

# A masterpiece-

**McIntosh®**  
**XRT 18**



Loudspeaker stands optional.



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The McIntosh XRT 18 system produces sound images that are amazingly life-like. You'll hear stereo images that have depth and space dimensions that are so realistic, so satisfying that you will feel aware of the dramatic emotional intensity of your first experience of live music.

When you first hear the XRT 18's you will be amazed by five outstanding characteristics:

- Transparency of sound
- Coherence of sound imaging
- Definition of musical instruments
- Musical balance
- Musicality of expression
- Absence of typical loudspeaker sound

The core of the concept of the XRT 18 system involved not only the usual guidance from years of experience and the intuitive vision of a new possibility, but in this case it centered, as well, around a one and only choice from hundreds of possible cones, suspensions, magnets, magnetic assemblies, crossover network components, enclosure volume, stiffness and geometry. That one critical choice is an optimized interrelatedness which yields, via computer modeling, the extra smoothness of the time and energy response fields which has eluded researchers for decades.

This miracle of sound recreation does not happen by accident. To reproduce the power, the clarity, and the pure musical expression of a triple fortissimo it takes a lot of individual speaker mechanisms. The XRT 18 distributes the power over 32 tweeters, two midranges and two bass mechanisms. All of these must be coordinated in time and intensity to achieve the uniformity of sound field from left and right, to produce sound images, wide, deep, accurate, realistic and satisfying. How we combined all of these radiators in the correct combination of pairs of radiators, controls of energy and time is the story of the XRT 18 system.

How many ways to connect 16 (per side), high frequency radiators, how many combinations of time control, energy control and radiator pairs must be explored to unlock the secret of the XRT 18 performance is truly amazing. The millions of arrangements could never be explored in several lifetimes by trial and error. Only by using mathematical processes could all of the possibilities be analyzed in search of the one right solution.

The complete mathematical expression for any point in the sound field of these systems contains 128 terms! This equation, to achieve even sound spectrum, required a solution for each five degrees of elevation and each *five degrees of azimuth in front of and to the sides of the speakers*. Every term was varied to search for the optimum combination. In all, some 92 million calculations were made. This effort would have taken years on an advanced desk top scientific computer. It required 91 hours of calculations by a super digital equipment computer to unlock the secret of the one of these millions of possible solutions!

The crossover network directs all musical information below a designated frequency to the woofer, information above the woofer but below the tweeter to the mid-range, and all frequencies above the



