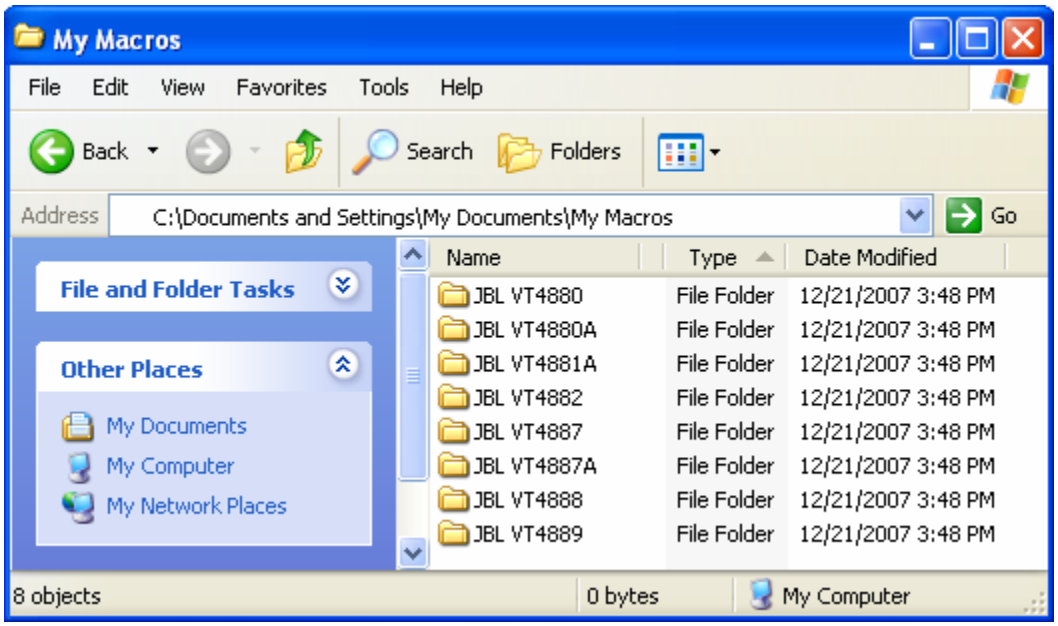
JBL VERTEC V4
BSS AUDIO SOUNDWEB LONDON
README FILE

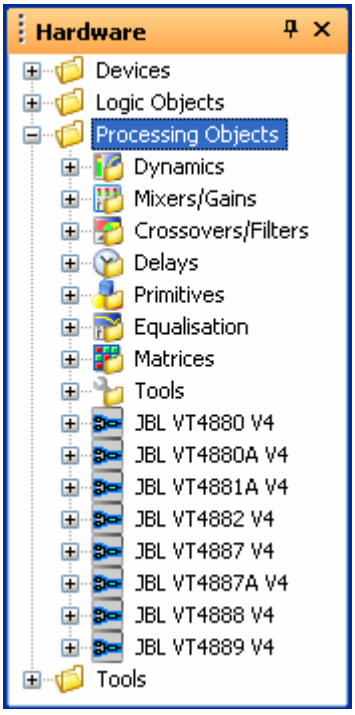
Before installing JBL VerTec V4 preset macros, check for the latest BSS Audio London Architect™ Software on:

http://www.soundweb-london.com/

Unzip the “JBL VerTec V4 BSS Audio Soundweb London” ZIP file and move all folders (and their contents) to the “My Documents \ My Macros” directory on your computer:



When BSS Audio London Architect is launched, presets will be available as:



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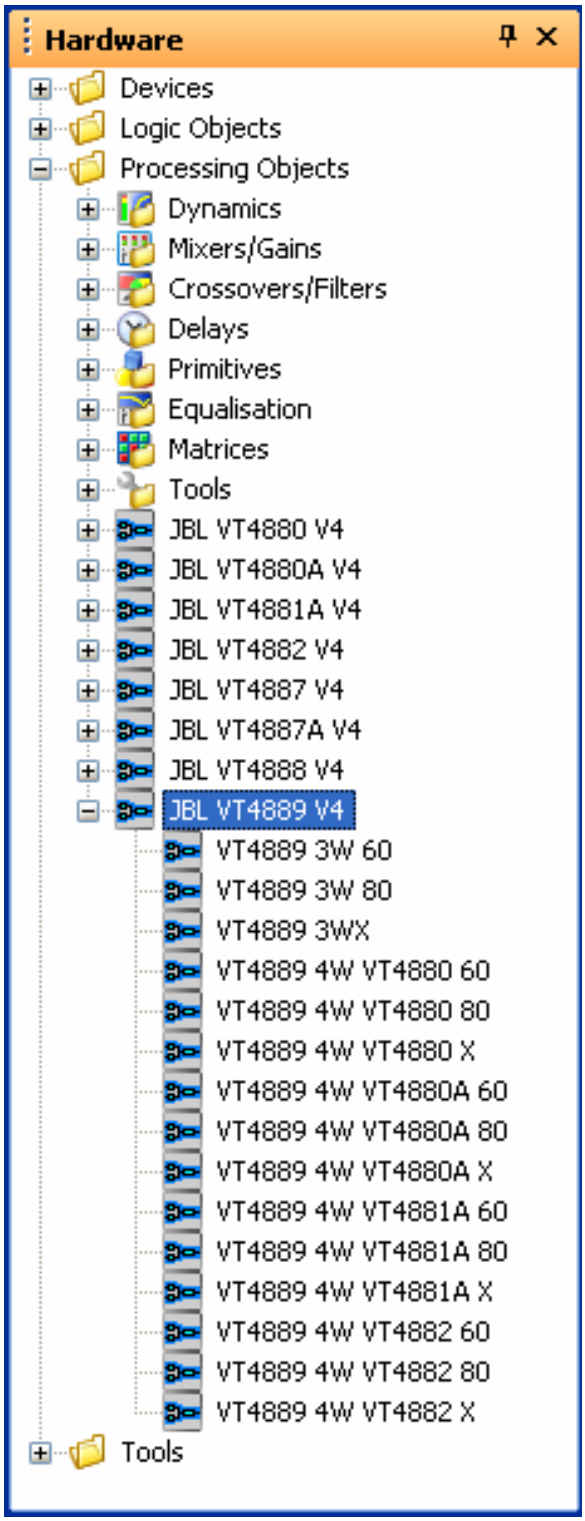
Select the desired JBL Vertec model to access available presets:



Refer to the "JBL VerTec V4 BSS AUDIO SOUNDWEB LONDON PRESET SUMMARY" sheet to select the appropriate preset for your application

