K-Electronics

BluRay - Multimedia - Receiver

T+A

Highend audio and video at their best

In 1996, when T+A introduced the first K-series CD receivers to the market, these were the most compact machines we had ever produced, representing a form of compressed High-End based on the ‘full-size’ ranges. Since that time we have continued to develop this design philosophy with many successful products. For example, in this way the all-in-one machines such as the K8 and K2 Blu have benefitted from the experience and expertise we gained in developing the large BD 1260 R High-End BluRay player. And in a similar manner the power amplifiers and pre-amplifiers of these receivers have also profited from the technology developed for the E-series POWER PLANT high-performance amplifier.
Thousands of users have been delighted and won over by the overall philosophy of the K-series: excellent sound, superb picture quality, simple operation, top-quality materials and timelessly elegant design - all in a compact case. The K8 is certainly one of the most complex devices we have developed and produced to date. It is an extremely modern 7.1 BluRay HD receiver equipped with the finest technologies available today, and designed to form the high-performance command centre of a sophisticated home cinema surround system. At the same time the K8 is extremely versatile: it satisfies all the needs of the keen, demanding home cinema enthusiast with its 7.1 facilities and excellent BluRay playback, but is also an excellent choice for those of us for whom 5.1 or 3.1 loudspeaker set-ups are adequate; it even includes high-quality stereo modes to cater for fans of pure two-channel reproduction. Since the K8 is equipped with seven power amplifiers, each generating a continuous power of more than 150 Watts, and features a control system of highly intelligent design, it can provide stereo sound in up to three adjacent rooms, each with independent volume control - depending on the selected mode of operation. We took a deliberate decision to install very powerful power amplifiers offering superb sound quality, together with a high-performance analogue mains power supply. The result is that the exacting music and video enthusiast can safely connect large, power-hungry loudspeakers to the system, which has no difficulty in providing sound in large rooms. Many BluRay discs are demanding in terms of dynamic range and levels, and the K8 also fulfils these requirements effortlessly.
The K2 Blu is a 3.1 BluRay receiver whose essential components are based on those of the K8; it constitutes the high-performance command centre of a Hi-Fi or virtual surround system. Depending on the owner’s preferences and requirements, the machine can be set up to operate as a classic stereo system with two loudspeakers, or as a virtual surround system with an additional Centre loudspeaker and sub-woofer; we deliberately decided against making provision for rear speakers. Since the K2 Blu features five power amplifiers, each producing a continuous power of more than 150 Watts, it can even provide stereo sound in an adjacent room, with independent volume control. We took a very deliberate decision to install the high-power power amplifiers of the K8, with their outstanding sound quality, which means that the exacting music and video enthusiast can safely connect large, power-hungry loudspeakers to the system, providing plenty of effortless power for large rooms.
Both receivers are fitted with a high-quality BluRay disc mechanism which delivers outstanding picture quality with superbly graduated, natural colours, high contrast and perfect sharpness. We deliberately omitted 3D, as we consider this ever-changing technology to be immature, inconvenient and unsuitable for normal televisions in home use. In the cinema situation 3D can certainly be impressive, but at home it can be an irritating, stressful experience. Naturally both receivers feature a FM RDS tuner with very good reception qualities and Radiotext information. The machines also offer full access to all the new media, as they are equipped with the High-End streaming client of the E-series and R-series Music Player. This means that they have access to MP3 players and USB memory media using the USB port on the back panel, as well as Internet radio and network music services; it is also possible to connect and control an iPod.
We have invested a great deal of effort in implementing a simple, intelligent method of controlling our K-series receivers. In spite of their comprehensive facilities they are easy and intuitive to operate, either on the device itself or using the remote control handset supplied in the set.
The optional FD 100 remote control handset with integral screen makes operation even more convenient.
The sophisticated design of our K-series receivers is unique, unmistakable and typically T+A, and makes a welcome change from the uniform appearance of many mass-produced products. Our K-series loudspeakers, which embrace a full range of great-sounding units, are also of aluminium construction, and both machines combine superbly with them.

K8

The controls in the classic T+A style make the K8 dead easy and intuitive to operate, despite its multitude of functions. All essential functions are directly accessed on the device. The FM100 premium system remote control is very neatly structured and colour-coded. Its function blocks are distinctly separated with a clearly readable lettering. Beyond the normal operation, the FM100 allows to use additional functions and text entries. Basic adjustments like loudspeaker levelling, balance, tone controls and the selection of the surround sound matrix are made via simple menus on the remote. It is even more comfortable using our FD 100 bi-directional radio remote control handset with screen, the optinal Gateway (radio receive module) has to be installed in the machine. The generous high-definition graphic VFD display offers excellent readability even from a larger distance and also shows the data and information context-sensitive in different font sizes. It can be gradually dimmed.

Concerning A/V devices, we at T+A also attach great importance to great sound, which is why we use a high-grade BluRay drive of the latest generation with three lasers. It does not only deliver a superb picture with BluRay and DVD, but also a notably good CD reproduction. We use only first-class audiophile D/A converters by Burr-Brown, for the front channels (stereo) even in the balanced differential mode. All current Dolby and DTS HD formats are available and will be decoded by our highend audio board.

The video board designed by T+A has an outstanding picture quality, for it uses a cutting-edge video processor from Genesis whose sophisticated scaler can upscale the video data from the analogue inputs and from DVDs to 1080p at the most. So you can also connect older source devices without HDMI output to the K8 and run them with ultimate quality via the HDMI 1.4a output. Thus all modern TV sets, beamers and panels can be fed in an optimal manner. For external video sources there are three HDMI inputs which transfer 3D formats as well.