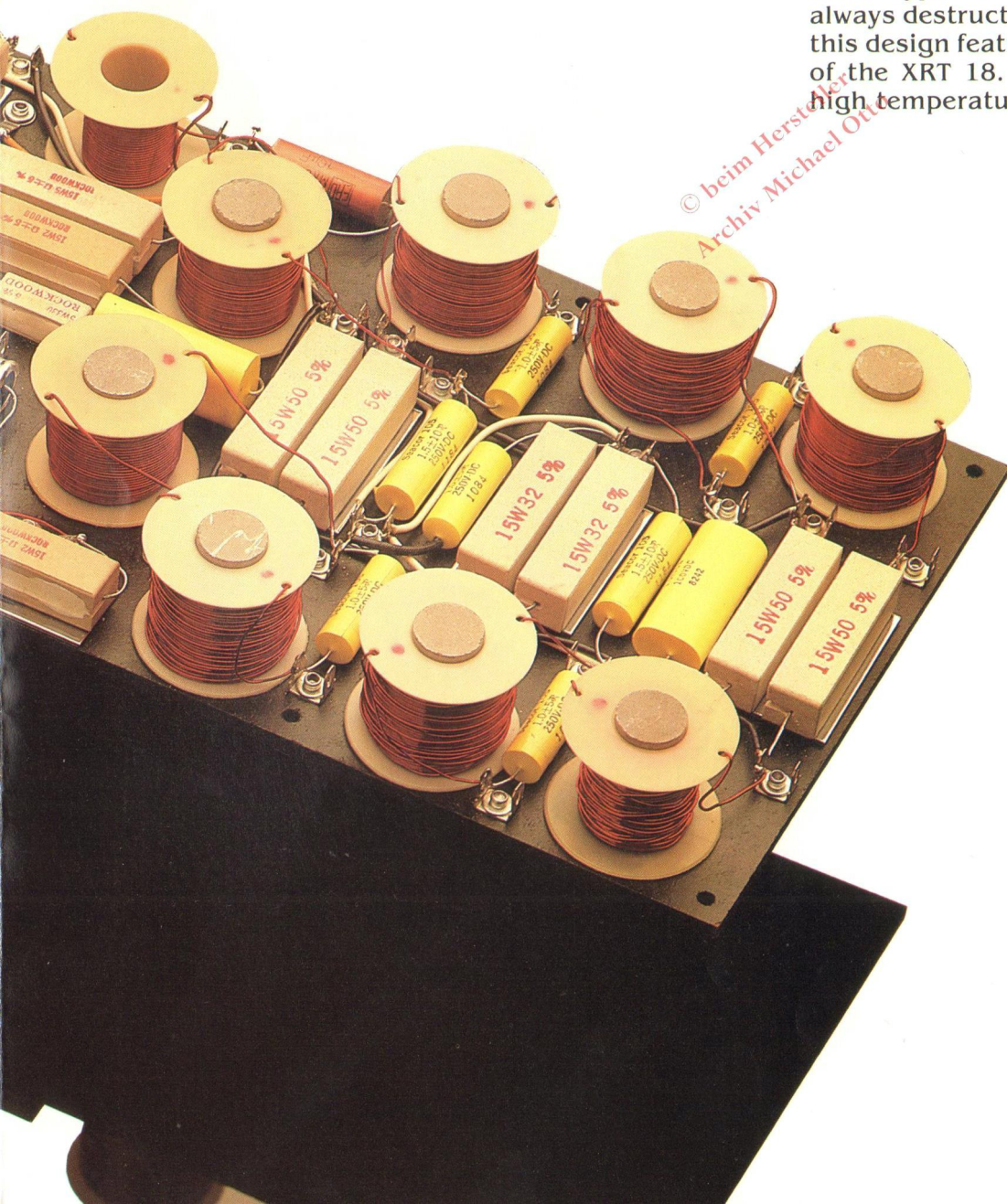
Johannes Brahms original score "Variations on a Theme by Schuman"

