



# JBL VERTEC V5 R1 README FILE



## INTRODUCTION

VERTEC® V5 is a software “plug-in” upgrade for VT4886, VT4887, VT4887A, VT4888, VT4889 and VT4881A, VT4882, VT4883, VT4880, VT4880A subwoofers that dramatically enhances VERTEC system performance.

The main features and benefits of VERTEC V5 are summarized as follows:

- Leverages BSS Audio Omnidrive HD™ linear phase FIR processing capability available in Crown® I-Tech HD Series power amplifiers and JBL DrivePack® DPDA input modules
- Significantly improved:
  - horizontal coverage (due to the use of higher order, asymmetric filters)
  - sound quality via phase linearization
  - system response to equalization
  - far-field summation and throw
  - inter-array interaction, summation and stereo imaging

Following a successful VT4889 / VT4888 V5 pilot program phase, additional support is added for VT4886, VT4887 and VT4887A models in the current release and the following features introduced:

- Short Throw (ST) and Long Throw (LT) preset support is now available for VT4886, VT4887, VT4887A as well as VT4888 and VT4889 – see below for further details
- Dedicated downfill presets for use of VT4886, VT4887 or VT4887A with VT4888, VT4889 or VTX V25 enclosures
- Comprehensive VT4886, VT4887 or VT4887A preset support for Crown IT4x3500HD 4-channel amplifiers
- Revised VT4886 LevelMax limiter settings featuring peak limiter side chain HF protection for secure system operation and sonic transparency
- Revised 1x, 2x, 3x VT4886 ST presets with specific equalization to compensate for low frequency coupling of one (1x), two (2x) or three (3x) VT4886 enclosures, providing nominal flat frequency response and matched sensitivity (also compatible with VRX 928LA and 932LA-1 V5 1x, 2x, 3x ST processing). For use with subwoofers, the following high pass options are provided for all VT4886 2x, 3x ST and LT presets: fullrange (60 Hz); 80 Hz; 120 Hz; 160 Hz; 300 Hz



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- Expanded VT4883 subwoofer preset support: 60-120, 60-160, 60-300 Hz options are added to complement previously-available 80, 120, 160, 300 Hz low-pass presets, including cardioid processing for all options
- Expanded VT4886/VT4883 preset support for use with VT4880, VT4880A, VTX S28 or VTX G28 subwoofers for suspended VT Subcompact / ground stacked subwoofer configurations
- Comprehensive cardioid subwoofer support for all VERTEC subwoofer models (VT4881A, VT4882, VT4883, VT4880, VT4880A)
- Sub/low preset support for VT4887A and VT4881A, VT4882, VT4880, VT4880A subwoofers including cardioid configurations (60, 80 Hz options)
- Sub/low preset support for VT4888 and VT4882, VT4880, VT4880A, VTX G28 or VTX S28 subwoofers including cardioid configurations (X, 60, 80)
- Sub/low preset support for VT4889 and VT4880, VT4880A, VTX G28 or VTX S28 subwoofers including cardioid configurations (X, 60, 80)
- Mixed cardioid preset support for use of VTX S28 (rear-firing) with VT4880 or VT4880A (front-firing) enclosures (X, 60, 80)

*Note: Upcoming VERTEC V5 releases will progressively add V5 support for VERTEC DrivePack DP-DA models*

## SHORT / LONG THROW MODES

Two preset options are available for VT4886, VT4887, VT4887A, VT4888 and VT4889: Short Throw (ST) and Long Throw (LT):

**ST (Short Throw)** presets have nominally-flat low and high frequency response and are suitable for short throw applications such as stacked side fill for stage monitoring or stacked theatre / club systems intended for short throw front-of-house sound reinforcement.

**LT (Long Throw)** presets have a 6 dB low-frequency shelving characteristic and high-frequency shelving response (HF pre-emphasis) to offset air absorption over typical throw distances for nominally focussed arrays and are suitable for medium- to long-throw applications.