The front panel USB port is linked to the BluRay player and allows to enter and playback LPCM, MP3, photo, JPEG and movie data files or the use of a USB stick for BD-Life usage.

The high-class headphone socket has been purposefully designed very upmarket for large jack plugs and has its own power amplifier. When used, the loudspeaker outputs will be turned off completely.

The comprehensive array of sockets indicates the enormous range of facilities provided by the K8 - it really is a command centre. Seven passive loudspeakers can be connected to the high-quality speaker terminals, which are made of gold-plated pure brass. As you would expect, an output for an active sub-woofer is available for the primary listening area. The K8 can be configured for various modes of operation, in which the loudspeaker outputs are used in different ways. The standard configuration is a 7.1 surround set-up for the main room. If this is not required, an alternative 5.1 configuration can be selected, in which case the BACK channel power amplifiers can be used to provide a stereo downmix signal in Zone 2 (adjacent room), with its own volume control. If the optional 3.1 configuration is chosen, i.e. if you just want to use main speakers, Centre and sub-woofer in the main room, then the surround channel power amplifiers can again be employed to provide sound in Zone 3. Permanent provision is made for a fourth Zone in the form of a RCA output, but this does require supplementary power amplifiers or active speakers, such as our CM Active. RCA outputs are also provided for Zones 2 and 3 or the BACK and SURROUND channels. The volume can be set independently in the different rooms (or zones) if the supplied E 2000 receiver is connected to the RC socket for that zone, and installed in the adjacent room. A USB socket can be used as power supply for an audio radio transmission module.

A further facility offered by the K8 is to use the BACK channel power amplifiers as supplementary bi-amping power amplifiers for the primary channel, or to switch the Zone 4 RCA outputs to the front channels. This requires a change to internal jumpers in the machine; this work must always be carried out by an authorised dealer.

At top left on the back panel is the socket for the optional internal module and receive aerial for our FD100 bi-directional radio remote control handset. Adjacent to this are the analogue RCA output (for recording), three analogue RCA inputs (for various audio sources) and an analogue iPod input for audio and video playback. Below these sockets are the E-Link socket, the RS 232 update port which doubles as control interface for Loewe, Crestron equipment, and an E 2000 IR receiver input. Next comes the FM aerial socket, which should be of high quality in order to makefull use of the RDS FM tuner's good reception characteristics. The USB A1 socket is intended for an HDD (hard disc) or a USB stick, while USB A2 provides a digital iPod connection. Also present are a digital output, an optical digital inputand two co-axial digital inputs catering for sampling rates of up to 192 kHz. The K8 is equipped with a network switchwhich routes the machine's network and Internet connections, i.e. it links the streaming client and the BluRay mech-anism to the Internet or your network. The LAN 1 and 2 sockets are used for connecting external devices such as TV sets. The video section offers sophisticated connection facilities for three digital sources via HDMI, and a maximum of four analogue sources of various formats; these analogue sources can be upscaled to a resolution of 1080p. The video board and HDMI output corresponds to 1.4a specifi cation, and features Audio Return Channel (ARC) and HDMI Ethernet Channel (HEC).

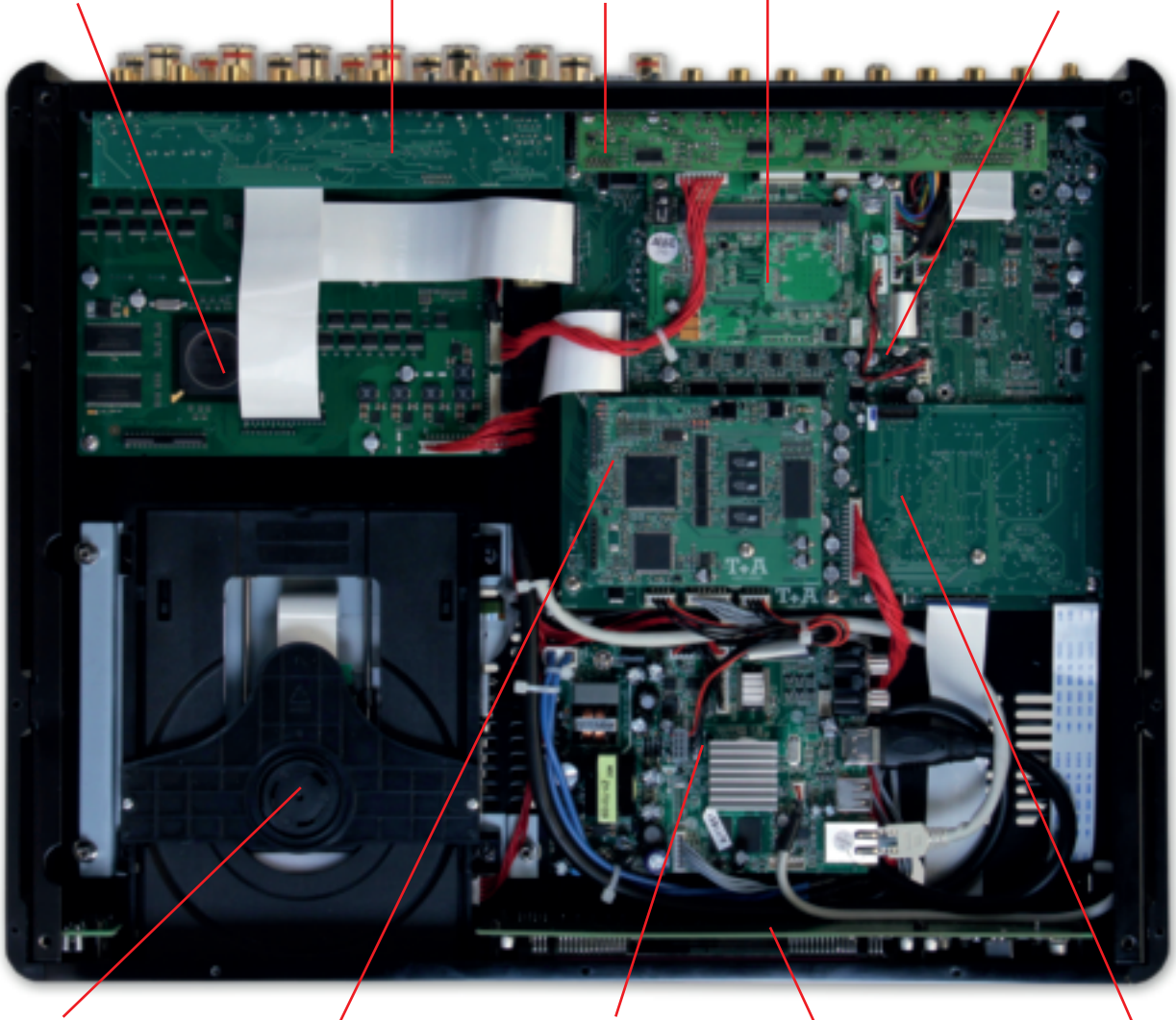
Input PCB for the analogue AV inputs, 2 x YUV, 2 x CVBS, 4 x Video.

