



Spectra

C and T Series Consoles

APB-DynaSonics introduces the next generation of live performance analog consoles. With over 70 years of combined console design experience, the engineers of APB-DynaSonics, located in Totowa, New Jersey (USA), have tailored a console series designed to meet the demanding needs of both the Sound Contracting and Touring communities. With an emphasis on audio quality, reliability and value, Spectra is loaded with desirable features such as VCA control of both inputs and outputs, mono/stereo/3 speaker LCR monitoring and inserts on all primary outputs, including auxes and matrixes. The master VCA output fader can simultaneously control the levels of left / right, center, mono and any of the four (4) matrix outputs. APB-DynaSonics has taken a fresh approach to live performance analog console design. Check Spectra out for yourself and you will instantly see the APB-DynaSonics advantage.

- 8 VCA groups for channel level control plus a separate output VCA master.
- High quality Burr-Brown ICs used in the mic preamp stage.
- THAT Corp VCA elements used in all gain-control circuits.
- 10 Auxiliary mixes All Auxes are selectable pre eq/post eq/post fader. Additionally, Aux Pairs 5-6, 7-8 and 9-10 are each selectable pre/post fader and switchable between mono or stereo operation. Spectra-C and Spectra-T may be operated as a FOH or Monitor Console.
- All Aux Master Outputs feature 100mm faders, plus solo, mute, polarity reverse, pre/post matrix send, and talkback preset switches. Auxiliary outputs are XLR Balanced and have pre fader inserts.
- Variable high pass filter (20Hz to 400Hz at 12dB per Oct) on mono input channels. A fixed frequency high pass filter (80Hz at 18dB per Oct) is provided on Stereo input channels.
- Spectra-T mono EQ = 4-Band Sweep EQ with Switchable bandwidths and +/-15dB range.
- Spectra-C mono EQ = 4-Band with HF/LF switchable in frequency and 2 overlapping mid-sweep EQ bands with +/-15dB range.
- Master Mix outputs adaptable to many uses and controllable from a single master VCA fader:
Left/Right, Center, Mono, and LCR input channel assignment. LCR assignment configures the pan control across Left, Center, and Right mix buses bypassing the L/R and Center assignment switches. Mono bus may be used as an additional auxiliary, matrix, sub or surround mix as can the Center mix bus. An additional use for Center and Mono bus operating together is for the generation of discrete A/B vocal mixes where each bus feeds a separate set of matching loudspeakers while L/R provides a separate orchestra mix. Any of the four master outputs are available as Alt Outputs (pre or post master level) or as part of the 15 x 4 Matrix System (which may be put under master VCA control). A discrete sub-woofer output may be derived by directly assigning to the Mono mix or through an Aux bus reassigned to the Mono mix bus and controlled as part of the house mix from the master VCA fader.
- Available with 24, 32, 40, 48 and 56 mono input channels plus a 24 input expander frame. All versions (except expander) include 4 additional line input channels that may be operated in Stereo, Dual Mono, or Split Track mode. An optional redundant power supply is available for all Spectra models.
- 3 Year Transferable U.S. Warranty (1 Year plus 2 additional years with U.S. warranty registration).

SPECTRA MONO INPUT CHANNELS

The mono input channel uses a Mic/Line switch to choose between microphone and line level input signals. If a connector is plugged into the provided XLR and 1/4" connectors, the Mic position of the switch selects the XLR connector at microphone level (a separate microphone pad switch is also provided) while the line input position of this switch selects the 1/4" connector at line level. If nothing is plugged into the 1/4" connector, the mic/line switch will optimize the XLR connector for use as a microphone or line input. The input section also includes a 48-Volt Phantom Power switch (with LED) and a polarity reverse switch. The signal for the direct output connector is selected using a front panel post-fader/pre-source switch. Internal jumpers select the pre-source as pre high pass filter (default), post-insert or pre-fader.

A continuously variable high pass filter (20Hz-400Hz) at a 12dB per octave slope is provided on all mono input channels. A High Pass filter ON switch is provided with LED.

