dBTechnologies
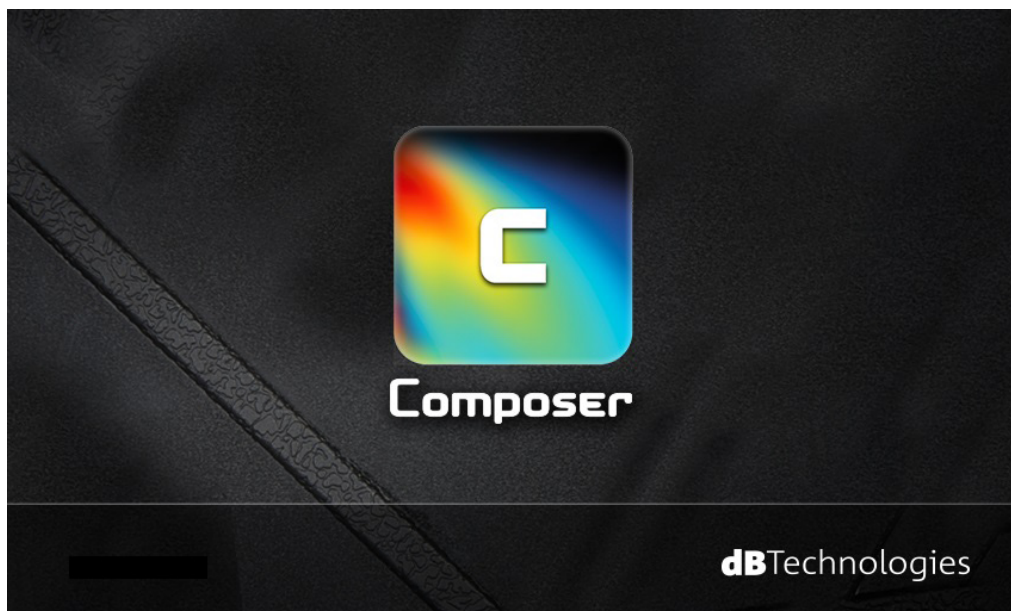# Composer

---

VER. 6.0

QUICK REFERENCE

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dBTechnologies

CONTENTS

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1.6 PC SYSTEM REQUIREMENTS

Due to system variability of computer hardware it is not possible to determine general system requirements for the optimum operation. In the following you will find some recommended system requirements which have been established after several tests with various PCs. Even if your PC fulfils the system requirements, problems can occur with dBTechnologies Network softwares, due to special hardware or software configurations. It is not possible to provide a 100 percent operational guarantee with dBTechnologies Network software.

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2. MINIMUM SYSTEM REQUIREMENTS

- Microsoft® Windows® 10, Windows® 8.1, Windows® 8, Windows® 7 (SP1), Windows® XP® (SP3) operating system
- Intel® Core™ i3, or higher, processor
- 1 GB system memory RAM (2 GB recommended)

3. WHAT'S NEW

VERSION: 6.0 (dBTechnologies Composer)

a) Added VIO and K series
b) Added accurate DRK-210 fly-bar frame management (with mechanical calculations and center of gravity simulation).
c) Added "manual mode" new management
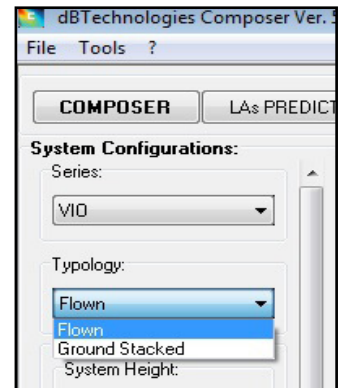d) Bug fixes

a) ADDED VIO and K series

Now it's possible to manage our products:
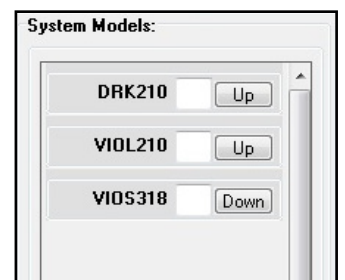
DRK-210
VIO L210
VIO S318
DVA K5
DVA KS10
DVA KS20

It's necessary to select VIO series or DVA K from the specific combo box as shown in the picture.
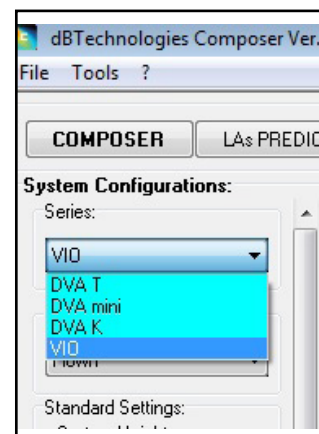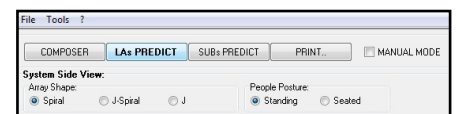
Then it's important to select if the system will be flown or in ground stacked configuration.

The related VIO or K products will appear consequently (in dependance on the "Typology" filed).

WIth the new series, in LAs PREDICT page, in Line Array Data table, there is the new management of double rotary (Speaker Coupling and High Frequency Compensation).

Line Array Data:

N°	Model	Angle [°]	SPEAKERS COUPLING	HIGH FREQ COMP.	Delay [ms]	Shape	Weight [kg]
Flybar# 1	DRK210	2,2	-----	-----	-----	-----	21,5
Box# 1	VIOL210	4	B	8	0	----	28,6
Box# 2	VIOL210	0	B	6	0	----	28,6
Box# 3	VIOL210	2	B	4	0	----	28,6
Box# 4	VIOL210	3	B	3	0	----	28,6
Box# 5	VIOL210	3	B	3	0	----	28,6
Box# 6	VIOL210	3	B	3	0	----	28,6
Box# 7	VIOL210	4	B	3	0	----	28,6
Box# 8	VIOL210	7	B	3	0	----	28,6

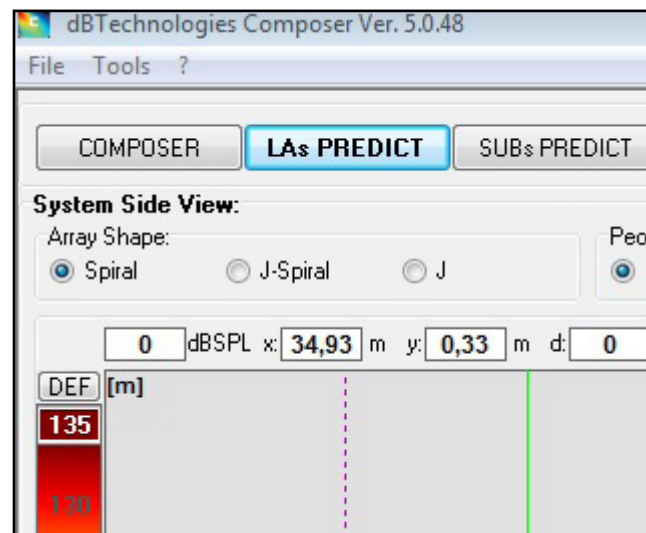## b) ADDED ACCURATE DRK-210 FLY-BAR FRAME MANAGEMENT

In LAs PREDICT page, on the right side, the graphical
interface is now updated with the option of 2 chain
motors for DRK-210 flybar.
It contains all mechanical parameters and calculations for
a safe installation.
In particular, in System Data subpage, once has previously
been selected the flown installation with VIO system,
you can find, among others, the fly bar tilt angle and the
double rigging graphical representation.

N.B.
To check the actual tilt angle of DRK-210 flybar frame it
is possible to mount a laser inclinometer on the frame
before the installation. For further information please
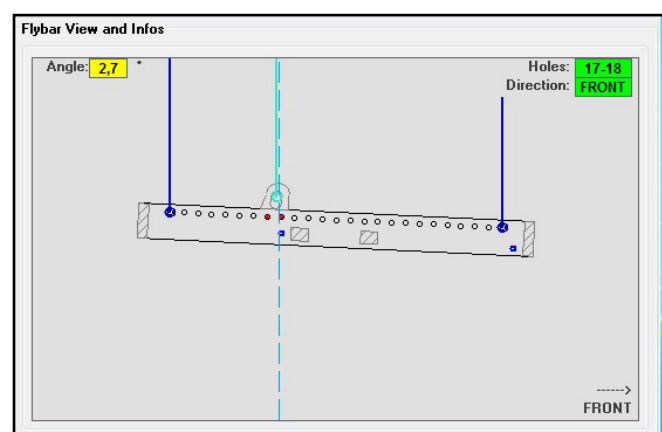check DRK-210 mounting instructions.