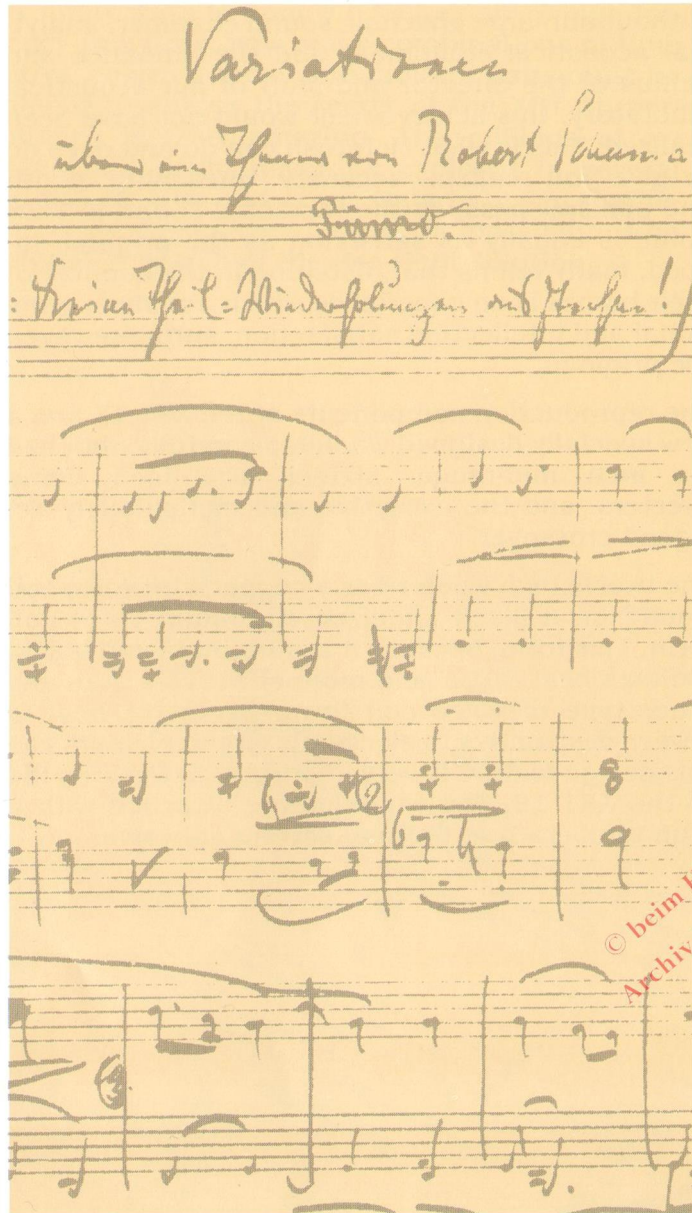
mid-range to the dome tweeters. Thus each loudspeaker performs best with least distortion and greatest energy transfer in its designated operating area. The McIntosh crossover network, however, has these additional tasks to perform: smooth the response in the active area of sound for each speaker, present a uniform arrival time to the listener, and compensate for the non-uniform top to bottom response characteristics encountered in typical short columns of high frequency drivers. A loudspeaker that can deliver ideal depth, spaciousness and three dimensional sound space, requires a crossover network that is a product of particular and comprehensive examination of the multitude of mathematical potentials to include the exact circuit components required to provide smoothest response and correct arrival time. The product of this effort produced a crossover network that has 13 coils, 13 capacitors, 13 resistors, 3 diodes, 2 fuses and 2 lamps. A total of 46 component parts.

Without our large anechoic sound chamber, analytical acoustical equipment and the guidance and genius of the director and staff of our acoustical laboratory, this achievement would not have been realized. This is what McIntosh can do and does do to give you realism, accuracy, musicality, depth and spaciousness, so the recreated sound in your home is equally as satisfying as the original. Indeed, many tell us that, listening in the comfort of their homes is an experience which, for sheer emotional and intellectual satisfaction, surpasses even the original!

The reproduction components of the XRT 18 are: a new specially designed woofer, a carefully matched six inch mid-range, sixteen one inch dome tweeters, and the extensive and meticulously designed crossover.

The twelve inch woofer has a copper wire voice coil wound on a black anodized aluminum voice coil form. This form, because it is aluminum and black, radiates heat faster and more effectively than any other type of voice coil form. Excessive heat is always destructive to electronic circuit elements so this design feature is very important to the long life of the XRT 18. The windings are attached with a high temperature, thermal setting adhesive.





The voice coil assembly is joined directly to the rigid cone. It moves in the magnetic field of an oversized magnet and magnet structure. This voice coil assembly is centered and suspended in the magnetic field by a special cloth spider. The compliance of the spider is controlled by the careful impregnation of the cloth with phenolic resins. Diligent engineering, decades of experience and continuous testing determined the selection of the right mass of the cone assembly for the ideal match of the energy capability of the magnetic structure. The cone and voice coil assembly is attached to the speaker basket with the centering spider and a critically formed closed cell urethane surround which is coated with a proprietary sealant.

The six inch mid-range was designed to complement the frequency range of both the twelve inch woofer and the one inch dome tweeters. Construction is very similar to the woofer except the mass and size of moving parts are greatly reduced to accommodate the higher frequency range. The rear of the mid-range is acoustically isolated from the woofer so that it cannot be driven by the back pressure wave of the woofer.