Spectra-T incorporates 4-band sweepable EQ. An EQ ON switch is provided with LED.

HF band is sweepable from 800Hz to 16 kHz and switchable between shelving and asymmetrical bell with a 2/3 octave bandwidth in boost mode and 1/4 octave bandwidth in cut mode.

HMF band is sweepable from 400Hz to 8 kHz and switchable between 1 octave and 1/3 octave.

LMF band is sweepable from 100Hz to 2 kHz and switchable between 1 octave and 1/3 octave.

LF band is sweepable from 20Hz to 400Hz and switchable between shelving and asymmetrical bell with a 2/3 octave bandwidth in boost mode and 1/4 octave bandwidth in cut mode.

An Insert ON switch with LED is provided on Spectra-T consoles. All features other than the EQ are identical between Spectra-C and Spectra-T consoles.

Spectra-C incorporates a four band EQ. An EQ ON switch is provided with LED.

HF is switchable between 8 kHz and 12 kHz shelving.

HMF is sweepable from 400Hz to 8 kHz with a 1 octave bandwidth.

LMF is sweepable from 100Hz to 2 kHz with a 1 octave bandwidth.

LF is switchable between 60Hz and 120Hz shelving.

A total of 10 Aux buses are provided. The aux sends are divided into two sections:

The four Aux 1-4 level controls have a common post-fader/pre-source switch. In the pre-source position, an additional front panel switch selects the signal source as pre-fader or pre-EQ. Internal jumpers determine the pre-EQ point as post-insert (default), pre-insert or pre-HPF.

Individual level controls are provided to Aux buses 5 through 10. These are grouped in pairs with each pair having a post-fader/pre-source switch, with an additional switch to select mono or stereo operation. When in stereo mode, the upper knob becomes the pan control to the odd and even buses while the lower knob controls the level of the stereo pair. Auxes 5 thru 10 can be configured for up to 3 stereo mixes for use with stereo ear monitors or effect devices. An additional switch is provided for selecting the pre-source signal for all 6 auxes; it operates like the pre-source switch for Auxes 1-4.

In addition to their use as a conventional aux send, any of the auxiliary buses may be used to feed an adjustable sub-woofer signal into the output section of the console with its signal controllable by a common master output fader, maintaining balance between the primary output signal and the sub-woofer signal.

Switches are provided for channel assignment to the Left-Right, Center, and Mono mix buses.

Though labeled as Center, this bus may be used as an independent output mix, identical to the additional Mono mix bus. The Left-Right assignment is routed through the channel pan control. A LCR assignment switch is provided which overrides the Left-Right and Center assignment switches and reconfigures the pan control into a true Left-Center-Right pan system with a taper that fits most contracting and theatrical needs. The additional post-fader Mono assignment may be used as a post-fader sub-woofer send, a mono surround send or an additional aux/matrix mix. The assignment system can also be configured as an L-R music system with separate A-B vocal system.

High Quality, field replaceable 100mm faders are standard on Spectra-C and Spectra-T consoles.

No audio passes through this fader, instead a control voltage is generated that controls the channel's VCA element. The input channel level can be controlled from any of the 8 VCA Group master faders. The voltage being applied to the VCA element is represented by a variable intensity 2-color LED on each channel. A 6-segment pre fader LED meter is provided with both peak and signal present LED's. The channels mute function can be directly controlled from the internally illuminated mute switch or from any of the 12 mute groups within the master section (4 discrete and 8 linked to the VCA assignment switches) whose activation is displayed on the channel's remote mute active LED. When any local or remote mute switch is activated, both pre and post fader aux signals are muted.

