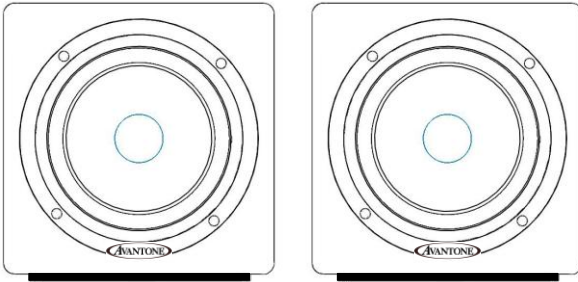


**AVANTONE**  
**PRO**

**ACTIVE**

# MIXCUBES™



**Powered Mini-Reference Monitors for the *NEW MILLENNIUM***

## **APPLICATION**

Active recording / mixdown monitors

## **ENGINEERING OBJECTIVES**

The **AVANTONE Active MixCubes™** are designed to be high resolution, full-range powered mini-reference monitors for fixed or remote locations.

The secondary engineering facet was to create a timeless design that compliments a single full range transducer.

## **PERFORMANCE OBJECTIVE**

Studios primarily use 2-way & 3-way large monitors designed to represent a wide range reference viewpoint at higher listening levels.

However ..... in the newly developing age of High Definition Audio, there is still a need to hear what your mix will sound like when played back over small "bass-challenged" systems such as televisions, clock radios, computers, car stereos, iPod docking stations, etc.

It is important to make mixing judgments based partially on listening to reference monitors that will not impart tonal anomalies caused by crossovers or inferior full range drivers. Particular attention is always paid to the critical mid-range vocal/guitar/keyboard areas. This is where having a full-range monitor without a crossover is truly revealing.

More than twelve months of R&D, comparative listening & tweaking went into the voicing of the **AVANTONE MixCubes™**.

The result is a very smooth sounding, full range upgrade from those old familiar 5C Sound Cubes™ engineers were so fond of in the 1980's-1990's.

Listening tests reveal that the **MixCubes™** have a smoother midrange, more accurate, transparent top end response with extended bass while maintaining the basic characteristics of those original little cubes.

## Cabinet Design

- Constructed of non-layered, high rigidity MDF board due to its natural low-resonance characteristics. All cabinet edges are radiused.
- Elegant Polyurethane high gloss “Butter-Cream” finish
- 7mm thick neoprene pad embedded into the base of the cabinet serves as a skid-resistant acoustic isolator.
- For creative mounting situations, we recessed an industry standard 5/8”-27 mic stand mount into the base.

## Driver Design

The paper cone, (chosen for its musical character) was custom designed utilizing the latest in FEA modeling and “old-school” speaker design artistry. The finest New Zealand pulp material is blended with mica fibers for rigidity and longevity.

The cloth surround material is made in Japan and has unique damping characteristics, enabling a predictable compliance over the lifespan of the driver.

The motor structure is made of certified 1008 *low carbon steel* by Sumitomo. The magnets are Y-40 GRADE (MIL-SPEC) yielding a 43oz. High-power/low-distortion motor structure.

Our proprietary 5.25” Die-cast aluminum frame supports the driver/cone minimizing mechanical transfers.

The outer mounting face of the aluminum frame is polished for an elegant appearance.

