



QSC's Digital Cinema Monitors provide signal processing and monitor functions in a single integrated system. Designed to be used with QSC's Digital Cinema Amplifiers (DCAs), DCMs optimize loudspeaker performance while simplifying cinema sound system wiring and configuration. The DCM-10, DCM-10D, DCM-30 and DCM-30D cover cinema systems ranging from three to five screen channels, and are configurable for bi-amp, tri-amp or quad-amp operation. DCMs are also compatible with all cinema processor formats including Dolby Digital Surround-EX and DTS-ES.

Digital Signal Processing

The DCM's digital signal processing capability outperforms traditional analog crossovers for optimized speaker performance. Crossover frequency, parametric equalization, polarity and gain can be precisely adjusted for each speaker in your system. Digital delays, adjustable in 20 μ s increments, assure proper acoustical time-alignment of loudspeaker drivers for smooth frequency response, especially critical in 3-way and 4-way systems. An active emergency bypass crossover with redundant power supply is also included for fail-safe operation.

Less wiring, faster setup

DCMs greatly simplify system wiring and set-up, significantly reducing installation time and labor cost. Input to the DCM is provided via a standard DB-25 cable from the cinema processor. Connections to DCA amplifiers for input and monitor signals are made through a single QSC DataPort/VGA-style cable. All traditional XLR and barrier strip terminations are eliminated.

DCMs also simplify set-up by using a menu-driven, PC-based software program for configuration. The program includes a speaker data file that lists default parameters for popular cinema speaker models. Commonly used configurations can also be saved on a disk, allowing you to quickly load them on other DCMs.

Advanced Monitor Functions

In addition to audio monitoring of amplifier inputs and outputs, DCMs include QSC's exclusive "load fault" detection. DCMs monitor all amplifier outputs and indicate opens and shorts in the speaker system and wiring via LED "load fault" indicators, providing confirmation that all amplifier outputs are functioning properly.

Features

- Real-time software control via USB
- Bi-amp, tri-amp and quad-amp configuration
- Analog inputs or AES/EBU (D models)
- User defined auxiliary outputs
- Provides Monitor and Crossover functions in one box
- Digital Signal Processing for state-of-the-art sound quality (high dynamic range)
- Fast system setup time (especially in megaplexes with similar rooms)
- Simple connections with QSC DataPort connectivity. Only one cable per amplifier needed (contains two signal inputs, two signal returns, power on/standby control and two channels of load monitoring)
- Exclusive "Load Fault" detection indicates speaker system or wiring faults
- Simple crossover adjustments via PC with password control for tamper proof system adjustments
- Lower system cost than existing quad-amp solutions
- Compatible with all current sound formats; 3-5 screen channels, 5.1 - 7.1
- 3-year warranty plus optional 3-year extended service contract

Dimensions (HWD): 5.25" x 19" x 15"
 Line Voltage Requirements: 100 VAC – 240 VAC, 50/60 Hz
 Accessories Included: (1) 6 ft. (2m) UL/CSA line cord • (1) User Manual
 (1) Software CD

Front Panel Controls

Power Switch: (1) Rocker Switch
 Monitor Mode Select: (1) Momentary Push Button
 Monitor Channel Select: (9 or 11) Momentary Push Buttons
 Monitor Volume: (1) Rotary Potentiometer
 Test Lead Connections: (2) Test Point Jacks
 Bypass Mode Select Switch: (1) Slide Switch

Indicators

Power Indicator: (1) Green LED
 Monitor Mode Indicators: (1) Green LED and (1) Yellow LED
 Processor Channel Indicators: (9 or 11) Green LEDs
 Amplifier Channel Indicators: (9 or 11) Yellow LEDs
 Load Fault Indicator: (1) Red LED
 Clip Indicator: (1) Red LED
 Bypass Mode Indicator: (1) Flashing Red LED
 Alt EQ Mode Indicator: (1) Yellow LED

Rear Panel Controls

Bypass Crossover Level: (2 or 3) Rotary Trimpots
 Bypass Crossover Type: (1) Slide Switch
 Analog/Digital Input Select: (1) Slide Switch
 (D models only)

Rear Panel Control Connectors

Main Analog Input: (1) 25-pin female D-sub connector
 Surround EX Input: (1) 25-pin female D-sub connector
 Digital Input (D models only): (1) 25-pin female D-sub connector
 Amplifier DataPorts: (10 or 19) 15-pin female high-density D-sub connectors
 Control Port: (1) USB Series-B Receptacle
 Hearing Impaired Line Output: (1) 3 position screw-terminal connector
 Powered Sub Line Output: (1) 3 position screw-terminal connector
 External Monitor Speaker Output: (1) 2 position screw-terminal connector
 Aux Line Level Input: (1) 3 position screw-terminal connector
 Alt EQ Contact Closure Input: (1) 2 position screw-terminal connector
 AC Power Inlet: (1) IEC style

DCM Inputs

Input Stage Type: Active balanced
 Input Impedance: 20k ohms
 Maximum Analog Input Level: +14.2 dBu (4.0 Vrms)
 A/D Conversion: 24 bit delta-sigma 128x oversampled