The streaming client board connects to web radio, network, iPod and USB sources.

6-layer state-of-the-art video board. Superb picture quality due to late-breaking video processor. Newest HDMI 1.4a standard with ARC and HEC. Application of superfast HDMI receiver and transmitter modules. Four analogue inputs with discrete calibration for optimal conversion and scaling up to 1080p.

High-grade stereo audio connection board with one tape output, three line level inputs and one analogue iPod socket.

The complex mainboard is the heart of the K8. It accomodates a modern, freely programmable signal processor for the analogue ins and outs, premium D/A converters with 24 Bit/192 kHz, a high-class preamplifier and the control centre for all sources and outputs. Very short signal paths ensure perfect audio results.



High-grade BluRay drive of the latest generation with triple beam laser technology. Decoupled subchassis and elastic mounted laser unit.

Cutting-edge BluRay decoder board. Ultramodern one-chip solution with extremely fast data processing and ultimate picture and sound quality.

High performance processor of the ARM family for the mainboard with additional RAM and flash memories, updatable.

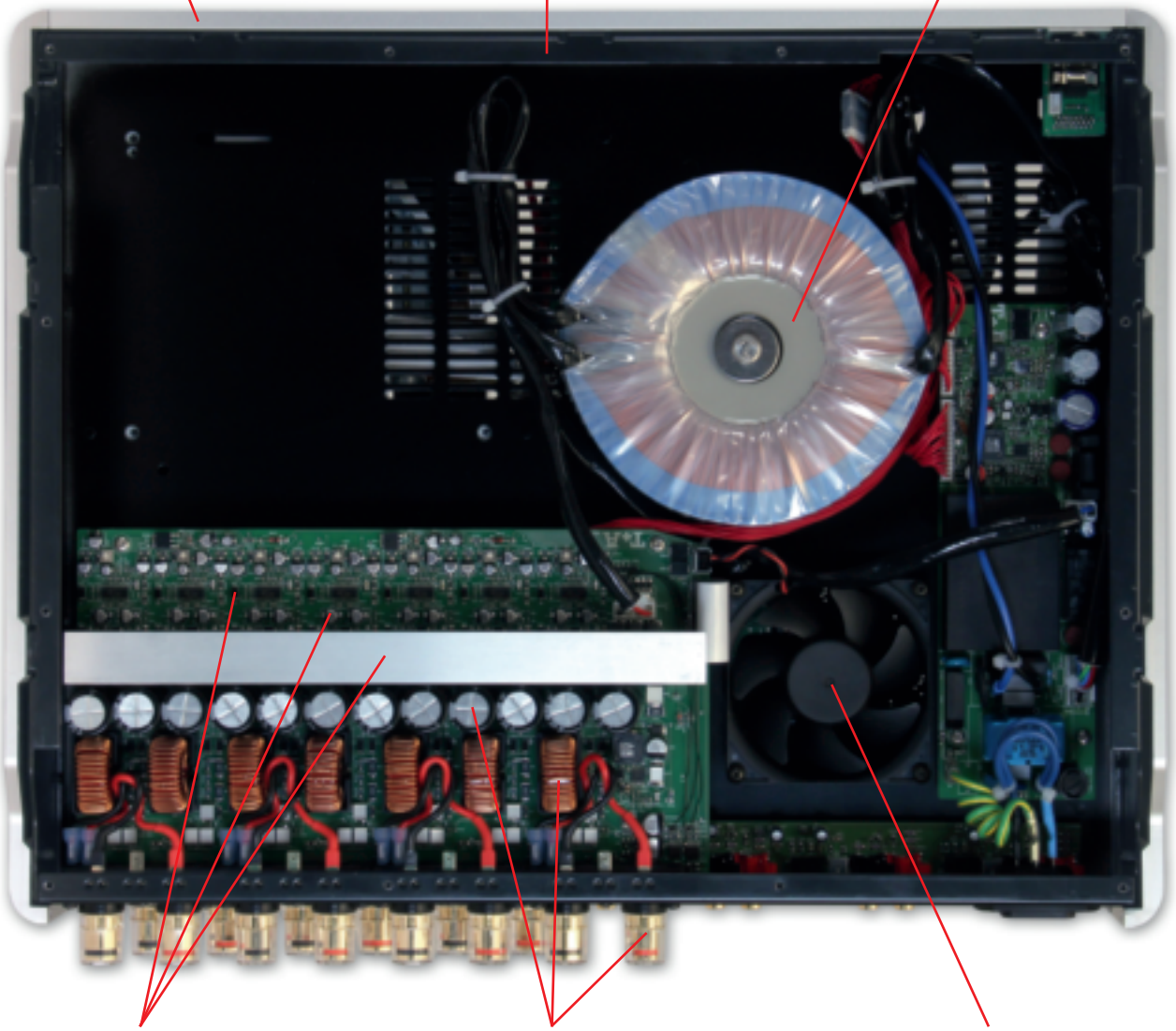
Highend 7.1 high definition surround decoder. With its two freely programmable 56 Bit dual core signal processors it handles the entire audio signal processing, generating all current Dolby and DTS high resolution formats. An auto calibration function for the loudspeakers is also available.

Control board with very large and excellently readable graphic VFD display. Context-sensitive presentation and display of all functions.

The housing has a two-part construction. Located inside is the supporting steel tray, on the outside are the fine decorative parts made from solid aluminium. Owing to the screw joints and its heaviness the K8 is completely decoupled from the environment.

The steel chassis tray is the backbone of the K8. Not only does it ensure the high rigidity of the whole construction, but also the easy accessibility of the individual boards. There is an upper compartment for the signal processing boards and a lower one for the power amplifiers and the power supplies.

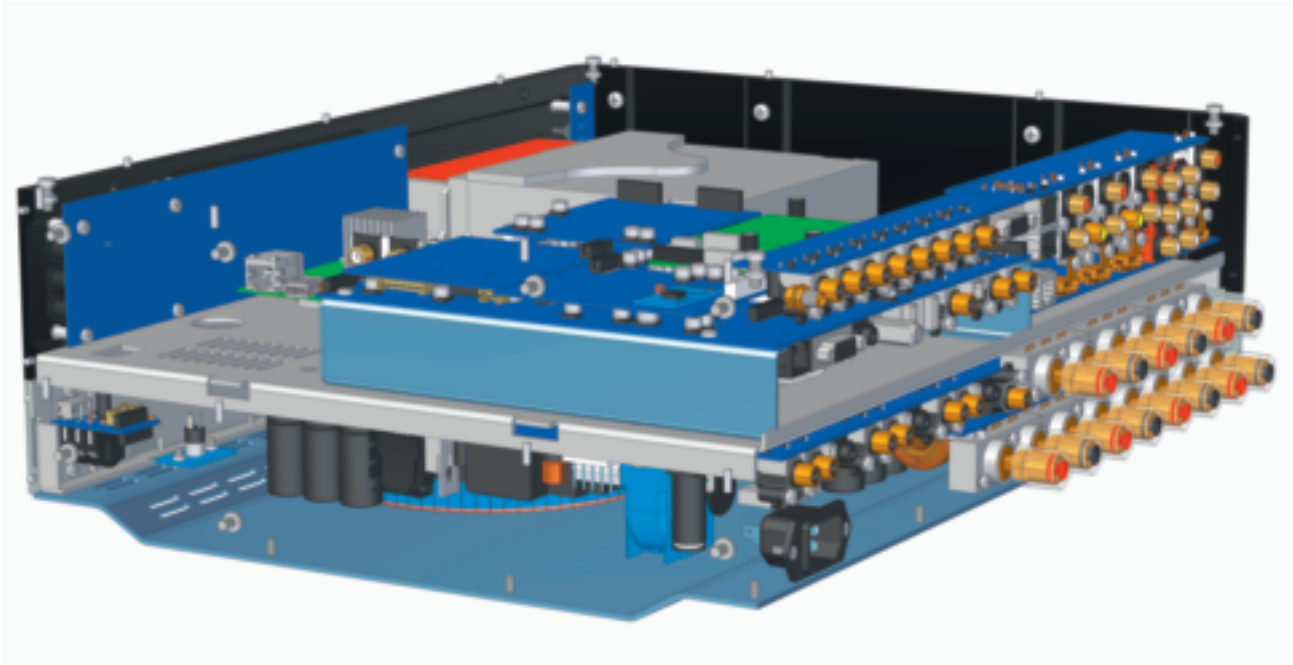
The power supply features a low radiation heavy-duty toroidal mains transformer with huge reserves even under heavy load. All stages and voltages have an elaborate individual regulation. Due to an additional, power saving power supply the over all power consumption is below 1 Watt in standby mode.



The design of the T+A switching power amps: modulator, dual MOSFET and a massive heatsink. The seven power amplifiers sound brillant, command huge reserves and have proven to be extremely rugged high performance tools.

Power amp out with sophisticated filtering, high-quality chokes and processor-controlled protection circuit for all operating conditions.
The gold-plated pure brass loudspeaker terminals are directly connected.

The smart-controlled cooling fan keeps the internal temperature constant and remains silent even under heavy load. The air stream flows from the front underside across the device and escapes through the rear cooling slots.

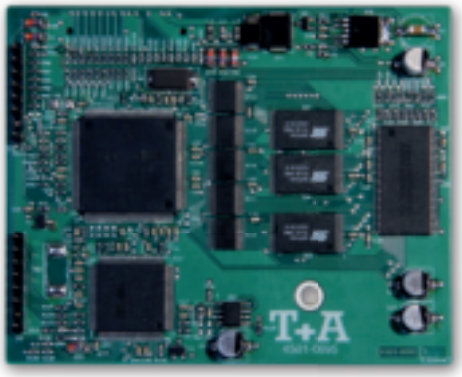


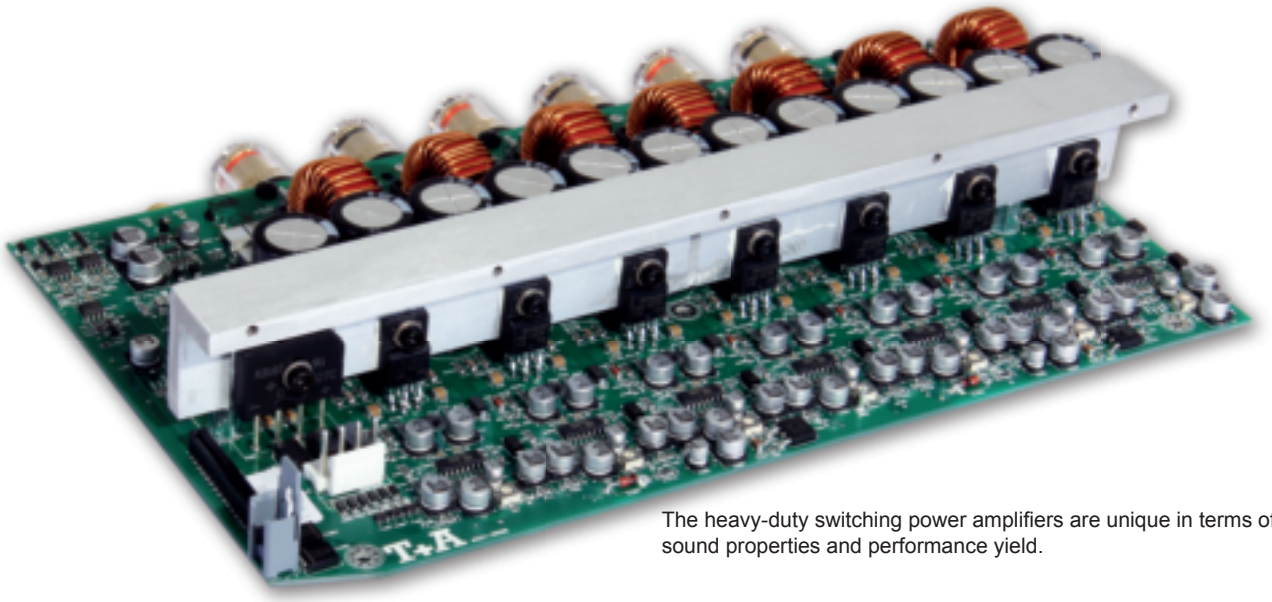
The 3D design drawing by our ultramodern Solid Edge CAD software shows the complexity of the K8 in a spectacular manner. Such elaborate housings can only be developed by using state-of-the-art technology. Not only the electronics, but also the mechanics of the K8 is a masterpiece!

Our devices feature a unique case design: all external components are made from solid aluminium using sophisticated extrusion tools. Once the extruded profiles are produced, they are machined to very high levels of precision using the latest milling machines, resulting in parts which fit with great accuracy. The silver-coloured components are then carefully and repeatedly blasted with glass beads until the surfaces are velvet-smooth, after which they are anodised. This process retains the full metallic character and natural colour of the aluminium. The control area and the upper side panels are also bead-blasted, but are then polished in a complex five-stage process before a high-gloss black finish is applied. The top panel and base plate consist of 6 mm thick aluminium plates, machined and finely finished all round. The surfaces are then carefully bead-blasted, brushed and anodised. All trim components are screwed to a complicated twin-chamber cradle chassis with an internal centre plate. The steel cradle chassis is made to extremely tight tolerances, and is by its nature totally rigid. The bottom section houses the high-performance mains power supply with torroidal transformer, voltage power supplies, stabilising circuitry and power power amplifiers, while the top section accommodates all the circuit boards for the audio and video signal processing sections. The steel centre plate shields these delicate sub-assemblies very effectively from the mains section.

The HDMI 1.4a video board is equipped with the latest processors and software algorithms.

The high definition surround decoder with two Dual-Core 56 Bit DSP´s is also the latest and most up-to-date of its kind.





The heavy-duty switching power amplifiers are unique in terms of sound properties and performance yield.

K2 Blu

We developed the K2 Blu as an all-purpose machine for music lovers who wish to play music to the highest quality from various sources and media, as well as raise the (generally very mediocre) sound quality of their TV set to a high standard, but are not prepared to find space in their living room for six or eight loudspeakers. For this reason the K2 Blu is not a classic surround receiver with 7.1 loudspeakers and HDMI source switching, as the K8 satisfies that need; instead it is designed to feed two stereo loudspeakers and - if desired - a Centre speaker, a sub-woofer and two additional external speakers for an adjacent room. Various user-selectable operating modes, such as three-channel or virtual surround, provide facilities for optimum reproduction, depending on the loudspeakers connected to the unit, and the type of music preferred.

The base functions of the K2 Blu can be controlled on the device itself, but the FM 100 system remote control provides additional control of supplementary and text input functions. Basic settings such as loudspeaker calibration, balance, tone controls and the choice of sound field matrix are selected using simple menus and the remote control system. It is also possible to use our FD 100 bi-directional radio remote control handset with screen, since the necessary Gateway (radio receive module) is installed in the machine as standard. The large-format, high-resolution VFD screen with graphics capability displays the data and information in context-dependent form in various font sizes, and can be dimmed incrementally.

The K8 and K2 Blu are equipped with the latest generation of high-quality BluRay mechanism incorporating three lasers. This means that they deliver extremely good sound quality from CD as well as a superb picture from BluRay and DVD (which is upscaled automatically). The picture output is generated through the digital HDMI output, and the very highest standard of HD picture quality can be attained, depending on the monitor or TV set connected to the unit. The BluRay-specific menus are displayed on the television or monitor connected to the system. The machine's front panel USB port is connected to the BluRay player, and can be used to feed and play LPCM-, MP3-, Photo JPEG and film files; alternatively a USB stick can be used for BD-Life.