## Amplifier Design

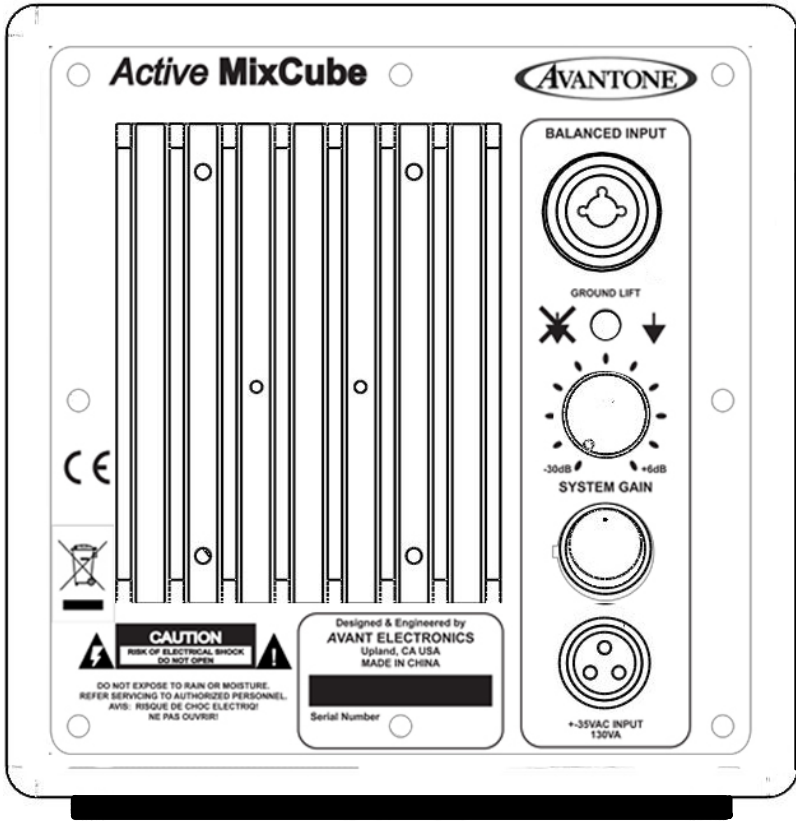
We designed the amp module from the ground up to be a true professional-grade amplifier. It incorporates “overkill” concepts in component selection as well as safety. The result is a “no-compromise” amp with robust headroom characteristics that will rival the performance of much higher priced studio rack mount amps.

## REAR PANEL CONTROLS / CONNECTIONS

- **BALANCED INPUT:** This “combo XLR” input accepts a BALANCED male XLR plug as well as a 3-conductor BALANCED TRS ¼” or a 2 conductor UNBALANCED TS ¼” male plug. For unbalanced operation with a TS connector the *minus* signal is automatically grounded.

	XLR	TRS	RCA
HOT ( + )	Pin 2	Tip	Tip
COLD ( - )	Pin 3	Ring	
SHIELD (GROUND)	Pin 1	Shield	Shield

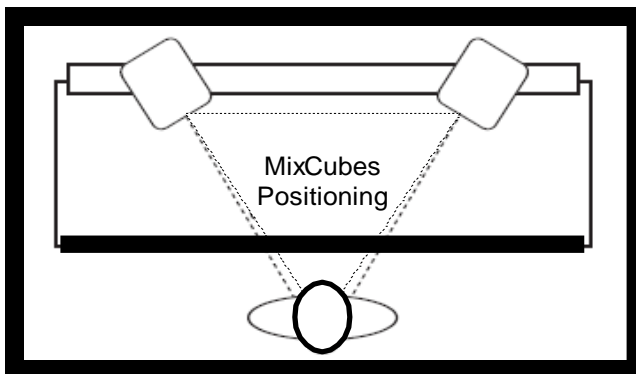
- **SYSTEM GAIN:** This variable control adjusts the sensitivity of the signal that appears at the input. Rotating the control clockwise increases the sensitivity while a counter-clockwise rotation decreases sensitivity. The adjustable gain range is from -30 to +6 dB. A setting of +6 allows a full, unimpeded signal to be sent to the amplifier. The detented gain positions allow for repeatable settings between speakers for proper matching. **Please Note...** when the signal appearing at the input is too hot, the amplifier can overload causing distortion and possible damage to the speaker. If overload occurs, attenuate (decrease) the input level by turning the knob counter-clockwise a few clicks.
- **ON/OFF Switch:** This illuminated switch turns the amplifier section on and off. The unit is still receiving power from the transformer however.
- **AC INPUT:** This input is **only** to be use with the proprietary AVANTONE Power Supply. Tighten the cable/connector securely for reliable operation. **Note:** There is a switch on the power supply for selecting the proper AC/MAINS operating voltage for your location.
- **GROUND LIFT Switch:** By engaging this switch the pin 1 shield is lifted at the input jack. This can be used to aid in ground loop control of the incoming analog line signal.