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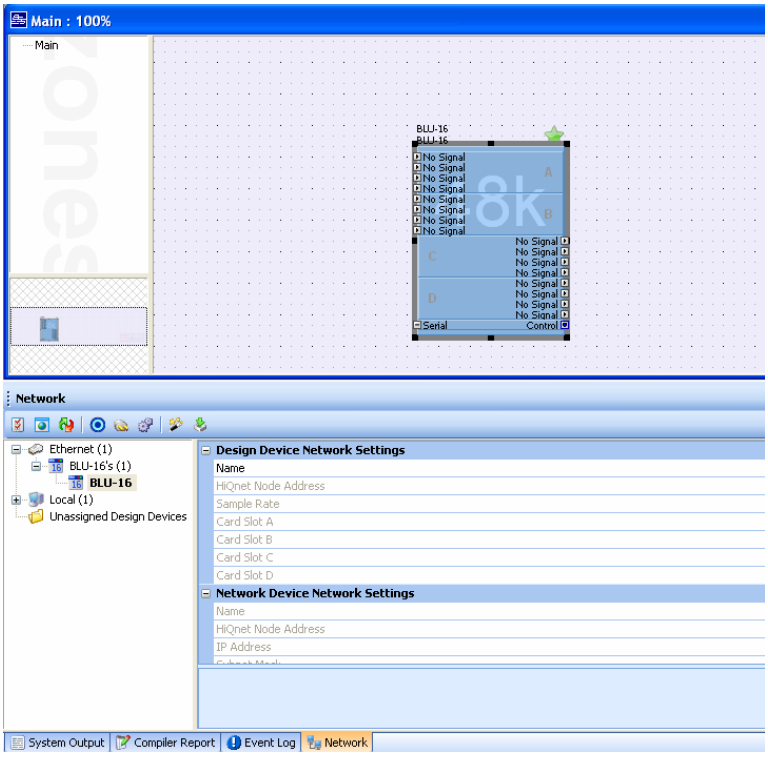
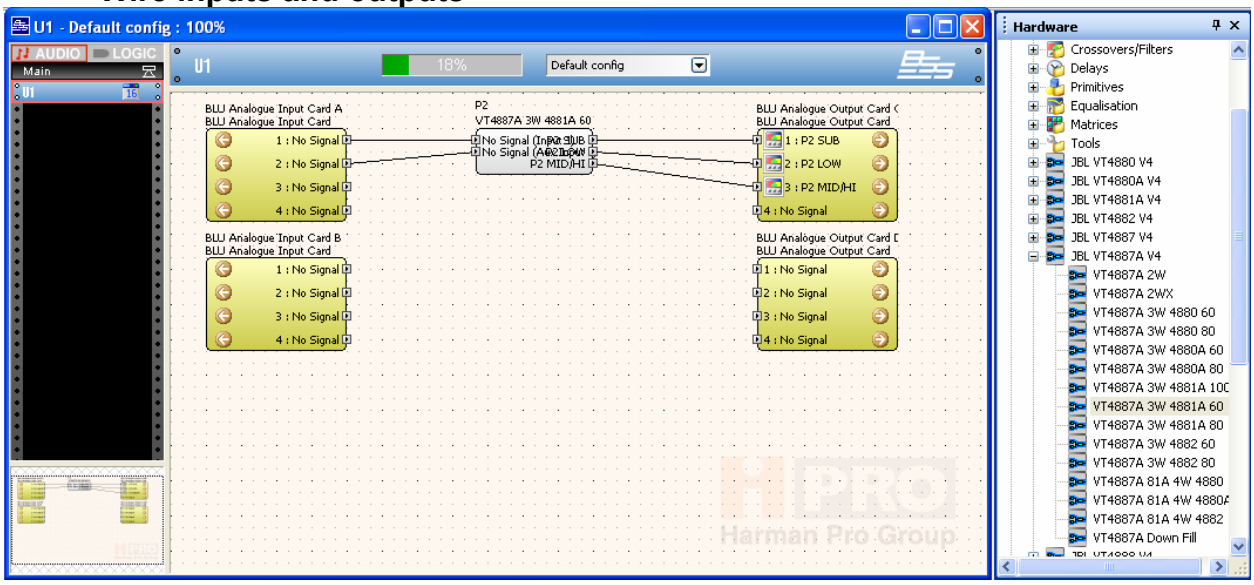
To use JBL Vertec V4 presets, select the appropriate Soundweb London device then drag & drop onto:



- **Double click on the device to open for editing**
- **Open the Processing Objects Menu**
- **Drag & drop the desired Vertec V4 preset macro into the device**
- **Wire inputs and outputs**