A "soft" solo system is provided. When any solo switch is activated, the Solo Clear switch within the master section illuminates as well as an LED next to the Left/Center/Right meters within the master section of the console. All Solos can be cleared by pressing the master solo clear switch. A PFL/AFL Solo-mode switch is provided in the master section as well as an Input Priority switch that can be activated when the console is used as a monitor console for more user friendly solo control in this application. When the solo mode switch is set to PFL mode, mono channels are monitored pre-fader in mono while stereo channels are monitored in stereo. When the solo mode switch is set to AFL mode, the monitored signal follows the channel's assignment switches, routing the soloed signal in mono, stereo or LCR to the selectable 2 or 3 speaker monitor system that includes left, right, center, and sum outputs as well as to the L/C/R solo meters. Any soloed signal is also routed to the monitor and headphone systems (defeatable).



Line Input Channel

SPECTRA (STEREO) LINE INPUT CHANNELS

Four dual-input channels are provided on all console configurations (except expander) that will accept line-level signals from rear panel 1/4" balanced or RCA input connectors. Two inputs are provided on each channel, each with individual input gain and polarity reverse switches. These modules can be operated in STEREO (normal), DUAL-MONO (when Sum switch is activated), or in SPLIT-TRACK mode (when split track switch is activated - for use with "split-track" CD playback on a single channel). A four band fixed frequency stereo EQ with 80Hz/18dB per Octave high pass filter is provided on each channel. Aux and bus assignments are similar to the mono input channel including VCA control.

SPECTRA MASTER SECTION

VCA Group Control (8 Groups)

100mm VCA group faders are provided with internally illuminated VCA solo (VCA solo activates all assigned input channel solo switches) and VCA mute switches (activates all assigned input channel mutes and indicated by channels remote mute led being illuminated). A unity LED is provided on each VCA master fader to assist the operator when assigning input channels without any level change occurring.

Auxiliary Master (XLR Balanced Output) Control (10 Channels)

Each auxiliary output section includes 100mm faders, matrix pre/post send switch and talkback preset switch. A polarity switch is provided for the XLR balanced output. A dual color dynamic signal present and peak LED indicator monitors the Aux mix level. The Peak circuit monitors all critical points within the Aux audio path. Assignment switches are provided on each auxiliary so it may also be used as a subgroup (with insert point) feeding the master outputs, or as an assignment of a sub-woofer mix feeding the master Mono output. All auxiliary outputs feature a pre-fader TRS insert jack and XLR balanced outputs. Full time 12-Segment LED output metering is provided.

Output Master (XLR Balanced Output) Control (4 Channels)

The console's Left, Right, Center and Mono outputs are controlled by a single 100mm fader. This House Master Fader controls the individual VCA elements within each output. Four dual color dynamic signal present and peak LED indicators monitor the respective output mix levels and the associated peak circuit monitors all critical points within the respective output audio path. All outputs feature a pre-fader TRS insert jack and XLR balanced outputs. Full time 12-Segment LED output metering of Left, Right, Center and Mono is provided.

Alternate Outputs (2 Mono + 1 Stereo)

Each of the alternate outputs can be any combination of Left, Right, Center, Aux 9, and Aux 10 outputs. These sources may be derived pre or post their respective master level control. The two Mono Alternate outputs are fitted with Jensen transformers for signal isolation and voltage protection typically needed when used as a broadcast or camera feed. Any of the Alternate outputs may be used as a trim level for the master Left, Right, Center or Mono outputs after re-patching to these outputs.

Output Matrix (XLR Balanced Output) Control (15 x 4)

All four Matrixes are sourced from the 10 auxiliary buses, external input, and Left, Right, Center and Mono buses. Any of the 15x4 matrix outputs can be controlled by the House Master Fader. Use of this feature will maintain a balance between all primary outputs of the console such as left/right, center, subs, and delay or under-balcony speakers. Insert points are provided on all matrix outputs. 12-Segment metering is provided for each matrix output that is shared with the Left, Center, and Right SOLO function.

Monitor and Headphone System

Identical features are provided for the Monitor and Headphone systems. Each section includes level control, Solo OFF switch with LED (as solo normally overrides any source that is pre-selected), Left/Right, Center, Mono, Aux 9/10, and External Input. A common Pre/Post source switch is provided. Solo trim control is included with OFF switch. Monitor outputs on the rear panel include Left, Right, Center, and Sum outputs. A front panel switch selects between two or three speaker control room monitoring. The output Sum connector is used as a sub-woofer output or a feed to a wedge speaker when used as a monitor console. Headphone connectors are located on the rear panel and under the arm rest. Both 1/4" and 1/8" headphone connectors are located under the armrest.

Solo System

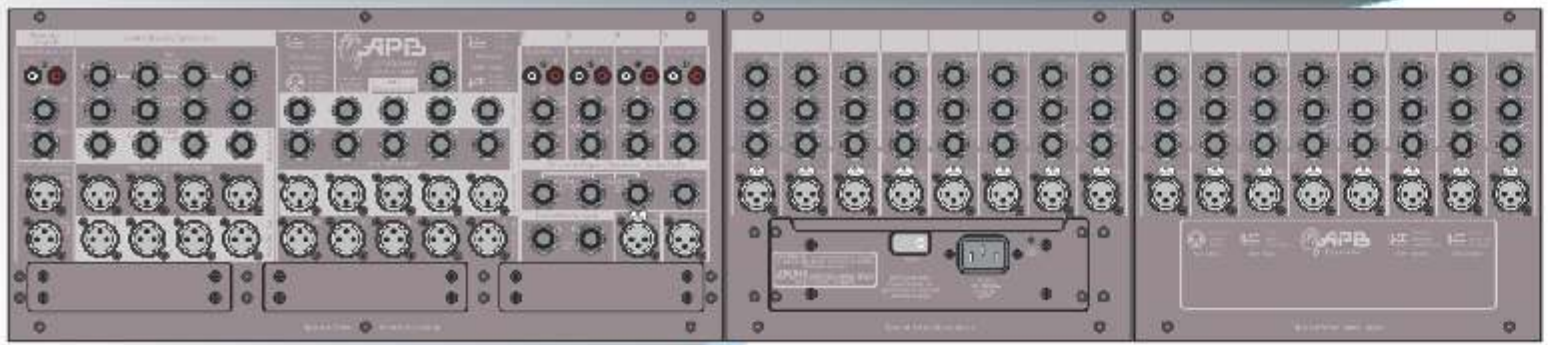
All Solo switches are internally illuminated when activated. A master Solo Clear switch is provided. Five mix buses are provided for the solo system. In the PFL mode, mono channels are monitored in mono and stereo channels are monitored in stereo. In AFL mode, post fader signals are monitored in mono, stereo, or LCR depending upon the channel's assignment switches. A Solo trim control is provided with On/Off switch. An Input Priority Switch enhances solo use when the console is being used as a monitor console. Once an output is soloed, going to an input solo will temporarily cancel the output solo. When the input solo is cleared, the console will go back to its previous output solo state. The Solo signal appears on Headphones and Monitor outputs unless the Solo Off switches in either of these sections is activated.

Talkback/Oscillator System

A talkback system is provided to the Left/Right, Center, Mono and external XLR output of the console. Talkback preset switches are also located on each of the aux output sections. Both an internal microphone and rear panel XLR input and output connector is provided. A 1 kHz oscillator may be activated in place of the talkback microphone.

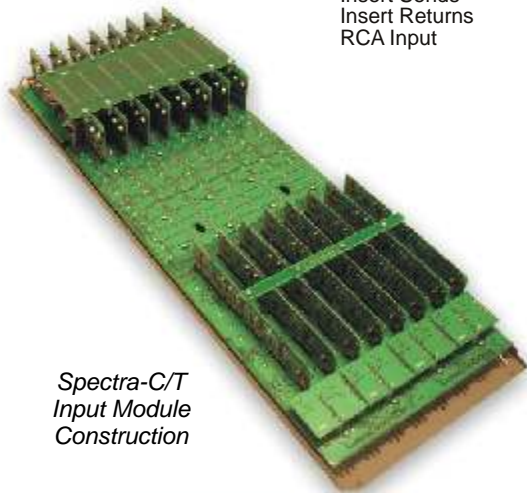


Portion of Master Section of Spectra-C/T



SPECTRA-C/T SPECIFICATIONS (All measurements: 20Hz-20kHz Bandwidth unless otherwise noted).

