R - series

Ultra Wide Bandwidth

Overall Range

T+A

The R-series is T+A's oldest and most important product group. Since 1999 the general design, the overall technical conception and the operating philosophy of the range have remained unchanged, and today the series encompasses nine models which cover the entire spectrum of high-quality audio and video reproduction. By any standards this is an impressive number of machines for a manufacturer specialising in the High-End market sector. However, this extensive range is necessary, since we wanted to pursue an idea which we now consider to be of fundamental importance, namely that of system philosophy. Nowadays nobody wants to be obliged to use four different remote control handsets in order to control the Hi-Fi and surround components of a single system. And even if it is possible to purchase high-quality individual modules, there is no guarantee that they will work efficiently together, as they are not designed from the outset to do so. We take the opposite view: we are absolutely consistent in pursuing the path of uniformity in terms of operation, function and appearance, and design each new R-series device with that in mind. This is undoubtedly a very important factor in the company's success over recent years.

In contrast to many other manufacturers, we deliberately designed and maintained the R-series to be capable of updating. We don't produce what appear to be "new products" every year; our innovations are incremental, and newly developed machines can always be integrated into any existing system at any time. All our products are so good that they retain their superiority over competitors' models in terms of price : performance ratio over a period of many years. That this claim is true is shown by the many outstanding reviews of our machines from the international specialist Hi-Fi press. We only introduce new models to the market when they represent significant advances in terms of function and sound, and this is precisely the case with the latest 1260 / 1560 series. Significantly improved components have become available for use in amplifiers and converters, and we have exploited their performance advantages by developing ingenious, newly conceived circuit designs and processor technologies in order to obtain significant improvements in actual sound quality. **U**ltra-**W**ide **B**andwidth sums up the qualities of this new generation of machines: they offer extremely broad-band performance, incredible dynamism and speed, and the net result is that they produce sound which is as close to the original recording as possible.

The simple, restrained appearance of this series may sometimes be deceptive, since all these somewhat austere R-series machines offer enormous potential performance. In direct comparison with comparable - often much larger - models made by our competitors, ours are superior, better constructed and built using higher-quality components. Study the illustrations in this brochure, and you will be able to admire the fantastic internal workmanship, the beautiful circuit boards and fine components.

The not insignificant price of our R-series components can be justified on two counts: by the extremely high manufacturing quality and top-class sound, and by the fact that our designs enable users to adopt the latest technologies and integrate them straightforwardly into older systems; naturally this feature helps to maintain the value of your sound system, and may even increase it.

P 1260 R audiophile pre-amplifier. Long ago, the legendary predecessor of this machine - the P 1230 R - wrote Hi-Fi history: it was selected by the specialist magazines as Hi-Fi device of the year so regularly that it was becoming rather monotonous. The device was so good, and so superior to the competition, that we built it for six years without making any modifications. However, now we have succeeded in improving it further by introducing the following new features: the latest generation of audio operational amplifiers (op-amps), which are so crucial in sound generation, are mounted on their own double-sided circuit board with power plane, voltage de-coupling and constant current by-pass. We call this sophisticated design feature OAD (Op Amp Decoupling), and it ensures that the op-amps have perfect conditions in which to work, guaranteeing unprecedented sound quality in conjunction with the latest High-End components.
Seven line-level inputs, two with input buffers for other makes of machine with higher impedance (TV and Tape 2), the option to upgrade from manual control to a central remote control system (as with all R-series pre-amplifiers and integrated amplifiers), and supplementary symmetrical outputs make the P 1260 R the perfect control centre of a High-End component system.

A 1560 high-performance power amplifier. This amplifier combines enormous power with extreme broad-band characteristics for superb performance and speed. Equipped with High-End mica capacitors, ACT silver circuit boards, precision resistors and carefully optimised torroidal transformers this amplifier can boast the very finest components available, as well as the new **OAD** op-amp technology mentioned earlier. Added to these advantages are non-magnetic circuit boards, and non-magnetic materials for all connections and contacts, completely eliminating the disturbing distortion which is caused by ferro-magnetic non-linearity effects.
The **ICA** technology (**I**solated **C**urrent **A**mplifiers) developed by T+A de-couples the input stages of the power amplifier from the current amplifier stages, and this design feature has also been further improved. The circuit features the latest transistors for the driver and output stages, with reduced gate capacitance and higher limit frequencies, giving the output stages an even greater bandwidth and higher speed. An important result of this technology is that the sound characteristics of our output stages and integrated amplifiers are independent of the selected volume level and the load represented by the loudspeakers connected to them. It is no coincidence that many owners of impedance-critical and phase-critical loudspeakers use our amplifiers, since they possess enormous reserves of power - as well as simply sounding better under all conditions.

PA 1260 R audiophile integrated amplifier. Building small, compact integrated amplifiers with superior sound quality is a great art - an art which T+A has mastered like no other company. Like its superbly reviewed predecessor, the PA 1230 R, the PA 1260 R is also assembled from the brilliant components, circuit boards and technologies developed for our pre-amplifiers and power amplifiers. We sanction no compromises, and for this reason the machine achieves exactly the same level of sound quality as these individual modules, and although it offers slightly less output power than the A 1560, it is still capable of delivering a lavish 300 Watts continuous power into 4 Ohms. Even large and critical loudspeakers are tamed and controlled effortlessly by this amplifier. Seven line-level inputs, two tape outputs and one pre-amplifier output make this all-rounder the fabulous heart of a compact High-End system with exceptional sound.

R 1260 R audiophile receiver. We took the outstanding P 1260 R integrated amplifier and fitted it with an equally superb analogue tuner to create our receiver. Its predecessor - the R 1230 R - was one of our most successful machines ever, and many music lovers have learned to appreciate the marvellous sound it creates from any of its input sources, the unique reception characteristics of its integral High-End tuner, its high power output and, of course, the unit's compact dimensions. It is the classic device for the demanding two-channel enthusiast, and we take this into account by including sockets for our superb phono pre-amplifier circuit boards, which can be installed upon request (as is the case with the P 1260 R and PA 1260 R). A better low-profile machine you simply will not find. A nominal output of 300 Watts into 4 Ohms is unique in the world for a unit of this size, and makes the R 1260 R the perfect hub of a compact High-End stereo system.

P 1260 R | pre-amplifier

A 1560 | power amplifier

PA 1260 R | integrated amplifier

R 1260 R | receiver

CD 1260 R audiophile CD player. The CD continues to hold its place as the most important sound medium - simply because it is in such widespread use. We have developed the new CD 1260 R to provide perfect reproduction of this medium. The disc mechanism is equipped with a High-End pushrod loader system, contains top-quality components including Mabuchi motors and an aluminium / ABS laminate drawer, and spins in CD-specific "Single-Speed" mode. The sophisticated decoder delivers the data to a High-End converter which is a completely new in-house development; this operates in the unique quadruple mode developed by T+A, aimed at achieving optimum values for background noise, cross-talk and dynamics. All the converters of the R-series feature a freely programmable signal processor which makes it possible to exploit the switchable oversampling process developed by the T+A research team. These converters now work in 32-bit mode, making them totally unique, and world leaders in this field. The only disc players available which permit the user to choose between different optimised reproduction characteristics in the areas of timing and frequency response are those in the T+A R-series and V-series. Another in-house development by T+A is the re-synchronisation process which nips jitter effects in the bud, constantly re-synchronising the signal to eliminate adverse effects on sound quality. This enormous refinement explains why our disc players provide such outstanding sonic qualities.

SACD 1260 R High-End CD-SACD player. This new player is also based on a legendary predecessor in the shape of the SACD 1250 R, which has garnered one of the best sets of reviews over the last few years. Naturally we have retained the earlier machine's overall design, but have introduced new components and technologies such as **OAD** and 32-bit mode to gain further improvements in sound quality. The SACD 1260 R is a thoroughbred two-channel player which was developed with the sole purpose of delivering the finest possible stereo reproduction from CD **and** SACD. These two formats are entirely different, and therefore require wholly different processing; that is the only way of extracting the optimum results from both. T+A has adopted a unique philosophy for audio reproduction: each music format has its own independent signal process; there are even separate oscillators for CD and SACD. The converter / analogue output section of the SACD 1260 R represents the peak of what is feasible with today's technology: no fewer than eight of the latest Burr-Brown / TI D/A converters are employed, with four forming the unique T+A quadruple converter for each channel, now working in 32-bit mode in conjunction with the digital signal processor. The digital section is totally separated from the analogue section by the use of i-Couplers, while the output stage is well up to analogue High-End standards. Separate mains power sections and voltage supplies for analogue and digital sections are typical of our designs, as are encapsulated sub-assemblies, a High-End pushrod-based disc mechanism and an analogue method of switching the output bandwidth.

MP 1260 R audiophile DAC and network client. This species of device represents the way forward for music reproduction. More and more music lovers are recognising the advantages of stored music content for High-End listening. Nowadays almost every household has a computer network, and this provides a straightforward method of storing music on network discs in any resolution (and therefore quality) that is desired. This stored music is then available to the entire household (network) - and thus everyone in the dwelling - in MP3 quality, as CD files or even to higher standards. It is worth noting that the sound quality of high-resolution or uncompressed data on hard discs is indisputably superior to that from the classic CD. For these reasons it was an obvious move for T+A to develop machines which exploit the great potential which exists in these media to a higher standard and with greater consistency, thereby helping to push these formats a significant step forward in the direction of High-End quality. The MP 1260 R is a thoroughbred audio device which is easily integrated into the home network and Internet, and offers the best possible audio quality. Please note that the MP 1260 R is **NOT** a computer. Instead it is a high-quality audiophile D/A converter into which additional capabilities have been transplanted, enabling it to make use of other digital sources such as a Streaming Client. In addition to this we have developed a network-capable processor board, featuring W-LAN, LAN, UPnP, USB and iPod interfaces. The net result is that the MP 1260 R can access anything and everything that delivers music: Internet radio, network music servers (NAS), USB media storage devices, MP3 players and iPods - including their control system. The machine also incorporates a high-quality VHF tuner, so that listeners can continue to enjoy good old analogue radio. The overall design and construction of the converter and sub-assemblies are based on those of the new CD 1260 R, and as you would expect it offers fantastic sound quality. For this reason we have equipped the MP 1260 R with two additional digital inputs, so that other digital sources can also benefit from its superb converters.

CD 1260 R | CD player

SACD 1260 R | CD-SACD player

MP 1260 R | DAC and network client

BD 1260 R High-End Blu-Ray player. Long conflicts between competing systems are sadly not unusual in our industry, but now Blu-Ray has finally prevailed as the new HD format. For a Blu-Ray player to be capable of playing the widespread DVD and CD formats they are necessarily extremely complex: two different lasers are required, and the quantities of data to be processed are enormous. Implementing HD audio formats with HDMI 1.3 is also not exactly trivial, and the entire system is still at the development stage. T+A is using the latest generation of disc mechanisms and decoders for the BD 1260 R. This provides the superior picture qualities of the Blu-Ray system together with excellent DVD reproduction and superb-quality up-scaling to 1080p. The video signal output can be transferred via the HDMI 1.3 output if required, with Component, S-Video and Composite outputs as alternatives.
As you would expect from us, we have placed particular emphasis on audio reproduction, because we are determined to obtain the best possible sound quality with DVD and CD as well as exploiting the new HD audio formats (7.1). T+A has adopted a unique philosophy for audio reproduction; the CD, DVD and Blu-Ray signals are processed exactly as required for each data format. For multi-channel and two-channel use we employ the converter / analogue circuit board of the SACD 1260 R, which is controlled by a signal processor and fitted with eight converters, and in multi-channel mode passes on the analogue signals in superb quality via the converter's eight outputs. The SR 1560 R surround receiver boasts eight high-quality inputs for the 7.1 format, and is capable of giving a convincing demonstration of the fantastic quality of HD-Audio formats. In stereo mode the converter is operated in double-differential mode in order to achieve even better reproduction characteristics. A jitter-free digital output is available for all the digital sound formats. The overall design is based on that of the SACD 1260 R.

SR 1560 R audiophile surround receiver. This 7.1 surround receiver is a true multi-talent from the T+A stable. It has been developed for people who love High-End surround sound, but in particular are not prepared to accept anything less than the highest possible quality of two-channel audio reproduction. The basis of this machine is the superb R-series pre-amplifier and power amplifier sections, the freely programmable surround processor (for generating Dolby Digital and DTS formats), the professional-standard video section, the high-quality VHF tuner and the separate mains power supplies for the analogue and digital sections. The case is very compact, and forms an ideal combination with the source devices in a complete system. Nevertheless, it can generate a total power of no less than 750 Watts (5 x 150 W) whilst maintaining outstanding sound quality and tremendous dynamism under load, and therefore forms a great basis for a 5.1 surround system. If you are intending to assemble a large home cinema system with 7.1 sound, the surround receiver provides two pre-amplifier outputs which can be configured in various ways: they can be connected either to one A 1560 power amplifier as a stereo output stage, or to two in mono mode to act as the front channels. With its top-quality video terminals, wide-band video board (HDTV) and superb tuner, the SR 1560 R can form the perfect core of a complex home cinema system. Even the new audio formats offered by the BD 1260 R Blu-Ray player can be reproduced via the 7.1 multi-channel inputs. And - of course - we have kept our audiophile customers in mind: for analogue stereo operation there is an analogue direct mode (High Quality Analogue Stereo Mode), in which the entire digital signal processing circuitry of the decoder is switched off, and thereby eliminated from the signal path.

BD 1260 R | Blu ray player

SR 1560 R | surround receiver

TECHNOLOGY

Separate channels and fully symmetrical construction: the A 1560. Steel case, cast aluminium parts, solid brass terminals.

The PRE-AMPLIFIERS

The core of every T+A system is the pre-amplifier, as these units have a crucial influence on the overall sound of the Hi-Fi system. If the pre-amplifier falsifies something, it is impossible to correct the imperfection subsequently. T+A has always remained true to the concept that the first element of any new series must always be the most important and complex device of all. Once this core machine has been produced, then it becomes possible to develop smaller or modified variants of comparable quality. The P 1200 R was always the germ-cell of our R-series, and from it were derived all the integrated amplifiers and receivers which we have developed in the meantime, and which have been received with such extraordinary enthusiasm by the magazine reviewers. We have continued with the same philosophy of continuous evolution in developing this latest generation of machines; it is the design and construction of the P 1260 R pre-amplifier that are responsible for the outstanding technical specifications and superb sound of our whole palette of pre-amplifiers, integrated amplifiers, power amplifiers and receivers.

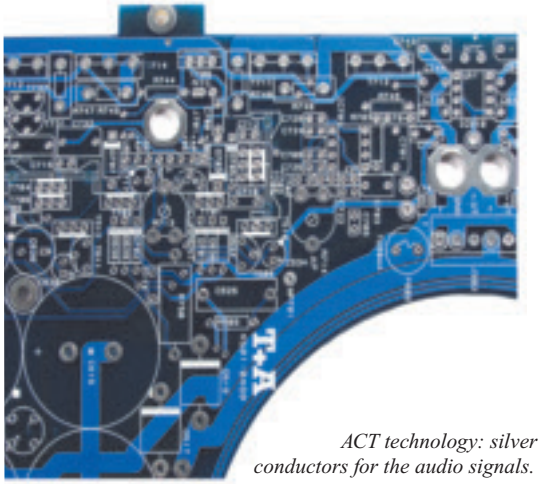
The further development work which resulted in the P 1260 R was aimed primarily at the requirement for even better sound quality. The result is the new **OAD** (**O**p **A**mp **D**ecoupling) technology: the latest generation of audio operational amplifiers (op-amps), which are so crucial in sound generation, are mounted on their own double-sided circuit board with power plane, voltage de-coupling and constant current by-pass. Carefully selected, top-quality components plus ultra-tight tolerance VISHAY metal film resistors, WIMA FKP, silver-electrode mica capacitors and ELNA Cerafine in those sub-assemblies which crucially affect the sound have brought about a further improvement in quality.

Upon request the P 1260 R can be fitted with a high-quality phono module and a remote control system. The R-series remote control system enables the user to operate every aspect of the whole system using the remote control handset for the pre-amplifier, integrated amplifier or receiver. The remote control system is completely isolated from the signal path, and controls the machines exclusively via relays and motorised potentiometers. All R-series units feature a special interface (R-Link) which is the key to controlling and operating new and additional source devices.

The POWER AMPLIFIERS

As is the case with our pre-amplifiers, we have adopted a fundamental strategy relating to power amplifiers; a strategy which is employed in all variants of these devices. The requirements placed on High-End power amplifiers in terms of sound quality have become enormously more exacting over the last few years. Neutrality, high output power and performance independent of load have always been required, but optimum dynamics and peak-handling characteristics have now gained greater importance. Our output stages fulfil these requirements to perfection. The input stages of T+A audio power amplifiers are de-coupled from the output stages. We term this technology **ICA** (**I**solated **C**urrent **A**mplifier), and it ensures that our power amplifiers maintain their superb sonic qualities regardless of the loudspeakers connected to them.

T+A has developed a new and unique technology for the circuit boards used in the output stages. Our term for these circuit boards is **ACT**. Copper alone is usually employed for circuit boards, but we now also employ silver as conductor where the signal passes, with no separation layer. The basic reason for this innovation is that silver is the best conductor available bar none, and offers outstanding sound qualities - especially in the high-frequency range. Since our amplifiers have very high limit frequencies (**U**ltra **W**ide **B**andwidth), the skin effect also plays its part here. At crucial points in the new output stages we employ mica capacitors, as these have the lowest loss factor of all, plus silver electrical contacts and electrodes. These parts form a homogeneous system with the **ACT** circuit boards. At the same time these circuit boards are non-magnetic, and all connections and contacts are also designed to have the same properties, with the result that disturbing induced distortion effects are eliminated completely. All our output stages are matched accurately to each other in terms of amplification factors, dynamic characteristics and phase / group timing, making them absolutely ideal for bi-amping and multi-amping configurations.



ACT technology: silver conductors for the audio signals.

The INTEGRATED AMPLIFIERS and RECEIVERS

Our integrated amplifiers and receivers are constructed in a consistent manner based on the pre-amplifier, power amplifier and tuner sub-assemblies. For this reason they share identical sound qualities and feature counts.

Large heat-sinks are employed to shield the sensitive pre-amplifier from the power output stage and the mains power supply, and that is why the superb sound qualities of the individual devices are retained in full in T+A combination units. In particular, the PA 1260 R integrated amplifier and the R 1260 R receiver are convincing proof of our capability to extract very high power levels (200 - 300 Watts depending on load) from such small units, whilst maintaining matchless sound quality. They also drive highly demanding loudspeakers with effortless ease, while their combination of exceptional components, sound characteristics and specifications achieves results which are only available otherwise from separate modules with wikkedly high price-tags.

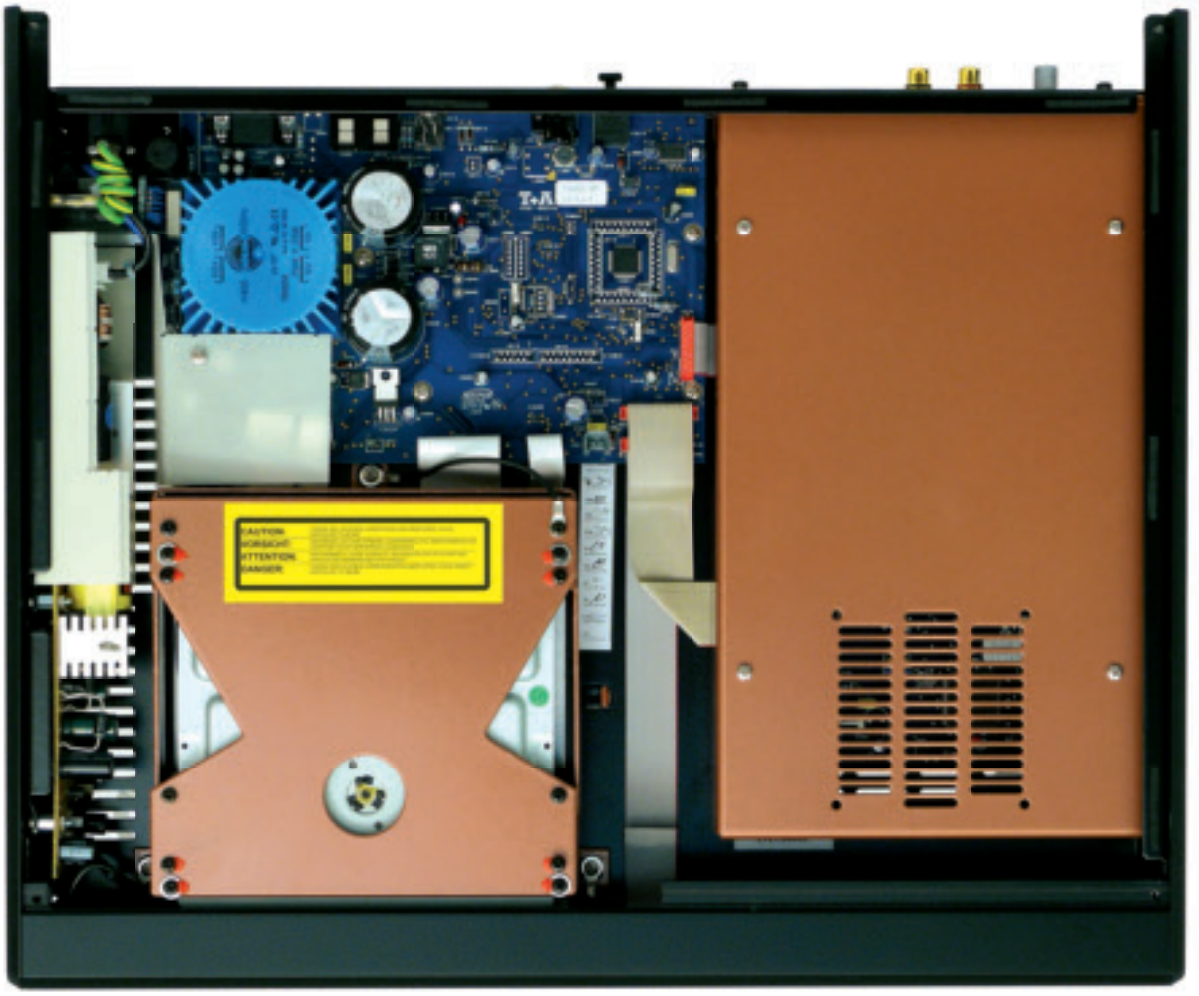
The task of designing high-performance integrated amplifiers of such compact dimensions is enormously challenging, and affects every single sub-assembly. For example, output stages generate considerable waste power in the form of heat which must be dissipated effectively. Moreover the danger of radiated and induced interference rises steadily as the power of the output stage is increased. It is therefore necessary to adopt many measures to counter these problems, starting with special heat-sink profiles, extremely low-profile terminal strips and our characteristic all-metal cases, which have particularly good shielding qualities. Many components, such as toroidal transformers, disc mechanisms and capacitors have been developed specifically to suit our ”compressed” method of construction.
All our power amplifiers, integrated amplifiers and receivers are fitted with a highly efficient protective circuit which is located outside the signal path, and therefore has no adverse effect on sound quality of any kind. The protective circuit monitors the input signal before the output stage, compares it with the output signal, and switches off the output relay at lightning speed if it detects the slightest discrepancy between the two (clipping, distortion, etc.). The circuit is also tripped if the machine overheats or a short-circuit occurs at the outputs.
The R 1260 R receiver consists of the components of the superb PA 1260 R integrated amplifier and our proven analogue tuner module. The double-sided circuit board of the tuner section incorporates targeted SMT construction and represents a miracle of miniaturisation, while the extremely short internal signal paths provide optimum RF characteristics. The sound qualities and measured values of the R 1260 R are virtually identical with those of the integrated amplifier upon which it is based - including its enormous output of 300 Watts into 4 Ohms. Only in the input section were we obliged to remove one socket due to shortage of space, and the tone controls are not separate for each channel, although they can still be switched off completely. The VFD screen displays all the operating modes of the tuner section.
Like T+A pre-amplifiers, our integrated amplifiers and receivers can also be equipped with a remote control system, enabling them to control every function of all the source devices remotely.

The TUNERS

A genuine High-End tuner not only has to cope with the enormous density of transmitting stations in Europe, which means that it must possess excellent long-range characteristics and selectivity, but must also be fully capable of cable reception. For this reason our two High-End receivers - the R 1260 R and SR 1560 R - also feature one of the best analogue tuner modules available anywhere in the world; a tuner circuit which we developed in-house for our legendary stand-alone tuners. It features a high-performance front end with four tuneable circuits and a regulated dual-gate MOSFET input stage. The drift-free digital quartz PLL circuit ensures exactly centred tuning at all times - the essential pre-condition for optimum sound quality.
The IF amplifier is fitted with high-quality filters and can be operated in wide-band or narrow-band modes: very wide-band for picking up powerful stations, and very narrow-band when required to ensure excellent reception characteristics in densely occupied frequency bands, where ultra-high selectivity is called for. The quadrature demodulator stage provides super-accurate control, generating outstanding harmonic distortion figures with minimum possible background noise.
The MP 1260 R is fitted with a new digital FM tuner which possesses good sound and reception qualities.

Our R 1260 R has enormous reserves of power which cope effortlessly even with large, problematic loudspeakers, while its cultured sound is truly High-End and beyond reproach. Take a look inside, and you will see the reason for its top-class performance.

TECHNOLOGY



This is what T+A understands by the term ‘High-End’: our CD / SACD player - the SACD 1260 R - combines state-of-the-art analogue technology with the latest digital signal processing. Two completely separate mains power supplies of ample dimensions for the analogue and digital sections, mains filters to guard against feedback effects, shielding measures to eliminate induced RF interference, a floating suspension disc mechanism in an anti-resonance housing, a sophisticated, fully encapsulated quadruple converter and total galvanic de-coupling of the digital and analogue sections; all these features form the basis for a level of sound quality and measured data very close to the limit of what is physically possible.

DIGITAL SIGNAL PROCESSING

Right from the outset T+A has invested tremendous time and trouble in developing and optimising digital sound sources, with the aim of obtaining exceptional sound quality; this applies to our CD players, DSR tuners and, more recently, digital storage media and the Internet, and the reward for our intensive work has been to make us one of the world’s leading manufacturers of high-quality digital components. Many of our machines have been reviewed by the international specialist press and hailed as milestones. Converter technology is a particular field of expertise for us, as these circuits are crucial in the reproduction of music to the highest standards of quality, as faithful and uncoloured as possible. That is the reason why T+A has developed its unique design philosophy and processes. In conjunction with the digital filters, the converter has the task of transforming the digital data into analogue voltages. In the case of the R-series units the whole system is controlled by the latest generation of freely programmable signal processors which are exceptionally powerful. Once again T+A shows the way forward, as our converter systems are the first to operate in 32-bit mode.

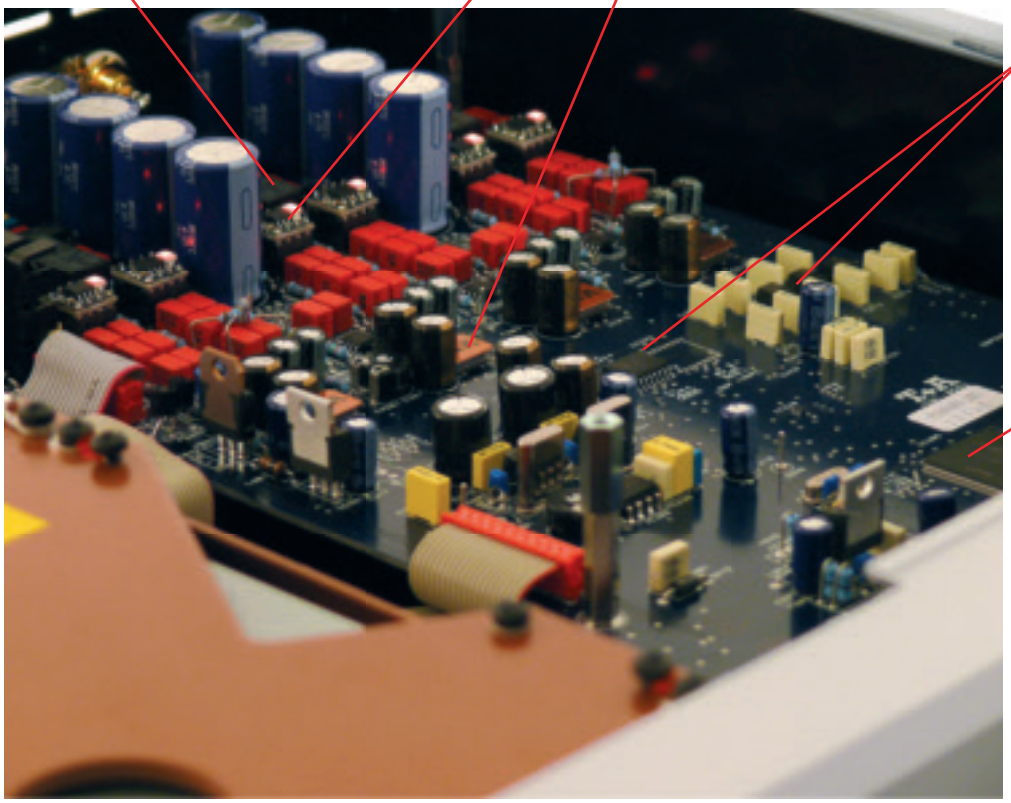
It is easy to understand that faithful music reproduction can only occur if the conversion process is carried out as well and as accurately as possible. Our new CD player - the CD 1260 R - and the network player - the MP 1260 R - now feature for the first time a newly developed quadruple converter derived from the SACD 1260 R. The converter in the SACD 1260 R is unique even by T+A’s standards: no fewer than eight highly selected Burr-Brown / TI D/A converters, acknowledged as the world’s finest, are employed in this circuit. The quadruple converter is the further logical development of the differential converter. In the differential converter (two D/A converters in a symmetrical push-pull arrangement) common-mode errors cancel themselves out, uncorrelated converter errors are halved, and uncorrelated noise diminishes by 3 dB. The quadruple converter contains twice the number of converters again, i.e. there are now four converters per channel. This configuration reduces uncorrelated converter errors to a quarter, and lowers background noise by 6 dB. The effort of developing a converter of this type is quite immense, but we believe that the results are worth it. The converter circuit is followed by an extremely refined audiophile analogue output section of discrete construction. To prevent any chance of the digital section exerting an adverse influence on the analogue section, these two sub-assemblies are completely separated and de-coupled using a unique T+A design feature: the control signals are transferred via opto-couplers, while the latest inductive, jitter-free i-Couplers from Analog Devices cater for the high-speed data signals. The overall result is that we achieve genuine analogue High-End sound quality both with CD and with SACD

The quadruple converter of the SACD 1260 R

State-of-the-art analogue section with switchable output bandwidth

OAD circuit boards

4 stereo D/A converters

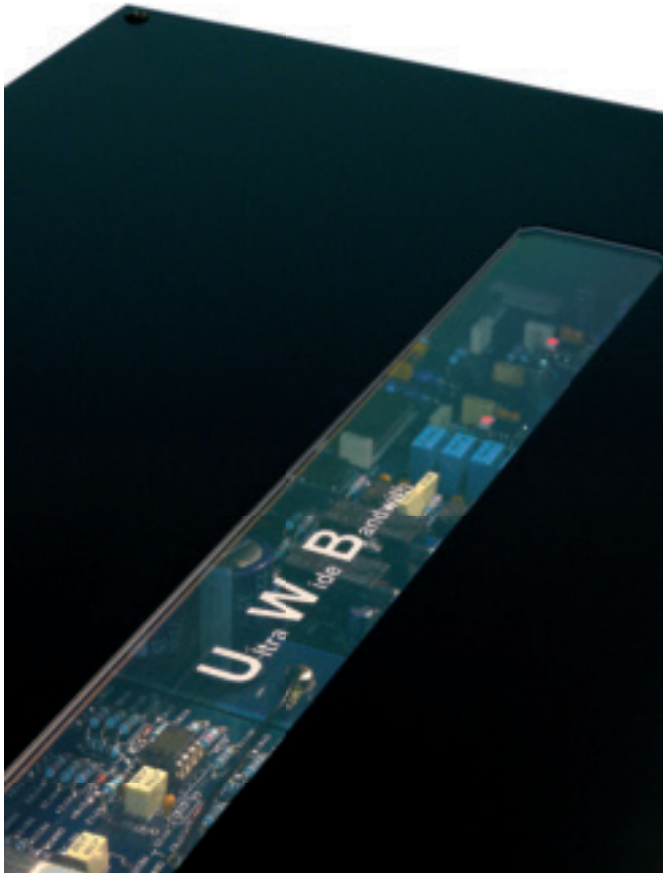


i-Couplers for the audio signals and opto-couplers controlling the complete galvanic separation of the analogue and digital sections.

A freely programmable 56-bit signal processor is the key to the four selectable oversampling algorithms developed exclusively by T+A, enabling the user to fine-tune the system's sound to suit individual tastes. The following filters are available: FIR short, FIR long, Bezier / IIR, Bezier.

The back panel of the MP 1260 R shows the comprehensive facilities provided by this digital source device. These include the High-End analogue outputs of the quadruple converter and a jitter-free digital output. Two high-quality digital inputs (cinch and optical) are available for converting external sources (e.g. set-top boxes), enabling these sources to exploit the superb sound qualities of the MP 1260 R in the same way as the LAN, W-LAN, iPod and USB ports. A VHF tuner is also included. The MP 1260 R is connected via the "R-Link" data bus, and is remote-controlled like any other source device via the master unit in the R-system. An RS-232 update and control port is also present.

TECHNOLOGY

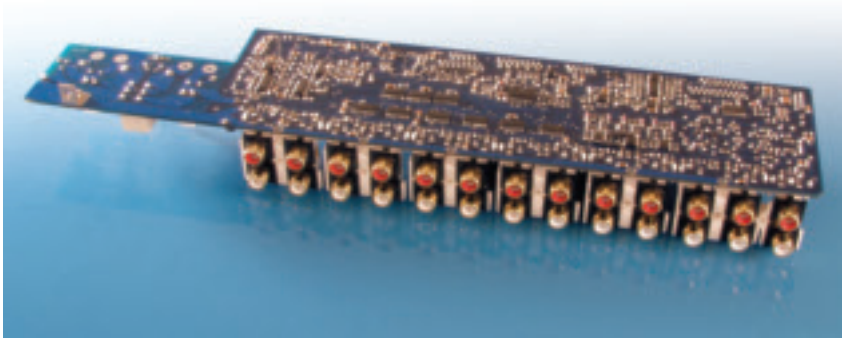


PRECISION DISC MECHANISM

The case of any Hi-Fi unit, whether purely analogue or digital, has an enormous influence on its sound quality. The basic principle is that shock, vibration and sound waves should be prevented as far as possible from reaching the circuit boards, as it is demonstrable that electronic components have a powerful microphony effect. This means that the measured values and thus the associated sound quality deteriorate if the components are allowed to oscillate or vibrate to any significant extent. This is the reason why we have always placed very great importance on solid, heavy cases for our products. The internal cradles are of steel construction and support the whole machine. Steel not only lasts for ever, but also has very good shielding qualities, which in turn prevents outside influences reaching the electronics. All covers, side cheeks and front panels are manufactured from pure aluminium, while the connection sockets and loudspeaker terminals are made from high-purity, non-magnetic, gold-plated brass. All circuit boards are clearly and logically laid out, and we strictly maintain the principle of the shortest possible signal paths. In T+A machines you will find no loose bundles of ”cable spaghetti”; instead the individual circuit boards are inter-connected using high-quality cable looms and flexible leads, with the result that circuit boards and sub-assemblies can easily be removed and exchanged when required. Many sub-assemblies feature additional shielding by copper-plated internal housings, designed to avoid RF interference. This metal-based construction makes our machines extremely durable, as well as being recyclable up to 95% or more.

The High-End disc mechanisms fitted to the CD 1260 R and the SACD 1260 R are equipped with nothing but absolute top-quality components: heavy-duty motors from Mabuchi, sub-chassis with excellent damping characteristics, stainless steel pushrods, aluminium / ABS laminate disc drawers and metal encapsulation with good shielding efficiency. The disc mechanisms of the 1260 models are suspended in a solid anti-resonance housing with a damping coating and three-point supports, so that no external sound or shock can affect the sampling performance of the laser unit.

The sophisticated four-layer audio board is a complex circuit matrix which makes it possible to use two different sources simultaneously whilst maintaining the highest standards of quality.



SURROUND

The SR 1560 R is an extraordinary High-End surround receiver offering exceptional sound and picture quality. It is fitted with up to six stacked circuit board levels, all effectively shielded and efficiently separated. Five potent output stages, each generating 150 Watts of continuous power, can easily cope even with difficult loudspeaker types, and they all share one vital characteristic: they sound great! The tuner is another example of this: in spite of the wealth of sub-assemblies inside the case, the tuner's sensitivity is only 1.0 µV.

Six A/V sources, two of them video recorders, can be connected using Composite or S-Video, and the different signal formats can even be used simultaneously. This is possible thanks to the receiver's sophisticated semi-professional video board which is capable of converting the video format from Composite to S-Video and vice versa. A supplementary format converter (VC1) converts Composite and S-Video signals into YUV. An additional feature is a further AV Composite input on the machine's front panel, which is ideal for connection to a camcorder. The SR 1560 R is fitted with a supplementary HDTV-capable video board of the highest quality (350 MHz bandwidth), with four Component inputs for connection to high-resolution picture sources. There are six digital audio inputs, one of them on the front panel and one tape connection for analogue or digital recorders. One of the three analogue audio inputs (CD, TV, Phono) is a high-quality Phono MM input whose levels can be calibrated automatically to match the other source devices.

The signals from the audio inputs can either be further processed in the digital decoder (ProLogic II x, sound fields and Neo:6), or transferred to the output stages by a direct analogue route; in this configuration all the digital sub-assemblies are eliminated entirely from the signal path. For source devices with their own decoder - such as the BD 1260 R Blu-Ray player - a 7.1 multi-channel input with level management is available. Two monitors can be connected to the receiver using Composite or S-Video, one of them Component (YUV). Three digital audio outputs (2 x co-ax and 1 x optical on the front panel, for fast, straightforward transferral of audio material) are present, as are two standard sub-woofer outputs and a T+A SC-Link sub-woofer output, which provides perfect control of our own family of sub-woofers.

The SR 1560 R features five permanently installed output stages. For 7.1 set-ups two additional output stages for the rear loudspeakers (BACK) are required, which can then be connected to the BACK OUT output sockets. One further output is available in the form of the ACTIVE SPEAKER OUT sockets: the front channel signals are present at these sockets, making them ideal for use with our TCI 1 Active, TCI 2 Active or Talis TLS 10 A active loudspeakers. However, that's not all: there is a switch on the underside of the machine which can be used to configure the output stages actually intended for the front channels as the BACK channels. In this guise the front channels are reproduced using active speakers or additional output stages and passive speakers, while the surround channels are reproduced via the five integral output stages with their connected loudspeakers. The SR 1560 R even offers the facility to view and hear a second source independently in a second room (multi-room 2 zone - 2 source concept).

OPERATING CONVENIENCE

The R-system is unique. Even though a sophisticated T+A AV system may contain a very wide variety of devices such as tuner, SACD / Blu-Ray / CD player, network player, 7.1 surround processor, mono power amplifiers, loudspeakers and a sub-woofer, and has to be adjusted to suit all the different operating modes, a single system remote control handset with just 33 buttons is sufficient to control everything. Operating the system is simple and logical because all the required function sequences are set up and stored just once, and after this all you need is a single button-press on the desired function, and the system sets itself up automatically: for High-End two-channel stereo or genuine 7.1 home cinema - just as you wish!

Back view of the SR 1560 R. Packed absolutely full!

Specifications

	P 1260 R	PA 1260 R	R 1260 R
Pre-amplifier stage			
Frequency response + 0 /– 3 dB	0,5 Hz – 400 kHz	0,5 Hz – 400 kHz	0,5 Hz – 400 kHz
Signal:noise ratio			
High-level	7 x 107 / 112 dB	7 x 104 / 109 dB	5 x 104 / 109 dB
Phono-MM (optional)	83 / 87 dB	82 / 86 dB	82 / 86 dB
Phono-MC (optional)	79 / 82 dB	78 / 82 dB	78 / 82 dB
Sub-sonic-Filter	14 Hz	14 Hz	14 Hz
Total harmonic distortion	< 0,001 %	< 0,001 %	< 0,001 %
Intermodulation	< 0,001 %	< 0,001 %	< 0,001 %
Channel separation	> 90 dB	> 90 dB	> 90 dB
Nominal Input sensitivity			
High-level	250 mV / 20 kOhm	250 mV / 20 kOhm	250 mV / 20 kOhm
Phono-MM (optional)	1 – 5 mV, 16 Capacitances	1 – 5 mV, 16 Capacitances	1 – 5 mV, 16 Capacitances
Phono-MC (optional)	60 – 1000 µV, 16 Impedances	60 – 1000 µV, 16 Impedances	60 – 1000 µV, 16 Impedances
	Phono modul replaces one high-level input		
Outputs			
Headphones	50 Ohm	50 Ohm	50 Ohm
2 x Tape	250 mV_{eff} / 100 Ohm	250 mV_{eff} / 100 Ohm	250 mV_{eff} / 100 Ohm
PRE out Cinch	Nom 1 $V_{eff,}$, Max 9,5 V_{eff}, 22 Ω	Nom 1 $V_{eff,}$, Max 9,5 V_{eff}, 22 Ω	Nom 1 $V_{eff,}$, Max 9,5 V_{eff}, 22 Ω
PRE out XLR	Nom 1,45 $V_{eff,}$, Max 19,6 V_{eff}, 22 Ω	-	-
Prozessor-Schnittstelle mit Festpegel (TASI)	build in	build in	build in
Output stage			
Nominal output per channel into 8 Ohm		100 Watt	100 Watt
both channels simultaniously into 4 Ohm		150 Watt	150 Watt
Peak output into 8 Ohm		150 Watt	150 Watt
Peak output into 4 Ohm		290 Watt	290 Watt
Power bandwidth		1 Hz – 300 kHz	1 Hz – 300 kHz
Frequency responce + 0 – 3 dB		1 Hz – 400 kHz	1 Hz – 400 kHz
Slew rate		60 V/µs	60 V/µs
Damping factor		> 500	> 500
Signal:noise ratio		> 110 dB	> 110 dB
Total harmonic distortion		< 0,002 %	< 0,002 %
Reservoir capacity	10000 µF	50000 µF	50000 µF
Mains, 110V/60Hz or 220/240 V/50 Hz	30 VA	300 VA	300 VA
Dimensions (HxWxT)	7,5 x 44 x 39 cm	7,5 x 44 x 39 cm	7,5 x 44 x 39 cm
	3 x 17,6 x 15,5“	3 x 17,6 x 15,5“	3 x 17,6 x 15,5“
Weight	7 kg (15,4 lbs)	9 kg (19,8 lbs)	9 kg (19,8 lbs)
Finishes	Silver aluminium, black	Silver aluminium, black	Silver aluminium, black
Remote control	Optional	Optional	Optional
Tuner			**see Tuner module**

	A 1560
Stereo operation	
Nominal output into 8 Ohm	170 Watt
Both channels simultaneously into 4 Ohm	280 Watt
Peak output into 8 Ohm	185 Watt
Peak output into 4 Ohm	340 Watt
Bridged mono operation	
Nominal output into 8 Ohm	500 Watt
Nominal output into 4 Ohm	600 Watt
Peak output into 8 Ohm	700 Watt
Peak output into 4 Ohm	900 Watt
Power bandwidth	1 Hz – 300 kHz
Frequency response + 0 /– 3 dB	0.5 Hz – 350 kHz
Slew rate, stereo	60 V/µs
Mono	120 V/µs
Damping factor	> 500
Signal : noise ratio	> 114 dB
Total harmonic distortion	< 0.001 %
Inputs	XLR, Cinch
Reservoir capacity	120000 µF
Mains socket, 110 V or 220 / 240 V, 50 Hz	650 VA
Dimensions (HxWxD)	15 x 44 x 39 cm
	6 x 17.6 x 15.6“
Weight	17.5 kg (38.5 lbs)
Finishes	Silver aluminium, black
Remote control	via R-system

	Tuner module
Reception range, FM	87.5 – 108 MHz
Sensitivity	
Mono, S/N = 26 dB	0.9 µV
Stereo, S/N = 46 dB	28 µV
Overload margin	> 110 dB
Attenuator (Local, DX)	dynamic, manually switched
Tuned tuner circuits	4 x quartz PLL, digital
Selectivity, (df = 300 kHz) N / W	80 dB / 60 dB
Stereo overload damping (1 kHz)	> 40 dB
MPX filter	19 kHz + 38 kHz
THD 40 kHz deviation, stereo wide	< 0.10 %
Stereo narrow	< 0.15 %
Mono narrow	< 0.10 %
Signal : noise ratio, mono / stereo	> 79 dB / 72 dB
Frequency response +/- 1.5 dB	5 Hz – 15 kHz
Output voltage (75 kHz deviation)	1 V_{eff}
RDS display	Station name

SR 1560 R

Type	5-channel receiver		
	7.1 digital decoder		
AV inputs	7,	of which recorders	2
Audio inputs	4,	of which recorders	1
Sockets - AV IN			
SCART (RGB / S-Video / FBAS)	none		
Video (FBAS)	7		
S-Video	6		
Component (YUV)	4		
Sockets - AV Recorder OUT			
SCART (RGB / S-Video / FBAS)	none		
Video (FBAS)	2		
S-Video	2		
Video signal conversion, up / down	yes / yes		
Sockets - AV MONITOR OUT			
SCART (RGB / S-Video / FBAS)	none		
Video (FBAS)	2		
S-Video	2		
Component (YUV)	1		
Video signal conversion, up / down	yes / yes		
Sockets - AUDIO IN			
Analogue high-level / Phono	7 / 1		
with audio calibration	yes		
Multi-channel (5.1 / 7.1)	Cinch (7.1)		
TASI	yes		
Digital optical / co-axial	3 / 3		
Sockets- AUDIO RECORDER OUT			
Analogue	1		
Digital optical / co-axial	1 / 2		
Sockets - AUDIO OUT			
PRE OUT	yes		
AS LINK active LS control	yes		
Multi-channel output	no		
Output for rear output stage	yes		
Sub-woofer terminals	3		
Variable cut-off frequency	yes		
SC LINK, sub-woofer control	yes		
Digital decoder			
Formats	7.1		
DolbyDigital / EX*	yes / yes		
dts / ES / ES Discrete*	yes / yes / yes		
PRO LOGIC II / PRO LOGIC IIx / dts NEO:6*	yes / yes / yes		
Dolby Headphone*	yes		
Room sound programs	7		
Two-channel / Mono	yes / yes		
Processor	56-bit digital audio signal processor		
A/D converter	24-bit / 48 kHz		
D/A converter	24-bit / 192 kHz		
Frequency response	1 Hz - 22 kHz		
Total harmonic distortion	0.004 %		
Signal : noise ratio	106 dB		
Pre-amplifier			
Frequency response	1 Hz - 400 kHz		
Total harmonic distortion	0.002 %		
Signal : noise ratio (A)	107 dB		
Volume control / increments	Analogue / 1.5 dB step		
Output stages			
No off.	5		
Nominal output per channel (4 / 8 Ohm)	150 / 110 Watt		
Peak output per channel (4 / 8 Ohm)	250 / 170 Watt		
Damping factor	> 500		
Slew rate	60 V / µs		
Reservoir capacity	50000 µF		
Mains power supply, 115 / 230 V, 50 / 60 Hz	600 VA		
Features			
Direct analogue stereo	yes		
2 zones / 2 programs	yes / yes		
Trigger outputs for sub-woofer, projector, …	3		
Automatic loudspeaker calibration	yes		
General			
Dimensions (HxWxD)	15 x 44 x 39 cm (6 x 17.6 x 15.6“)		
Weight	18 kg (39.7 lbs)		
Finishes	Silver aluminium, black		
Remote control system	included		
Tuner data	**See Tuner Module**		

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„DTS“ and „DTS Digital Surround“ are registered trademarks of Digital Theater Systems, Inc.

	BD 1260 R (preliminary)	**SACD 1260 R**	**CD 1260 R**
Formats			
Audio	CD-DA, CD-R/RW, MP3-CD WMA-CD	SACD-Stereo, CD-DA, CD-R/RW	CD-DA, CD-R/RW,
Video	SL/DL: BD-Rom, BD-R, BD-RE DVD-V, DVD-R+-, DVD-RW+- BD-9, WMV-CD, VCD1.0 + 2.0 SVCD, DIVX, XViD		
Picture	JPEG-CD		
Audiodata			
Analogue outputs	Stereo 2,5 V_{eff} / 22 Ohm 7.1 (Multichannel)	Stereo 2,5 V_{eff} / 22 Ohm	Stereo 2,5 V_{eff} / 22 Ohm
Digital outputs	1 x coax, 1 x optisch, HDMI 1.3 IEC 60958 (CDDA/LPCM) Stereo, Dolby Digital (AC-3) DTS, DTS-HD Dolby Digital plus, Dolby True-HD	1 x coax, 1 x optisch IEC 60958 (CDDA/LPCM)	1 x coax, IEC 60958 (CDDA/LPCM)
D/A-Converters	32-bit, 384 kHz Sigma Delta, 8-times oversampling Double-differntial	32-bit, 384 kHz Sigma Delta 8-times oversampling Double-mono-quadrupel	32-bit, 384 kHz Sigma Delta 8-times oversampling Double-mono-quadrupel
Upsampling	freely programmable signal processor mit 4 selectable oversampling-algorithms. FIR short, FIR long, Bezier/IIR, Bezier		
Analogue output filter	Phase linear Bessel filter with 100 kHz limit frequency	Phase linear bessel filter switchable 60 kHz / 100 kHz	Phase linear Bessel filter with 100 kHz limit frequency
Frequency responce + Dynamik range			
CD	2 Hz - 20 kHz / 100 dB	2 Hz - 20 kHz / 100 dB	2 Hz - 20 kHz / 100 dB
SACD	2 Hz - 44 kHz / 110 dB	2 Hz - 44 kHz / 110 dB	
DVD-V	2 Hz - 22 kHz / 100 dB		
DVD 96/24	2 Hz - 44 kHz / 110 dB		
Total harmonic distortion	< 0,001 %	< 0,001 %	< 0,001 %
Signal: noise ratio	115 dB	116 dB	112 dB
Channel separation	110 dB	110 dB	106 dB
Mains	110V/60 Hz or 220-240V/50 Hz	110V/60 Hz or 220-240V/50 Hz	100-240V, 50-60 Hz
Dimensions (HxWxD)	7,5 x 44 x 39 cm 3 x 17.6 x 15.6“	7,5 x 44 x 39 cm 3 x 17.6 x 15.6“	7,5 x 44 x 39 cm 3 x 17.6 x 15.6“
Weight	8 kg (17.6 lbs)	6 kg (13.2 lbs)	6 kg (13.2 lbs)
Finishes	Silver aluminium, black	Silver aluminium, black	Silver aluminium, black
Remote control	via R-System or FB-Set	via R-System or FB-Set	via R-System or FB-Set

MP 1260 R

Streaming Client formats	MP3 , WMA, AAC, FLAC, OGG-Vorbis, WAV 96/24,
Play-lists	PLS, M3U, ASX
Supported media servers	UPnP AV, Microsoft Windows Media Player 10, (MS DRM10), vTuner Internet Radio Service, DLNA compatible servers,
Features	Web server (remote PC web browser control), Auto network config., Internet Radio Station database (automatic updates over Internet).
Interfaces	USB 2.0, iPod with control and display, 2 x SP/DIF digital input Co-ax + optical (TOS-Link), 16 ... 24-bit, 24 ... 96 ks/S, LAN, W-LAN
Analogue outputs	Stereo 2.5 V_{eff} / 22 Ohm
Digital outputs	1 x co-ax, IEC 60958 (LPCM)
Digital inputs	2 x SP/DIF, co-ax + optical (TOS-Link)
D/A converter	32-bit, 384 kHz Sigma-Delta, 8-times oversampling Double-mono-quadrupel
Up-sampling	freely programmable signal processor with four selectable oversampling algorithms. FIR short, FIR long, Bezier/IIR, Bezier
Analogue filter	Phase-linear Bessel filter 3rd Order with 100 kHz limit frequency
Frequency response	2 Hz - 20 kHz,
Total harmonic distortion	< 0.001 %
Signal : noise ratio	112 dB
Channel separation	106 dB
Tuner	FM Radio 87,5 - 108 MHz
Sensitivity	2 µV
Overload margin	> 125 dB
Stereo overload damping	40 dB
RDS display	Station Name, Radio text
Dimensions (HxWxD)	7.5 x 44 x 39 cm 3 x 17.6 x 15.6“
Weight	8 kg (17.6 lbs)
Finishes	Silver aluminium, black
Accessories	W-LAN aerial, iPOD cable
Mains socket	100 - 240 V, 50 - 60 Hz, 40 W
Remote control	via R-system

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