The screen window conceals the IR receiver for the FM 100 remote control system, as well as a Bluetooth module aerial. The K2 Blu is our first device to be fitted with an A2DP-compliant Bluetooth interface, which provides a fast, simple means of binding any mobile audio devices to the receiver for extremely convenient playback of audio files.

The headphone socket has its own amplifier, and switches off the loudspeaker outputs completely when in use.

Naturally the K2 Blu also features a clock and a convenient alarm timer.

The array of socketry on the machine's back panel indicates the impressive facilities of the K2 Blu: five loudspeakers can be connected to the high-quality speaker terminals. As in the case of our High-End series, these terminals are made of high-purity gold-plated brass, which is completely devoid of ferro-magnetic materials and therefore has no distorting influence. Loudspeaker pair B is used to provide stereo sound in an adjacent room, while speaker pair A and the Centre are intended for the main listening area. An output for an active sub-woofer is also available for the main area if required. The volume can be set differently in both rooms (or listening zones), if the E 2000 socket is used to connect the receiver supplied in the set, and the latter installed in the neighbouring room.

All the audio signal processing is carried out by a high-performance digital signal processor which generates the sound fields for virtual surround mode, regulates all the tone settings and cut-off frequencies for the primary loudspeakers (and the sub-woofer when required - bass management), processes and controls the loudspeaker output signals, and converts the three analogue inputs so that they can also be processed digitally. The digital data streams are converted by high-quality 24-bit / 192 kHz D/A audio converters made by Wolfson.

The amplifiers employed are our high-speed switching power amplifiers (double MOSFETs), which are an in-house development. Each amplifier generates a continuous power of more than 150 Watts, and is capable of delivering a current of 25 Ampere; this is ample even for large loudspeakers and big rooms. A mains power supply with a torroidal transformer offers low leakage fields, stability under load, and high reservoir capacity, ensuring ample energy under all conditions. Naturally the machine features a sophisticated protective circuit which monitors all its operating states.

The picture output of the BluRay disc mechanism provides full HD via the HDMI output.

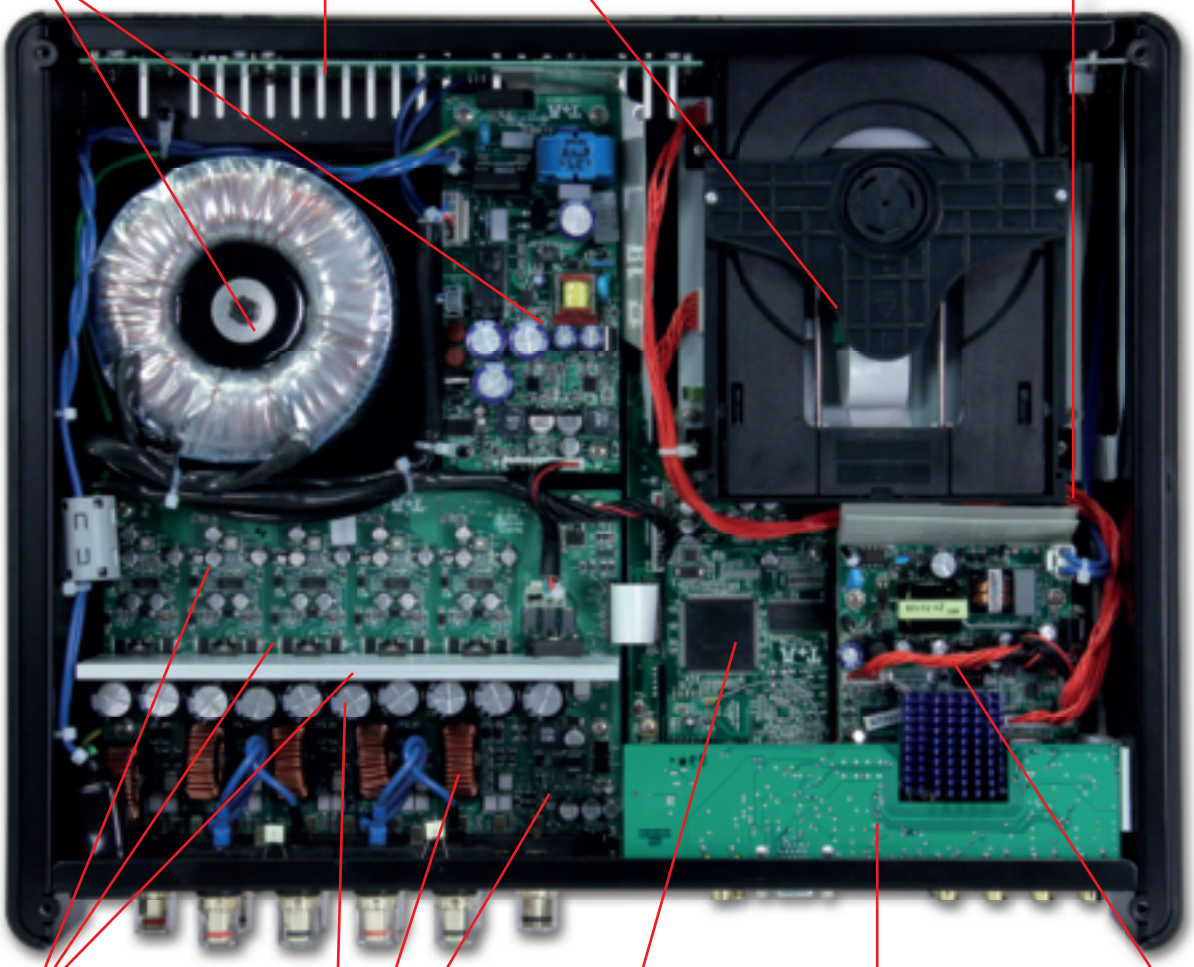
Three analogue sources (TV, Aux and Tape) and two digital audio sources (optical and RCA) can be connected to the K2 Blu, which means that the machine can form the universal command centre of your entire system. The TV input features an Auto ON function which switches on the K2 Blu automatically when the television is turned on. Since the integral FM RDS tuner is of very high quality we recommend the use of an effi cient outside radio aerial. All the digital sources are present at the digital output, while the RS 232 port provides update and control facilities. The K2 Blu is equipped with the latest generation of streaming client, providing access to the local network (optionally via W LAN or LAN) and all UpNP servers and / or computers connected to it, plus Internet radio. T+A has established a service contract with the company **vTuner Internet Radio Service**, which enables purchasers of our streaming client products to create individual station and favourites lists; these are made available automatically when you select Internet radio.