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In Safety Data, the user can find a complete simulation of the line-array center of gravity, with weight and safety informations.

In particular, 2 safety references, as usual, can be choosen (EUROCODE 3 or BGV-C1). The related result is a percentage of the maximum weight capacity used in the configuration, shown in a green label, if safe, or in red label, if not admitted.
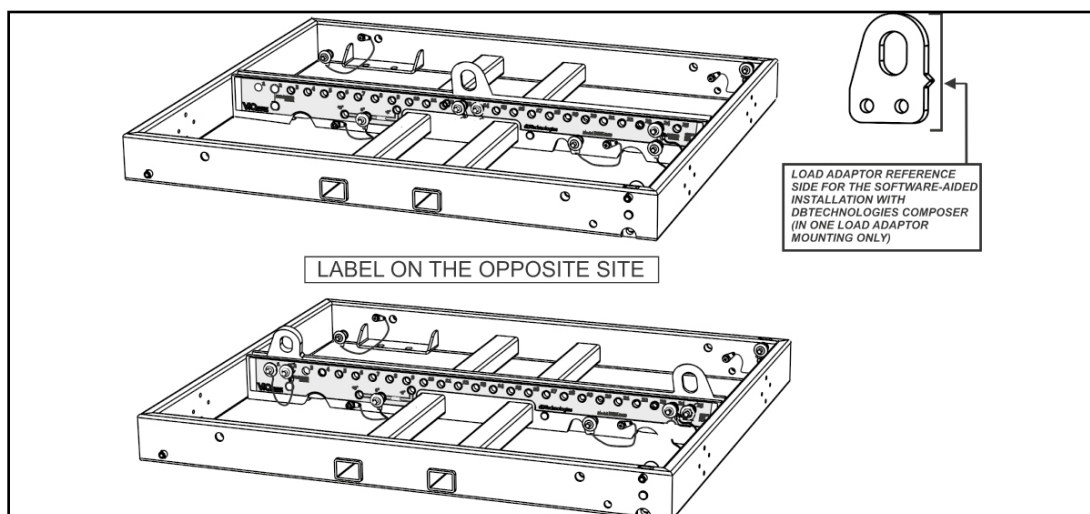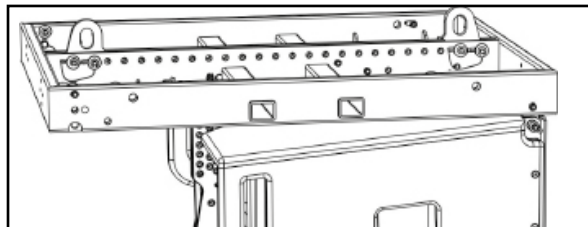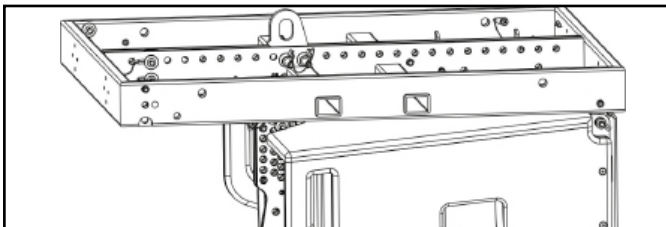
In case of use of only one chain motor, the "SINGLE" reference give the number of the holes in load adaptor positioning.

Please note that these holes are numbered on a label on the side of the actual DRK-210 fly-bar frame. The "FRONT"/"REAR" indication is about the reference of 1 load adaptor, as shown in the picture below. In case of "FRONT" this reference must be on the side of the front of line-array, in case of "REAR" in the rear one.

In case of use of two chain motors, the references holes are the external (extreme) one, and the reference orientation it is not important.

Please not that in each case each motor has to be sized in accordance with the weight reported in "LOAD" field.

For further information please refer also to DRK-210 mounting instructions.


LABEL ON THE OPPOSITE SITE

LOAD ADAPTOR REFERENCE SIDE FOR THE SOFTWARE-AIDED INSTALLATION WITH DBTECHNOLOGIES COMPOSER (IN ONE LOAD ADAPTOR MOUNTING ONLY)

c) ADDED "MANUAL MODE" NEW MANAGEMENT

It is possible to manually tune in every moment an existing project.

Manual mode can be entered:

- directly by checking the field "MANUAL MODE"

- automatically, when the coverage angle is modified (graphically in Sytem Side view, or inserting a value in System Data table). In this case the modified angle is highlighted in yellow.
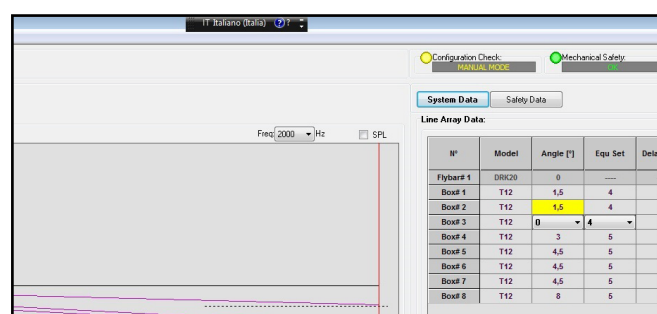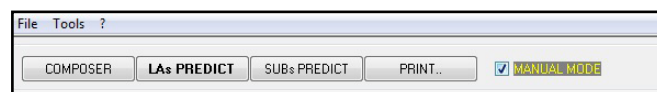
- automatically, when one equalization parameter is modified. This features is not allowed for VIO series, and it is allowed only in High Frequency Compensation in DVA K series. The modified equalization value is highlighted in yellow.
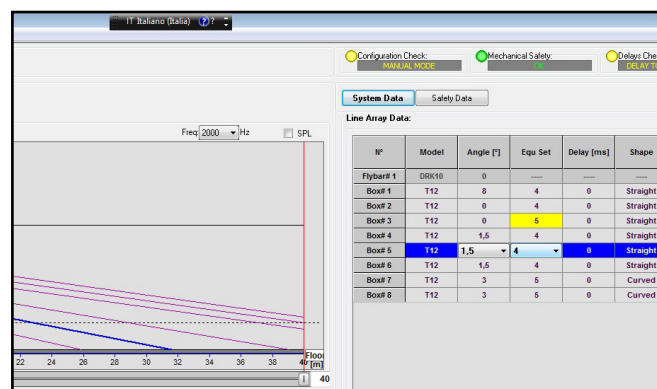

When manual mode is on, the related label in Configuration Check highlight this condition.
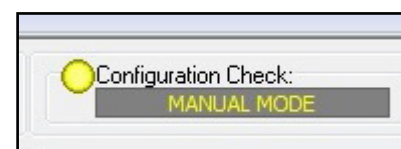
Please note that in this mode, some variations of the parameters do not affect the overall calculations, but result only in local modifications:

- adding some modules in manual mode does not imply splay angle calculation for these modules (see the example in the pictures)
- modifying the coverage angle does not modify all the paramenters of the overall system scenario
- modiying balcony settings does not imply angle and coverage modification
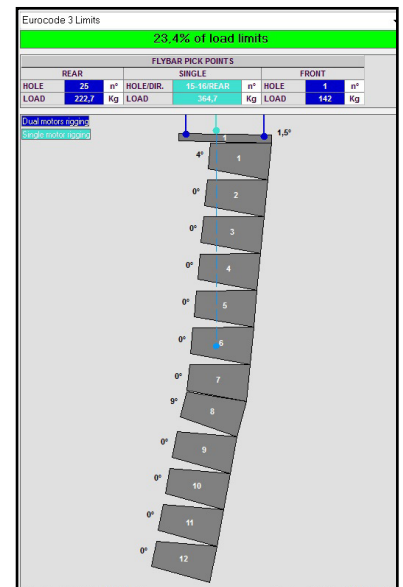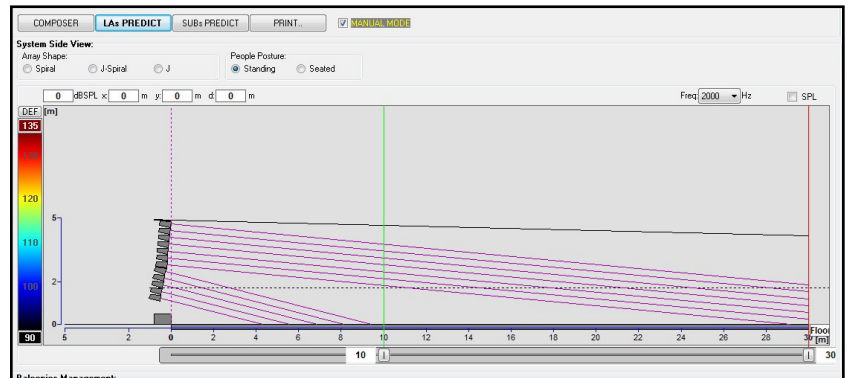
If you need an overall upgrade of all the parameters, in dependance of these parameters variation, you need to uncheck the related box of MANUAL MODE. The upgrade is automatic. The system will be completely upgraded, but the local modifications will be lost.
In the following warning you need to press "Yes" as you can see in the picture.
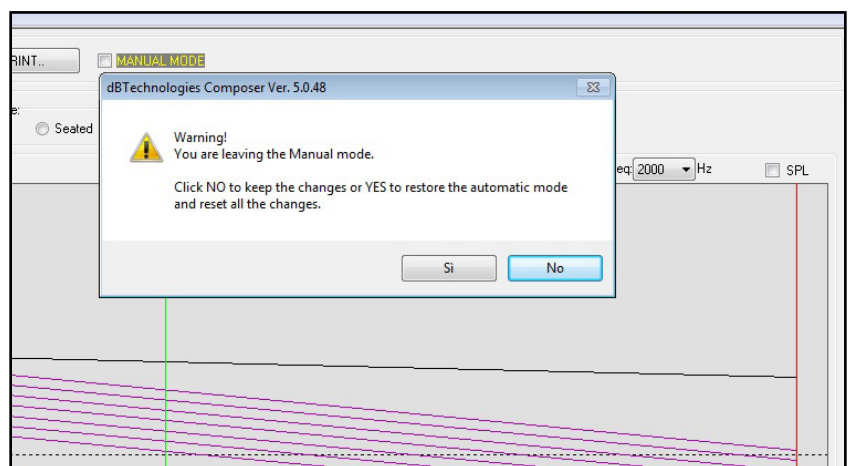
VERSION: 5.0 (DVA Composer)

a) Added DVA MINI management
b) Added Subs S15H and S18H management
c) Added new spl color rulers management
d) Added spl chart control panel (zoom, fit, move, curves)
e) Improved multi frequency's spl display
f) Improved the subwoofer spl calculation
g) Added sub's delay management (on board / external processor)
h) Added new splash screen management and new software icon
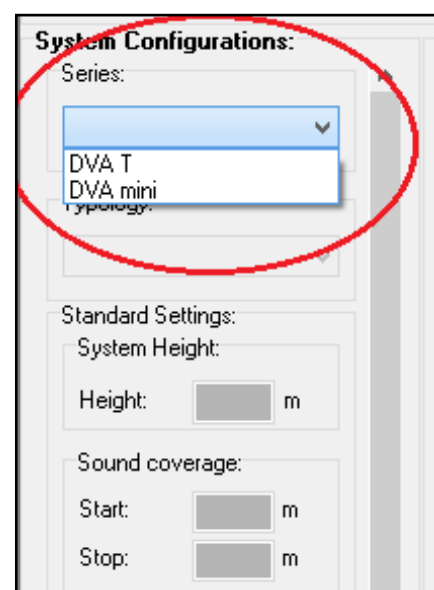i) Bug fixes

a) ADDED DVA MINI MANAGEMENT
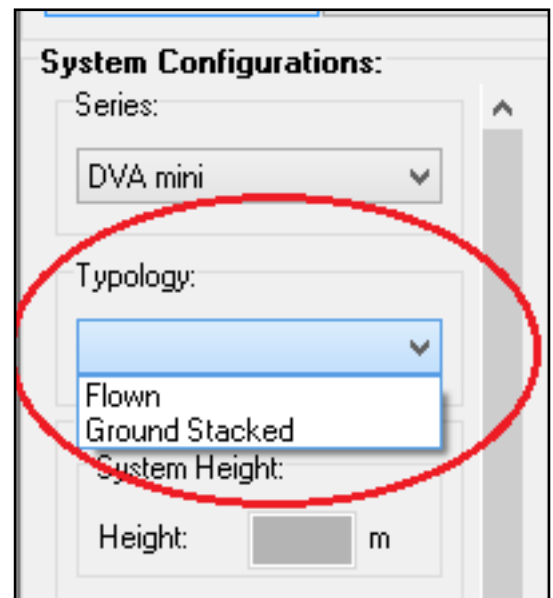
Now it's possible to manage our products:

DVA M2M
DVA M2S
MS12
S15H
S18H
DRKM5
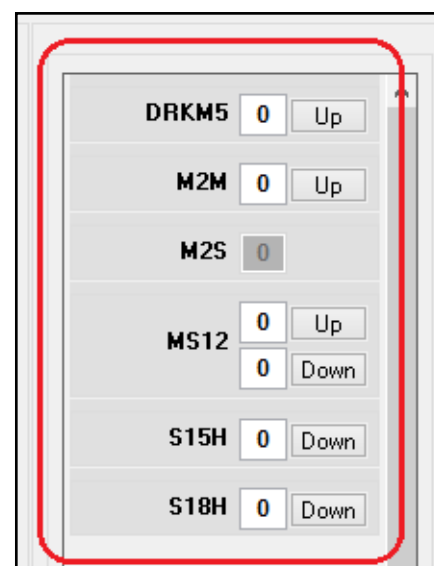
It's necessary to select DVA T series (T12 – T8, etc...) or DVA Mini series (M2M – MS12 – S18H etc..) from the specific combo box as shown in the picture.

Then it's important to select if the system will be flown or in ground stacked configuration.
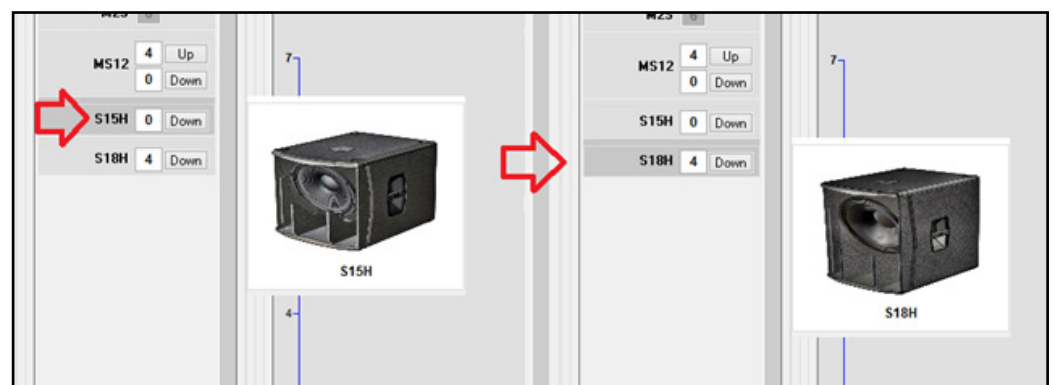
N.B. The DVA Mini system is composed by a Master module and Slave module. The number of M2S (Slave) is dependent from the number of M2M (Master). In facts for every M2M added an M2S will be added automatically.
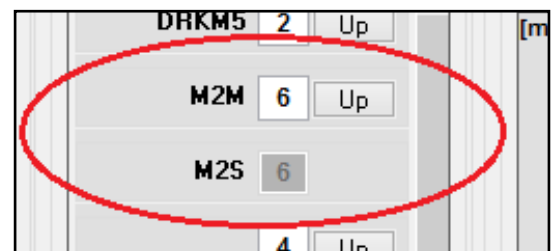
b) ADDED SUBS S15H AND S18H MANAGEMENT

