
Lock Front Panel	On, Off									Maximum No. of Mics	Off, 1-8 (4)								
Set Passcode	Any 5 Front Panel Keys									First Mic Priority	On, Off								
Device ID No.	0 - 7									Last Mic Mode	Last On, Off, or Mic 1								
Unit ID No.	Factory Programmed									Gate Ratio	0 - 50 dB (15)								
Mixer Mode	Master-Single /Linked, Slave									Off Attenuation	0 - 50 dB (12)								
RS232 Baud Rate	9.6, 19.2, 38.4 kbps									Hold Time	.1 - 8.0 seconds (.3)								
RS232 Flow Control	On, Off									Decay Rate	Slow, Medium, Fast								
Modem Mode	On, Off									Manual Ambient	0dB to -70dB (-30)								
Clear Modem Password	Enter																		
Timeout	0 - 15 (10)																		
Auto Answer	On, Off																		
Auto Disconnect	Off, Loop Drop, Call Prog, LD + CP																		
*Telco Adapt Mode	Auto, Burst																		
*Hook Duration	50 ms 500 ms																		
*Receive Reduction	On, Off																		
Input Channel		1	2	3	4	A	B	C	D	Telco	S1								
Program Parameter	Selection Range																		
Input Gain Adjust	-20dB to 20 dB (0)																		
Subbus Attenuation	0dB to -20dB (-6dB)																		
Input Type	Mic 55dB, Mic 25dB, Line																		
Microphone Activation	Auto, Override On/Off, Manual On/Off																		
Mute	On, Off																		
Phantom Power	On, Off																		
AGC	On, Off																		
High-Pass Filter	On, Off																		
EQ	On, Off																		
*Low Band EQ	-12dB to 12 dB (0)																		
*Mid Band EQ	-12dB to 12 dB (0)																		
*High Band EQ	-12dB to 12 dB (0)																		
Chairman Mic	On, Off																		
Adaptive Ambient	On, Off																		
Echo Cancellation	On, Off																		
NLP	Off, Soft, Medium, Aggressive																		
Output Channel		1	2	3	4	A	B	C	D	Telco	S1								
Program Parameter	Selection Range																		
Output Gain Adjust	-20dB to 20 dB (0)																		
Mute	On, Off																		
NOM	On (A - C, Telco) or Off (1 - 4, D)																		

Q & A