

Appendix A:

Specifications

Microphone Preamplifiers:

Source Impedance: 150 ohms
Input Impedance: 4 k ohms minimum, balanced
Nominal Level Range: Adjustable, -75 dBu to -20 dBu
Input Headroom: >20 dB above nominal input
Output Level: +4 dBu, nominal

Analog Line Inputs:

Input Impedance: 20 k Ohms
Nominal Level Range: Selectable, +4 dBu or -10dBv
Input Headroom: 20 dB above nominal input

Analog Line Outputs:

Output Source Impedance: <50 ohms balanced
Output Load Impedance: 600 ohms, minimum
Nominal Output Level: +4 dBu
Maximum Output Level: +24 dBu

Digital Audio Inputs and Outputs:

Reference Level: +4 dBu (-20 dB FSD)
Impedance: 110 Ohm, balanced (XLR)
Signal Format: AES-3 (AES/EBU)
AES-3 Input Compliance: 24-bit with selectable sample rate conversion, 20 kHz to 216kHz input sample rate capable.
AES-3 Output Compliance: 24-bit
Digital Reference: Internal (network timebase) or external reference 48 kHz, +/- 2 ppm
Internal Sampling Rate: 48 kHz
Output Sample Rate: 48 kHz
A/D Conversions: 24-bit, Delta-Sigma, 256x oversampling
D/A Conversions: 24-bit, Delta-Sigma, 256x oversampling
Latency <3 ms, mic in to monitor out, including network and processor loop

Frequency Response:

Any input to any output: +0.5 / -0.5 dB, 20 Hz to 20 kHz

Dynamic Range

Analog Input to Analog Output: 102 dB referenced to 0 dBFS, 105 dB "A" weighted to 0 dBFS
Analog Input to Digital Output: 105 dB referenced to 0 dBFS
Digital Input to Analog Output: 103 dB referenced to 0 dBFS, 106 dB "A" weighted
Digital Input to Digital Output: 125 dB

Equivalent Input Noise

Microphone Preamp: -128 dBu, 150 ohm source, reference -50 dBu input level

Total Harmonic Distortion + Noise

Mic Pre Input to Analog Line Output: <0.005%, 1 kHz, -38 dBu input, +18 dBu output
Analog Input to Analog Output: <0.008%, 1 kHz, +18 dBu input, +18 dBu output
Digital Input to Digital Output: <0.0003%, 1 kHz, -20 dBFS
Digital Input to Analog Output: <0.005%, 1 kHz, -6 dBFS input, +18 dBu output

Crosstalk Isolation, Stereo Separation and CMRR

Analog Line channel to channel isolation: 90 dB isolation minimum, 20 Hz to 20 kHz
Microphone channel to channel isolation: 80 dB isolation minimum, 20 Hz to 20 kHz
Analog Line Stereo separation: 85 dB isolation minimum, 20Hz to 20 kHz
Analog Line Input CMRR: >60 dB, 20 Hz to 20 kHz
Microphone Input CMRR: >55 dB, 20 Hz to 20 kHz

Power Supply AC Input, iQ Core with

iQ Console

Auto-ranging supply, 90VAC to 240VAC, 50 Hz to 60 Hz, IEC receptacle, internal fuse
Power consumption: 100 Watts

Operating Temperatures

-10 degrees C to +40 degrees C, <90% humidity, no condensation

Dimensions

DESQ

W 15.31in (388.85 cm), H 15.30 in (388.72 cm), D 2.79 in (57.15 cm)

RAQ

W 19.0 in (48 cm), H 3RU, 6.97 in (177.0 cm), D 2.54 in (64.50 cm)