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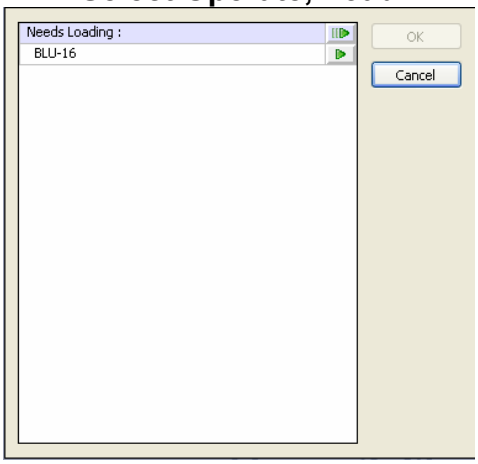
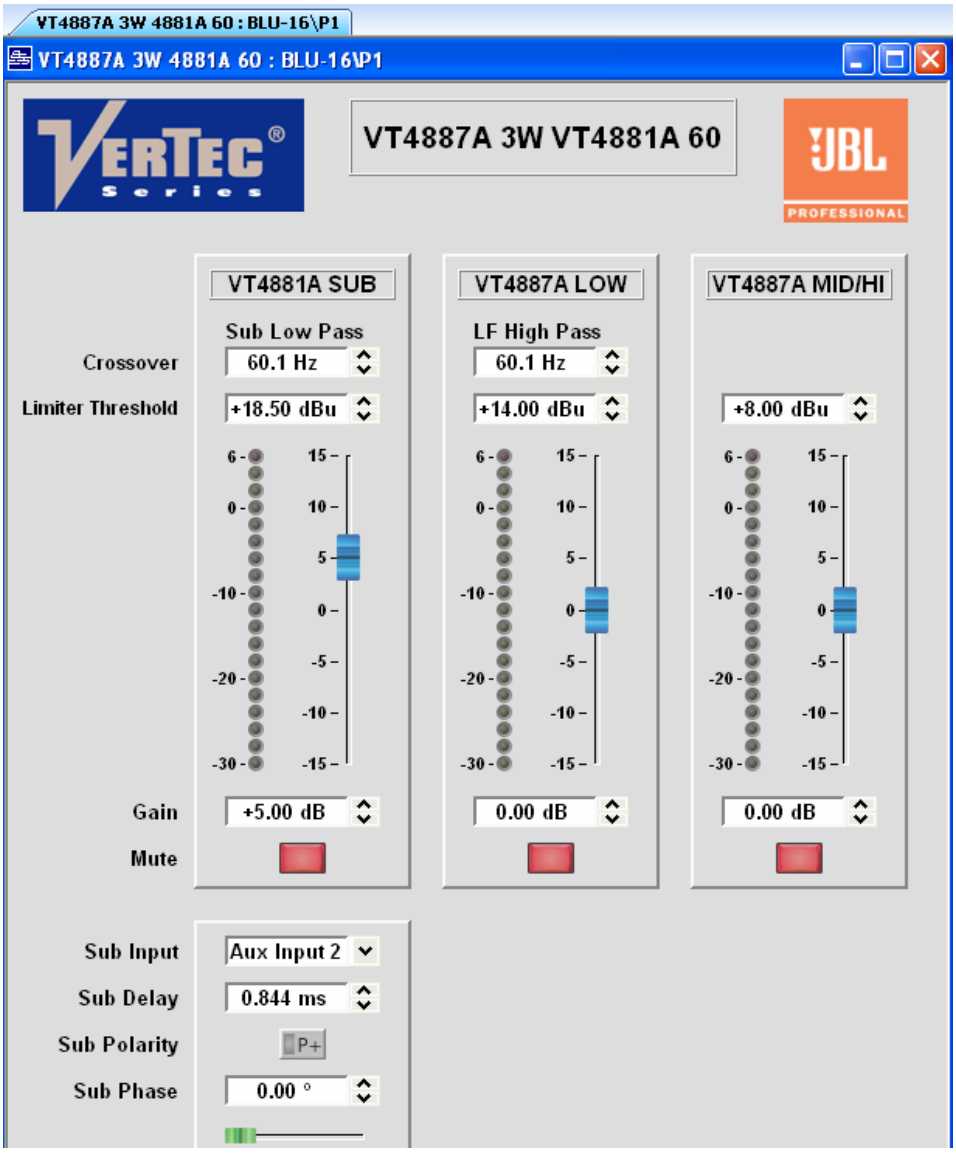
Select Operate, Load



Go Online and Open the Control Panel



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Gain structure and limiting have been designed for amplifiers with 26 dB gain

Amplifiers driving all sections (sub, low, mid, high) should be set for 26 dB gain

Disclaimer: VerTec V4 limiter settings are intended to provide a starting point for optimum system performance while ensuring reliable system protection. However, the end user is ultimately responsible for system operation in the field and standard warranty conditions apply in the event of component damage.

1) For I-Tech 4000 and 6000 models it is necessary to change the maximum analog input level from +15 dBu to +21 dBu in order to be able to select 26 dB gain. Using the amplifier's front panel interface, go to the I-Tech Advanced Menu and select +21 dBu as maximum analog input level. This will then allow you to select 26 dB gain using the top level front panel menu.

2) With amplifier gain set to 26 dB, gain structure should provide the following behavior:

Console level 9 dBu (no sub/low limiting)

12 dBu (approx 3 dB sub/low limiting, program dependent)

15 dBu (approx 6-9 dB sub/low limiting, program dependent)

If you prefer to run your console hotter, scale all channel output gains (sub,low,mid,hi) down by 3 to 6 dB and leave limiter thresholds as is.

If you prefer to run your console at a lower level, scale all channel output gains (sub,low,mid,hi) up by 3 to 6 dB and leave limiter thresholds as is.

To verify gain structure and limiter functionality, it is recommended that signal flow from console → dsp → amplifiers is checked with loudspeakers disconnected prior to use.