Dataport Outputs - Screen Channels

Output Level Range: +6 dB to -18 dB in 0.1 dB steps
 Dynamic Range: >103 dB
 THD+N, AES-17, 20Hz – 20kHz, +12 dBuInput Level, All Filters
 Set Flat: < 0.013% Analog Inputs / < 0.008% Digital Inputs
 Frequency Response: 20 Hz – 20 kHz (no filtering)
 D/A Conversion: 24 bit delta-sigma 128x oversampled
 Filter Topology: 24 bit digital IIR filters
 Crossover Filters: Linkwitz-Riley 24 dB/octave digital filters programmable from 20 Hz – 20 kHz
 Parametric EQ: (3 per channel + 3 per band) Digital bandpass filter with ±10 dB of boost/cut programmable from 20 Hz – 20 kHz. Q is programmable in 1/10th octave steps from 1/10 to 2 octaves
 CD Horn EQ: Digital shelf filter with up to 6 dB of boost programmable from 1 kHz – 20 kHz. Available on high-frequency band only
 Screen EQ: Digital shelf with up to 6 dB of boost programmable from 1 kHz – 20 kHz
 Subsonic (highpass) filter: Digital high pass filter programmable from 15 Hz – 50 Hz. Q can be programmed as 0.707 (flat) or 2 (B6 boost)
 Allpass Filter: 2nd order allpass filter programmable from 20 Hz – 2000 Hz (dual low band output only)
 Channel Delay: Programmable in 1ms steps from 0 – 20 ms
 Band Delay: Programmable in 21 μs steps from 0 – 10 ms per band
 Band Polarity: Normal, Inverted
 Mute: Individual mutes on each channel and band output

Specifications subject to change without notice.

Dataport Outputs - Surround and Subwoofer

Output Level Range: +6 dB to -18 dB in 0.1 dB steps
 Dynamic Range: >103 dB
 THD+N, AES-17, 20Hz – 20kHz, +12 dBuInput Level, All Filters
 Set Flat: < 0.013% Analog Inputs / < 0.008% Digital Inputs
 Frequency Response: 20 Hz – 20 kHz (no filtering)
 D/A Conversion: 24 bit delta-sigma 128x oversampled
 Filter Topology: 24 bit digital IIR filters
 Parametric EQ (2 per channel): Digital bandpass filter with ±10 dB of boost/cut programmable from 20 Hz to 20 kHz. Q is programmable in 1/10th octave steps from 1/10 to 2 octaves
 Subsonic (highpass) Filter: Digital high pass filter programmable from 15 Hz – 50 Hz. Q can be programmed as 0.707 (flat) or 2 (B6 boost)
 Channel Delay: Programmable from 0 – 150 ms per output (surrounds only)
 Mute: One mute for all subwoofer outputs, one per surround channel
 Bass Management: Weighted sum of screen channels may be low pass filtered and mixed with sub output

DataPort Outputs - Aux

Output Level Range: +6 dB to -18 dB in 0.1 dB steps
 Dynamic Range: >103 dB
 THD+N, AES-17, 20Hz-20kHz, +12 dBuInput Level, All Filters
 Set Flat: < 0.013% Analog Inputs / < 0.008% Digital Inputs
 Frequency Response: 20 Hz – 20 kHz (no filtering)
 D/A Conversion: 24 bit delta-sigma 128x oversampled
 Filter Topology: 24 bit digital IIR filters
 Crossover Filters: Linkwitz-Riley 24 dB/octave digital filters programmable from 20 Hz – 20 kHz
 Parametric EQ: (3 per channel + 3 per band) Digital bandpass filter with ±10 dB of boost/cut programmable from 20 Hz – 20 kHz. Q is programmable in 1/10th octave steps from 1/10 to 2 octaves
 Subsonic (highpass) Filter: Digital high pass filter programmable from 15 Hz – 50 Hz. Q can be programmed as 0.707 (flat) or 2 (B6 boost)
 CD Horn EQ: Digital shelf filter with up to 6 dB of boost programmable from 1kHz – 20 kHz. Available on high frequency band only
 Screen EQ: Digital shelf with up to 6 dB of boost programmable from 1 kHz – 20 kHz
 Channel Delay: Programmable from 0 – 20 ms per output
 Band Delay: Programmable in 21 μs steps from 0 – 10 ms per output
 Mute: Individual mutes on each channel output
 Surround Bass Management: Weighted sum of surround channels may be low pass filtered and mixed with aux output
 All amps power on with DCM activation

Amplifier A.C. Control

Emergency Bypass Crossover

Filter Type: 2nd order active Butterworth, 2 or 3 way
 Attenuation Range (trimpot): 0 dB to -20 dB
 Crossover Frequencies: 1000 Hz (2-way), 500 Hz and 1500 Hz (3-way)

Powered Subwoofer Output

Output Stage Type: Single ended (balanced impedance)
 Output Impedance: 50 ohms
 Maximum Output Level: +14.8 dBu (6Vp = 4.25 Vrms)
 Loading Requirements: $R_{MIN} = 2k\ \Omega$ $C_{MAX} = 4\ nF$
 (total of remote & dataport connection)

Monitor Speaker Output

Amplifier Output Power: 15 watt Class D amplifier
 Frequency Response: 20 Hz – 20 kHz (±2 dB)
 Dynamic Processing: 1.5:1 Compression

Aux Input

Input Stage Type: Active Balanced
 Input Impedance: 20k ohms
 Maximum Input Level: +14.2 dBu (4.0 Vrms)

Hearing Impaired Output

Output Stage Type: Single Ended (balanced impedance)
 Output Impedance: 50 ohms
 Nominal Output Level: -11.8 dBu (200 mVrms)
 Loading Requirements: $R_{MIN} = 2k\ \Omega$ $C_{MAX} = 4\ nF$

Contact Closure Input

Input Type: TTL Compatible or Dry Contact Closure
 Operating Mode: Connection to ground through a maximum impedance of 1.3 k ohms selects alt EQ settings

Internal Monitor Speaker

Dimensions: 4" full range driver