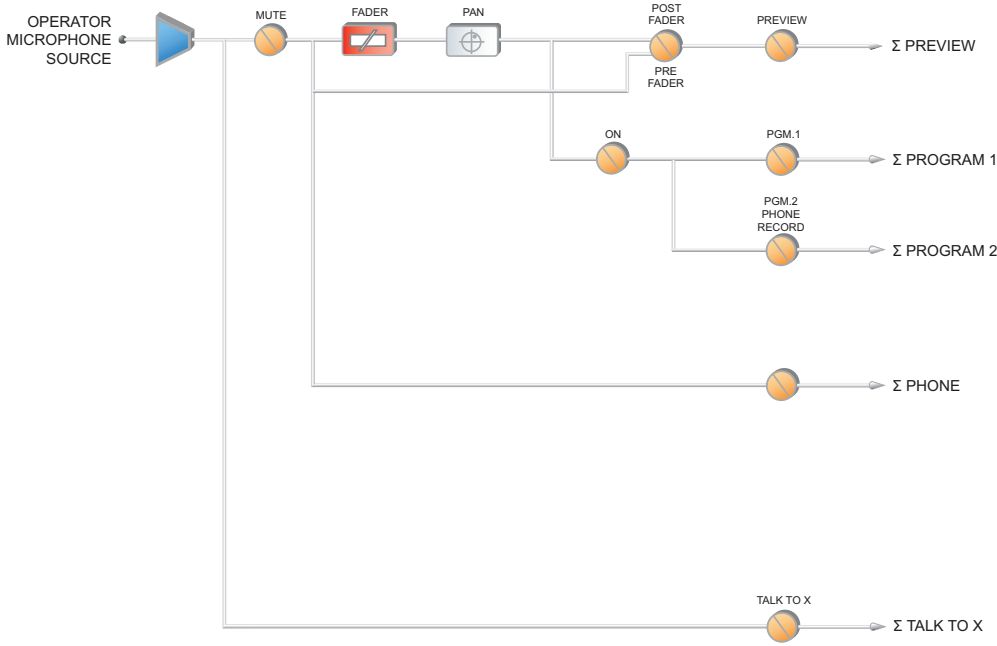
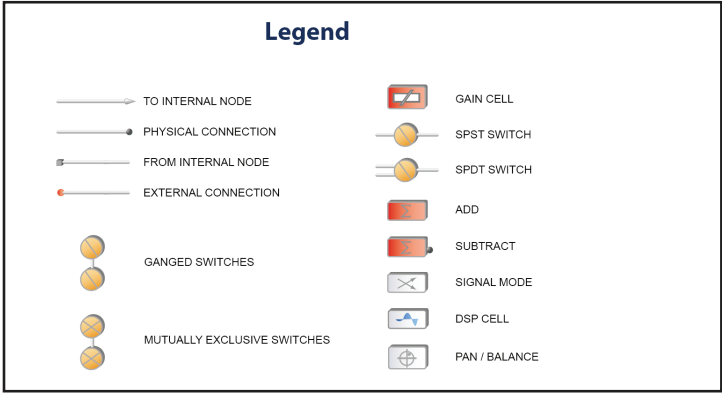
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W 19 in (48 cm), H 2 RU, 3.47 in (8.80 cm), D 8.45 in (21.46 cm)

Table of Inputs and Outputs

<u>Main Outputs</u>	<u>Type</u>	<u>Comments</u>
Program 1	Stereo	Main stereo bus (Usually referred to as Program)
Program 2	Stereo	Second stereo bus (Sometimes referred to as Audition)
V-Mixer	Stereo	Stereo Submix - sum of one stereo source
V-Mode	Stereo	Used for processing MONO sources and creation of MONO streams
<u>Monitor-related Outputs</u>		
<u>Type</u>	<u>Comments</u>	
CR Monitor	Stereo	Control room monitor speakers, source and level controlled by Monitor 1 control
CR Headphone	Stereo	Control room (board op) headphone, source and level controlled by headphone
Preview	Stereo	Allows the connection and level control of external powered speakers.
Talk to External	Mono	Allows board operator mic to talk to other devices, a logic command is associated
Talk to CR Audio	Mono	Allows the Talk to CR audio mix to drive an external destination
<u>Monitor-related Inputs</u>		
<u>Type</u>	<u>Comments</u>	
External Preview Input	Stereo	Allows an external path into the preview speakers, a logic command is associated
External Monitor Input 1	Stereo	Allows an external source to be monitored by CR or studio selectors
External Monitor Input 2	Stereo	Allows an external source to be monitored by CR or studio selectors
<u>Source Inputs</u>		
<u>Type</u>	<u>Comments</u>	
Microphone Input <i>n</i>	Mono	Typical installations have 2 microphone sources per studio
<u>Source-related Outputs</u>		
<u>Type</u>	<u>Comments</u>	
Feed-to-Source A <i>n</i>	Mono	Mono mix-minus output feeds the left side of a stereo connection. "Talk to..." function enabled.
Feed-to-Source B <i>n</i>	Mono	Mono mix-minus output feeds the right side of a stereo connection. "Talk to..." function disabled.