3) For use with amplifiers having gain not equal to 26 dB, individual channel output levels and limiter thresholds should be adjusted by the difference in amplifier gain for their respective channels.

Example: for amplifiers with 32 dB gain, channel output levels should be lowered by 6 dB; limiter thresholds for all channels should also be lowered by 6 dB.

4) Subwoofer sections for all X, 60, 80 presets are pre-time aligned. For flown 4889, 4888 or 4887A/4881A and ground stacked 4881A, 4882, 4880 or 4880A sub configurations, simply add the measured geometric path length difference between flown versus ground stacked (at your reference location of choice) to the pre-aligned delay as a starting point for time alignment measurements and further adjustment.

5) Known Bugs in BSS Audio London Architect V1.14: Functionality of subwoofer channel time alignment delay processing can be intermittent. Subwoofer time alignment should be verified via acoustic or electrical measurements in order to confirm that delay processing is functioning properly.

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Limiter thresholds are based on 2x 2 Hour RMS power handling specifications (dBu equivalent calculated based on 26 dB gain amplification):

2 HOUR POWER HANDLING

ENCLOSURE MODEL	NOM LOAD (ohms)	RMS 2 HR (W)	PEAK POWER (W)	REC'D POWER (W)	dBu EQUIV * (2 x RMS)
VT4887a MID/HI	8	225	900	450	11.8 dBu
VT4887a LOW	8	750	3000	1500	17.0 dBu

ENCLOSURE MODEL	NOM LOAD (ohms)	RMS 2 HR (W)	PEAK POWER (W)	REC'D POWER (W)	dBu EQUIV (2 x RMS)
VT4888 HI	16	70	280	280	9.7 dBu
VT4888 MID	8	400	1600	800	14.3 dBu
VT4888 LOW	2 x 8 ohms	2 x 750 W	2 x 3000 W	2 x 1500 W	17.0 dBu

ENCLOSURE MODEL	NOM LOAD (ohms)	RMS 2 HR (W)	PEAK POWER (W)	REC'D POWER (W)	dBu EQUIV (2 x RMS)
VT4889 HI	16	165	660	660	13.4 dBu
VT4889 MID	8	1800	7200	3600	20.8 dBu
VT4889 LOW	2 x 8 ohms	2 x 690 W	2 x 2760 W	2 x 1380 W	16.6 dBu

ENCLOSURE MODEL	NOM LOAD (ohms)	RMS 2 HR (W)	PEAK POWER (W)	REC'D POWER (W)	dBu EQUIV (2 x RMS)
VT4881A	8	1500	6000	3000	20.0 dBu
VT4882	4	1550	6200	3100	17.1 dBu
VT4880	4	1550	6200	3100	17.1 dBu
VT4880A	4	3000	12000	6000	20.0 dBu

* dBu Equivalent calculated based on 26 dB amplifier gain (20x voltage gain)

In some cases (for example: VT4881A, VT4880A subwoofers and VT4889 mid section), recommended amplification (= 2x 2 Hour RMS section power handling) exceeds amplifier output capability and limiters are calibrated to prevent RMS / Peak amplifier clip. VT4889 mid section limiter thresholds have been adjusted for optimum headroom relative to the low section. Note: Under hard sub/low/high section limit conditions, the VT4889 mid section threshold may need to be further reduced in order to maintain spectral balance.

In other cases (for example: VT4887A, VT4888, VT4889 HF sections), limiter thresholds are calibrated to 2x 2 Hour RMS power handling. For more dynamic program material with low RMS signal content (for example, classical music) HF section limiter thresholds can be increased by 3 dB (or up to rms or peak amplifier clip - whichever value is lower) to match peak power handling. Conversely, for more demanding applications, limiter thresholds can be lowered by 3 dB to match RMS power handling.