The version 5.0 of DVA composer allows to manage the new subs S15H and S18H.

c) ADDED NEW SPL COLOR RULERS MANAGEMENT

In the LA predict window or Sub predict windows it's present a new way to manage the values and colors of the SPL shown.
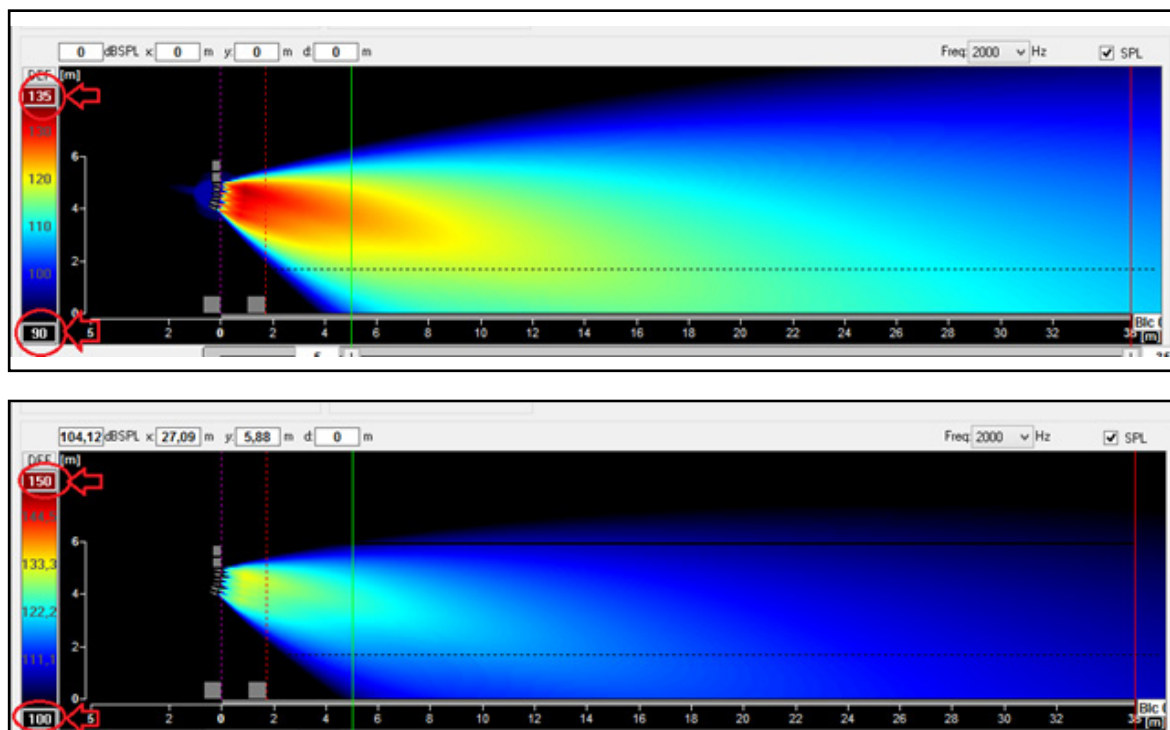
The software starts with a standard range of values (max 135dB, min 90 dB) just clicking over the cells shown in the picture 8 it's possible to change these parameters.
Clicking over DEF button the software restore the default values (135 - 90 dB)
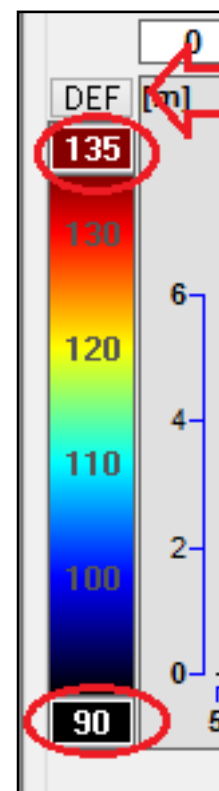
DVA Composer 5.0 performs several checks automatically to control if the values are correct.
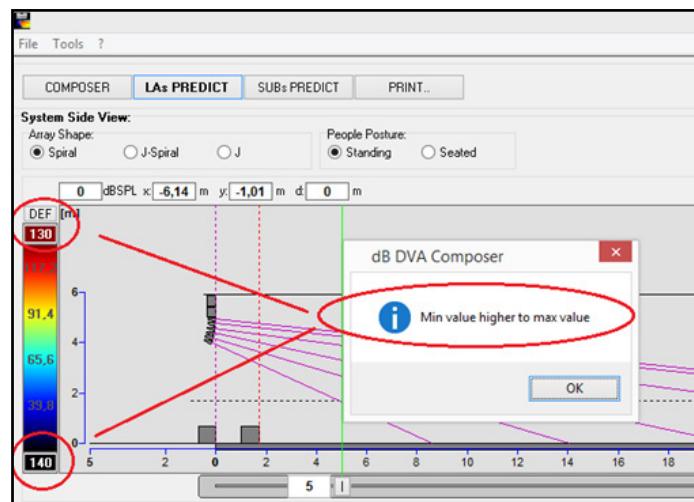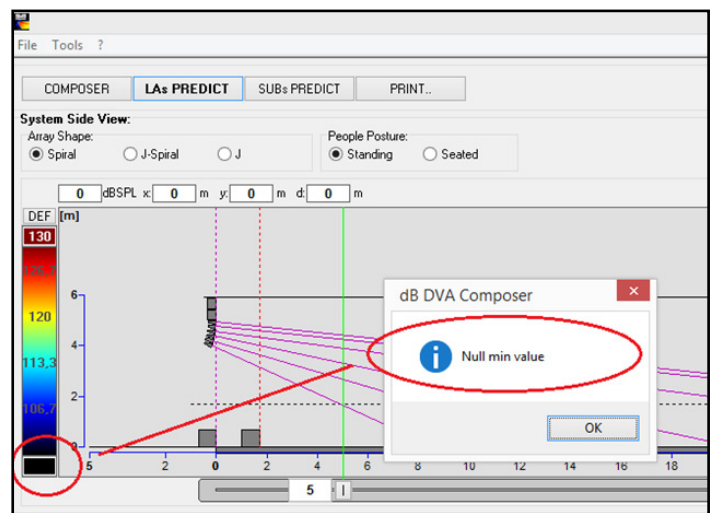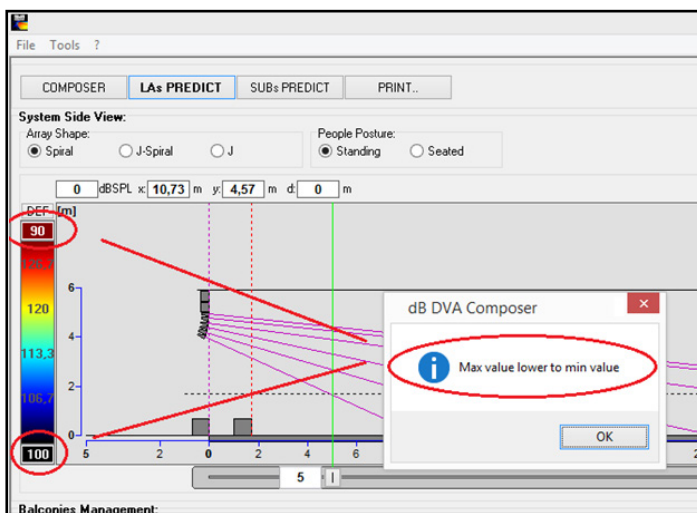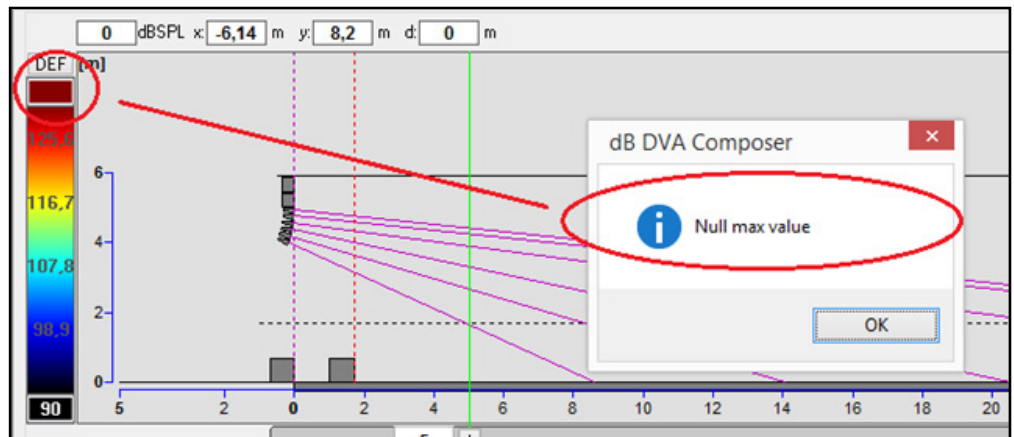
d) ADDED SPL CHART CONTROL PANEL