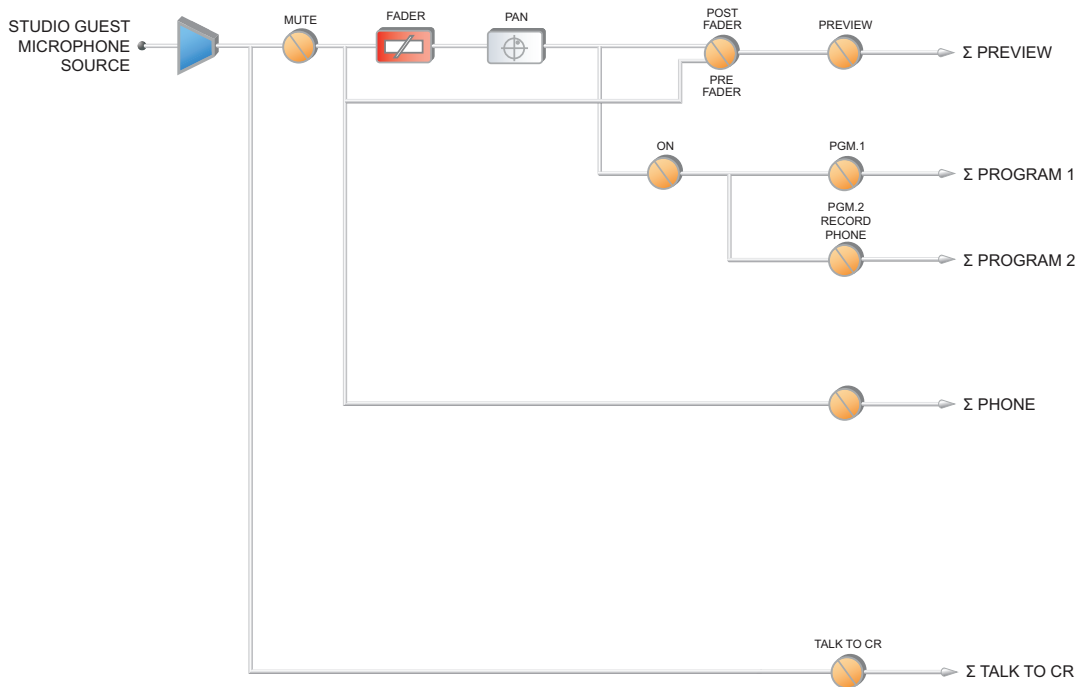
Appendix B: Block Diagrams



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Figure B-1 Block Diagram - Operator Microphone