## PLACEMENT

When positioning the **AVANTONE MixCubes™** on stands or console bridges it is best to keep them at ear level and slightly angled in towards the engineer. The optimum stereo listening perspective is achieved by keeping the monitors at an equal distance from each other and to the engineer's ears.

Since MixCubes are shielded it is ok to place them near a CRT video monitor or TV without causing any problems. The bottom 5/8"x27 mic stand mount will also allow you creative positioning options in unusual studio playback situations.



## CONNECTING your MixCubes

**Before plugging in and powering up your MixCubes please take a moment to be certain that the proper AC MAINS operating voltage setting has been selected on the transformer/power supply.**

Set all faders and level controls to minimum on your console/monitors feed. All other equipment should be powered up before turning on the MixCubes so as to avoid loud turn-on spikes and surges. The input "SYSTEM GAIN" control is set at minimum at the factory so as to avoid an accidental overload upon initial hookup. This is intended to force the engineer to purposefully set the gain where appropriate and safe in reference to the monitor send output level from the console.

## SPECIFICATIONS

**SYSTEM TYPE:** Active (Self-Powered) shielded full-range stereo pair

**SYSTEM FREQUENCY RESPONSE:** 90Hz-17,000Hz (Accessible musical range)

**MAX SPL:** 104dB 1 meter @1%THD (PINK NOISE)

**AMPLIFIER:** Class A/B

**AMP POWER:** 60 watts RMS@ .005% THD (1KHz)

**AMP FREQ. RESPONSE:** 22Hz-50KHz +0dB/- 3dB (90Hz-50KHz +/-0dB)

**NOISE:** S/N -113 dB "A" Weighted

**COOLING:** Convection / Heat Sink-Aluminum Fins

**DRIVER:** Proprietary Design-8 ohm 5.25" Cast Aluminum Frame / Paper Cone/Shielded

**CABINET:** Sealed design /18mm MDF/ with Dacron Acoustical stuffing

**INPUTS:** XLR & TRS +4/Balanced and -10 unbalanced

**SENSITIVITY:** 0dBu (.775VRMS) input at maximum volume (+6dB) = 104dB SPL

**CABINET DIMENSIONS:** 165mm x 165mm x 165mm ( 6 1/2"x 6 1/2"x 6 1/2" )

**CABINET WEIGHT:** 3.55kgs / 7.8 Lbs (each)

**WARRANTY:** 5 Year Limited Warranty to original purchaser

## MixCubes "Break-In" suggestions:

Because any new full range speaker exhibits a certain amount of "tightness" when first played, you will most likely benefit from a "break-in" of the MixCubes if you are going to be doing critical work almost immediately. Normally, standard usage of the speakers over a short period of time is all that is required before you recognize the tonal changes taking place with the driver "flexing" from some hours of use. However, if you need to "get to work" immediately; then we do have a suggested "break-in" mode that will advance the "natural time process" much quicker. Here is the "quick version"!

Though the MixCubes do perform solidly right out of the box it is beneficial to actually run them through a "burn-in" period before using them in professional mix situations.

Some High-end speaker manufacturers claim that many speakers need a 100-200 hour break-in period before they are "normalized" which most professional engineers do just to get use to their new monitors.

We feel that simply playing any commercial music CD with good low frequency content through them on a loop for 24-72 hours at a medium volume level can easily do this.

This procedure serves to "normalize" the driver surrounds by flexing them.

Users have reported that this sped up the break-in process and the MixCubes seemed to "open-up" a bit more than when first powered up.

Whatever process you utilize, rest assured that you have purchased an amazing tool that will aid in determining the proper levels and tones of your all-important mixes!