### **NOTE:**

***It is not recommended to mix ST and LT presets within the same array (for example, ST presets on lower circuits and LT on middle / upper circuits of the array).***



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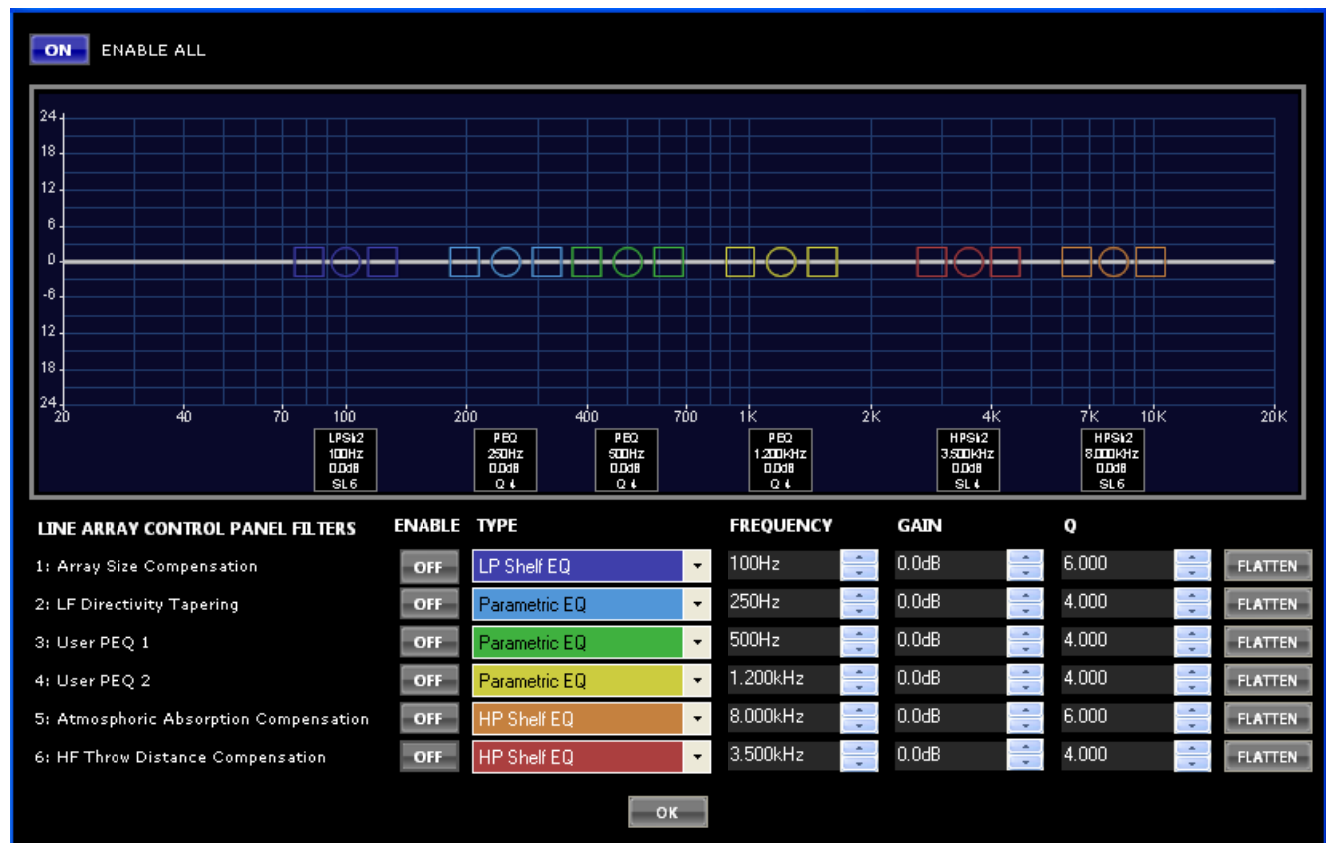


*For more precise control of SPL distribution and frequency response throughout the intended array coverage region, it is recommended that either ST or LT presets are used for the entire array and circuit-level gain shading and tapering adjustments implemented using the JBL Line Array Control Panel that is available in JBL HiQNet Performance Manager and JBL Line Array Calculator.*

*For more details on working with the JBL Line Array Control Panel, please refer to the Performance Manager or JBL Line Array Calculator help files. Additional online support is available at: [http://hignet.harmanpro.com/tutorials/performance\\_manager/](http://hignet.harmanpro.com/tutorials/performance_manager/)*

## JBL LINE ARRAY CONTROL PANEL

*(available in JBL Line Array Calculator and JBL HiQnet Performance Manager)*



***For short-to-medium throw applications, use ST presets for all array circuits and apply HF shelving to upper circuits***

***For medium-to-long throw applications, use LT presets for all array circuits and apply HF shelving to lower circuits if necessary***



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## SUB/LOW PRESETS

VERTEC Subwoofer preset naming convention is as follows:

***SUB / SUB “VERTEC SUBWOOFER MODEL” “VERTEC MODEL” “SUB/LOW OPTION”***

where:

“VERTEC SUBWOOFER MODEL” = VT4881A, VT4882, VT4883, VT4880 or VT4880A

“VERTEC MODEL” = VT4886, VT4887A, VT4888 or VT4889

“SUB/LOW OPTION” = X, 60, 80 (see below)

VERTEC Low section preset naming convention is as follows:

***LF / LF “SUB/LOW OPTION” “VERTEC MODEL” “ST or LT”***

where:

“SUB/LOW OPTION” = X, 60, 80 (see below)

“VERTEC MODEL” = VT4886, VT4887A, VT4888 or VT4889

“ST or LT” = Short Throw or Long Throw (see above)

For example: SUB/SUB VT4880 VT4888 X provides VT4880 subwoofer processing on amplifier channels 1 and 2 that is appropriate for use with LF / LF X VT4888 ST or LT

## SUB/LOW OPTIONS

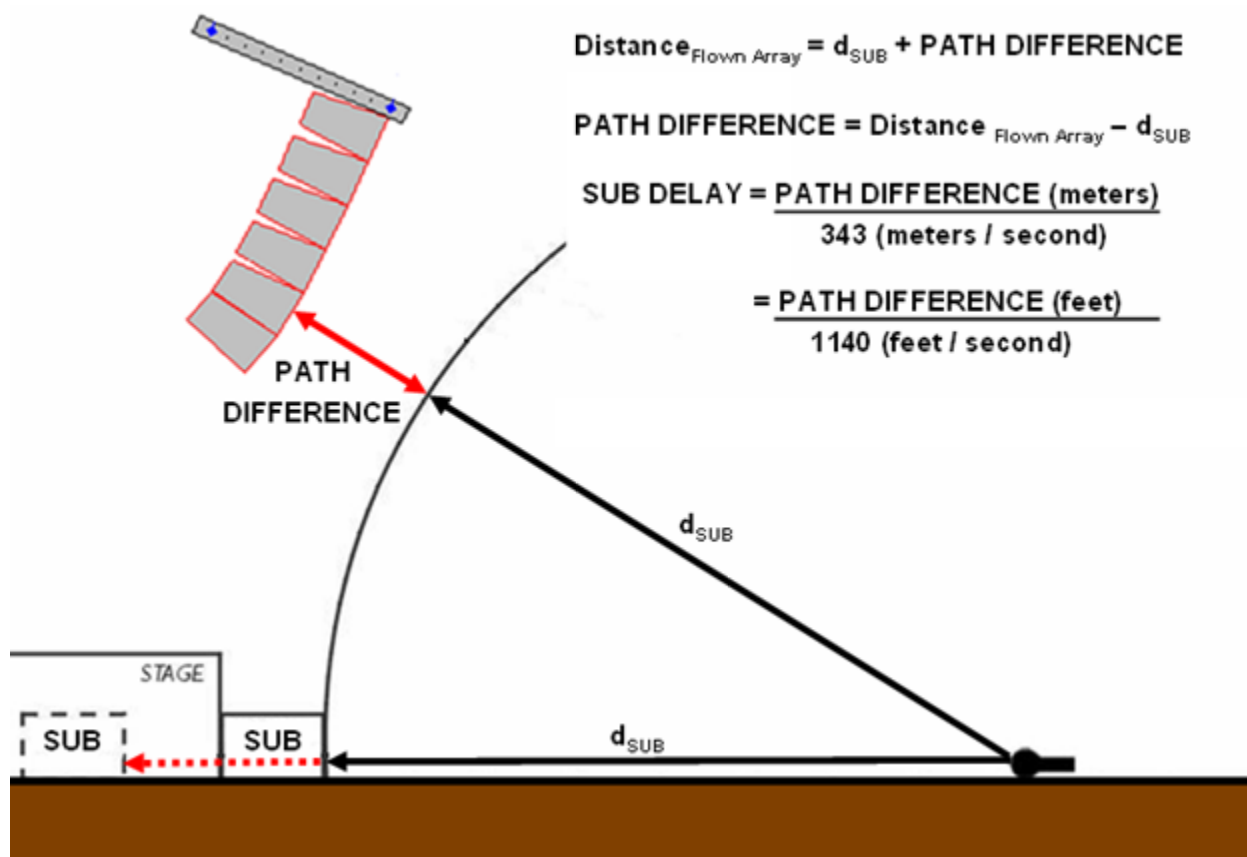
- 60 presets have a 60 Hz high pass filter for VERTEC models and a 60 Hz low pass filter for VERTEC subwoofers (subwoofers have positive polarity)
- 80 presets have an 80 Hz high pass filter for VERTEC models and a 80 Hz low pass filter for VERTEC subwoofers (subwoofers have positive polarity)
- X presets allow the low section for VERTEC models to operate in fullrange mode with maximum LF extension and apply an 80 Hz low pass filter for VERTEC subwoofers (subwoofers have negative polarity)

Note1: Always use the corresponding sub/low processing option for VERTEC and VERTEC subwoofer models, i.e., make sure the low section and subwoofers are both operating in the same mode (X, 60 or 80).

## SUBWOOFER TIME ALIGNMENT

Subwoofer sections for all presets are pre-time aligned for closely-coupled configurations where VERTEC enclosures (VT4886, VT4887A, VT4888, VT4889) are either stacked on top of, or suspended below VERTEC subwoofer enclosures (VT4881A, VT4882, VT4883, VT4880, VT4880A). For closely coupled conditions, proper summation is obtained when the corresponding sub/low processing option is used for both VERTEC and VERTEC subwoofer models, i.e., low section and subwoofers are both operating in the same mode (X, 60 or 80).

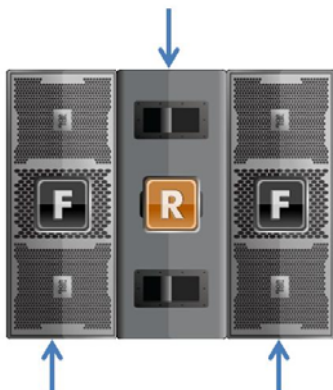
For suspended VERTEC and ground-stacked VERTEC subwoofer configurations, simply add the measured geometric path length difference between the flown system versus ground stacked subwoofers (at your reference location of choice) to the input delay processing block on ITechHD amplifiers as a starting point for time alignment measurements and further adjustment.



## CARDIOID SUBWOOFER CONFIGURATIONS

To implement VT4881A, VT4882, VT4883, VT4880 or VT4880A cardioid configurations, simply select the appropriate X, 60 or 80 preset for front- and rear-firing enclosures, respectively, as illustrated below for the case of VT4880 enclosures:

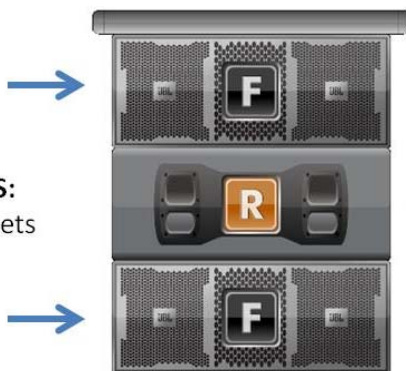
**REAR-FIRING ENCLOSURE:**  
VT4880 VT4889 CARDIOID X, 60, 80 presets  
or  
VT4880 VT4888 CARDIOID X, 60, 80 presets



**FRONT-FIRING ENCLOSURES:**  
VT4880 VT4889 X, 60, 80 presets  
or  
VT4880 VT4888 X, 60, 80 presets

VTX S28 enclosure suspension is compatible with VerTec VT4880 and VT4880A models to facilitate the implementation of cardioid configurations. The physical offset required to align suspension frames is accounted for in the preset, simply select the appropriate X, 60 or 80 preset for front- and rear-firing enclosures as illustrated below for the case of VT4880 enclosures:

**FRONT-FIRING ENCLOSURES:**  
VT4880 VT4889 X, 60, 80 presets



**REAR-FIRING ENCLOSURE:**  
S28 VT4880 CARDIOID X, 60, 80 presets



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### IMPORTANT NOTES:

**VERTEC V5 will not be available for non-HARMAN PRO Digital Signal Processors**  
*(Crown I-Tech HD power amplifiers, BSS Audio Soundweb London or JBL DrivePack DPDA input modules are required in order to use V5)*

**VERTEC V5 is currently available for Crown I-Tech HD power amplifiers only**  
*(Vertec DrivePack DPDA input module support to be added in the near future)*  
*(BSS Audio Soundweb London macro support to be added in the near future)*

**Crown I-Tech HD power amplifiers must be operated at 96 kHz when using VERTEC V5**