

# SYNTHESIS SDP-40

DIGITAL PROCESSOR/  
CONTROLLER

Powerful, Precise,  
Compatible, Flexible  
And Expandable –  
The Synthesis SDP-40  
Digital Surround  
Processor/Controller.

**JBL**

S Y N T H E S I S<sup>®</sup>

## JBL and the Movies grew up together.

It's a quantum leap from the first movie sound system that premiered in 1928 with "The Jazz Singer" to the astonishingly realistic THX®-certified sound systems that reproduce the digital sound we enjoy today. And JBL has been there every step of the way.

With the introduction of JBL Synthesis in 1990, JBL established a reputation for offering the best home theater systems available on the market. Since then JBL has been a leading innovator in home theater products that set the standard for performance.

Now there is a new addition to our proud heritage of electronics: the JBL Synthesis SDP-40 Digital Surround Processor/Controller.

The SDP-40 offers both balanced and unbalanced outputs and is the culmination of years of research in room acoustics, psychoacoustics, and audio creation and reproduction.



### SPECIFICATIONS

#### Audio Inputs and Outputs

##### Audio Inputs

8 Stereo pairs (RCA) or 5 stereo pairs and 1 5.1-channel analog input

##### Digital Audio Inputs

6 Coaxial (RCA), 6 optical (5 TosLink and 1 optical mini jack), 1 AES/EBU; coaxial and optical inputs conform to IEC-958, S/PDIF standards

Sample rates: 44.1kHz, 48kHz, 88.2kHz, 96kHz

Accepts: 16–24 bits PCM audio, Dolby® Digital, DTS® and DTS-ES® discrete data formats

##### Main Audio Outputs

12 Unbalanced (RCA) and 12 balanced (XLR) for Front L/R, Center, LFE, Subwoofer L/R, Side L/R, Rear L/R, Auxiliary L/R

##### Zone 2 Audio Outputs

2 Stereo pairs (RCA, one fixed and one variable output level); 2 balanced (XLR) for L/R variable output

##### Record Audio Outputs

2 Stereo pairs (RCA, one fixed and one variable output level); 1 coaxial (RCA) and 1 optical (TosLink) S/PDIF output (in parallel)

#### Performance (Main Zone)

##### Analog-to-Digital Conversion

24-Bit, 96kHz, dual-bit  $\Sigma\Delta$  architecture

##### Digital-to-Analog Conversion

24-Bit, 44.1kHz to 192kHz, multi-bit  $\Sigma\Delta$  architecture, operating in dual-mono mode

##### Frequency Response

10Hz to 20kHz +0.1dB/–0.25dB, –0.75dB at 40kHz, reference 1kHz

##### THD + Noise

Below 0.008% at 1kHz, maximum output level

##### Dynamic Range

108dB minimum, 111dB typical, 22kHz bandwidth

##### Signal-to-Noise Ratio

108dB minimum, 111dB typical, 22kHz bandwidth

##### Input Sensitivity

200mVrms (2Vrms for maximum output level) at 0dB input gain

##### Input Impedance

100k $\Omega$  in parallel with 150pF

##### Output Level

150mVrms typical, 6Vrms maximum (RCA outputs); 300mVrms typ, 12Vrms maximum (XLR outputs), maximum value with full-scale input signal and volume at +12dB

##### Output Impedance

100 $\Omega$  in parallel with 150pF (RCA outputs); 50 $\Omega$  in parallel with 150pF (XLR outputs)



**Performance  
(Zone 2 and Record Zone)**

<b>Analog-to-Digital Conversion</b>	24-Bit, 44.1kHz to 96kHz, dual-bit $\Sigma\Delta$ architecture (record zone only)
<b>Digital-to-Analog Conversion</b>	24-Bit, 44.1kHz to 192kHz, multi-bit $\Sigma\Delta$ architecture
<b>Frequency Response</b>	10Hz to 20kHz, +0.1dB/-0.25dB, -0.75dB at 40kHz, reference 1kHz
<b>THD + Noise</b>	Below 0.008% at 1kHz, maximum output level
<b>Dynamic Range</b>	105dB minimum, 108dB typical, 22kHz bandwidth
<b>Signal-to-Noise Ratio</b>	105dB minimum, 108dB typical, 22kHz bandwidth
<b>Input Sensitivity</b>	200mVrms (4Vrms for maximum output level)
<b>Input Impedance</b>	100k $\Omega$ in parallel with 150pF
<b>Output Level</b>	200mVrms typical, 4Vrms maximum (RCA outputs); 400mVrms typical, 8Vrms maximum (XLR outputs, Zone 2 only); maximum value with full-scale input signal and volume at 0dB
<b>Output Impedance</b>	100 $\Omega$ in parallel with 150pF (RCA outputs); 50 $\Omega$ in parallel with 150pF (XLR outputs, Zone 2 only)

**Video Inputs and Outputs**

<b>Video Inputs</b>	5 Composite (RCA), 8 S-video, and 4 component video (3 RCA, 1 BNC)
<b>Video Outputs</b>	4 Composite (RCA, 2 monitor and 2 record), 4 S-video (2 monitor and 2 record) and 1 component (BNC)
<b>Performance (Composite &amp; S-video)</b>	NTSC M, PAL- and SECAM-compatible
<b>Switching</b>	Active
<b>Output Level</b>	1.0V peak-to-peak
<b>Impedance</b>	75 $\Omega$
<b>Input Return Loss</b>	>40dB
<b>Differential Gain</b>	<0.5%
<b>Differential Phase</b>	<0.5°
<b>Bandwidth</b>	>25MHz
<b>K Factor</b>	<0.3%
<b>Gain</b>	$\pm$ 0.15dB
<b>Signal/Noise Ratio</b>	>70dB
<b>Frequency Response</b>	10Hz to 10MHz, +0.1/-0.3dB



<b>Performance (Component Video)</b>	3-Channel (Y/Pr/Pb), format-independent
<b>Switching</b>	Passive
<b>Impedance</b>	75Ω
<b>Bandwidth</b>	>300MHz
<b>Insertion Loss</b>	<3dB
<b>Other</b>	
<b>Microphone Inputs</b>	4 3.5mm Miniature phone jacks Input sensitivity: 10mVrms (400mV maximum input level) Input impedance: 20kΩ (accepts balanced or unbalanced input signals)
<b>Trigger Outputs</b>	1 Power on/off trigger, 2 programmable triggers; +12 VDC, 0.5 amps each; 5-pin DIN connector
<b>RS-232 Serial</b>	2 9-Pin D-sub connectors
<b>Input/Output</b>	For system control and software upgrades
<b>Power Requirements</b>	90 – 250 VAC, 50Hz – 60Hz, 90W (universal line input), detachable power cord
<b>Dimensions (H x W x D)</b>	6.63" x 17.3" x 14.85" (169mm x 440mm x 377mm) Rack-mounted: 7" x 19" x 14.85" (178mm x 483mm x 377mm)
<b>Weight</b>	45 lb (20.5kg)
<b>Rack-Mounting Kit</b>	Kit for mounting in a standard 19" equipment rack included
<b>Environment</b>	Operating temp: 0° to 35° C (32° to 95° F) Storage temp: -30° to 75° C (-22° to 167° F) Relative humidity: 95% maximum without condensation
<b>Remote Control</b>	Hand-held, battery-powered infrared remote control unit Batteries: two AA



SYNTHESIS®

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