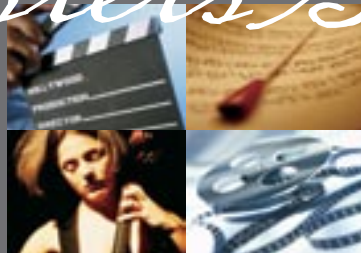


Masters Series



MASTER-CLASS ENGINEERING





NAD's legendary engineer,

Bjorn Erik Edvardson.

OVER DECADES HIS WORK HAS EARNED 5-STAR REVIEWS.

*But the new Masters Series is his
new benchmark for superiority.*

**PROPRIETARY THINKING.
TECHNOLOGICAL BREAKTHROUGHS. UNSURPASSED SPECIFICATIONS.**

The three key elements of NAD's Master-Class Engineering



For many companies today, advanced engineering is the goal. It represents a crowning level of achievement. Once attained, it is coveted.

But NAD's design team views it quite differently. They are not one to relinquish their ambition even in the celebration of a great accomplishment.

NAD sees the most advanced engineering not as an end point but as a brand new starting line. It represents a challenge to see how much further NAD designers can go.

This assertive philosophy shaped the new Masters Series. Before pen was put to paper it was determined that this new component series would be 'breakthrough'.

Small wonder then, that it's become a shining example of proprietary thinking, technological breakthroughs and unsurpassed specifications.

These three elements define a new, more challenging level of engineering. NAD's Master-Class Engineering.

This brochure details all the technological achievements that contribute to Master-Class Engineering and the superiority of the Masters Series.

Before you read it, allow us to highlight one more point that works to your great advantage.

It has to do with the 'unsurpassed specifications'. the Masters Series is built far better than systems have to be. It has massive quality within. Nothing was spared, from the use of one-of-kind "Holmgren" transformers, to special 'wave form' heat sinks and housings of thick high-grade steel.

Inside, the Masters Series is a thing of beauty. NAD designers insisted upon it.

We give this beauty a special name commensurate with its quality. Instead of mere build quality, we call it NAD Build-Artistry™. If that communicates a no-compromise attitude, we don't mind a bit.

Because here innovative thinking is matched by brilliant construction. We couldn't allow anything less. As that wouldn't be up to the Master level.

THE NEW MASTERS SERIES OFFERS YOU A GENETIC ADVANTAGE.

It's the ultimate achievement of a company with a 30-year history of 5-star reviews



NAD's tradition of creating products with "giant killer" performance has been well established over the last thirty years. This reputation has been earned by applying creative engineering solutions and meticulous fine-tuning to every circuit in every NAD product. Designed by music and film lovers, for music and film lovers, NAD components consistently deliver exceptional performance that creates a sense of involvement and truly carries you away. It is our strong belief, that when a product doesn't deliver an emotionally involving and musically accurate performance, then it has missed the primary point of its very existence! But we don't stop there. By keeping our designs simple, yet with an eye to the future, and avoiding the trendy gimmicks favoured by many of our competitors, NAD stands alone in consistently delivering pure entertainment and lasting value.

WHY "MUSIC FIRST"?

NAD's "Music First" philosophy represents a refreshingly different approach to most other components on the market today, in that it keeps accurate music reproduction as its first priority. With music, distortion is relatively easy to notice but with a great deal of movie soundtrack material, there often isn't an apparent correlation between the distortion and the sound causing it; after all, who knows what the Tyrannosaurus Rex really is supposed to sound like? NAD therefore demands that their audio-for-video components maintain the same high standards of musicality that we are known for in our stereo products. If an A/V receiver or DVD player can pass the demanding rigors of music reproduction, then it will sound exceptional with motion picture soundtracks.

Whether you're into Hollywood blockbusters, sci-fi, drama, comedy, music or sports, (or even computer games), NAD's "Music First" approach to component design assures a rich and exciting new dimension to your home entertainment.

FULL DISCLOSURE POWER RATINGS

Power sells products, so many manufacturers tailor their designs to obtain the best power

ratings in industry-standard tests. In today's digital world, with uncompressed signals and multi-channel entertainment, these continuous power ratings drive designs that are inefficient, hot, heavy and expensive to produce. Even worse, the sound quality in most of these designs is very thin, overly bright, and lacking musical texture. And since the power is far less than "promised" when driving 5 or 6 loudspeakers, the dynamic power required for the full intensity of an action movie scene or orchestral climax is simply not available.

OUR SOLUTION

NAD's approach to this conundrum is to optimize its power supply to properly drive real-world loudspeakers. This means a properly regulated high current power supply is fitted to all NAD amplifiers and receivers. Thus we can rate our receivers with a continuous 4 ohm load, ALL channels driven simultaneously, FULL bandwidth (20Hz - 20kHz), and at rated distortion. This is a far cry from the commonly used FTC industry standard minimal requirement of using an 8 ohm load, any "associated" channels (no more than 2 at a time), at an easy 1 kHz frequency with no distortion specified!

Musical sound is not a uniform signal like

M 1 5 S U R R O U N D S O U N D P R E A M P P R O C E S S O R .

From the mind of the famed Master Engineer, Bjorn Erik Edvardsen: Sonic detail that you thought never existed.

"MUSIC FIRST" PERFORMANCE

Great performance is expected at this price level, yet NAD's fanatical attention to every sonic detail is obvious from the very moment the performance begins. Innovative circuit design, proprietary operating and decoding software, and premium quality parts combine with our 30 plus year heritage to produce a component with a musical presence that transcends mere technical specification.

From a 'bypass' for analog stereo and decoded 5.1 signals, to the latest surround formats from Dolby and DTS, the M15 maintains the musical integrity of every signal

type and every surround format. THX Ultra 2 post-processing adds the last word in cinematic realism to your movies, and NAD's renowned EARS uses your surround speakers to 'reveal the concert hall' in your favorite stereo recordings without adding artificial artifacts.

The soundtracks of the world's greatest movies are rich with musical content. A component that can convey the 'soul' of a Stradivarius violin will astound you with the realism of the sound effects Hollywood is so proud of. A component that has musical integrity adds another dimension to every

performance, be it musical or cinematic. The M15 allows the space, scale, and transparency encoded in the directional sounds of Dolby and DTS surround soundtracks, to push the boundaries of your listening room to nearly infinite dimensions.

SIMPLE CONVENIENCE, OPTIMUM FLEXIBILITY

The surround preamp processor serves as the 'brains' of your surround sound system. It takes the raw, unprocessed digital audio signals, decodes them into multiple (5.1, 6.1, or 7.1) analog channels, and sends them on

downstream to your amplifier and speakers. Compatibility is an important issue, as there is a multitude of different audio and video formats that must be catered to, with provision for several different types of signal transmission. Whether it is digital or analog, the M15 has the flexibility to accept all the popular formats, including the latest, HDMI (High Definition Digital Interface).

Once the signal arrives at the M15's input, it must be buffered, identified, decoded, and any 'post processing' routines (like THX) must be applied before the signal is converted from digital to analog and sent to the outputs.



There is also a requirement to 'redirect' bass frequencies, depending on the capabilities of the particular speakers used in your system. All this processing is controlled in the M15 by the latest high speed DSP's, loaded with NAD's proprietary software. These DSP's are capable of 100's of millions of operations per second!

Fortunately, we use all this processing power to keep the everyday operation of the M15 as simple and intuitive as possible. Once the system and user preferences are set, the M15 operates very much like our stereo preamplifiers. Just select the desired source – audio or video – set the volume, and hang onto your hat as the M15 takes you deeply into the essence of the music or movie you are about to experience.

Our User Interface uses a clear front panel display as well as an 'on screen display' that provides setup information directly on your connected TV screen. This is where the M15 can be customized to reflect your specific needs and desires. Surround format preferences, level matching of inputs (so there won't be an annoying jump in volume when you switch sources), and even the renaming of inputs can all be set in these simple two layer menus.

ONE REMOTE

The M15 is supplied with the latest iteration of NAD's renowned remote control, the HTRM (Home Theatre Remote – Masters Series). This 'smart' remote can learn the commands

of any IR remote for any other component. The innovative learning circuit can easily memorize any command (including many that other remotes fail on), and can also memorize a sequence of commands (we call this a macro) to simplify the operation of your entire audio video system.

We use a logical layout of keys that are supplemented by a two-line LCD display to keep you informed of which component you are controlling and which command is being sent. We strongly believe that this combination of keys and display creates the easiest and most satisfying user interface of any remote control. Once familiar, most operations can be completed using the sense of touch alone, allowing you to stay focused on the video picture of your program. In darkened rooms, the HTRM automatically illuminates its keys and display for easy viewing.

The HTRM also includes a PC interface for advanced programming, and easy backup or cloning of your particular HTRM setup. Simply connect via USB cable to a computer running MS Windows and load the supplied program. Commands for various components can be stored, and complex macros can be easily configured and downloaded into the HTRM.

Special attention has been paid to the ergonomics of the HTRM, and you'll find it feels 'right', whether you are right or left handed, and whether you operate it with one hand or two. Due to the power saving features of the HTRM, the 4 'AA' batteries have a long

- THX Ultra 2 Certified
- 6 AV Inputs with Composite and S-Video
- 3 HD Component Video Inputs
- 4 Coax and 4 Optical Digital inputs
- 4 Analog Stereo Inputs
- Tape Monitor
- 7.1 Direct Analog Input
- Dolby Digital EX, ProLogic IIx (movies and music), DTS ES, DTS 96/24, Neo:6, THX EX, THX Cinema, THX Music, EARS, Enhanced Stereo, Stereo Bypass
- Video upconversion; Composite and S-Video inputs available on Component Video output
- HDMI connection – 2 inputs, 1 output
- OSD available on Component Video output
- OSD chip is completely bypassed when not selected
- "Direct" Component Video output without OSD
- Lip sync compensation – (option to 100mS)
- Flexible Bass Management including individual crossover frequencies for Front, Center, and Surround speakers
- Digital domain tone controls with center channel "dialog" control
- RS-232 interface for advanced custom installations
- 12V Triggers for advanced control options, 1 In and 3 Out
- 3.5mm IR Control jacks, 1 In and 2 Out
- Second zone AV output with zone OSD available
- Four dual differential 24 bit, 192 kHz DACs
- Twin Motorola 24 bit high speed DSPs
- Dynamic Headroom Scaling for optimum resolution and S/N ratio for all program and decoding combinations
- NAD's Custom-Made "Holmgren" Toroidal transformer
- Switched AC Outlet
- Detachable AC cord
- 8 Device HTRM Illuminated Learning Remote control with LCD display
- ZR 2 Second Zone Remote

THE INSIDE STORY. *NAD is fanatical about proprietary engineering and materials that eclipse existing specification standards.*

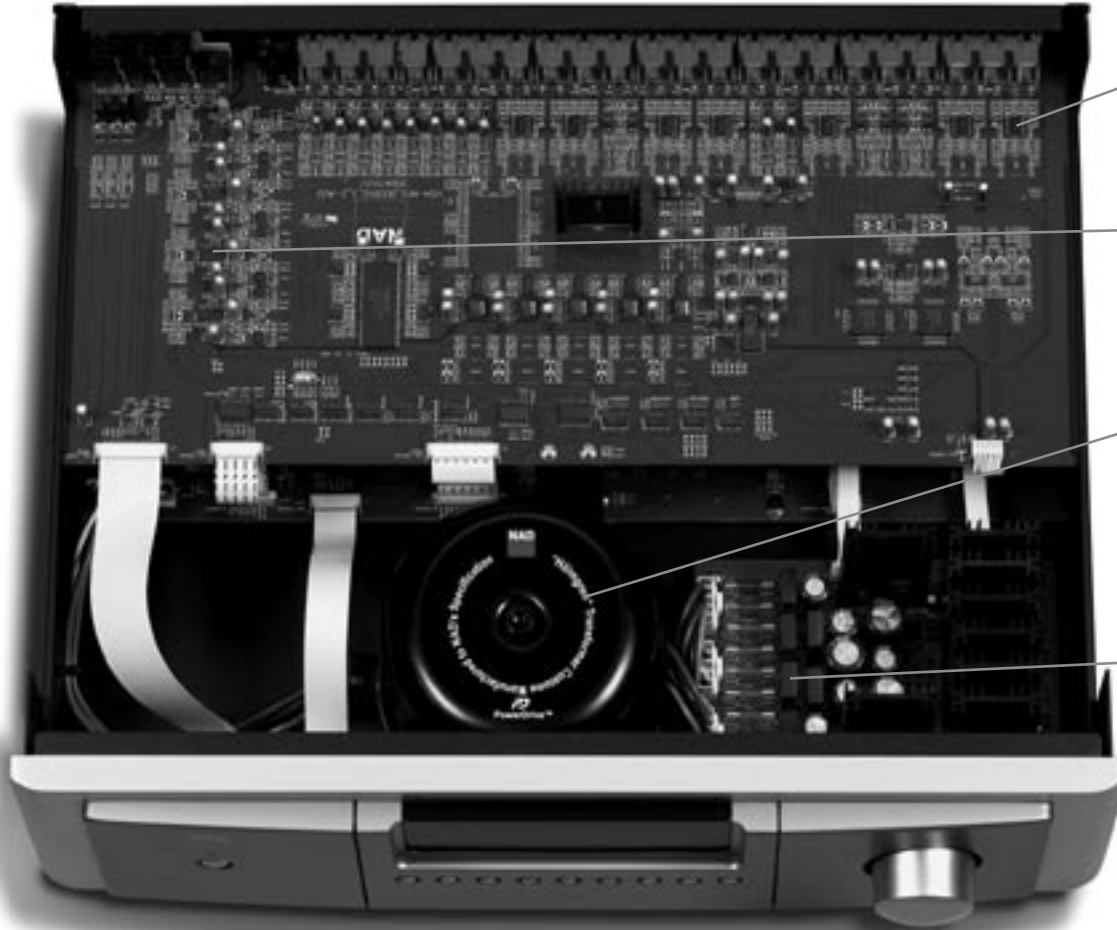
Audiophile grade analogue low distortion circuit.

Twin Motorola 24 bit high speed DSPs can process 300 million instructions per second.

Video format conversion for composite and S-Video signals to Component video.

HDMI video input switching by Silicon Image®.

A unique vibration damping foot comprised of a cast aluminum support with a highly absorbent silicon rubber insert provides superior vibration resistance.



Premium component parts from renowned suppliers Burr Brown, Wolfson and AKM.

4 discrete 2 channel DACs used in dual differential mode.

"Holmgren" custom-made transformers use special steel cores and winding techniques for excellent mains regulation and dynamic performance.

Independent rectifiers and multi-stage regulators for audio, video, and digital sections provide purer voltage for lower noise.

life and, when necessary, are inexpensive to replace. The display will inform you when the batteries need replacement.

LUXURIOUS DESIGN

The design brief reads: "The industrial design must create a physical presence that is powerful, dynamic, and solid, yet refined and elegant". We wanted a design that will still look fresh and new a decade from now, a design with classic proportions and understated details.

Intelligent use of aluminum extrusions, zinc castings, and heavy gauge steel results in a chassis that is as rugged as it is handsome. Innovative use of specialized coatings and plating results in a product that will retain its good looks for many, many years to come.

COMPATIBLE AND UPGRADABLE

The M15 interfaces perfectly with the majority of consumer audio and video formats including the latest, HDMI. Additionally, the operating and decoding software can be upgraded if and when new features and formats become available.

With rear panel IR remote input and outputs, programmable

12V triggers, and an RS-232 port, the M15 is highly compatible with many of the advanced control systems such as AMX and Crestron.

SECOND ZONE DOUBLES YOUR PLEASURE

A completely independent second audio and video 'zone', with its own remote control, is part of the M15 package. This line level output has independent source and volume selection, and is ready to interface with outboard amplifiers and controllers to send music and pictures to another room in your home.

POWER SUPPLY

The heart of every electronic component is its power supply. Taking the raw current from the wall socket and creating stable, clean DC voltages is crucial to obtain the maximum performance of every circuit in the M15. Based on a custom wound and shielded toroidal transformer, the M15 employs three secondary voltage taps, one for each of the sections of the preamp; audio, video, and digital. These feed into independent rectifiers and multi-stage regulators to obtain pure and stable voltages for each individual circuit. By keeping



Analogue performance

Analogue input impedance	56k/180pF
Analogue frequency response	5Hz to 20kHz ± 0.3 dB
Maximum input level	4Vrms
THD+N	0.003%
Signal/noise ratio	>102dB
Dynamic Range	100dB
Analogue channel separation	82dB
Crosstalk	82dB
Maximum output level	7Vrms

Output impedance

Main pre-out	470 ohms
Tape out	2K ohms
Multi-room output	470 ohms

Tone Controls

Bass	± 10 dB
Dialogue	± 6 dB
Treble	± 10 dB
Lip Sync Delay (max)	140mS

Digital input performance

THD+N (Bandwidth 10Hz - 20kHz)	0.003%
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Video Section

Input and output impedance	75
HDMI	2 inputs/1 output
Component Video Bandwidth	50MHz
Composite and S-Video	12MHz

Physical Specifications

Dimensions (W x H x D)*	17 1/8 x 5 1/3 x 14"
	(435x135x355mm)
Net Weight	29.3 lbs (13.30 kg)
Shipping Weight	43.6 lbs (19.8 kg)

* Dimensions exclude feet, knobs and speaker terminals

them completely separate, any possible cross contamination is prevented.

AUDIO PERFORMANCE FEATURES

Tone controls, AV presets, and direct access to sub, center, and surround levels allow unprecedented control of the sound field. Centre channel tone control operates in the 'presence' region of the human voice to improve the intelligibility of dialog. This is especially effective for many Dolby processed recordings. AV Presets take a 'snapshot' of any combination of speaker selection, level, and crossover frequency, to be recalled with just a couple of button presses of the remote control. You could, for example, have different setups for music and movies, or even settings for different types of music or different surround

modes. Direct access to the subwoofer, center, and surround speaker levels, without calling up menus, allow for 'on-the-fly' adjustments without interrupting the video program.

Premium parts from renowned suppliers like Burr Brown, Wolfson and AKM, are used in classic NAD circuit configurations to provide the low distortion and sonic realism NAD is famous for. With full 24 bit 192kHz analog-to-digital and digital-to-analog conversion, the M15 can fully exploit the best source material available today and for the foreseeable future. Unusually, the M15 uses multiple two-channel DACs rather than the 8 channel DACs favored by many of today's surround sound processors. We have found that the sonic performance of the two-channel DACs used in a dual differential mode, is well worth the extra

cost of this configuration.

Unprocessed analog inputs, whether stereo or via the 7.1 input, remain in the analog mode, sometimes known as 'bypass' mode. If a digital processing mode is selected, these signals are digitized using a 128x over-sampling Sigma/Delta ADC that employs a linear phase digital anti-aliasing filter to prevent any trace of ripple in the audio band. This superb quality ADC operates at 192MHz and full 24 bit resolution.

Super high-speed (8 MHz band width) low distortion (0.00008% THD) amplifiers are used for analog input and output buffers. These FET OPamps feature high slew rate and are capable of the high output current required by this application. Low noise and superb dynamics are assured.

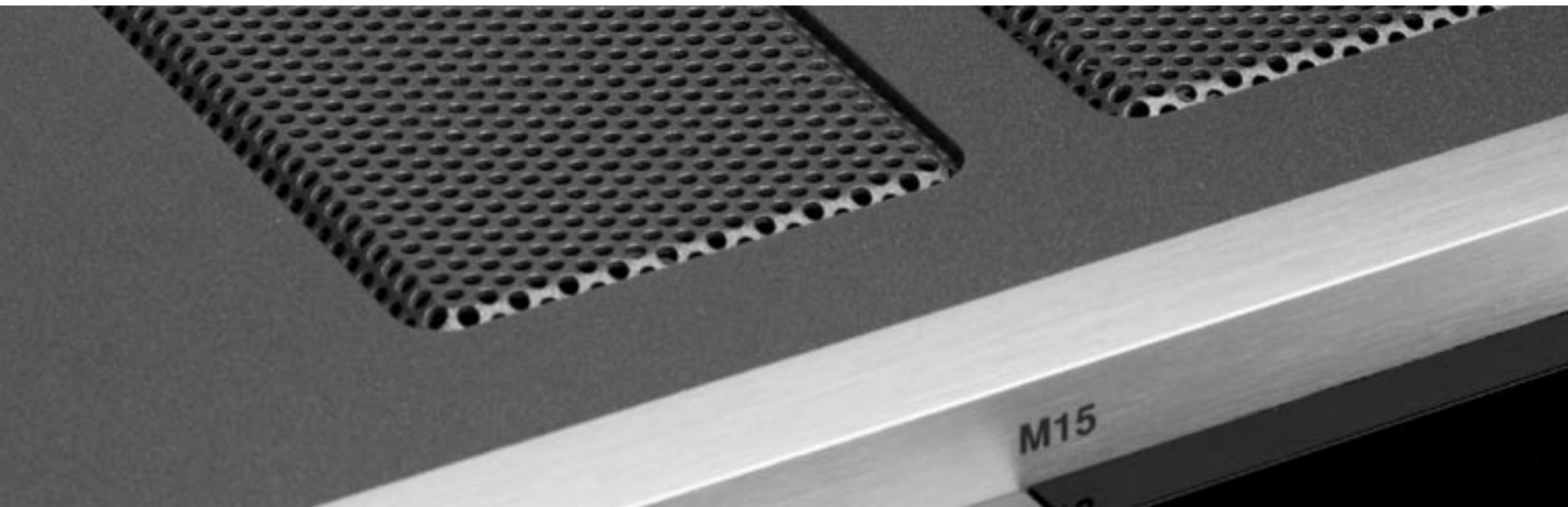
VIDEO PERFORMANCE FEATURES

The M15 can easily handle today's high resolution video signals, with support for most analog and digital video formats. Professional quality video buffer amplifiers feature 150MHz open loop bandwidth with super low phase shift and distortion.

HDMI switching is available for two sources. This newly developed high resolution digital audio and video format allows encrypted transmission of high resolution (HDTV) signal formats without passing through analog conversion.

The M15 is also capable of transcoding, or 'upconverting' Composite and S-Video signals to Component Video output. Through the use of the highest quality components, the quality of Composite and S-Video is fully preserved.

The on-screen-display (OSD) is simple and



effective, and is completely bypassed when not in use to preserve video resolution. It is also available on component and Zone 2 outputs. There is also a 'bypass' Component Video Output that even excludes the OSD switch to provide a reference quality signal.

DIGITAL PERFORMANCE, PERFECTED

The M15 is a clean sheet design, evolved over several years of intense development. Based around two high-speed 24 bit DSPs, the M15's exemplary DSP topology gives better noise and distortion performance than 32 bit floating point designs. New thinking about D/A and A/D conversion processes led to a circuit design that offers a level of technical precision and sonic performance unprecedented at this price level.

DYNAMIC HEADROOM SCALING

Among the many innovative techniques the M15 uses to squeeze the last ounce of nuance from every music and movie audio format, Dynamic Headroom Scaling is at the top of the list. This unique approach maximizes digital resolution.

What is 'digital resolution'? Think of a picture that has really fantastic detail in the dark shadows, with every subtle texture clearly visible; this describes a high resolution picture. It is like the difference between High Definition TV and Standard Definition TV – the HD picture is far more realistic.

Digital audio can also have high or low resolution, depending on the quality of parts in the analog-digital-analog conversion process. With the demands for surround sound processing and post processing, things get more complicated. The spare 'headroom' required to accommodate these complex processes means that the 24 bit signal path may only be working at 12 – 14 bit resolution. This limit is then imposed on all signals, whether the maximum processing power is required, or is not required, the headroom margin is fixed.

While this might be perfectly acceptable performance in a mid-level AV receiver, it is clearly lacking the detail and dynamics required for a realistic Home Theatre experience. This could also limit high resolution audio formats like DVD-A and SACD to merely CD level performance.

The M15 addresses this problem by dynamically adjusting, or 'scaling' the amount of headroom, based on the exact needs of the digital processes running at any given moment. This unique approach maximizes the audio resolution for every type of signal and fully utilizes the premium high performance parts we have included in the M15.



The remote with brains and beauty. Control your Home Theatre with an ergonomic form that melts into your hand. Soft illumination guides your finger to the correct key – even in theatrical lighting conditions.

M 2 5 S E V E N C H A N N E L P O W E R A M P L I F I E R .

Suddenly you become the Master of new levels of power for a cleaner sound. A minimum of 160 watts per channel proves it.

MASSIVE POWER

More power is always better when it comes to sound quality. Power is required not only to play loudly, but also to play cleanly without audible distortion. When an amplifier is asked for more power than it was designed to deliver, it can only respond with distortion.

Fortunately the M25 is one of the most powerful amplifiers on the market today designed for home use. With a minimum of 160 continuous watts per channel, all channels driven simultaneously, from 20Hz to 20kHz at rated distortion of 0.03%, the M25 easily delivers lifelike sound levels even in large

home theatre rooms. It handily meets THX's most stringent certification level, Ultra 2.

Unlike most surround sound receivers (NAD's own receivers are a rare exception) that only rate power with 1 or 2 channels running, or use very short term measurements, the M25 can deliver its full rated power continuously for

hours on end. Custom designed heat sinks and thermostatically regulated variable speed fans keep things cool under the most severe operating conditions. A unique fan circuit that tracks signal level, actually shuts down the fans during quiet passages to prevent any mechanical noise from interfering.



But it's not just the quantity of power that is important, it is also the quality of power that determines whether you can hear just a fiddle sound, or the unique character of a Stradivarius violin.

SOPHISTICATED CIRCUITRY

The M25 is comprised of 7 individual 'Monoblock' amplifier channels. Each channel uses a balanced junction FET input stage resulting in exceptionally low levels of noise and distortion. NAD employs a unique electronic ground isolation circuit to prevent ground loop noise in the system – a common problem in complex multi-channel systems. This circuit offers high input impedance for negligible loading on source components which results in less noise and distortion in the real world.

A fully complementary differential class A voltage amp with a push pull cascode output stage, provides ample current to drive the triple emitter-follower output stage. This circuit topology offers very low distortion combined with high current capability.

NAD's PowerDrive™ circuitry measures each channel's dynamic impedance individually and computes the optimum power supply voltage required to drive the output stage for maximum power and efficiency. PowerDrive permits high dynamic power and low impedance drive capability, while maintaining ultra low (<0.03%) levels of distortion.

The M25 also incorporates NAD's acclaimed switchable "Soft Clipping" circuit. Each channel

has individual over current, DC, infrasonic and ultrasonic overload sensing and protection for complete reliability under even the most severe operating conditions.

MASSIVE POWER SUPPLY

The M25 utilizes NAD's proven Holmgren Toroidal transformer design, in a massive 1,800VA size, to create a power supply that offers very well regulated voltage, and truly massive amounts of current. The Holmgren transformer design utilizes proprietary low leakage field technology which is very low in both electrical noise (stray field) and physical noise (buzz).

Multiple 100,000 uF, 100V low ESR capacitors ensure a clean DC voltage supply for very low noise and truly explosive dynamics. Ultra low impedance copper buss bars are used exclusively throughout for power delivery and grounding.

DETAIL ENGINEERING

It is the many small details that differentiate a really great amplifier from a merely adequate one. Buffered low impedance level controls allow system fine tuning without the distortion typical of most level control circuits. Custom designed gold plated speaker binding posts offer multiple connector options, while maintaining a large, corrosion-free, low impedance contact area. Input jacks are also custom designed for maximum performance. Even the feet that support the

- THX Ultra 2 Certified
- 7 X 160 watts Full Disclosure Power, 20Hz - 20kHz, at less than 0.03% THD with all channels driven simultaneously into 8 or 4 Ohms
- PowerDrive™
- Dynamic power of 220 watts at 8 Ohms, 385 watts at 4 Ohms, and 485 watts at 2 Ohms
- NAD's Custom-Made "Holmgren" Toroidal transformer
- NAD Soft Clipping™
- Precision low noise Input Level Controls
- Custom 5 way Binding Posts
- 12V Trigger for advanced control options, 1 in
- Detachable AC cord

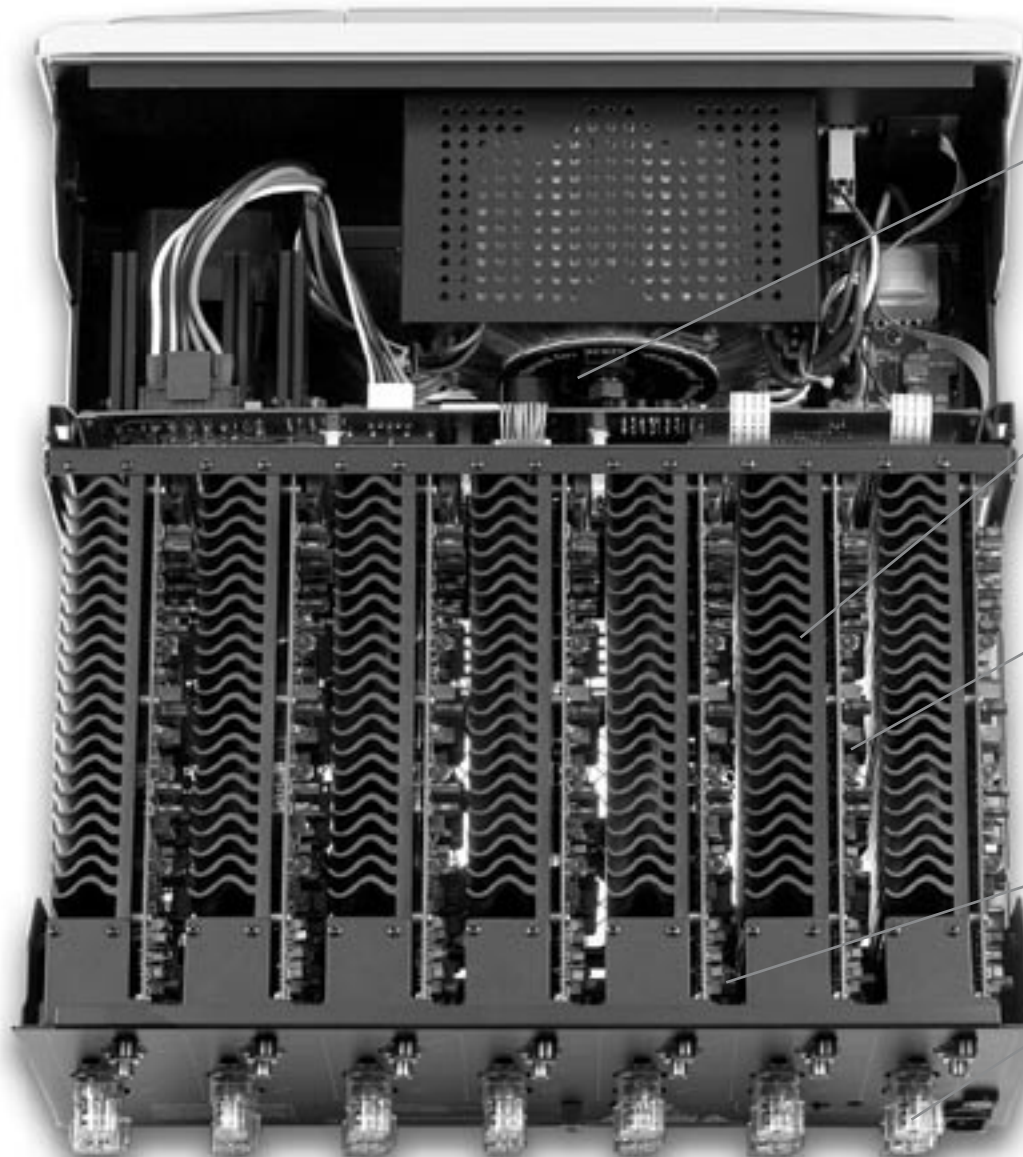
THE INSIDE STORY. *Superb “Build-Artistry™” and a highly refined industrial design set these components apart from all others.*

PowerDrive™ provides high dynamic power and low impedance drive capability for explosive dynamics even under demanding speaker loads.

Selectable NAD Soft Clipping™ prevents amplifier clipping distortion.

Unique signal tracking fan circuit keeps the amp cool and turns the fan off during quiet passages.

A custom vibration damping foot comprised of a cast aluminum support with a highly absorbent silicon rubber insert provides superior vibration resistance.



“Holmgren” custom-made transformers use special steel cores and winding techniques for excellent mains regulation and dynamic performance.

Proprietary ‘wave’ heatsink has 34% more surface area than conventional straight fin designs for more efficient cooling.

M25’s seven channels are contained in ‘monoblock’ gain modules. You benefit with the lowest distortion and widest channel separation.

Differential Class A Input amplifier uses high speed FETs.

Speaker connections are optimized with unique custom binding posts.

M25 are engineered to filter out vibration and provide maximum performance.

PUTTING IT ALL TOGETHER

The highly developed, yet elegantly simple circuitry of the M25, is matched with a brute force power supply to create one of the most powerful Home Theatre amplifiers on the market today. Yet all this power is balanced by a liquid and transparent sonic signature that is subtly nuanced and insightful. The M25 simply adds another dimension to surround sound that must be heard to be believed.



Continuous Power, 20Hz-20kHz, all channels driven simultaneously	> 160 W (22.0 dBW)
Rated Distortion (THD 20Hz-20kHz)	0.03%
Clipping Power (0.1% THD)	> 180 W
IHF dynamic headroom at 4 ohms	3.9dBW
IHF dynamic power at 8 ohms	>220 W (23.4 dBW)
IHF dynamic power at 4 ohms	>385 W (25.9 dBW)
IHF dynamic power at 2 ohms	>485 W (26.9 dBW)
Damping Factor	ref. 8 ohms, 50Hz >180
Input Impedance	1 Mohms; C = 180 pF
Input Sensitivity	1250mV +/-50mV
Voltage Gain	29.0dB
Frequency Response	20 Hz – 20 kHz ±0.2 dB
	3dB at 3 Hz/70 kHz
Signal/Noise Ratio	>96 dB ref. 1 W
	>118 dB ref. 160W

Physical Specifications

Dimensions (W x H x D)*	17 x 7 7/8 x 18 3/8"
	435 x 200 x 465.6mm
Net Weight	96.3 lbs (43.7 kg)
Shipping Weight	112.3 lbs (51.0 kg)

* Dimensions exclude feet, knobs and speaker terminals

M 3 D U A L M O N O I N T E G R A T E D A M P L I F I E R

Noise and distortion aren't infinitesimal as in other high-end amplifiers. They're more like non-existent.

ANALOG SOUND, DIGITAL CONTROL

The M3 is NAD's concept of the ideal musical companion, capable of transporting the listener to that place where the music simply exists in its own perfect space. For this task we have pushed classical analog circuit design to unprecedented levels of performance. The total lack of audible noise and distortion is the result of some very sophisticated analog engineering, and rather surprisingly, the use of digital control.

Freed of the constraints of traditional analog switches, NAD's Director of Advanced Development, Bjorn Erik Edvardsen devised an architecture using precision 1% resistors controlled by digital switches for all the level adjustments required for volume control, balance control and tone control. (Yes we still believe in tone controls – more on that later.) Input selection is via precision sealed reed relays. A major advantage of this architecture, in addition to its extremely precise performance, is the ability to place

controls in the most advantageous physical position within the circuit. The signal never has to travel to the front panel for switching, as with traditional amplifier designs. Getting to the infinitesimal levels of noise and distortion of the M3 requires very careful circuit layout, as only tiny changes in the signal path can have large effects on performance. Keeping signal paths as short as possible is also greatly aided by the use of SMD (miniature surface mount) components and multi-layer PCBs (circuit boards).

LUXURIOUS STYLING AND INTELLIGENT CONTROL

The design brief reads: "The industrial design must create a physical presence that is powerful, dynamic, and solid, yet refined and elegant." We wanted a design that will still look fresh and new a decade from now, a design with classic proportions and understated details. We also wanted an amplifier that was not only easy to operate, but also very flexible and complete in its control options.



Unlike many high performance amplifiers, the M3 includes a full suite of convenience features. Speaker switching for two pairs of speakers and very flexible tone controls are provided, as is a Zone 2 output with its own independent set of commands and dedicated ZR 3 remote control. Front panel controls use a multi-function knob and buttons to quickly navigate all amplifier functions. Direct access is available to many functions via the M3 remote handset. The M3 handset also features basic controls for the matching NAD DVD/SACD player.

Performance features include a multi-stage precision volume attenuator with 0.5dB steps and a range of 87.5dB, a remote balance control with 0.5dB steps, and a Mode control that allows stereo, left only, right only, and mono settings. Tone controls offer bass and treble adjustment, as well as a 'spectral tilt' option that is highly effective at correcting the tonal balance of many recordings by simultaneously increasing the bass and decreasing the treble (and vice versa) to create a warmer (or cooler) balance. We have also included a second set of preamp outputs and a switchable high pass filter for the internal amplifier, to allow easy implementation of an active subwoofer or bi-amplification.

The rugged chassis is built using thick 2mm mild steel plates with a front panel employing extruded aluminum and die-cast zinc in its construction. Special attention was paid to the control of mechanical resonance,

as this can affect sonic performance. Special isolation feet use aluminum and silicon rubber in a vibration damping configuration. All signal connectors are heavy duty gold plated types specifically engineered for the NAD Masters Series components. Finished inside and out, the M3 utilizes powder coating and advanced automotive paint finishes, creating an enduring and elegant mechanical package.

PREAMP DESIGN

The preamp uses all discrete low noise high impedance J-FET buffer amps and very high quality reed relay switches at the preamp input. Special high current low output impedance Class A gain modules provide tremendous dynamic headroom and high output current, combined with an exceptional S/N ratio in excess of -100dB (IHF).

The volume attenuator is very unique in that it uses discrete 1% precision resistors that keep impedance (and noise) very low. It is arrayed in 3 stages to reduce the residual noise in each amplifying stage and prevent the 'cascade effect' of noise that is present in most preamp designs. This circuit also provides the balance control, and as a result channel separation is superb and inter-channel cross talk is virtually eliminated. These resistor arrays are switched using 15 volt digital switches under software control, keeping all attenuation at the ideal point in the circuit architecture.

Low impedance stepped tone controls provide +/- 5 db of boost/cut in the bass and

- 180 watts X 2, 10Hz – 20kHz, with <0.03% THD, both channels driven into 8 or 4 Ohms.
- Dynamic power of 280 watts at 8 Ohms, 480 watts at 4 Ohms, and 785 watts at 2 Ohms.
- PowerDrive™
- Dual stage high current/high voltage power supply
- Dual Mono topology
- Twin NAD Custom-Made "Holmgren" Toroidal transformer
- Ultra precise multi-stage electronic volume control using discreet resistors
- 7 inputs, including 1 balanced XLR
- Tape/Zone 2 output (independent source selection, no volume control)
- Speakers A + B with custom 5 way binding posts
- Biamp mode with selectable 40, 60, 80, 100 Hz crossover frequency on Pre Out 1
- Pre Out 2 allows for additional amplification or powered subwoofer
- Main Amp input
- Remote Bass and Treble controls with Spectral Tilt option
- Remote Balance control with 0.5 dB steps
- Selectable Mono, Left, Right, and Stereo options
- RS-232 interface for advanced custom installations
- 12V Trigger for advanced control options, 1 Out
- 3.5mm IR Control jacks, 1 In and 2 Out
- Detachable AC cord
- M3 System Remote Control
- ZR 3 second zone remote

THE INSIDE STORY. *Master-Class Engineering – A synthesis of digital, analogue, and software design has resulted in a series of models that excel in every performance category.*

True dual monaural design maintains over 80 dB of channel separation under the most demanding operating conditions.

PowerDrive™ provides high dynamic power and low impedance drive capability for explosive dynamics even under demanding speaker loads.

Proprietary distortion cancellation circuit for vanishingly low distortion.

A unique vibration damping foot comprised of a cast aluminum support with a highly absorbent silicon rubber insert provides superior vibration resistance.



Sealed reed relay switches for superb signal integrity.

Special NAD Class A gain modules provide tremendous dynamic headroom and nearly immeasurable distortion.

NAD's proprietary multi-stage discreet volume control circuit provides precise volume settings in 0.5dB increments with ultra high signal-to-noise ratio.

Gold plated copper buss bars maintain low power supply impedance.

Two "Holmgren" custom-made transformers use special steel cores and winding techniques for excellent mains regulation and dynamic performance.

treble regions, or can be configured to provide variable slope, or 'spectrum tilt' at +/- 3dB per decade.

Biamp function allows the use of a second amplifier or active subwoofer PreOut 1, and offers a high pass filter function on PreOut 2, with selectable 40Hz, 60Hz, 80Hz, 100Hz or Full Range options. These are analog 2nd order filters configured around the low impedance differential Class A output stage of the preamp. This output stage also employs proprietary distortion cancellation circuitry.

POWER AMP HIGHLIGHTS

The M3 features a Dual Mono design with separate unregulated, and discrete regulated supplies for different stages of the 2 channels. The custom wound toroidal transformers use proprietary magnetic shielding technology. High current rectifiers feed low ESR 105C filter capacitors.

NAD's PowerDrive technology measures load impedance continuously on each channel and adjusts the power supply voltage for maximum undistorted dynamic power into the connected speaker at all times and under all operating

conditions. The signal processor also continuously measures temperature and average long term power and, based on this information, chooses the optimum voltage.

PowerDrive allows the M3 to sound far more powerful than its already impressive 180 watt per channel rating would suggest. Totally effortless sound, even at elevated levels, is the hallmark of the PowerDrive amplifier.

The M3 utilizes a wideband current-mode Class A voltage amp featuring large open loop compensated bandwidth, and running from low noise stabilised power supplies. NAD's patented current amp output stage starts with < 0.02 % static and dynamic distortion open loop (before feedback), even into 3 ohms at 20-20k at all levels. By utilizing small amounts of feedback the circuit returns distortion levels at all audible frequencies that are at limit of measurement – less than 0.002%!

The super rugged output stage features 4 pairs of 150W discrete bipolar output transistors per channel, for 50A peak undistorted output current. Massive heat sinking assures a lifetime of trouble free operation.



Pre-Amp Section

Line level inputs	
Input impedance (R+C)	150k//500p
Balanced Input impedance (R+C)	120k//100p
Input sensitivity, rated power	446mV
Frequency response (5Hz - 70kHz)*	< +/-0.3dB

Line level outputs

Output impedance	10
Tape	Source Z + 1k ohm
Signal/noise ratio	>110dB (AWTD)

Tone Controls

Bass	±5dB
Treble	±5dB
Spectral Tilt	±3dB

Power Amp Section

Continuous output power	2 x 180W (22.5dBW)
Rated Distortion (THD 20Hz - 20kHz)	0.004%
Clipping power	220W (23.4dBW)
IHF dynamic headroom at 8 ohms	4.2dB
IHF dynamic power at 8 ohms	280W (24.5dBW)
IHF dynamic power at 4 ohms	480W (26.8dBW)
IHF dynamic power at 2 ohms	785W (29.0dBW)
Damping factor (ref. 8 ohms, 50Hz)	>150
Input impedance	20k ohm/ 680pF
Input Sensitivity	1.38V
Voltage gain	29dB
Frequency response; 20Hz-20kHz	+/-0.03dB
-3dB at:	>80kHz
Signal/noise ratio; ref 1W	>107dB (AWTD)
Signal/noise ratio; ref rated power	>130dB

Physical Specifications

Dimensions (W x H x D)*	17 1/8 x 5 1/4 x 15 3/16" (435 x 135 x 386mm)
Net Weight	51.8 lbs (23.5 kg)
Shipping Weight	67.0 lbs (30.5kg)

* Dimensions exclude feet, knobs and speaker terminals

M 5 5 D I G I T A L D I S C P L A Y E R

A catastrophe for ordinary DVD players? Well, The ability to decode all formats is only the beginning.

UNIVERSAL PLAYBACK

With the proliferation of different optical disc formats, most people want just one player that will play them all. The M55 is capable of playing most all the popular entertainment oriented optical disc format, including the high resolution DVD-Audio and SACD music formats. MP3 and WMA compressed formats are also decoded, offering surprisingly good sound quality when recorded at higher available bit rates. Your existing CD collection is also in for a major sonic upgrade when played back through the advanced electronics of the M55.

DVD-Video can be watched in normal

interlaced mode, or in progressive scan mode, providing your TV monitor supports this type of signal. If you have a high definition (HDTV) monitor equipped with HDMI inputs that support HDCP encryption, you can also take advantage of the Faroudja DCDi chip that will 'upconvert' standard DVD (480 lines) to the HD formats of 720p or 1080i. These upconverted formats are also available on the Analog Component Video output.

DVD-Audio and SACD decoding take place on board with comprehensive bass management available for decoded signals. DVD-Audio uses high resolution 24 bit PCM signals and MLP 'lossless' compression to

advance audio performance to unprecedented levels. SACD (super audio compact disc) is a different approach to high definition audio using the DSD (direct stream digital) technique to obtain a very realistic sonic presentation. Both techniques have their adherents, but thankfully, with the M55, you don't have to take sides in the discussion about which format is better – you have both formats covered!

ADVANCED FEATURES

The M55 includes the High Definition Digital Interface (HDMI) with HDCP encryption, allowing high definition audio and video signals to be transferred between source

components, processors, and TV Displays in a pure digital format. This eliminates the distortion producing conversions between digital and analog by keeping the signal in the digital domain. Before the advent of HDMI, it was mandated that high definition audio and video signals could only be transferred using an analog format.

Naturally, the M55 supports all the popular DVD-Video features, such as fast and slow scan, multi-language, multi-angle, A-B repeat, and last scene bookmarking. The ergonomically designed remote handset puts all these features right under your thumb for easy and convenient operation. Easy



integration with advanced control systems, such as AMX and Crestron, is made possible using the rear panel IR input, 12V trigger input, and RS-232 port.

LUXURIOUS DESIGN

The design brief reads: “The industrial design must create a physical presence that is powerful, dynamic, and solid, yet refined and elegant”. We wanted a design that will still look fresh and new a decade from now, a design with classic proportions and understated details.

Intelligent use of aluminum extrusions, zinc castings, and heavy gauge steel results in a chassis that is as rugged as it is handsome. Innovative use of specialized coatings and plating results in a product that will retain its good looks for many, many years to come.

Since the high-density data recorded on DVD must be read with absolute accuracy, vibrations from outside or from internal sources, such as the power supply, will adversely affect sound and picture quality. A variety of special measures have been incorporated in the NAD M55 to suppress these unwanted vibrations, from the carefully engineered heavy gauge steel chassis, to the vibration isolating silicon rubber foot design.

AUDIO PERFORMANCE

Separate signal paths for DVD and SACD audio maintain the highest possible levels of DVD, CD and SACD sound quality. Digital

audio outputs are available in both coaxial, and optical (TosLink) SPDIF formats, as well as I/2 S digital format via the HDMI output. DVD-Audio uses the Dolby licensed MLP lossless compression to produce PCM formatted high resolution signals with 24 bits and up to 192kHz sample rates. MLP perfectly shrinks the very high data rates of DVD-Audio – up to 13.8 Mbps – to the DVD limit of 9.6 Mbps without losing any data. This compares with data rates of approximately 1.5 Mbps for CD, and as little as 0.03 Mbps for MP3 encoded audio.

Dolby Digital and Dolby ProLogic decoding is also included, as is support for MP3 and Windows Media Audio.

The NAD M55 uses professional grade 24-bit, 192-kHz audio D/A converters. These premium devices are well protected from noise caused by even minute fluctuations in current from the power supply. The level of quantization noise within the frequency range is uniform for all frequencies and very well suppressed. This D/A converter ensures that all the sound you hear is as clear and noise-free as possible. High speed FET output devices keep all the detail present in high resolution SACD and DVD-Audio formats, perfectly intact.

Digital Bass Management is available for all surround sound formats. This prevents bass frequencies from overloading and distorting your speakers by ‘redirecting’ them to your subwoofer which is specially designed to

- Plays DVD-V, DVD-A, DVD+R, DVD-R, VCD, SVCD, SACD, CD, CD-R, CD-RW
- HDMI HD Output
- Faroudja DCDi circuit for 480i (DVD standard) video upconversion to 420p, 720p or 1080i
- Progressive scan with 3:2 pull down (film detection mode)
- Component, S-Video and Composite Video Output
- 1 x 10 bit 27MHz for Composite/S-Video
- 1 x 12 bit 216MHz for Component output
- Independant video DACs allow simultaneuous feed to zone 2
- Coax and TosLink optical digital audio outputs
- Bass Management for DVD-A and SACD
- Separate 2 channel and 5.1 channel analog outputs
- Dolby Digital and DTS decoding
- HDCD, MP3, and WMA decoding
- 24 bit 192kHz DACs
- RS-232 port
- IR Input
- 12V Trigger Input
- Detachable AC cord
- DVD 55 Remote Control

THE INSIDE STORY. *Independent signal paths for DVD-Audio and SACD plus dual high-speed video DACs maintain the highest possible resolution of audio and video quality.*

*12 bit/216MHz video DAC
from Analog Devices for
component output.*

*Independent video DACs
allow simultaneous
feed to zone 2.*

*Burr Brown 24 bit/192KHz
audio DACs and OPamps.*

*A unique vibration
damping foot comprised
of a cast aluminum support
with a highly absorbent
silicon rubber insert provides
superior vibration resistance.*



HDMI by Silicon Image®.

*Faroudja DCDi video
processor upconverts to
720p and 1080i.**

*Independent SACD and
DVD-A processors with
bass management.*

*High performance DVD/
SACD drive.*

*Proprietary "switch mode"
power supply for ultra
low noise and rock solid
voltages.*

** software dependant*

handle the lowest octaves. When playing DVD-Video, DVD-Audio or Super Audio CD sources, it is possible to preset speaker configurations. The crossover point is selectable with 12 dB high and 24 dB low pass filter slopes.

VIDEO PERFORMANCE

The M55 features a Dual Discrete Video Circuit (D.D.V.C.) for the highest possible picture quality via the Component Video output. An extremely high-speed video D/A converter is a very critical component in generating a superior quality video playback from DVD. The NAD M55, therefore, uses the Analog Devices 12-bit, 216MHz video D/A converter to ensure highly accurate playback of delicate, low-level video signals. This produces a vivid picture that is faithful in every detail. Over sampling of 4x is achieved for Progressive and 8x for interlaced video signals, allowing more detailed D/A conversion. Higher quality picture reproduction is also possible thanks to a filter with flexible 'shutout characteristics' that is used for the analog

filter in the latter stage. Furthermore, the NAD M55 uses two separate video D/A converters to process Progressive and Interlaced signals. This eliminates mutual interference between the Progressive and Interlaced signals and allows both an Standard Definition and a High Definition picture to be output simultaneously – a great feature for sending video to a second viewing zone (available on the M15 Preamp Processor).

Progressive Scan features the DCDi processor by Faroudja. Progressive Scan technology represents a vast improvement over the interlaced scanning method used in normal TV broadcasts and other conventional applications, as it can process around twice as much video data to produce a sharper, noise-free picture with finer details. Video images are faithfully displayed with optimum naturalness and beauty.

A wealth of picture quality adjustment functions, including Contrast, Brightness, Hue, Sharpness, Black Level and Gamma, can all be adjusted using the intuitive On Screen Display.



Audio

Frequency Response CD Audio	4Hz to 20kHz
Frequency Response SACD Audio	10Hz to 41kHz
Frequency Response DVD (96kHz)	4Hz to 44kHz
Output Level	2V rms
Signal/noise ratio, A-weighted	-115dB
THD (at 0dB, 1kHz)	0.0045%
Wow and Flutter	Quartz Accuracy
Channel separation CD	90dB
Dynamic range	99dB
Number of discs	1

DVD Video

Signal to Noise (interlace/progressive)	70dB, 72dB
Signal System	PAL/NTSC

Output

Digital Coaxial -	
PCM, DTS, MPEG, AC3	0.5 p-p 75 ohm, RCA x 1
Digital Optical -	
PCM, DTS, MPEG, AC3	3V p-p 75 ohm
Composite Video	1v p-p 75 ohm 1 x RCA
S-Video	Y/C 4 pin x 1
Component Video	RCA x 3 Y/Cb/Cr

HDMI YES

Remote Control NAD DVD-6

Physical Specifications

Dimensions (W x H x D)*	17 1/8 x 3 7/8 x 11 4/5" (436 x 100 x 300mm)
Net Weight	18.7 lbs (8.5kg)
Shipping Weight	30.0 lbs (13.6kg)

* Dimensions exclude feet, knobs and speaker terminals

Masters Series



MUSIC AND HOME THEATRE.

The way master musicians and master film makers would want it rendered.



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