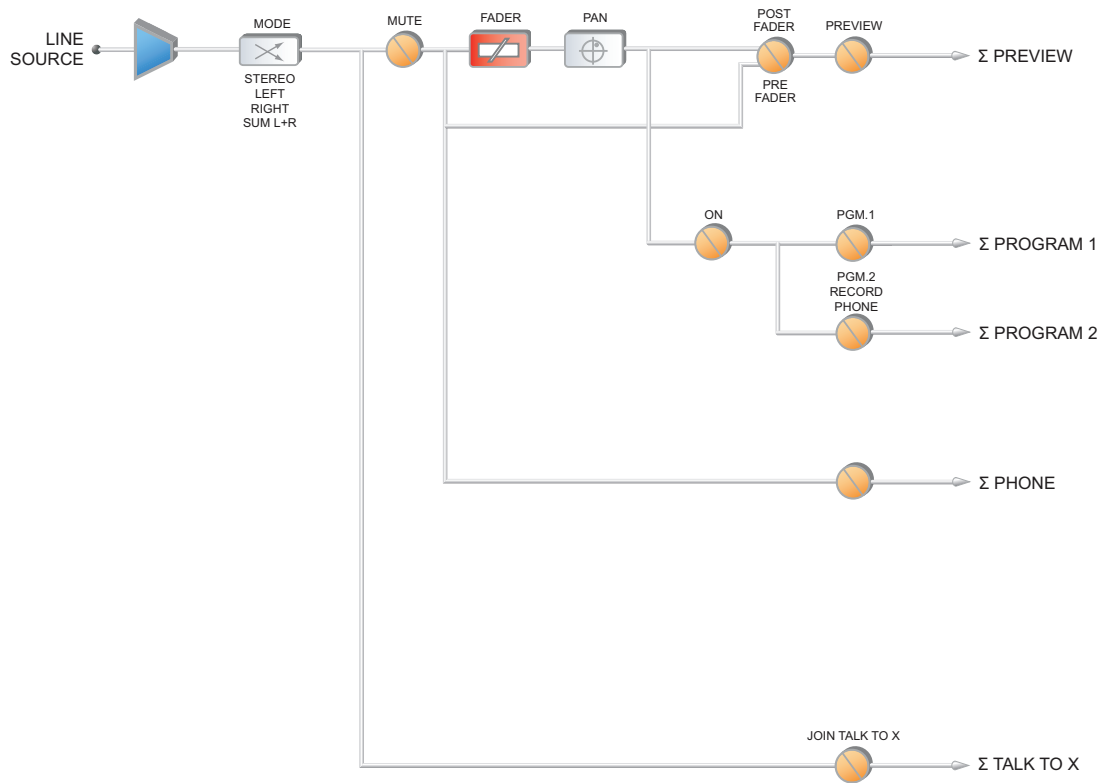
Block Diagrams



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Figure B-2 Block Diagram - Guest Microphone