Frequency Response	+0/-0.5dB Ref 1kHz (Any input to any output)	
Noise	Mic EIN Less than 128dBu (150 ohm source, 60dB gain)	
Bus Noise	Better than -85dBu 32 Channels routed with faders down, Master fader at unity. Better than -95dBu with Master fader down	
THD + Noise	Better than 0.02% Mic Input to Main Outputs (Left/Right/Center/Mono) @ +15dBu Output Level	
Crosstalk at 1kHz	Fader @ Unity / Channel Level +4dBu Better than -90dB Channel to Channel Better than -90dB Channel to Main Output Better than -90dB Aux Shutdown Better than -90dB Fader Attenuation	
Phase Shift	Better than +10 degrees /- 15 degrees Mic In to Main Out	
Maximum Input Levels	+38dBu (with Pad) Mic Pre-amp Input +21dBu All Other Inputs	
Standard Output Levels	+4dBu	
Maximum Output Levels	Capable of driving 600 ohms or greater Balanced Mains (Left/Right/Center/Mono), Aux Outputs 1 through 10, Matrix Outputs 1 through 4 +26dBu into 2k ohm or higher - All Other Outputs +21dBu Impedance Balanced	
Inputs/Outputs	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Mic Inputs Normal SM58 operating position Max Voltage Gain: Mic In to Main Out Line Inputs Mix/Aux Outputs Monitor Output Headphone Output Insert Sends Insert Returns RCA Input</p> </div> <div style="width: 45%;"> <p>3k5 ohm balanced 1:00 (35db gain) 92dB >10k ohm balanced 50 ohms Balanced 50 ohm Impedance Balanced To drive 8 ohms or greater - 1/4" and 1/8" connectors 100 ohm Unbalanced 10k ohms Unbalanced 10k ohms Unbalanced</p> </div> </div>	
	Master Metering	Eighteen - 12-segment LED meters displaying: 4 Master Outputs - Left / Right / Center / Mono, 10 Auxiliary Outputs 4 Matrix Outputs Solo Metering and Solo ON LED - Left / Center (mono) / Right, Solo Shares Matrix Output Meters
	Mono Input Channel Metering	6-Segment LED with multi-point clip warning and Signal Present LED
	Line (Stereo) Input Channel Metering	3-Segment X 2 Peak "0"/Signal Present LED's on Left and Right Channels



Spectra-C/T
Input Module
Construction



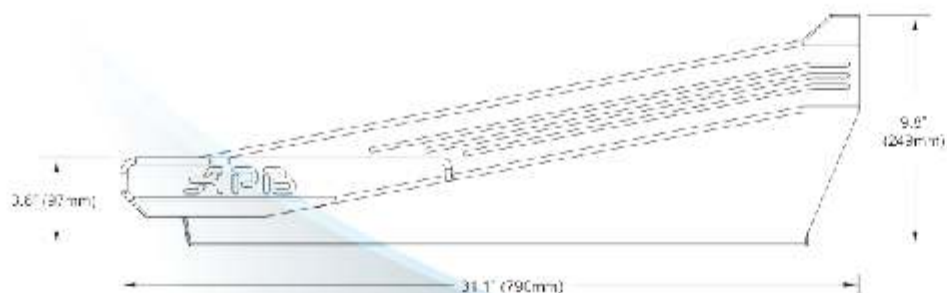
Spectra-T
Mono Input EQ

Please See our Web Site at APB-DynaSonics.com for additional information about this product.

APB-DynaSonics, Inc. reserves the right to improve design features and specifications without prior notice as part of its ongoing development program.

Spectra Width (approx)

Spectra-24	=	47.1" (1197mm)
Spectra-32	=	56.6" (1438mm)
Spectra-40	=	66.1" (1678mm)
Spectra-48	=	75.6" (1920mm)
Spectra-56	=	85.1" (2162mm)
Spectra-24exp	=	30.4" (772mm)



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