This "Break-In" suggestion is being recommended to remind you that like all things new, (i.e. a new sports car), a short break-in time is a good time for the driver to flex and normalize. Enjoy and here's to accurate mixes!

## **IMPORTANT !**

**Be sure to select the proper operating voltage on the power supply/transformer before plugging in the transformer to the AC power source. Improper selection can result in damage to the unit that will not be covered under the warranty.**

**NOTE:** We take great care in packing the units in a well protected box at the factory and it is rare that any shipping damage can occur. However, should this happen please contact your shipper immediately to report the damage. We encourage you to keep the original packing materials in the event you need to ship or transport them.



**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**Warning:** To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.



Do not attempt to service this unit yourself, as it will void your warranty. Please check your unit carefully upon receipt and return to place of purchase immediately if there are any problems with the product. After that, the standard AVANTONE 5 YEAR warranty will apply to defects in materials and workmanship.


**(U.S.A)** Should your AVANTONE product require service, please contact the AVANT ELECTRONICS Service Department. (909) 931-9061 -or- e-mail [service@avantelectronics.com](mailto:service@avantelectronics.com)

You must obtain an RA # (Return Authorization number) from us before shipping a unit back to us. This RA # must be clearly written on the outside of the box.

Please safely pack the units...It is best to use the original packing materials. AVANT ELECTRONICS can not be responsible for any damages incurred in shipping to us due to poor packaging. PLEASE PACK CAREFULLY and FULLY INSURE THE SHIPMENT.

**(INTERNATIONAL)** For service or warranty assistance, please contact the AVANT ELECTRONICS distributor in your country through the dealer from whom you purchased this product.

## IMPORTANT SAFETY INSTRUCTIONS

- 1 Read these instructions.
- 2 Keep these instructions.
- 3 Heed all warnings.
- 4 Follow all instructions.
- 5 Do not use this apparatus near water.
- 6 Clean only with dry cloth.
- 7 Install in accordance with the manufacturer's instructions.
- 8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11 Only use attachments/accessories specified by the manufacturer.
- 12  Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13 Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

### Warning!

- To reduce the risk of fire or electrical shock, do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
- This apparatus must be earthed.
- Use a three wire grounding type line cord like the one supplied with the product.
- Be advised that different operating voltages require the use of different types of line cord and attachment plugs.
- Always observe the local safety regulations. Ensure that the factory-set power requirements for the device (refer to the label on the back of the monitor) corresponds to the mains supply in your region.
- This equipment should be installed near the socket outlet and disconnection of the device should be easily accessible.
- To completely disconnect from AC mains, disconnect the power supply cord from the AC receptacle.
- The mains plug of the power supply shall remain readily operable.
- Do not install in a confined space.
- Do not open the unit - risk of electric shock inside.

### Caution:

You are cautioned that any change or modifications not expressly approved in this manual could void your authority to operate this equipment.

### Service

- There are no user-serviceable parts inside.
- All service must be performed by qualified personnel.



The lightning flash with an arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

(6)

## LIMITED 5 YEAR WARRANTY

Avant Electronics AVANTONE Active MixCubes™ are warranted by Avant Electronics to be free from defects in materials and workmanship for the period of 5 YEARS to the original purchaser. In the event of such defects, the Avant Electronics product will be repaired without charge or, at our option, replaced with a new one if delivered to Avant Electronics prepaid, together with a copy of the sales slip or other proof of purchase date. The warranty excludes problems due to normal wear, abuse, shipping damage or failure to use the product in accordance with the specifications.

All speaker systems are vulnerable to damage from sustained amplifier clipping. This can be described as a distortion of the signal caused by the amplifier running out of headroom. Heat will then be generated in the voice coil of the driver beyond the heat handling capabilities of wire and glue. At some point the voice coil will burn, causing the speaker to sound very distorted; eventually the driver will stop working.

All parts and labor are covered under this Limited Warranty. However, if it is determined by AVANT ELECTRONICS that the voice coil was burned due to sustained amplifier clipping, we reserve the right to charge the customer for the cost of the repair, since this is considered abuse.