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Default JBL VerTec V4 BSS Audio Soundweb London Limiter Thresholds are calibrated for Crown I-Tech 8000 amplification at 26 dB gain:

BSS AUDIO SOUNDWEB LONDON LIMITER SETTINGS
CROWN I-TECH 8000 (26 dB gain = 18.5 dBu)
(2 HOUR POWER HANDLING)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4887a MID/HI	8.0 dBu
VT4887a LOW	15.0 dBu (14.0 dBu for 2WX)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4888 HI	7.0 dBu
VT4888 MID	12.0 dBu
VT4888 LOW	16.0 dBu (14.0 dBu for X)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4889 HI	11.0 dBu
VT4889 MID	13.5 dBu
VT4889 LOW	15.0 dBu

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4881A	18.5 dBu
VT4882	17.0 dBu
VT4880	17.0 dBu
VT4880A	18.5 dBu

* BSS Audio Soundweb London Limiter Parameters have been calibrated to agree with other Vertec V4 - Supported Digital Signal Processors based on Audio Precision measurements of rms and peak voltages using pink noise and sine wave stimuli

For I-T8000 amplifier gain not equal to 26 dB, channel output levels and limiter thresholds should be adjusted by the difference in selected amplifier gain versus 26 dB. For example: for 32 dB amplifier gain, channel output levels should be lowered by 6 dB; limiter thresholds for all channels should be lowered by 6 dB.

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For use of VerTec V4 presets with Crown amplifiers other than I-T8000, limiter thresholds should be scaled to account for differences in amplifier input sensitivity:

	26 dB GAIN INPUT SENSITIVITY		
CROWN MODEL	**VOLTS (rms)**	**dBu (rms)**	**dBu (peak)**
MA-3600VZ	**4.80 Vrms**	**15.8 dBu**	**18.8 dBu**
MA-5002VZ	**4.80 Vrms**	**15.8 dBu**	**18.8 dBu**
I-T4000	**5.01 Vrms**	**16.2 dBu**	**19.2 dBu**
I-T6000	**5.49 Vrms**	**17.0 dBu**	**20.0 dBu**
I-T8000	**6.52 Vrms**	**18.5 dBu**	**21.5 dBu**

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BSS AUDIO SOUNDWEB LONDON LIMITER SETTINGS
CROWN I-TECH 6000 (26 dB gain = 17 dBu)
(2 HOUR POWER HANDLING)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4887a MID/HI	8.0 dBu
VT4887a LOW	15.0 dBu (14.0 dBu for 2WX)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4888 HI	7.0 dBu
VT4888 MID	12.0 dBu
VT4888 LOW	16.0 dBu (14.0 dBu for X)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4889 HI	11.0 dBu
VT4889 MID	13.5 dBu
VT4889 LOW	15.0 dBu

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4881A	17.0 dBu
VT4882	17.0 dBu
VT4880	17.0 dBu
VT4880A	17.0 dBu

* BSS Audio Soundweb London Limiter Parameters have been calibrated to agree with other Vertec V4 - Supported Digital Signal Processors based on Audio Precision measurements of rms and peak voltages using pink noise and sine wave stimuli

For I-T6000 amplifier gain not equal to 26 dB, channel output levels and limiter thresholds should be adjusted by the difference in selected amplifier gain versus 26 dB. For example: for 32 dB amplifier gain, channel output levels should be lowered by 6 dB; limiter thresholds for all channels should be lowered by 6 dB.

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BSS AUDIO SOUNDWEB LONDON LIMITER SETTINGS
CROWN I-TECH 4000 (26 dB gain = 16.2 dBu)
(2 HOUR POWER HANDLING)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4887a MID/HI	8.0 dBu
VT4887a LOW	14.0 dBu (13.0 dBu for 2WX)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4888 HI	7.0 dBu
VT4888 MID	12.0 dBu
VT4888 LOW	15.7 dBu (13.7 dBu for X)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4889 HI	11.0 dBu
VT4889 MID	13.2 dBu
VT4889 LOW	14.7 dBu

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4881A	16.2 dBu
VT4882	16.2 dBu
VT4880	16.2 dBu
VT4880A	16.2 dBu

* BSS Audio Soundweb London Limiter Parameters have been calibrated to agree with other Vertec V4 - Supported Digital Signal Processors based on Audio Precision measurements of rms and peak voltages using pink noise and sine wave stimuli

For I-T4000 amplifier gain not equal to 26 dB, channel output levels and limiter thresholds should be adjusted by the difference in selected amplifier gain versus 26 dB. For example: for 32 dB amplifier gain, channel output levels should be lowered by 6 dB; limiter thresholds for all channels should be lowered by 6 dB.