With this new feature you can navigate into the spl chart. This allows to have a more accurate analysis of the spl shown.
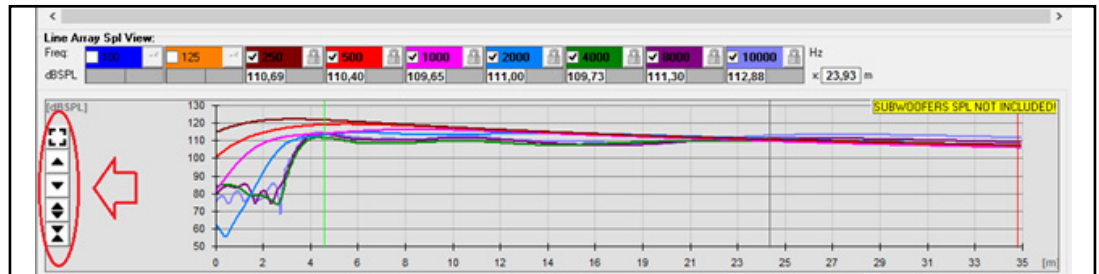
The line that show the coverage is fixed, you can navigate only through the spl bar (vertically).

A)   Fit the chart
B)   Shift up the chart
C)   Shift down the chart
D)   Zoom In
E)   Zoom Out

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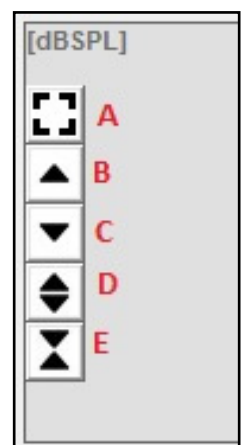
e) IMPROVED MULTI-FREQUENCY DISPLAY

Now, Dva Composer 5.0 have this important feature, it allows to show in the spl chart nine frequencies (third octave) at the same time.

In the chart two vertical bars (green and red) border the requested coverage, but the graph display entire spl values from zero meters to the max coverage requested. In the row Freq. we have a flag to enable the frequency, the frequency's value and the hold button to freeze the line plotted on the chart.
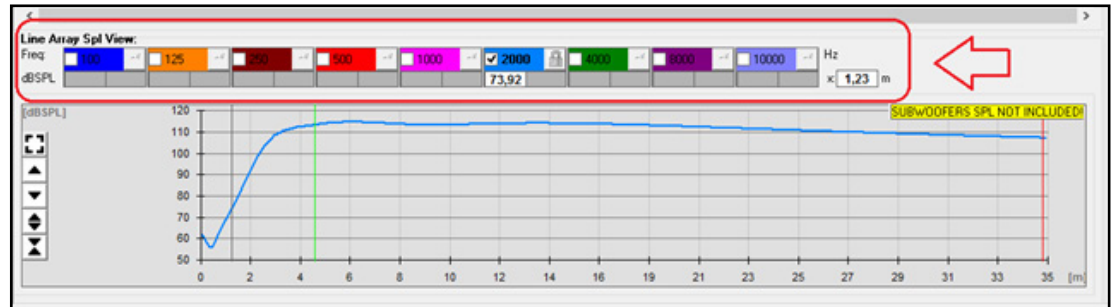
In the dB SPL row is shown, in the first cell, the dBSpl values at the frequencies enabled. This value is correspondent at the position of the cursor on the chart. When the hold button is enabled, under this button it will show the value of the curve frozen to compare with the actual curve at the same frequency.
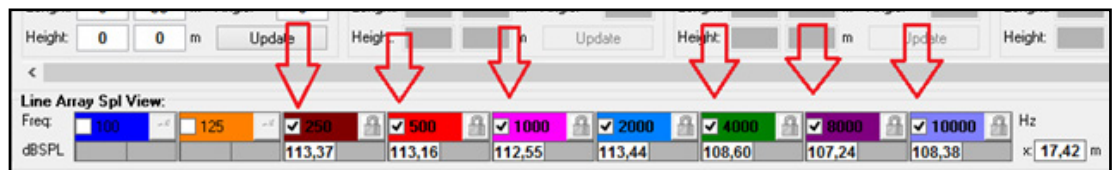
N.B. it's possible to enable only one hold button at the same time. At the end of the dB SPL row is shown the position in meters of the cursor into the coverage range.

f) IMPROVED THE SUBWOOFER SPL CALCULATION

In DVA Composer 5.0 it's been inserted the real frequency response curve of every subwoofers.

g) SUBWOOFER DELAY MANAGEMENT

As Shown in picture you can choose the delay calculation mode for end fire setup. In fact, if your system is equipped of an external processor, the DVA Composer give you the possibility to set the delay mode on EXT PROC. (Priority will be given to the attenuation frequency and to the distance between the subwoofers). In ON BOARD mode the delay will be calculated according to step allowed by the internal processor of our subwoofers

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4. COMPOSER SECTION

STANDARD SETTINGS

In Standard settings section you can quickly set up your scenario.

You just have to insert:
- the height of your system as flybar vertical position [1.1]
- venue settings: start coverage and end coverage positions [1.2]

If you don't need any special settings you can skip to Section LINE MODULES.

ADVANCED SETTINGS

Clicking on Line array setting checkbox [1.3] you can modify the gap between the two line array systems and the gap between the eventual Left\Right subwoofers clusters.
In Stage setting it's possible to set the stage dimensions: height, width and depth of the stage [1.4].
Enabling Framework setting you can choose between truss-layers
or horizontal-truss [1.5].
If you change something you can click on UPDATE Current System [1.6]
to apply the changes.

SYSTEM MODELS

In the System Models column on the right you can find the complete list of DVA products, in terms of: flybars, line array speakers, subwoofers.

Before adding the modules you have to choose between one of the two available flybars, DRK10 [1.7] or DRK20 [1.8].
At this point you can add the modules by just double-clicking on the relevant box or inputting the total number of modules you have and then pressing *Enter* button.
Instantly the chosen modules will appear on the right graph window.
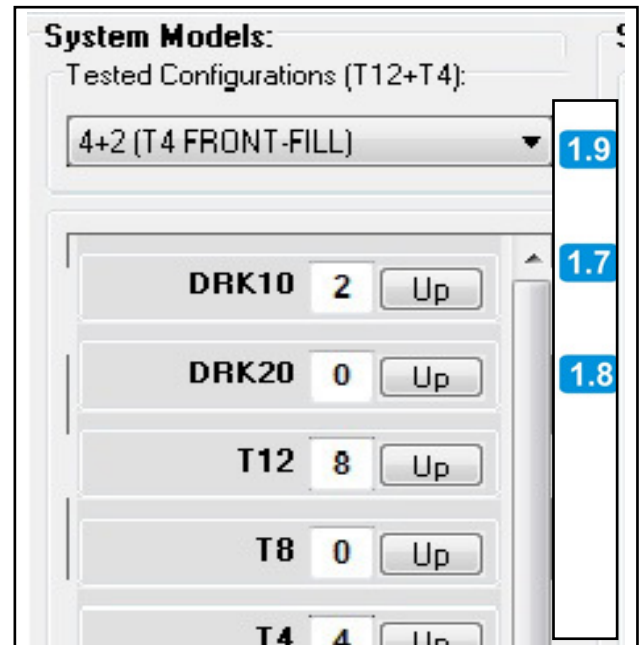
TESTED CONFIGURATIONS

In the drop-down box at the top you can choose from a set of tried and tested configurations of T4 and T12 [1.9]
Time after time dBTechnologies will release more tested configurations to help users having the best results they can reach with their systems.