The one inch high frequency domes are made of a specially formulated textile. Each dome is attached to a copper wire voice coil wound on a high temperature form. The assembly is centered and suspended in the magnetic field by a special surround. Both dome and surround are coated with a proprietary material to make an air tight seal. The surround is connected to an intermediate ring which is fastened to the magnet assembly.



# PERFORMANCE LIMITS

We promise you that the XRT 18 you buy must be capable of performance at or exceeding these limits at the time of purchase or you get your money back. McIntosh PERFORMANCE LIMITS are the maximum departure from perfection permitted for a McIntosh instrument.

## FREQUENCY RESPONSE

20 to 20 kHz

## REFERENCE OUTPUT LEVEL

An acoustic output of 86 dB sound pressure level (SPL) in free field is produced at 1 meter with 1 watt input referred to 8 ohms at the loudspeaker input terminals.

## MAXIMUM POWER

The XRT 18 will handle 150 watts of continuous program power.\* The system is capable of up to 500 watts program peaks.

## RECOMMEND POWER

As little as 30 watts may be used for smaller rooms and lower listening levels. To handle peak power requirements, an adequate power reserve is recommended. Most damage to speaker systems is from underpowered amplifiers that are driven into clipping. McIntosh amplifiers equipped with the patented POWER GUARD CIRCUIT automatically prevents destructive clipping.

## FUSE PROTECTION

The XRT 18 speaker system is protected by a 3 amp fast acting main fuse. The tweeters are protected by a 1 1/4 amp fast acting fuse.

## IMPEDANCE

8 ohms nominal

## CROSSOVERS FREQUENCIES

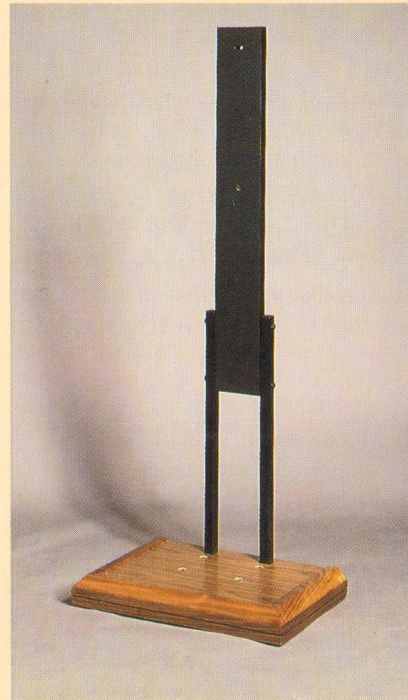
350 Hz and 1.5 kHz

## SPEAKER SIZES

Woofer - 12 inch (30.5 cm) diameter  
Mid-range - 6 inch (15.2 cm) diameter  
Tweeters - Sixteen 1 inch (2.54 cm) diameter

## CABINET CONSTRUCTION

The bass cabinet and high frequency column frame are made of 48 pound density fiber board with genuine walnut veneer exteriors. The finish is a 23 step process including 6 hand applications of oil-sealer with intermediated hand sanding and rubbing operations which enhances the full beauty of the walnut.



## CABINET SIZES

### Bass Cabinet

27 7/32" (69.1 cm) high

17 1/2 (44.5 cm) wide

11 3/4 (29.8 cm) deep

### Tweeter Column

57 5/16 (145.6 cm) high

10 1/2 (26.7 cm) wide

1 5/8 (4.13 cm) deep

## SYSTEM WEIGHT

### Bass Cabinet

63 lbs. (28.6 kg)

### Tweeter Columns

29 lbs. (13.2 kg), each

## SHIPPING WEIGHT

### Bass Cabinet

72 lbs. (32.7 kg)

### Tweeter Column

72 lbs. (32.7 kg) (1 pr. in single shipping carton).

## TOTAL STEREO SYSTEM

216 lbs. (98.0 kg), 3 cartons

\*Per EIA Standard RS-426A

**Franchised Dealer:**



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