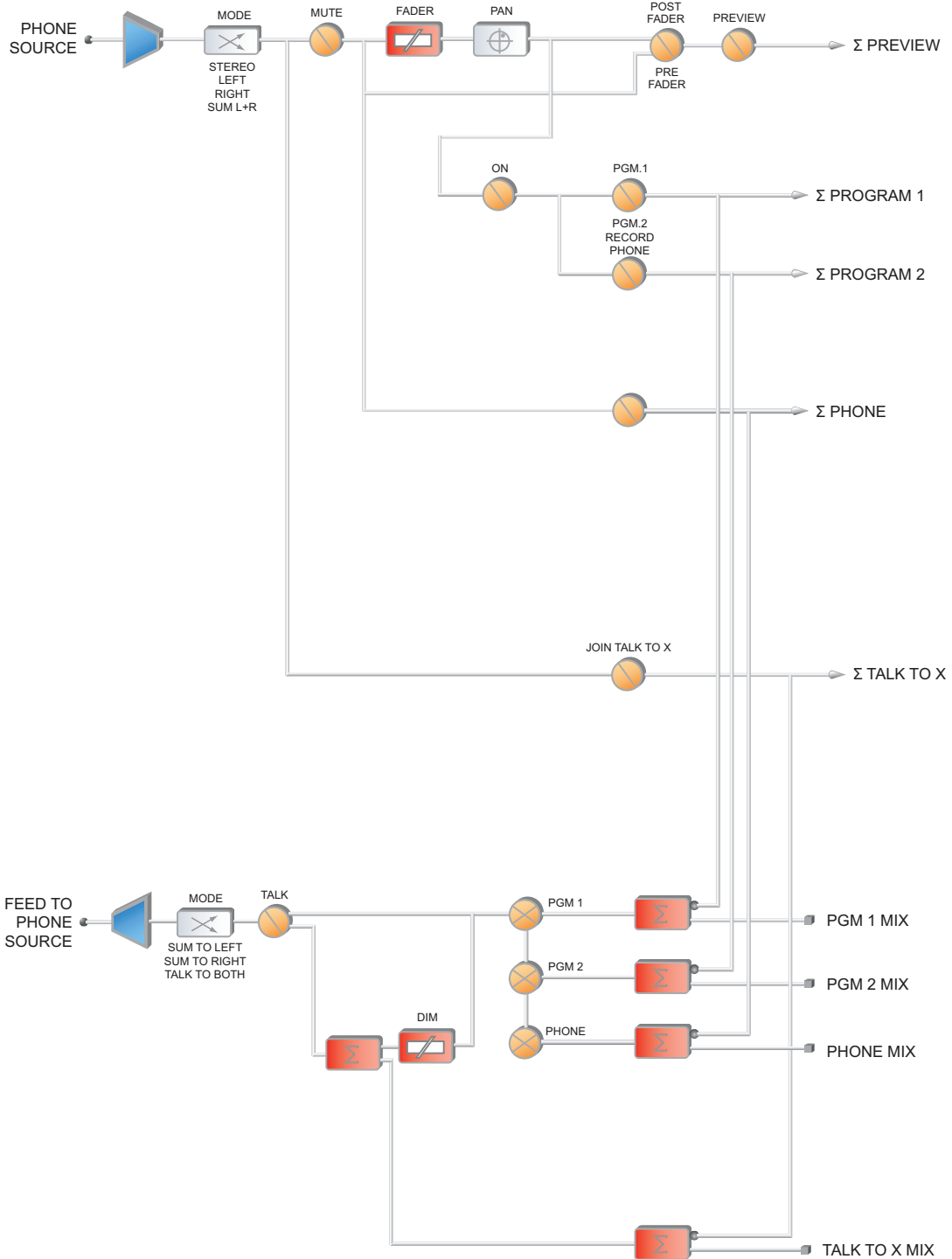
Block Diagrams



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Figure B-3 Block Diagram - Line Source

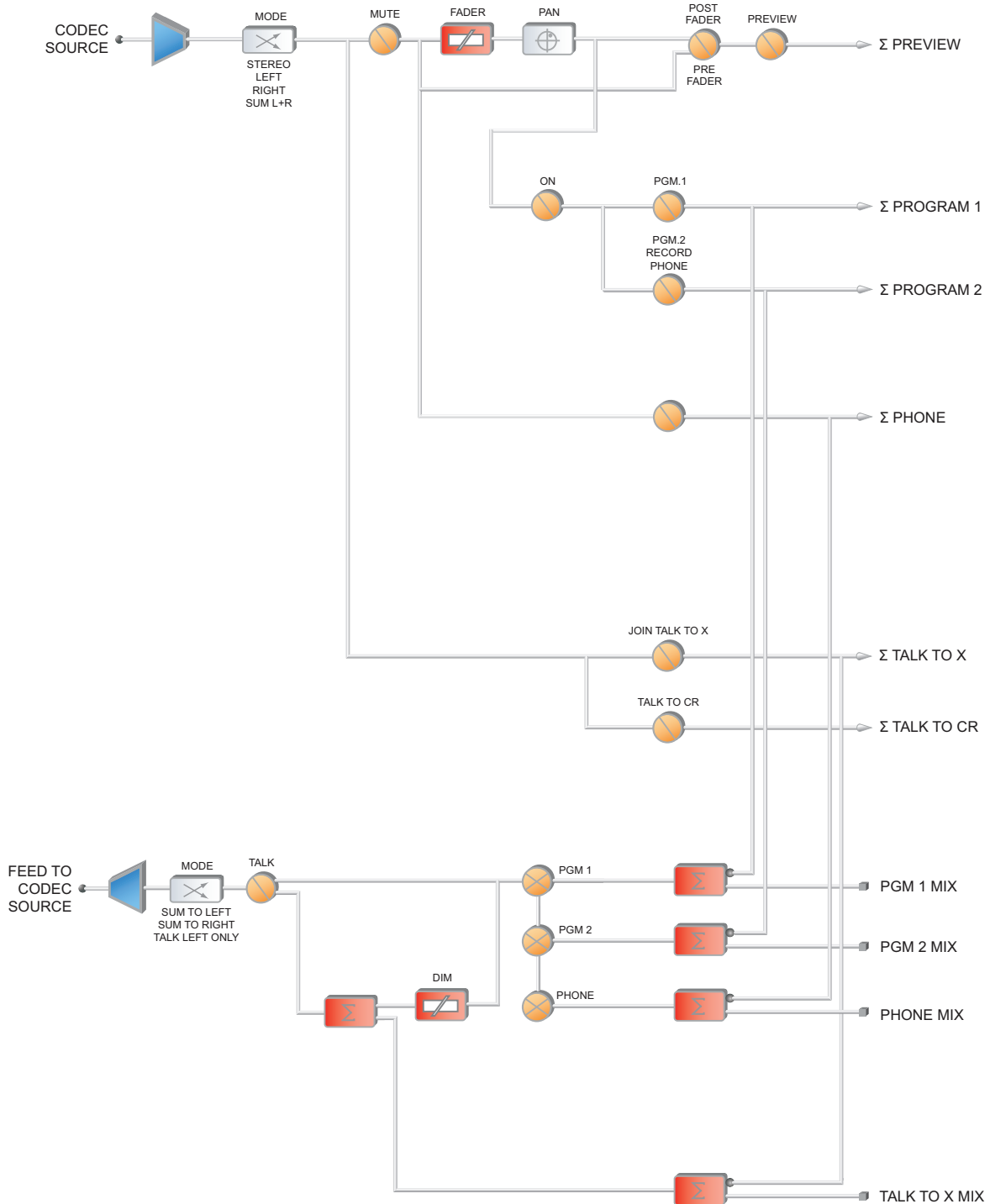
Block Diagrams



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Figure B-4 Block Diagram - Phone Source