ALARMS

If the configuration is a good one, the Configuration check alarm will be green, otherwise this label will be yellow and Configuration not recommended will appear.

dBTechnologies
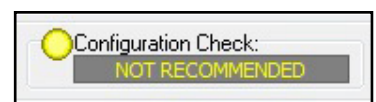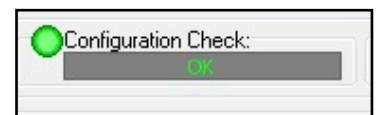
5. LINE ARRAY SECTION

Now click on LAs PREDICT button.

PREDICT VIEW

On the first graph you can see the actual prediction of your system, based on the data you entered on the previous page.
You can modify the angle of the ground [2.1], or add up to three balconies and modify them in terms of dimensions and inclination [2.2].
The software will update all the data in real time.

If you prefer a different coverage, you can either go back to the first page and modify the coverage section, or simply move the cursors under the graph.

You can choose among three different shape modes [2.3]:
• Spiral: the shape will be rounded like a spiral
• J: the first modules will be in straight position to cover longer distances.
• J-Spiral: a hybrid solution, including spiral and J shapes. This configuration works for every situation.

Also, it's possible to choose between standing or seated audience [2.4].
Clicking on SPL button [2.5] (after having set the evaluation frequency) the sound pressure level field will appear on the graph.
With the mouse you can go around the graph and the SPL label [2.6] will show the RMS power at that point. And also, clicking on the graph you could use a ruler to measure the distances [2.7].
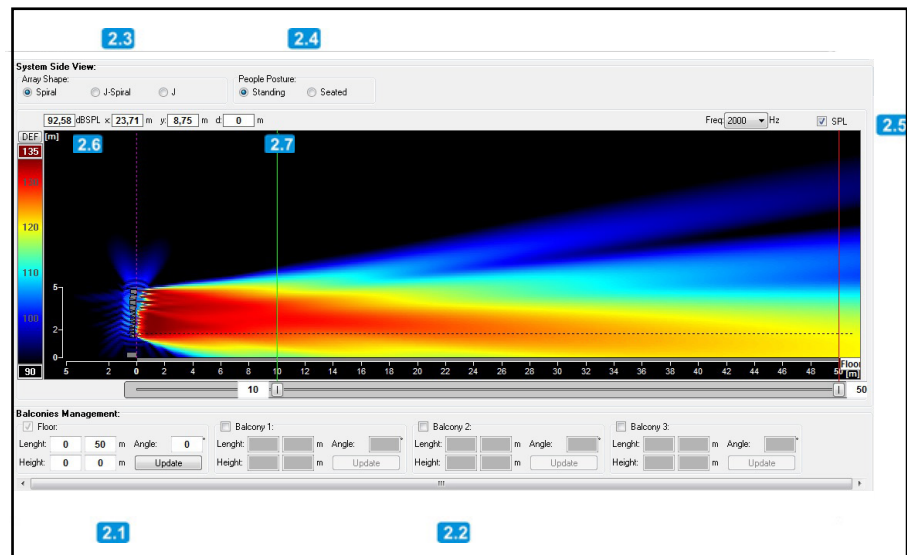
MANUAL MODE

This feature allows you to change the angles between each module and the inclination of the flybar.
You can change them just selecting the line coming out from a single module [2.8] By clicking and holding it, the software will display every available trajectory for the module [2.9], and with a simple drag you can change the box inclination [2.10]. Note that the software applies the changes in real time, and you can instantly check mechanical safety and frequency response of the system.
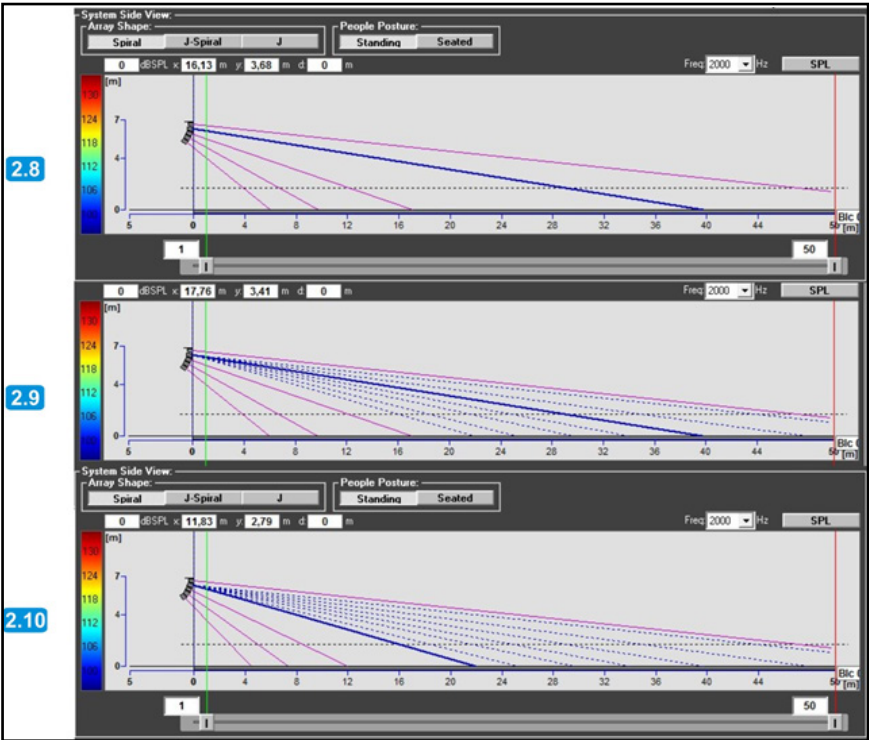
At the time you enter in "manual mode", the configuration check alarm turns yellow [2.11], and EQs of all modules are "frozen" to the last configuration provided by the software (Spiral, J, or J-Spiral shape).

As "manual mode" is set, you can manually change EQs presets just in the "line array datas", from there you can choose between some different appropriate EQ presets , according to the total number of cabinets of the array [2.12].

N°	Angle [°]	Equ Set	Model	Shape	Weight [Kg]	Delay [ms]
Flybar# 1	0	----	DRK20	----	18,7	----
Box# 1	3	4	T12	Straight	29	0
Box# 2	0	4	T12	Straight	29	0
Box# 3	0	4	T12	Straight	29	0
Box# 4	0	4	T12	Straight	29	0
Box# 5	0	4	T12	Straight	29	0
Box# 6	1,5	4	T12	Straight	29	0
Box# 7	1,5	4	T12	Straight	29	0
Box# 8	1,5	4	T12	Straight	29	0
		4				
		5				

LINE ARRAY SPL VIEW

On the section shown in the picture you can see the power of your system depending on the distance and the chosen frequency.

That's the fastest way to understand how the SPL coverage works at ear-height, without clicking on SPL button on the graph above.

