

# MEGATREND MkII

- The rebirth of an audio icon -



The brand new Megatrend MkII

In the 1970's Bo Bengtsson designed a dipole speaker system so far ahead of its time that the audio industry nicknamed him "Mr. Megatrend."



The original

**The original concept** and idea (as seen in the picture to the left), was to create an open dipole system that allows the speaker system to "breathe" by not encapsulating the back wave into a cabinet of any kind.

This has been done before but never to the level of "no compromise" as in the case of the Megatrend's and never by using "conventional" but refined electro-dynamic woofer technology to its full capacity.

To get an idea of the advantage of an enclosure-free cabinet, cup your hands in front of your mouth while speaking, and you get a sense of the coloration problems any "normal" speaker has to face (and solve) by implementing internal damping into the box.

## "Nothing beats cubic inches"

It can be shown that dipole speakers, given the right circumstances, beats "anything" when it comes to performance parameters, due to the removal of the cavity effect introduced by encapsulating the back side of the radiating elements.

**The problem:** As always, there is a price to pay for any progress; in this case size is the key. As much as the open structure prevents resonance-induced issues, the other side of the coin reveals that a cancelling effect may occur when the front wave interacts with the back wave.

**The solution:** To give the panel such a dimension, and dimension ratio, that the cancelling effect is pushed down to the low bass range where it is easily compensated. For any practical purpose this means a fairly large baffle; the Megatrends have a height of 7 feet and are +3 feet wide.



Picture of the prototype in its early stage of layout

An advantage of the dipole speaker, on the other hand, is that it can be made to have a very short physical "depth," making it relatively easy to set up in a listening room.

### Important benefits of a dipole speaker

1. No or next-to-zero resonance problems within the cabinet design.
2. Many woofers working in parallel produce a huge radiating area and consequently an enormous radiation resistance, (coupling to the air), resulting in excellent dynamics; in that respect the large dipole can only be compared to huge exponential horns but without the latter's size demands for a given LF cutoff frequency .
3. The efficient coupling to the air gives a sensitivity around 100dB/1w/1m, which lessens the demands for a huge power amplifier.

4. The increased air load in relation to the multiple woofers results in a woofer system rf that is significantly **lower** than for a single woofer in free air.

5. One of the strongest benefits of a multi-woofer concept in a large dipole baffle is the very low cone excursions in relation to the output. This means that the woofers work well within their so-called Xmax, resulting in extremely low distortion for a given SPL. (You hardly see the membrane movements until nearly deafening levels are reached.)

### **A woofer is a woofer or? No ...**

In fact, the woofer choice in a dipole unit is more critical than ever, as even the tiniest artifacts are disclosed. Bo Bengtsson's first Megatrends where built using the best cones available at that time - a plastic material called Bextrene, developed by KEF and BBC.

Today's Megatrend MkII woofer cones are completely different: made from a magnesium/aluminum alloy that stores less energy than anything we have found on the market. In addition, they can take 10 times the power input compared to the original Megatrend and are essentially flat up to 7kHz, creating an easy match with our ribbon drivers for the MF/HF reproduction.



The new aluminum/magnesium woofer cone used in MK II version



Each Megatrend has a 78 inches tall ribbon line source , using 1" ribbons

### **A few words on the ribbons**

The ribbon drivers in the Megatrend MkII represent the latest generation of drivers where the chassis are made from composite for maximum strength combined with high inner damping properties.

The ribbon line is mechanically separated from the woofer panels in order to a) suppress chassis-born vibrations from the woofer section and b) avoid airborne pressure differences from the dipole panel that could put the ribbon membranes into unwanted motion.

### **About amplifiers and crossover network solutions**

The Megatrend MkII is a dual amp speaker with moderate power requirements. It is offered in 2 versions: Either with a built-in passive first order solution plus the Ultra Propulsion driver interface or with the Ultra Propulsion drive unit alone if the customer is going to use an active electronic crossover. 2 x 100Watts at 8 Ohm satisfies SPL requirements in all but **extremely** large listening rooms.

