



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  $\mu$ 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: (D models only)	(1) Slide Switch

**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 $\pm 10$ 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 $\mu$ s 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 $\pm 10$ 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 $\pm 10$ 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 $\mu$ s 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

**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: (total of remote & dataport connection)	$R_{MIN} = 2k$ ohms $C_{MAX} = 4$ nF

**Monitor Speaker Output**

Amplifier Output Power:	15 watt Class D amplifier
Frequency Response:	20 Hz – 20 kHz ( $\pm 2$ 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:	$R_{MIN} = 2k$ ohms $C_{MAX} = 4$ 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
-------------	----------------------