Control system circuit board, VFD screen with full graphics capability, and context-dependent display of all functions.

The extremely potent mains power supply with multiple stabilisation measures is equipped with a torroidal transformer offering excellent stability under load.

The BluRay disc mechanism features a floating suspension system and a high-quality triple-laser optical system.

The extremely modern main circuit board with control processor, digital signal processor and 24-bit 192 kHz D/A converters, offers the shortest possible signal paths, because all digital inputs and outputs are integrated into this one board.



Five power power amplifiers with modulator, double Mosfet transistors and heat-sink.

The Gateway module (radio receive processor) connects the FD 100 bi-directional radio remote control to the main processor of the K2 Blu

The decoder circuit board of the BluRay disc mechanism with the latest single-chip processing and upscaling for DVD and HDMI output.

Power amplifier output with reservoir capacity, chokes and protective circuit.

High-quality audio input and output board with analogue iPod input and video output for iPod.

Specifications K2 Blu

Amplifier section	
External inputs	Tape, Aux, TV (with Auto-on) 2V / 20 k Ohms
Headphone output	for dynamic headphones > 30 Ohms
Recording outputs	1V, 150 Ohms
Nominal output p. channel (stereo)	150 Watts into 4 Ohms, 95 Watts into 8 Ohms
Peak output	230 Watts into 4 Ohms, 130 Watts into 8 Ohms
Total harmonic distortion	< 0.005 %
Intermodulation	< 0.005 %
Channel separation	> 65 dB
Frequency response	1 Hz - 60 kHz
Operating modes	
Listening zone 1	Stereo (2.0 + 2.1), 3-channel (3.0 + 3.1), Virtual Surround
Listening zone 2	Stereo (2.0)
Bass management, cut-off frequencies	Full-range, 40 Hz, 60 Hz, 100 Hz, 150 Hz
D/A converter	24-bit, 192 kHz
Digital output	SP-DIF, co-ax 0.5 V / 75 Ohms, LPCM to IEC 958
Tuner section	
Reception range	87.5 - 108 MHz
Sensitivity	2 µV
Overload margin	> 125 dB
Stereo crosstalk attenuation	> 40 dB
Functions	RDS, station name, Radiotext, Clock, station lists, station memory
Streaming Client	
Formats	MP3 , WMA, (WMDRM 10), AAC, FLAC, OGG-Vorbis
Media server	UPnP AV + DLNA-compatible server, vTuner Internet Radio Service
Interfaces	USB2.0, LAN, WLAN
iPod interface	Playback of audio and video files from iPod incl. control and remote control of the iPod
Bluetooth	A2DP Bluetooth Audio transmission protocol
BluRay player	
Mechanism	3-laser BluRay linear disc mechanism mounted on vibration-absorbing sub-chassis
HDMI Audio output	PCM Stereo, HD-Bitstream out, Bitstream Legacy
HDMI Video output	HDMI 1.3; PAL, NTSC, 4:3, 16:9, Letter Box, Pan Scan
Disc formats	
Audio	CDDA (Audio CD), MP3 CD, CD R, CD/RW, Hybrid SACD CD layer
Container + other formats	MKV, MPG, AVI, VOB, MP4, WMV
Video	BluRay Disc, DVD, VCD, SVCD
Photo	JPEG Picture CD
Functions	Playback program, repeat functions, CD-text, MP3 ID3 v2 display, trick modes (slow motion, time lapse, static picture) camera angle, zoom, picture optimisation, preview, rotate
Supplied with	FM 100 remote control handset, E 2000 IR receiver, 2 x WLAN aerial
Power consumption	max. 600 Watts, stand-by 0.75 Watts
Dimensions (H x W x D)	10.7 x 44 x 35.5 cm (4.2 x 17.3 x 13.9 inch)
Weight	12 kg (26.5 lbs)
Finish	Black case with silver covers

Specifications K8

BluRay Player

Drive		3-laser BluRay linear drive on vibration dampening subchassis
Playable media	Video	BluRay disc, DVD, VCD, SVCD
	Photo	JPEG, Picture disc
	Audio	CDDA (Audio CD), MP3 CD, CD R, CD/RW, Hybrid SACD CD Layer
	Container + other formats	MKV, MPG, AVI, VOB, MP4, WMV
Other features		BD-Live (with external USB memory stick)
		Movie mode 1080p/24 Hz, extended colour space (xvYCC)