**Megatrend MkII** is a floor-standing true dipole speaker (or "free field doublet") offering extremely high quality sound at an affordable price. Ideally suited for 2-channel audio setups or home theater systems, the Megatrend II is a revolutionary refinement of Bo Bengtsson's earlier award-winning original Megatrend, featuring:

- More dynamics, impact and "slam" than ever via:
  - 24 x 8" wideband woofers per channel
  - Rock solid baffle panels
- A total baffle depth of less than 8 inches
- 80" of high power line source dipole ribbons
- Bi-amplification with proprietary Ultra Propulsion™ drive
- Ten times the radiating area of the average home audio system, resulting in:
  - Unheard-of low distortion levels at high SPL's
  - Half the distortion for a given output (MkII)
  - +100dB sensitivity
- 8-Ohm load impedance that suits tube as well as semiconductor amplifiers

### Notable refinements

- Custom-made dual voice coil alumin alloy 8" wide-band woofers created to our highest specifications
- Woofers with a useful range up to 2 octaves above what is considered normal for a woofer this size
- Extremely efficient coupling to the air
- Precisely crafted, high-resolution ribbon driver
- New NEO magnet structure
- Modified voice coil assembly
- Very linear frequency response
- Acceleration analysis of cabinetry to increase physical strength and suppress unwanted vibrations
- Strategically engineered cabinetry to increase stability and decrease resonance tendencies

The result is a faster and tighter bass response than ever and a midrange and top that sets a new standard. Typical distortion @110dB SPL: Bass: 0.3%; Mid/Treble: 0.03%.

### The line source ribbon concept

The line-source ribbon array uses 4 x 20" ribbon modules per channel, each served by its own magnet engine. The resulting force factor gives a tremendous increase in resolution and sensitivity. In addition, the following benefits are achieved:

- Totally even horizontal and vertical dispersion
- Improved air coupling due to increased radiation resistance
- Enhanced overall performance and transparency due to refined ribbon chassis technology

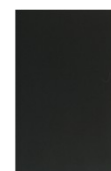
### Specifications: Megatrend MkII

<b>System type</b>	True dipole Dynamic/Ultra Propulsion (dipole) ribbon HF line source ribbon
<b>Circuit type</b>	First order Butterworth (passive or active)
<b>Enclosure type</b>	Baffle loading with dipole line source ribbon, freely radiating.
<b>Driver compliment</b>	Aperiodically damped high definition woofers
<b>Bass driver</b>	24 8" heavy duty woofers, with 300 watt peak power dissipation (10ms) <b>per woofer</b>
<b>HF driver/s</b>	Dipole ribbon line source with a total of 80" ribbon length in a strong Neo motor structure
<b>Rear ambience</b>	Dipole configuration
<b>Frequency response</b>	20Hz - 30kHz (+/- 2dB)
<b>Impedance</b>	8 Ohm nominal
<b>Sensitivity</b>	+100dB @ 1 watt, 1 meter
<b>Power (per channel)</b>	Min: 10W RMS Max: 2500W RMS Peak: 6000 W/10ms
<b>Finish</b>	Rosewood or Piano Black Glossy with removable black grille cloth. Other finishes to order
<b>Dimensions (HxWxD)</b>	210cm x 95cm x 25cm (50cm at base) 84" x 38" x 10" (24" at base)
<b>Weight</b>	Each speaker: 110kg, (242 lbs)
<b>Warranty</b>	5-year transferable (parts and labor) with registration

Megatrend MkII is currently available in the following finishes:



Rosewood



Piano Black Glossy

Actual finishes may vary slightly from the photographs.

### Our sonic signature

Megatrend MkII is one of the very few full-range speakers in the world utilizing a true open dipole structure for all frequencies from 20Hz and upwards. The effortless, transparent and resonance-free reproduction, only available via an open dipole structure, is our sonic signature.

Distributor in your region/country: