E-Series

balanced

T+A

The latest generation of the audiophile all-rounder!

Of all the High-End manufacturers it is T+A which has often assumed the role of trailblazer when it comes to introducing and implementing the latest technologies for the audiophile sphere. We could cite numerous examples: the first High-End electronics incorporating RS 232 AudioCon control, the first fully digital loudspeaker (A2D), CD player with reverse clock and switchable filters, digital signal processing with freely programmable signal processors, CD and SACD players with valve pre-amplifiers, the unique K8, a 7.1 BluRay HD-audio receiver, and the superb SOLITAIRE cylinder wave loudspeakers. We could continue almost ad infinitum, but even this short list clearly shows the enormous strength of the T+A development department, which allows us to introduce new technologies into the High-End market faster and more effectively than many other manufacturers.

Four years ago we developed the E-series, which marked the start of a revolution in the High-End world. MP3 and other compressed-data music formats were completely unacceptable to many High-End enthusiasts, and this meant that they completely misunderstood the tremendous possibilities inherent in music streaming from the home network or Internet.
It was therefore an obvious step for T+A to develop equipment which was capable of exploiting the vast potential of these media in a consistent manner, and to integrate the new machines into a High-End system in such a way that the results would satisfy even the most demanding of listeners.
Our development team selected an unusual but very sensible starting point in designing the E-series: instead of developing a computer-based network device, which by its very nature would never satisfy our high audiophile demands, we designed the MUSIC PLAYER in the form of a classic high-quality CD player, and equipped it with additional internal digital sources and inputs. This route opened up the opportunity to reproduce high-resolution musical content from network servers, computers or the Internet in the very highest quality - even exceeding CD quality, since the data rates from a network can be significantly higher than with classic CD or even SACD. As a result our MUSIC PLAYERS offer a standard of sound quality which was previously unattainable. Internet radio, MP3 players, iPod etc. are also reproduced at substantially improved quality.
The POWER PLANT perfectly complements the MUSIC PLAYER, contributing a further range of supplementary analogue inputs, while its modern output stage technology and enormous output enable it to drive even large and demanding loudspeakers perfectly.

The new MUSIC PLAYER and the new POWER PLANT have been awarded the suffix “balanced”, which indicates that these machines have been fitted with a completely new signal processing topology: they are now of fully symmetrical construction, and feature high-quality XLR inputs and outputs. Once again this has resulted in a clear improvement in the sound quality of this equipment, which had already received many awards in magazine tests.
We considered it virtually obligatory to merge these two exceptional individual components to produce a single machine - the MUSIC RECEIVER - which combines the essential components of both devices. It constitutes an extremely competent all-rounder, and is the perfect method of making a start in the audiophile E-series.

POWER PLANT *balanced*

The core of the E-series is the POWER PLANT *balanced*, an integrated amplifier with almost boundless power and superb sound.

Following the tradition of our legendary transistor-based and valve-based amplifiers, the pre-amplifier was developed from the outset with a clear emphasis on sound quality, neutrality and maximum possible dynamic range. The use of the latest audio operational amplifiers on separate voltage-stabilised circuit boards (OAD = Op-Amp Decoupling) produces a further important improvement in the sound. As you would expect, there is a two-stage volume control with precision ALPS potentiometer, which helps to ensure a generous overload margin and high signal : noise ratios. A Flat switch is included, allowing the sophisticated tone controls and loudness function to be removed entirely from the signal path if required.

The POWER PLANT *balanced* is equipped with high-quality balanced and unbalanced inputs. The balanced input section (XLR) is located on its own circuit board, is of fully symmetrical construction, and is coupled directly to the pre-amplifier via the highest-quality differential amplifiers. The RCA and XLR inputs are very flexible, and can be assigned to a variety of source devices. The input select switches feature the best quality gold-contact relays to guarantee freedom from harmonic distortion and background noise.

The output stages are switch-mode circuits in which the output signal is generated by a large number of very short positive and negative pulses. Our switched output stages - developed entirely in-house - are by no means ready-made “off-the-peg” integrated IC amplifiers; they are of discrete construction, and equipped with the very latest ultra-fast MOSFET transistors and intelligent high-current driver modules. The oversized analogue mains power supply, with toroidal transformer for low leakage fields and separate buffering for each stage, ensures that the system has high reserves of energy at all times, and is the key to the enormous dynamic range of the output stages.

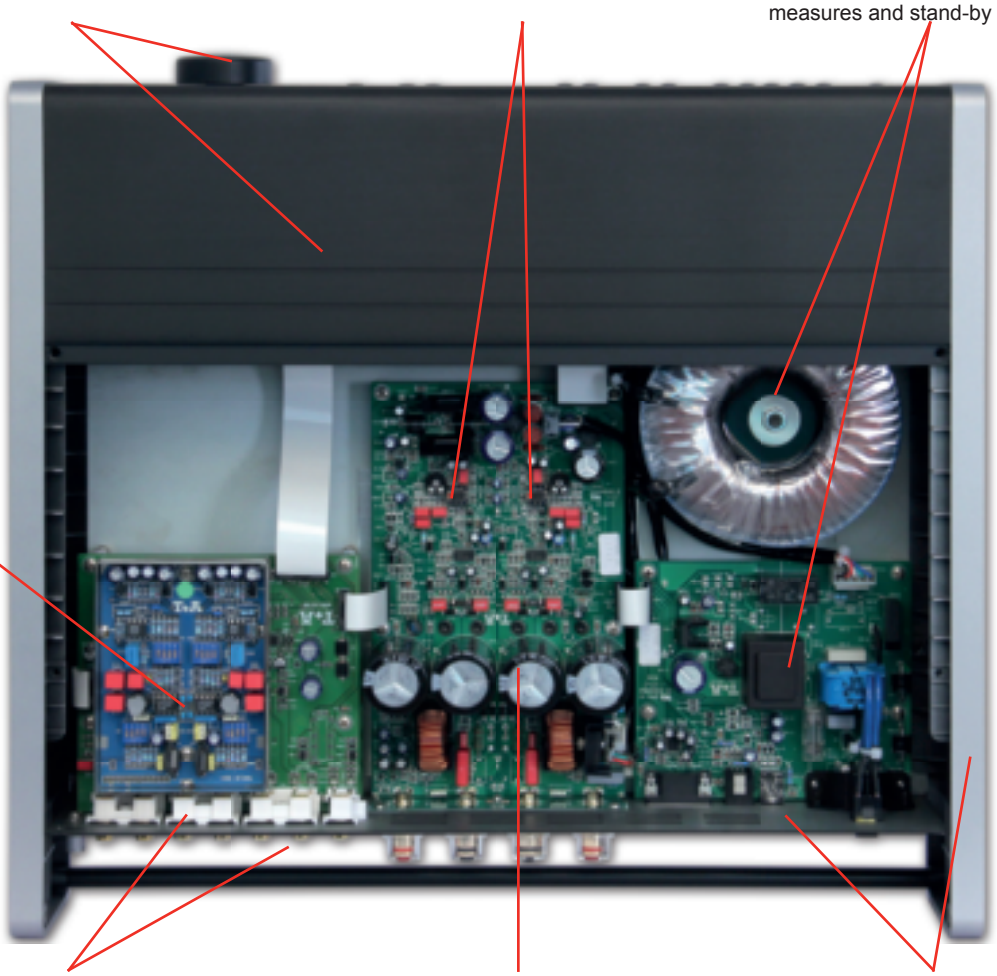
The Power Plant provides five high-quality inputs, which are selected using gold-contact relays; two of these can be set up as XLR inputs. A1 can also be converted to a Phono input using an internal PHE MM or PHE MC R-Series module (earthing clamp present). REC OUT and PRE OUT are also provided. The robust loudspeaker terminals are gold-plated and contain no ferro-magnetic metals. The integral RS 232 socket is used for software updates, and also constitutes the control interface for the system. For the E-series we developed a high-performance “E-Link” bus system which passes all commands from the FM100 system remote control handset from the MUSIC PLAYER to the POWER PLANT. If the POWER PLANT is operated without the MUSIC PLAYER, an FBS FM100 remote control set is required in order to control it remotely; in this case the E 2000 IR receiver is connected to the RC IN socket.

The basis of our new amplifiers is a type of output stage known as a PWM circuit (PWM = pulse width modulation), with a modulator of analogue construction. The output stages feature analogue negative feedback which compensates for any adverse effects of voltage fluctuations in the mains power supply, thereby eliminating signal distortions induced by the power supply voltage; such distortion is otherwise inevitable with pure “forward concepts”. The negative feedback is at a relatively low level, and is also frequency-dependent (stronger in the bass range, where large currents are encountered, diminishing in the mid-range / treble area). This results in a very well controlled, open sound image which never tends towards harshness, coupled with beautifully contoured, well-defined bass. The liveliness and musicality of this circuit philosophy is outstanding. When designed properly, switch-mode output stages can not only sound superb, they are also capable of generating enormous power with greatly reduced losses and little waste heat. They cope effortlessly even with power-hungry loudspeakers, since the POWER PLANT *balanced* delivers peak currents of up to 50 Ampere.

State-of-the-Art pre-amplifier with ALPS High-End Audio double potentiometer installed under the front profile.

Double-sided Op Amp Decoupling boards are components in the input section of the output stages which are crucial to sound quality.

High-performance toroidal transformer, extremely stable under load, de-coupled and supported in floating mounts. Mains power supply with multiple stabilisation measures and stand-by transformer.



Can be fitted with optional phono module for MM or MC cartridges, with 256-stage matching.

Supplementary balanced input board for two XLR inputs. Separate circuit board provides five unbalanced RCA inputs and pre-amplifier output. Gas-tight gold-contact relays are used for switching.

Two 250 Watt high-performance switch-mode output stages with sophisticated reservoir capacity (> 40,000 µF) of discrete construction with analogue modulator (PWM).

Solid metal case:
Heavy-duty die-cast side panels, extruded aluminium front and top panels, steel chassis cradle.

MUSIC PLAYER *balanced*

This is a unique and totally exclusive digital source component, as it combines for the first time the classic music source of CD with the newest music sources from the world of computers and the Internet. Kindly note that the MUSIC PLAYER is NOT a computer, but a high-quality audiophile CD player into which supplementary capabilities have been grafted, enabling it to exploit additional digital sources. To achieve this aim we developed a main circuit board capable of switching between four different digital sources whilst maintaining the highest possible, jitter-free quality: a streaming client (SCL) - which is a network-capable processor board featuring WLAN, LAN, USB and i-Pod interfaces - a high-quality digital FM tuner, the CD player and five digital SP/DIF inputs with their own clock resynchronisation. The net result is that the MUSIC PLAYER has access to everything that can deliver music: Internet radio, UPnP network music servers and USB media storage units, iPod including control system, VHF radio, CD discs, and music from your computer and other external sources via the SP/DIF inputs.

The classic CD is destined to remain one of the most important program sources into the distant future, and that is why - following the tradition of our legendary disc players - we designed the MUSIC PLAYER in the form of a thoroughbred stereo CD player. And that is also why the machine is immeasurably superior to any computer solution in terms of audiophile demands. The digital signals from the CD mechanism, the streaming client board, the VHF tuner and the digital SP/DIF inputs are converted into analogue signals to the highest standards of quality by the extremely refined, fully symmetrical, double-mono DAC. This circuit even employs the latest 32-bit converter from Burr Brown (TI). The MUSIC PLAYER is not only a High-End player: it also constitutes a High-End audio DAC for external sources.

The back panel of the MUSIC PLAYER *balanced* reveals the vast facilities on offer: the machine not only provides balanced High-End analogue outputs (with volume and tone controls as an option), but also a jitter-free digital output. The five High-End digital inputs (coax accepts up to 192 kHz sample rate, and optical accepts up to 96 kHz) can be used to provide high-quality conversion of external sources, enabling other equipment to benefit from the extraordinary sound qualities of the MUSIC PLAYER. The MUSIC PLAYER is supplied complete with the FM100 system remote control, which can also be used to control the POWER PLANT; in this case the machines are linked using the “E-Link” data bus connection. The gateway required to use the optional FD100 radio remote control system is installed as standard.

VFD screen with full graphic capability displays all system states and functions. Most of the MUSIC PLAYER's functions can be controlled from the front panel.

High-quality shielded CD mechanism with latest-generation decoder, including multiple de-coupling measures.

High-End analogue output section and converter board, of symmetrical construction and with full channel separation. Double-mono converter with switchable oversampling algorithms. Professional XLR outputs, high-quality RCA sockets.

High-performance mains power supply with sophisticated voltage stabilisation.

The streaming client (SCL) provides the connection to Internet Radio, all network components, iPod and USB sources.

Optional analogue High-End pre-amplifier module with volume and tone controls; typically used with separate output stages or active loudspeakers.

Radio receiver circuit board (gateway) with two signal processors. Enables the whole E-system to be remote-controlled using the FD100 bi-directional remote control handset with screen.

Main circuit board with switchable inputs for the four digital sources: CD player with CD-Text; FM tuner with Radiotext and supplementary functions; streaming client with Internet radio, iPod and USB; five High-End SP/DIF inputs, optical and coaxial.

The MUSIC PLAYER incorporates the High-End disc loader unit from our R-series players: the outstanding features of this unique design are its stainless steel pushrods, aluminium / ABS support plate, laser unit with floating mount system and heavy-duty MABUCHI motors.

MUSIC RECEIVER

This genuine all-rounder incorporates the essential genes of the superb POWER PLANT and MUSIC PLAYER separates, and is certainly one of the most modern and innovative receivers currently available on the world market. It combines classic analogue technology with the latest digital concepts, and constitutes a universal command centre for a truly modern, high-quality stereo system.

The MUSIC RECEIVER includes the complete circuit design of the POWER PLANT'S potent and superb-sounding output stages, with just a minor reduction in output. More than 160 Watt output power per channel into 4 Ohms are available. The mains power supply is of classic high end construction, and features an oversized toroidal transformer which is stable under load, large reservoir capacity and refined stabilisation measures. These features make it the ideal candidate for effortlessly driving large, complex and demanding loudspeakers to the highest standards of quality.

The MUSIC PLAYER contributes its excellent analogue pre-amplifier, converter and CD mechanism (without pushrods). The pre-amplifier includes many sensible functions such as balance, tone control, loudness, flat function and sub-sonic filter for operation with satellite loudspeakers. The MUSIC RECEIVER is also fitted with three high-quality analogue inputs (one of them as Tape in + out), one pre-amplifier output for connection to active loudspeakers or supplementary output stages, two sub-woofer outputs and one Line output, which would typically be used for a radio transmission module. The MUSIC RECEIVER is equipped with five digital inputs with independent clock resynchronisation, enabling the sophisticated 32-bit double-mono converter to be used as a high-quality audio DAC with other sources. The three coax inputs can process signals at up to 24-bit / 192 kHz. As you would expect, a jitter-free digital output is also present.

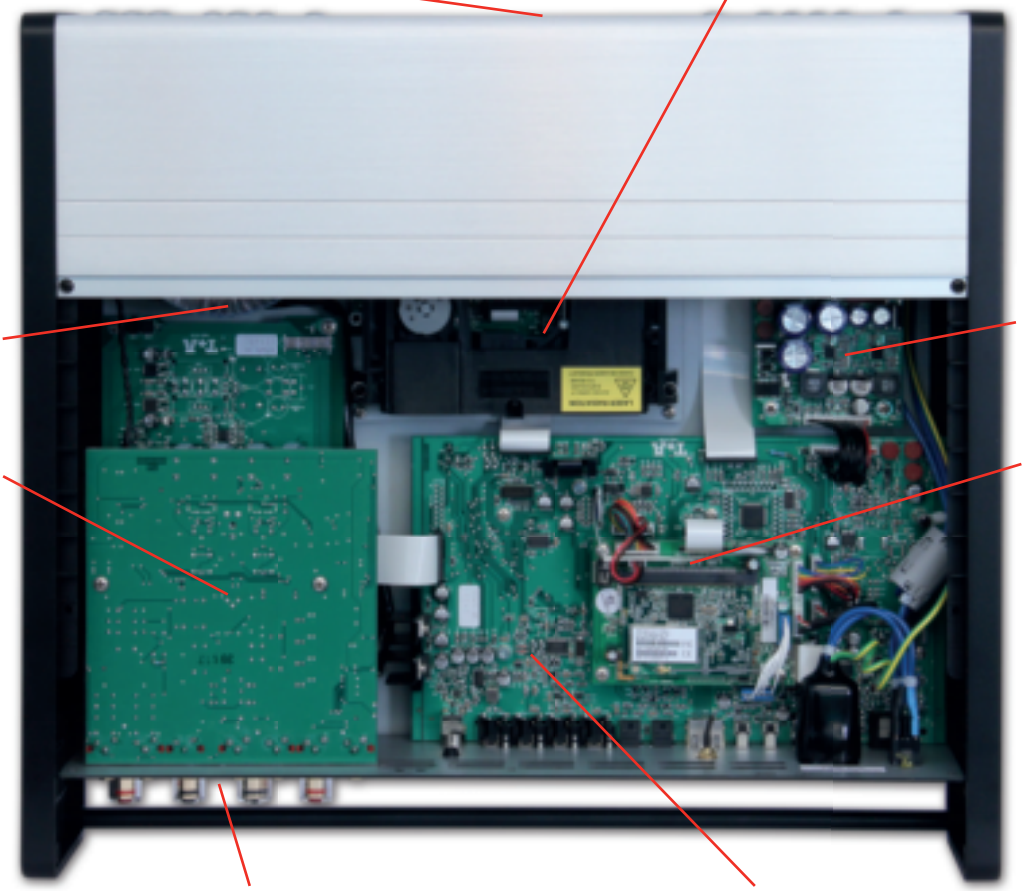
The facilities of this outstanding machine are rounded off with a good FM tuner and our streaming client board. The net result is that the MUSIC RECEIVER has access to everything that can deliver music: VHF radio, Internet radio, UPnP network music servers, USB media storage devices, PC and iPod including control system.

The back panel of the MUSIC RECEIVER reveals the vast facilities on offer: the machine not only provides High-End analogue inputs and outputs, but also a jitter-free digital output and five high-quality digital inputs (coax and optical). The LAN and WLAN sockets form the connection to the streaming client, while the USB inputs cater for the connection of an iPod and a hard disc. All RCA sockets and the loudspeaker terminals are hard gold-plated, and made of pure, non-magnetic brass. The MUSIC RECEIVER is supplied complete with the F 100 system remote control.

The optional FD100 can also be used.

VFD screen with full graphic capability displays all system states and functions. Most of the MUSIC RECEIVER's functions can be controlled from the front panel.

High-quality shielded CD mechanism with latest-generation decoder, including multiple de-coupling measures.



High-performance toroidal transformer, extremely stable under load, de-coupled and supported in floating mounts.

High-performance mains power supply with sophisticated voltage stabilisation.

High-End analogue pre-amplifier with minimal-length signal paths for input and output sections. 32-bit double-mono converter.

The streaming client (SCL) provides the connection to Internet Radio, all network components, iPod and USB sources.

Two 160 Watt high-performance switch-mode output stages with sophisticated reservoir capacity, of discrete construction and with analogue modulator (PWM).

Main circuit board with switchable inputs for the four digital sources: CD player; FM tuner; streaming client; SP/DIF digital inputs, socket for optional radio receiver (gateway).

The optional FD100 bi-directional radio remote control system can be used to control all functions via an optional gateway. It displays cover art as well as the full content of the device screen.

iPod Dock

Specifications

POWER PLANT *balanced*

Nominal output per channel	2 x 250 Watt into 4 Ohms, 2 x 140 Watt into 8 Ohms
Peak output	2 x 380 Watt into 4 Ohms, 2 x 210 Watt into 8 Ohms
Frequency response	+/- 3dB: 1 Hz - 60 kHz
Total harmonic distortion	< 0.005%
Inter-modulation	< 0.005%
Channel separation	> 80 dB
Inputs	5 x high-level (RCA) 250 mV_{eff} ... 3 V_{eff} / 20 kOhm
	2 x balanced (XLR) +- 250 mV_{eff} ... +- 3 V_{eff} / 5 kOhm
Optional	Plug-in MM phono module MM, 1 - 5 mV, 16 capacitance values
	Plug-in MC phono module, 60 - 1000 µV, 16 impedance values
Outputs	Pre-amplifier output
	Headphones > 50 Ohm
	Tape Out
Weight	13 kg, (28.6 lbs)
Remote control system	via MUSIC PLAYER or optional FBS 100 radio remote control system
Mains supply	220-230 V or 110-115 V, 50-60 Hz, 600 Watt

MUSIC RECEIVER

Nominal output per channel	2 x 160 Watt into 4 Ohms, 2 x 100 Watt into 8 Ohms
Peak output	2 x 220 Watt into 4 Ohms, 2 x 150 Watt into 8 Ohms
Frequency response	+/- 3dB: 1 Hz - 60 kHz
Total harmonic distortion	< 0.01%
Inter-modulation	< 0.01%
Channel separation	> 80 dB
Inputs	
analogue	3 x high-level (RCA) 250 mV_{eff} ... 2,5 V_{eff} / 20 kOhm
digital	SP/DIF (16 - 24-bit): 3 x coax (192 kHz), 2 x TOS-Link (96 kHz)
	2 x USB for iPod and hard disc
Outputs	
analogue	Pre-amplifier output, Line Out, Tape Out
Headphones	> 50 Ohms
digital	1 x coax, IEC 60958 (CDDA / LPCM)
CD player	See MUSIC PLAYER *balanced*
Streaming Client	See MUSIC PLAYER *balanced*
FM radio	See MUSIC PLAYER *balanced*
DA converter	See MUSIC PLAYER *balanced*
Weight	10 kg, 22 (lbs)
Accessories	Includes F 100 system remote control, WLAN aerial, FM aerial
Mains power	220-230 V or 110-115 V, 50-60 Hz, 300 Watt

MUSIC PLAYER *balanced*

CD-Player	CD/DA, CD-R, CD-RW, CD Text
Streaming Client	
Formats	MP3 , WMA, AAC, OGG-Vorbis, FLAC (192/24 via LAN) and WAV (192/24 via LAN) with gapless playback (where supported by server)
Playlists	PLS, M3U, ASX (where supported by server)
Supported media servers	UPnP 1.1, UPnP AV, Microsoft Windows Media Connect Server (MS DRM10), vTuner Internet Radio Service, DLNA compatible servers
Standards	DLNA, UPnP, MS-DRM 10, Designed to play Plays for sure guidelines
Features	Web server (remote PC Web browser control) vTuner,  Internet Radio Station database (automatic updates over Internet)
Interfaces	USB 2.0 for hard disc, iPod with control system and display, LAN, W-LAN RS 232 update and control interface
FM radio	FM Radio 87.5 - 108 MHz, sensitivity 2 µV, cross-talk damping > 40dB, overload margin > 125 dBµV, RDS functions, station lists, stored stations (presets)
D/A converter	32-bit, 384 kHz Sigma-Delta, 8-times oversampling, double-mono
Analogue filter	Phase-linear Bessel filter, 3rd order 100 kHz
Frequency response	2 Hz - 20 kHz 44.1 kSps 2 Hz - 22 kHz 48.0 kSps 2 Hz - 40 kHz 96.0 kSps 2 Hz - 80 kHz 192.0 kSps
Total harmonic distortion	< 0.001%
Signal : noise ratio (A-weighted)	109 dB
Channel separation	106 dB
Audio data	
Outputs, analogue	
Unbalanced (RCA)	2.5 V_{eff} / 22 Ohm fixed. With VV-module 0...2.5 V_{eff} variable
Balanced (XLR)	5.0 V_{eff} / 22 Ohm fixed. With VV-module 0...5.0 V_{eff} variable
Headphones	> 50 Ohms, only usable with pre-amplifier module installed (VVM)
Output, digital	1 x coax, IEC 60958 (CDDA / LPCM)
Inputs, digital	SP/DIF (16 - 24-bit): 3 x coax (192 kHz), 2 x TOS-Link (96 kHz) 2 x USB for iPod and hard disc
Weight	10 kg, (22 lbs)
Accessories	Includes FM100 metal system remote control, 2 x WLAN aerials, FM aerial
Mains power	100-240 V, 50-60 Hz, 40 Watt
General data	
Dimensions, H x W x D	12 x 44 x 39 cm, (4.7 x 17.6 x 15.6 inch)
Finishes	Black case with silver end panels Silver case with black end panels Black case with black end panels Silver case with silver end panels
Control interface	RS 232 for update and control system
Optional accessories	iPod-Dock USB **FD100** bi-directional radio remote control with screen **GW E** internal radio receiver for MUSIC RECEIVER **PHE MM** and **PHE MC** internal phono modules for POWER PLANT **VVM** internal pre-amplifier module for MUSIC PLAYER (volume + tone controls)

Technical modifications reserved!

Hifi Digital 4/2011

The MUSIC RECEIVER combines an almost overwhelming range of functions with excellent sound quality.
Sound: very good
Operation: very good
Features: very good
Workmanship: very good
Price : performance: superb

Stereo 9/2011

The superb E-Series components provide almost more pleasure in combination form. The integrated amplifier, CD player, streamer and VHF tuner with online radio, USB-DAC and D/A converter combine an almost overwhelming range of functions with excellent sound quality and T+A's customary solid workmanship. One of the strongest machines on the market!

Sound quality, streamer: 92%
Sound quality, CD receiver: 92%

Audio 6/2011

The Music Receiver from T+A's E-Series is far more than the modest name suggests: it combines virtually all the development milestones of the company's more recent history in a single extremely elegant package.

Sound verdict: 100 points
Price : performance: superb

AV-Magazin 7/2011

Thanks to its high-quality components the Music Receiver offers an unreservedly convincing performance with all sound sources. In the Music Receiver T+A has developed a High-End all-round system which is top value in every respect, and thoroughly deserves our Highlight award.

Sound: very good
Features: very good
Workmanship: very good
Operation: very good
Price : performance: good
Class: High-End
Overall: very good
AV-magazin Highlight

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