Streaming Client

Formats		MP3, WAV, FLAC, AAC, OGG Vorbis, WMA (WMDRM 10)
Bit rates	all formats	8 … 48 kSps/16Bit, variable bit rate (VBR)
Other bit rates	WAV, FLAC	96 kSps / 24Bit
Media server, network memory	(PC, NAS)	UPnP AV + DLNA compatible streaming servers
Web radio		Web radio with vTuner internet radio service
Interfaces	LAN	Ethernet 10/100 Mbit
	USB	1x USB 2.0 for memory stick or harddisk drive (HDD)
		1x USB 2.0 for iPod or 2nd memory stick / HDD
Other features		Favourite lists, station memory for web radio stations
		Digital iPod audio playback
		Charging function for iPod

iPod AV interface — Playback of audio and video files from iPod incl. iPod navigation and remote control

FM Tuner

HF bandwidth	87.5 – 108 MHz
Sensitivity	2 µV
Strong signal immunity	> 125 dBµV
Stereo crosstalk suppression	> 40 dB
RDS functions	Station name, programme type, radio text, time
Other features	Station lists, station memories (presets)

Video Processor

HDMI inputs		3 x HDMI 1.4
	Features	HDMI Ethernet channel (HEC)
Analogue A/V inputs		2 x YUV, 2x Video Composite (CVBS) or S-Video
HDMI output		HDMI 1.4
	Features	Audio return channel (ARC), HDMI Ethernet channel (HEC) control interface (CEC)
Functions		
	A/D conversion	Conversion of analogue AV signals to HDMI
	Scaling	All digital (HDMI) or analogue AV input signals to 576, 720, 1080 interlaced or progressive output format
	Image correction	Colour, contrast, sharpness, aspect ratio, overscan
Other features		Scaler bypass
		3D pass through (3D ready)
		Auto mode (automatic image size adaptation to monitor)

Surround decoder

Type	7.1 HighDefinition (HD) surround decoder with 2 freely programmable 56 Bit dual core signal processors (DC DSP)
Formats	Stereo, DOLBY ProLogic IIx, DOLBY Digital (AC3), DOLBY EX, DOLBY Digital Plus, DOLBY TrueHD, dts, dts-96/24, NEO:6, dts-ES, dts-ES discrete, dts-HighResolution, dts-HD Master Audio
Loudspeaker configurations	2.0, 2.1, 3.0, 3.1, 4.0, 4.1, 5.0, 5.1, 6.0, 6.1, 7.0, 7.1
Other features	DOLBY Volume
	Downmix function for line out and stereo sound for side rooms
	Automatic calibration function for loudspeakers

Preamplifier / D/A Converter

Analogue audio inputs	3 x stereo line inputs	2 V / 20 kΩ
	4 x stereo inputs	2 V / 20 kΩ, (as part of the analogue AV inputs)
Digital audio inputs	2x SP/DIF coax	stereo up tp 192 kSps / 24Bit (IEC 958), DOLBY + dts surround formats (IEC 1937)
	1x SP/DIF optical	stereo up tp 96 kSps / 24 Bit (IEC 958), DOLBY + dts surround formats (IEC 1937)
Analogue audio outputs Fixed level	1x stereo line out	2 V, 100 Ohms
Variable	1x subwoofer	2 V, 200 Ohms (e.g. for tape recorder)
with volume control	1x stereo out	e.g. for acoustic supply of side rooms
	1x stereo out	for active surround speakers or side room
	1x stereo out	for active rear speakers or side room
Other features	3 audio outputs with 5 V power supply e.g. for wireless audio transmission modules, remote turn-on of active loudspeakers etc.	
Digital audio outputs	1x SP/DIF coax	
D/A conversion	High-class 24 Bit / 192 kSps Burr-Brown D/A converters for all 7.1 channels Dual-converter differential DAC for the front channels L/R	
Volume control	Loss-free, high-precision volume control with professional studio-grade volume attenuaters	
Frequency response	2 Hz - 60 kHz	(1)
	2 Hz - 44 kHz	(2)
	2 Hz - 22 kHz	(3)
THD / Intermodulation	< 0.002 % / <0.004%	(1), (2) / (3)
S/N ratio	110 dB	(1), (2), (3)
Effective system dynamic range	110 dB / 98 dB	(1), (2) / (3)
Channel separation	100 dB	(1), (2), (3)
	(1)	SP/DIF 192/24 Digital_In or HD-BluRay
	(2)	SP/DIF 96/24 Digital_In or 96/24 HD streaming
	(3)	SP/DIF 48/16 Digital_In or 48/16 streaming
	each measured on the stereo preamp outputs	

Headphone Output for dynamic headphones > 30 Ω, with automatic speaker muting

Power Amplifiers 7 high performance switching power modules (T+A Linear PWM design)

Nominal output power per channel (stereo)	8 Ω / 4 Ω	95 W / 150 W
Transient output power	8 Ω / 4 Ω	130 W / 230 W
Distortion (THD)	< 0.005 %	
Intermodulation	< 0.005 %	
Frequency response	1 Hz – 60 kHz	

Additional Features: Wake-up timer, iPOD charging function,
Ethernet switch: distribution of an Ethernet uplink connection to BluRay player, streaming client, TV monitor (via HDMI / HEC) and up to 3 source devices (via HDMI / HEC), up to 2 more external devices (via LAN cable) (e.g. playing console)

General

Mains connection	EU version: 220-230 V / 50-60 Hz, US version: 110-117 V / 50-60 Hz
Power consumption	max. 650 W
Eco standby	< 0,4 W (IR remote control, wake-up timer)
Comfort standby	< 3,5 W (plus Ethernet router, iPOD charging)
Dimension (H x W x D)	14,5 x 44 x 37,5 cm (5.7 x 17.3 x 14.8 inch)
Weight	17,5 kg (38.7 lbs)
Finish	Aluminium silver, aluminium piano gloss black
Optional accessories	iPOD docking station digital (only audio), or analogue (AV), E 2000 external remote control receiver, FD100 bidirectional FM remote control with display

Technical modifications reserved

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