You can hold one of the curves and compare it with new ones given from different setups or different frequencies.
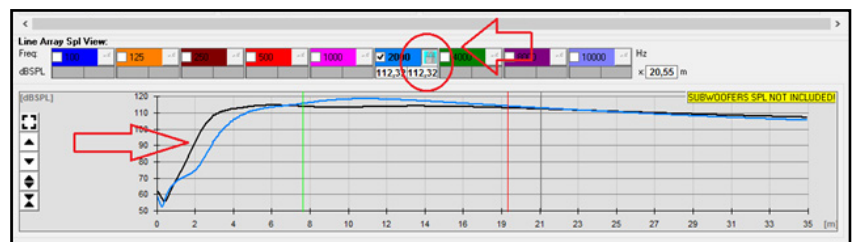
SYSTEM DATA

In the right window you can see all the information relating to the system (Picture 6), for each module in terms of:

• Mechanical angle to be used [2.14]
• Eq preset to be set up with the rotary encoder on the amplifier module [2.15] (you can modify EQ Presets only in "Manual Mode")
• Speakerbox model [2.16]
• Speakerbox sector affiliation: straight or curved [2.17]
• Weight of the module [2.18]
• Delay of the module [2.19]

2.14	2.15	2.16	2.17	2.18	2.19

Angles View:

N°	Angle [°]	Equ Set	Model	Shape	Weight (Kg)	Delay [ms]
Flybar# 1	0	----	DRK20	----	18,7	----
Box# 1	4,5	4	T12	Straight	29	0
Box# 2	0	4	T12	Straight	29	0
Box# 3	0	4	T12	Straight	29	0
Box# 4	0	4	T12	Straight	29	0
Box# 5	0	4	T12	Straight	29	0
Box# 6	1,5	4	T12	Straight	29	0
Box# 7	1,5	4	T12	Straight	29	0
Box# 8	1,5	4	T12	Straight	29	0
Box# 1	2,5	2	T4	Straight	13,8	0
Box# 2	2,5	2	T4	Straight	13,8	0
Box# 3	2,5	2	T4	Straight	13,8	0
Box# 4	2,5	2	T4	Straight	13,8	0

FLYBAR VIEW

In this window you can find flybar information (Picture 7):

- Angle of flybar [2.20].
- Holes where pivot has to be attached [2.21].
- Pivot position [2.21]: please note that dBTechnologies DRK20 pivot is asymmetrical; this for doubing the number of available suspension points for a more precise aiming of the system. Thus it's important to know the right position of the vertical side of this item. The options are two: vertical side to front or vertical side to back.
- Capacity of the flybar [2.22]: that's the maximum weight which flybar can support.
- Total weight of the current speaker boxes system [2.22].
- Total weight of the current system, including flybar weight [2.22].
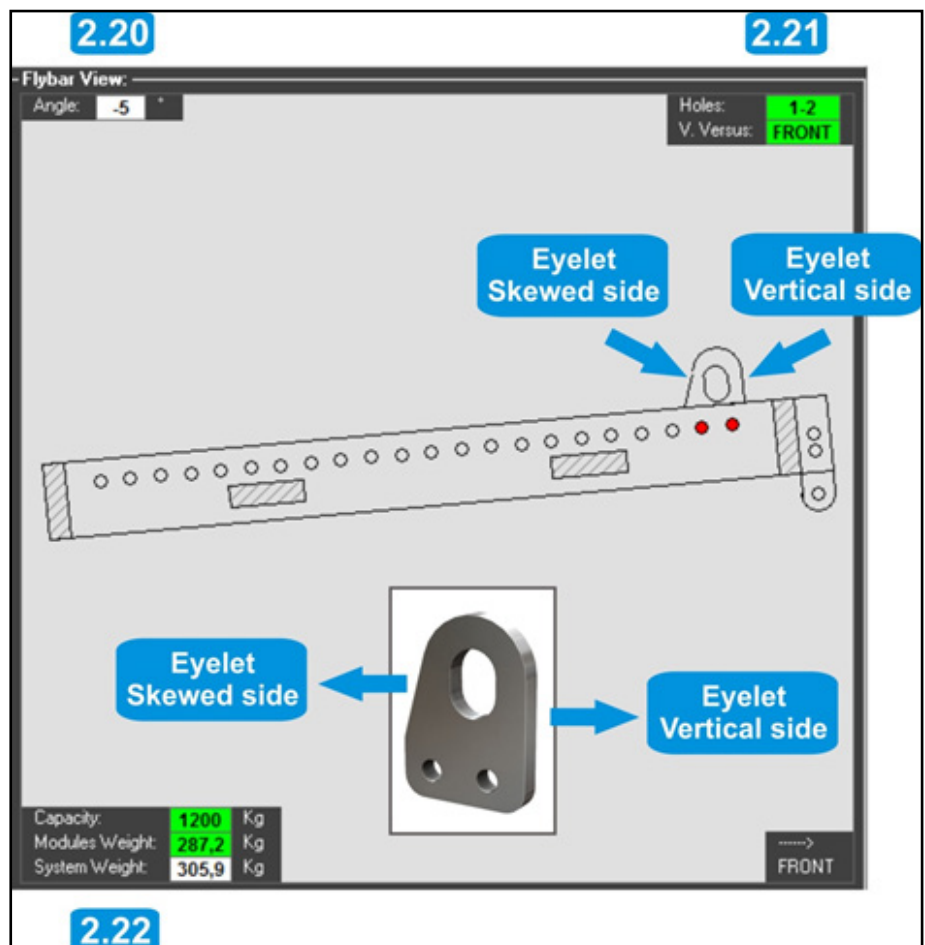
If the total weight of the boxes exceeds flybar capacity, the Mechanical safety alarm , will turn to red, in order to indicate this fact [2.20]. If the shape of the array is rot reachable with the available pinpoints of the flybar, the alarm will turn again to red [2.19] .
The obvious aim to rig up a system in safety condition, is to have a green alarm [2.18];
however, the simulation software can work even if the weight exceeds the maximum recommended one, but in this case the safety is compromised.

6. SUBWOOFER SECTION

On Subwoofer section you can manage your subwoofers setup

SUBWOOFERS CONFIGURATIONS VIEW

First of all you can choose between six available configurations:

- Left-Right [3.1]: the subwoofers will be placed under the two line array columns.
- Center [3.2]: the subwoofers will be placed at the center between the two line array columns. In this case the central audio channel from the mixer is needed.
- Left-Center-Right [3.3]: The subwoofers will be distributed between left-right and central positions. In this case, the central audio channel from the mixer is required in addition to left and right signals.
- Line [3.4]: the subs will be placed along a line, with different distances, to give the more powerful SPL response on the front/back and to attenuate the SPL on the sides. For this configuration, the central audio channel from the mixer is required; you can also connect the left ones to the left channel and the right ones to the right channel, but the results will be not the same as using the central signal.
- Cardioid [3.5]: the subs will be positioned in cardioid configuration to preserve the maximum power on the front and to attenuate the SPL on the back. If there is just one column, the central audio channel is required (L+R sum), but if there is an even number of columns, left-right channels can be used for central-left / central-right columns. The results in coherence of the low frequency dispersion wouldn't be of course the same as using a central audio channel, but the system will still work.
- End Fire [3.6]: the subwoofers will be placed in end-fire configuration and gaps/delays will be indicated in the lists on the right. As for Cardioid configuration, it's better to feed this cluster with a mono audio channel (L+R sum), even if the system can work (for even subs numbers) with left-right channels connected to left-right subwoofers.
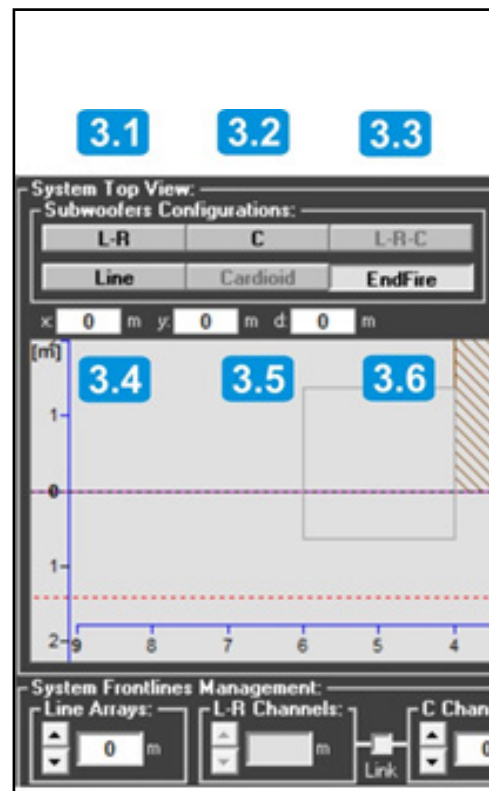
For every configuration you can choose among different dispositions, for both left-right and central channel [3.11]. Please note that the first number means the number of columns and the second one (the one in brackets) is the number of subs in each column (example: "4(2)" means a disposition in 4 columns of 2 sub each. Total: 8 subs).
If you have two different models of subwoofers, you can also modify the positioning moving one model from central to left-right position and vice versa, just clicking on "Invert" [3.12].
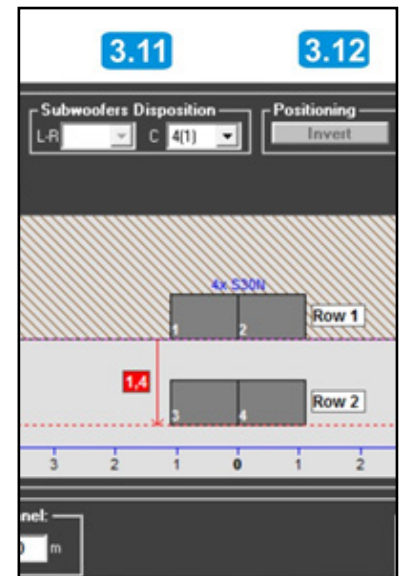
SYSTEM FRONTLINE VIEW

if you need the line array to be moved forwards or backwards from its starting position you can use the cursors on Line Array section below [3.7].
You can also write the position and press "Enter" to get the same result.
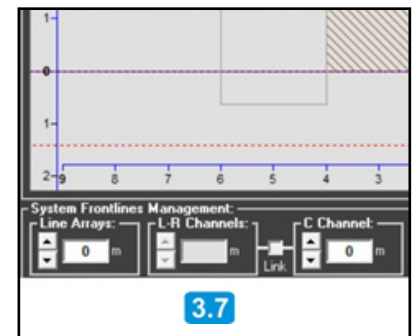

The same goes for the position of the subwoofers [3.8]: you just have to move them with the "L-R channels" and "C-channel".
You can also link the channels and move them all together.
Attenuation Frequency [3.8] is available for Cardioid and End-Fire configurations.
Opening Angle [3.9] is available only for Line setups. Here you can choose among some opening angles to set the proper line configuration with the number of subwoofers you have.
X-over frequency can be set up by drop-down menus [3.10].

Note that moving frontlines involves changing in delays for tops and subs phase alignment. Please always check "delay check" alarm on the top of the screen in order to have information about this issue.
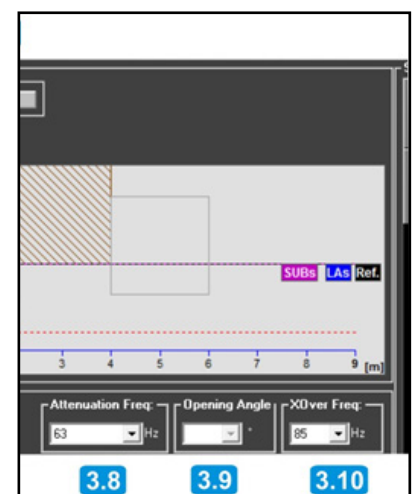
SUBWOOFERS SPL VIEW

The graph below (Picture 9) shows the sound pressure level field for the chosen configurations.
You just have to choose the evaluation frequency [3.14] and press the SPL button [3.15].
With the cursor you can go around the graph and the SPL label will show the peak power at that point [3.16].
Also here a ruler is available just clicking over the graph and moving the mouse around the power field [3.17].
The "Polar Pattern" box is available only when DVA S2585N Cardioid Subwoofers are selected. This dropdown menu let you choose polar pattern of the DVA S2585N subwoofers among Cardioid, Supercardioid and Hypercardioid. [3.18].
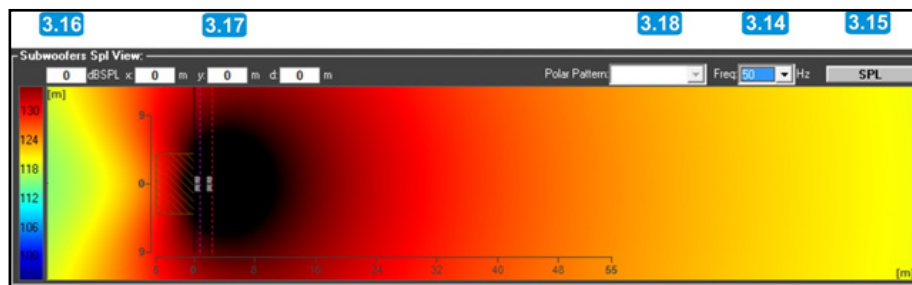
SUBWOOFERS DATA

On the left of this chart, there is the complete list of the subwoofers set, with all data for the chosen configuration.
- X-over frequency [3.19]
- Delay of each sub [3.20] (if the subs are placed so that the delays have to be set on the line arrays, the Delay checkbox will change from green to yellow and Delays to line array will appear in it).
- Phase [3.21]: phase of each sub: 0° or 180° for phase-reverse.
- Verse of the subwoofer [3.22]: indicates the position of the front side of each subwoofer; it means that if the subwoofer has to be physically rotated by 180°, BACK will appear on this column, otherwise it will say FRONT.
- Subwoofer model [3.23].
- Position of the subs frontline [3.24] (in case of end-fire configuration. it shows the position of the back subwoofers frontline) measured from the reference frontline (normally that's the stage frontline).
- Gap between the subwoofers frontlines [3.25] in case of end-fire configuration. This measure is taken considering the gap front-to-front of the two subs frontlines.

Chnnl	Row	N°	X-Over Freq [Hz]	Delay [ms]	Phase [°]	Verse	Model	Stage Gap [m]	Gap [m]
C	1	1	75	9	0	FRONT	S30N	0	0
		2	75	9	0	FRONT	S30N	0	0
		3	75	9	0	FRONT	S30N	0	0
		4	75	9	0	FRONT	S30N	0	0
	2	5	75	13,5	0	FRONT	S30N	1,7	1,7
		6	75	13,5	0	FRONT	S30N	1,7	1,7
		7	75	13,5	0	FRONT	S30N	1,7	1,7
		8	75	13,5	0	FRONT	S30N	1,7	1,7

7. PRINTOUT SECTION

On Printout section you can print your setup.

PROJECT INFO

Before printing the project, you can add some info about your event and you can also write down some notes about your setup.
After pressing Print Preview button the software will calculate all data you inserted and it will show a preview of your printout.
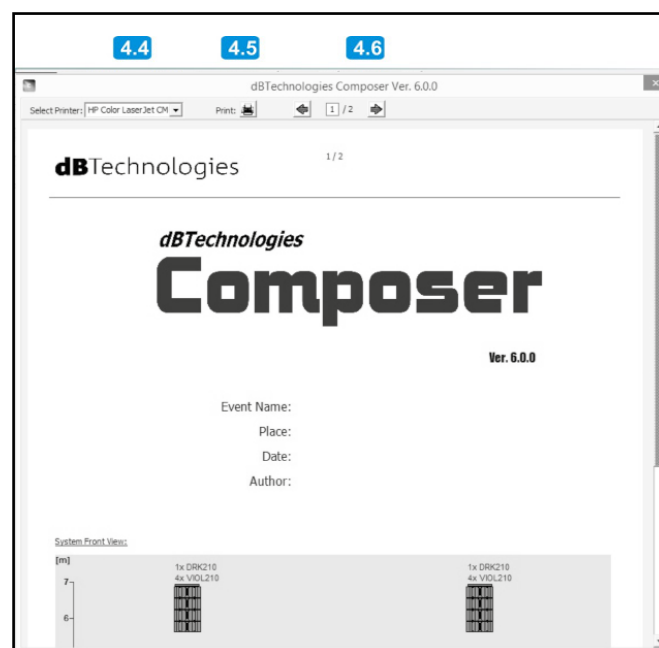

PRINT PREVIEW

In Print preview you can see the three pages created by the DVA Composer, clicking on the buttons on the top of the window [4.6]. Then you can select your printer [4.4] or your PDF creator software and at the end click on Printout button [4.5] to get the printout of the setup.

⚠️ *USER SHOULD NEVER APPLY A LOAD THAT EXCEEDS THE WORKING LOAD LIMITS OF ANY RIGGING COMPONENTS OR EQUIPMENT HERE PRESENTED. DESIGN, CALCULATION, INSTALLATION, TESTING AND MAINTAINANCE OF SUSPENSION AND STACK SYSTEMS FOR AUDIO EQUIPMENT MUST BE PERFORMED ONLY BY QUALIFIED AND AUTHORIZED PERSONNEL. AEB INDUSTRIALE S.R.L. DENIES ANY AND ALL RESPONSIBILITY FOR IMPROPER INSTALLATIONS, IN THE ABSENCE OF SAFETY REQUIREMENTS.*

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