Avant Electronics shall not be liable for damages based upon inconvenience, loss of use of the product, loss of time, interrupted operation or commercial loss or any other damages, whether incidental, consequential or otherwise. This warranty gives you specific legal rights, and you may have other rights, which will vary from state to state.

**This warranty is not transferable.**

Another fine product from...

The logo for Avantone Pro features the word "AVANTONE" in a large, bold, serif font. Below it, the word "PRO" is written in a smaller, bold, sans-serif font. A thick horizontal line is positioned between "AVANTONE" and "PRO".

[www.avantonepro.com](http://www.avantonepro.com)

Avantone Pro  
PO Box 748  
Tallman NY 10918  
+1 828 523 4311

## The Story of the AVANTONE MixCubes

I first became aware of the value of using an alternate mini reference monitor when I was introduced to the Auratone speakers in my early studio engineering days around 1979. During the last 25+ years the Auratone 5c SoundCubes found widespread usage among numerous studios the world over. They were nicknamed "Horrortones" for their purposeful limited sound capabilities. Savvy engineers however, were quick to understand their usefulness in the studio. They have not been commercially available for a long time. With the ever-increasing demands of today's playback mediums, it was time to take a serious look at redesigning a "mini reference monitor for the new millennium"

*-Ken Avant-*

At AVANT ELECTRONICS, we saw not only the importance of replacing those older, fatiguing units... We saw an opportunity to greatly improve on their original performance, construction and quality. First it is important to understand what this type of speaker can do and what it cannot... It is not at all intended to be an engineers' only mix monitor. It is not an entry-level monitor. It is an important and unique professional tool... an alternate small monitor system.

There are 3 PRIMARY uses for these monitors....

- MixCubes are designed as a "reference standard" example of a worst-case scenario / bass-challenged playback system.  
Let's face it... music is not only heard on nice, full range systems, but also on small systems like clock radios, iPod docking stations, inexpensive car systems as well as small televisions. There is very little bass present on those systems...hence the phrase "bass challenged". The mix engineer must make sure that his mix will also sound good when listened to over such a system. As an example...When working on a kick drum sound on a larger full-range 2-way or 3-way system it is fairly easy to come up with the sound that satisfies the engineer. The next step in evaluating the mix potential is to audition the sound on the MixCubes. The sound will be certainly less exciting... forget about "chest pressure" etc. The challenge is now to locate a secondary EQ frequency point which augments what the engineer dialed in while referencing on the larger monitors. What he then looks for is a way to bring out the awareness of the kick in the mix on the small speakers while preserving the integrity on the larger system. Indeed, a very revealing and significant process.
- MixCubes serve as a "reference standard" to judge the critical midrange area of a mix without clouding the acoustical linearity with a crossover. There is simply no perfect crossover... they all affect the sound by causing phase problems and non-linear performance at and near the crossover frequency. MixCubes are very useful in judging where the vocals, guitars, keyboards and snare drum sit in relation to each other thus helping to establish a clean "mix field".
- The MixCubes serve as an excellent reference example of a Mono TV mix. This allows an engineer to really put himself in the listener's seat to check out phase cancellation issues as well as balance.

Experienced engineers have developed their own personal methods for integrating these speakers into their mix down sessions.

A very revealing perspective can be achieved in the overall mix balance when turned down to be barely audible... is the lead vocal there? Are the snare, hi-hat and guitars each present or is one of them masking the others... or jumping to the forefront in the mix? You can best answer these mix questions by checking your mix with low level listening through a full range, single driver system. MixCubes address all of the issues mentioned above. They provide a powerful secondary reference monitor that can allow the engineer/producer to confidently recognize how their mixes or audio productions will translate across a wide variety of different types of playback systems!

When employed for their designed purpose, you will not find a better product for the price or intended application. Avant Electronics has taken a piece of studio history and improved upon it, reintroducing it to the audio world in the **AVANTONE MixCubes**.