Block Diagrams



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Figure B-5 Block Diagram - Codec Source

Block Diagrams

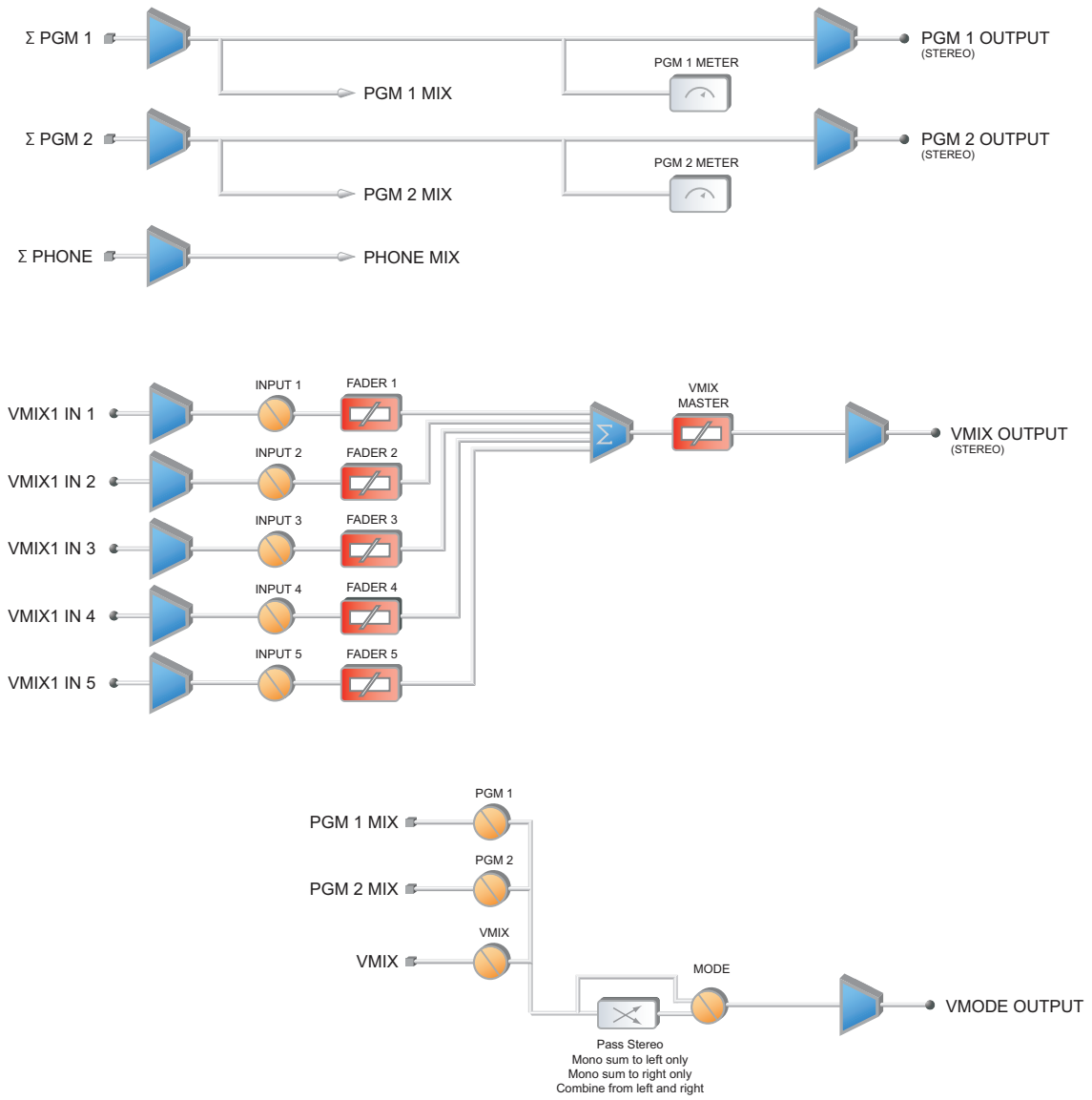
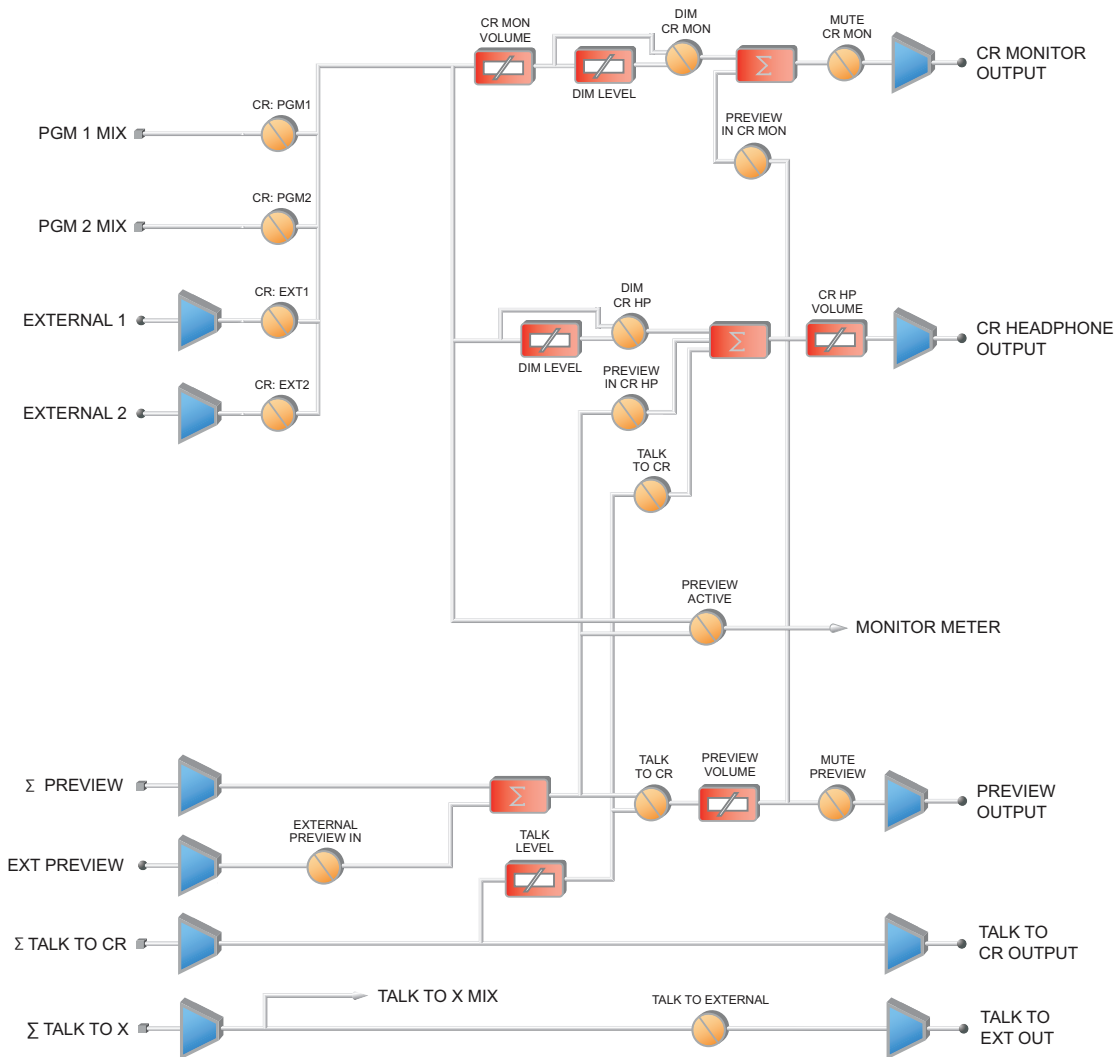


Figure B-6 Block Diagram - Master Output

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Block Diagrams



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Figure B-7 Block Diagram - Monitor Output