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BSS AUDIO SOUNDWEB LONDON LIMITER SETTINGS
CROWN MA-5002VZ (26 dB gain = 15.8 dBu)
(2 HOUR POWER HANDLING)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4887a MID/HI	8.0 dBu
VT4887a LOW	14.0 dBu (13.0 dBu for 2WX)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4888 HI	7.0 dBu
VT4888 MID	12.0 dBu
VT4888 LOW	14.8 dBu (12.8 dBu for X)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4889 HI	11.0 dBu
VT4889 MID	12.8 dBu
VT4889 LOW	14.3 dBu

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4881A	15.8 dBu
VT4882	15.8 dBu
VT4880	15.8 dBu
VT4880A	15.8 dBu

* BSS Audio Soundweb London Limiter Parameters have been calibrated to agree with other Vertec V4 - Supported Digital Signal Processors based on Audio Precision measurements of rms and peak voltages using pink noise and sine wave stimuli

For Crown MA-5002VZ amplifier gain equal to 36 dB (1.4 Vrms setting), channel output levels should be lowered by 10 dB; limiter thresholds for all channels should be lowered by 10 dB.

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For more conservative protection and, as a result, more conservative system performance, limiter thresholds can be set to 2x 100 Hour RMS Power handling:

100 HOUR POWER HANDLING

ENCLOSURE MODEL	NOM LOAD (ohms)	RMS 100 HR (W)	PEAK POWER (W)	REC'D POWER (W)	dBu EQUIV * (2 x RMS)
VT4887a MID/HI	8	160	640	**320**	**10.3 dBu**
VT4887a LOW	8	520	2080	**1040**	**15.4 dBu**

ENCLOSURE MODEL	NOM LOAD (ohms)	RMS 100 HR (W)	PEAK POWER (W)	REC'D POWER (W)	dBu EQUIV (2 x RMS)
VT4888 HI	16	50	200	**200**	**8.3 dBu**
VT4888 MID	8	260	1040	**520**	**12.4 dBu**
VT4888 LOW	2 x 8 ohms	2 x 530 W	2 x 2120 W	**2 x 1060 W**	**15.5 dBu**

ENCLOSURE MODEL	NOM LOAD (ohms)	RMS 100 HR (W)	PEAK POWER (W)	REC'D POWER (W)	dBu EQUIV (2 x RMS)
VT4889 HI	16	105	420	**420**	**11.5 dBu**
VT4889 MID	8	1260	5040	**2520**	**19.3 dBu**
VT4889 LOW	2 x 8 ohms	2 x 450 W	2 x 1800 W	**2 x 900 W**	**14.8 dBu**

ENCLOSURE MODEL	NOM LOAD (ohms)	RMS 100 HR (W)	PEAK POWER (W)	REC'D POWER (W)	dBu EQUIV (2 x RMS)
VT4881A	8	900	3600	**1800**	**17.8 dBu**
VT4882	4	1090	4360	**2180**	**15.6 dBu**
VT4880	4	1230	4920	**2460**	**16.1 dBu**
VT4880A	4	1800	7200	**3600**	**17.8 dBu**

* dBu Equivalent calculated based on 26 dB amplifier gain (20x voltage gain)

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Limiter thresholds can be adjusted to correspond to 100 Hour ratings as follows:

BSS AUDIO SOUNDWEB LONDON LIMITER SETTINGS
CROWN I-TECH 8000 (26 dB gain = 18.5 dBu)
(100 HOUR POWER HANDLING)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4887a MID/HI	6.0 dBu
VT4887a LOW	13.0 dBu (12.0 dBu for 2WX)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4888 HI	6.0 dBu
VT4888 MID	10.0 dBu
VT4888 LOW	14.5 dBu (12.5 dBu for X)

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4889 HI	9.0 dBu
VT4889 MID	12.0 dBu
VT4889 LOW	13.5 dBu

ENCLOSURE MODEL	THRESHOLD* (dBu)
VT4881A	18.0 dBu
VT4882	15.5 dBu
VT4880	16.0 dBu
VT4880A	18.0 dBu

* BSS Audio Soundweb London Limiter Parameters have been calibrated to agree with other Vertec V4 - Supported Digital Signal Processors based on Audio Precision measurements of rms and peak voltages using pink noise and sine wave stimuli

For other amplifier models (I-T6000, I-T4000, MA-5002VZ):
To re-calibrate thresholds to correspond to 100 Hour ratings, select whichever value is lower from the table above or the table corresponding to the amplifier in use given in the preceding pages.