

# Vacuum Tube Hi-Fi Systems





**EKCo**  
KT88

# Introduction

The EKCO brand was derived from its founder's name - Eric Kirkham Cole, who began making valve radios in the 1930s. In the '30s and '40s EKCO received the honour of being the only reference tuner used by the BBC, known for advanced noise suppressor controls and stunning Bakelite cabinet designs.

The current EKCO range includes a variety of Vacuum Tube CD players, Integrated, Power and Monobloc amplifiers. Each offer not just superior realism in sound production, but extraordinary high quality in craftsmanship too.

# Timeline

**1901**

Birth of Eric Kirkham Cole at 14th July.

**1922**

Cole started a small business manufacturing wireless "sets" of valve receivers at a production rate of 6 per week.

**1924**

Cole Devised and patented H.T. Eliminator.

**1925**

Cole started a partnership with Mr. W.S. Verrells who was a customer fascinated by the HT Eliminator.

**1927**

First (50-100 man) factory built behind London Road, Leigh-on-Sea to accommodate the rapid growth.

**1930**

Start of use of Bakelite for moulded casework and expansion into a new factory in Priory Crescent, Southend and expanded shortly after.

**1931**

Compression-moulding presses were installed at the Southend factory.

**1937**

Introduction of the add-on television unit which was to be used in combination with existing radio receivers.

**1939**

EKCO entered the electric lamp market.

**1939**

The outbreak of the war caused EKCO to open a 'shadow' factory in Malmesbury. The resources were used for the development of standard Air Interception (AI) and the Anti-Surface Vessel (ASV) military equipment.

**1940**

Opening of multiple 'Shadow' factories in Aylesbury, Woking and Rutherglen in Scotland.

**1945**

Southend started producing for the domestic market again, but EKCO continued the production of telecommunications, radar, electronic and nucleonic equipment at the other factories.

**1949**

Essex's plant the Radio production started in Hadleigh in Essex. EKCO also started national production in India of radio receivers, components and electric devices.

**1953**

EKCO's expanding activities resulted in another formation of a new subsidiary; EKCO Electronics Ltd. which took care of the marketing of radars, VHF radio, nucleonic equipment, etc.

**1955**

Increasing demand for radio and television receivers caused the Southend factory to expand to 30.000 square feet.

**1955**

The plastics division, which is now one of the biggest producers of industrial mouldings and plastic domestic ware, installed vacuum sheet forming presses.

**1955**

A controlling interest was acquired in Dynatron Radio Ltd. which produced high-grade radio, radiograms, television and electronic equipment.

**1956**

EKCO introduced world's first main/battery portable television receiver.

**1957**

The millionth television receiver left the EKCO factory. Ferranti Radio and Television Ltd, a wholly owned subsidiary started selling receivers under the Ferranti trademark.

**1958**

The EKCO heating equipment was being expanded with the complete range of domestic reflector fires and 'Warmglow' electric blankets.



An Ekco AD65 Wells Coates Radio from 1934.

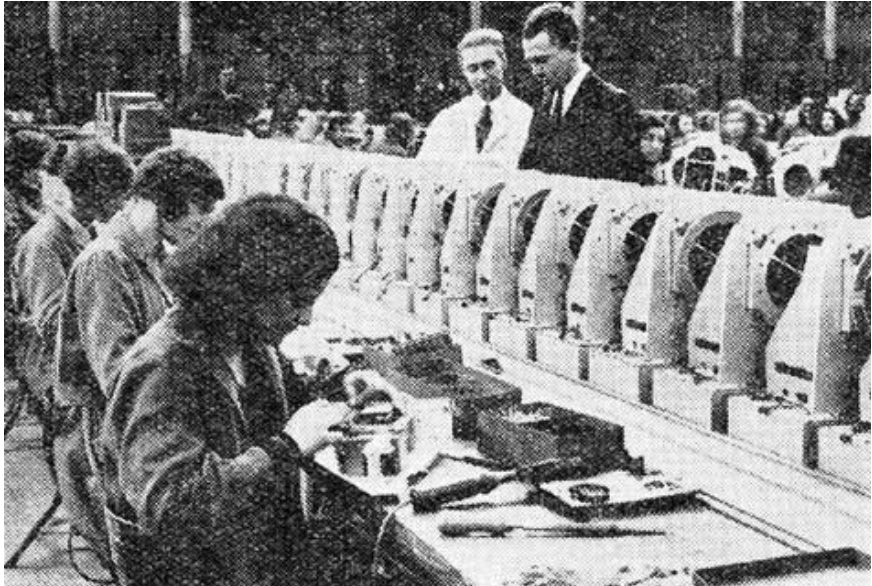


EKCO A22 3-band Radio, 1945.





Founder, Eric Kirkham Cole.



An EKCO assembly line, 1932.



Business partner, William Streatfield Verrells' Rolls Royce, 1932, fitted with an EKCO radio system.

iv

WIRELESS AND ELECTRICAL TRADER

9 June 1956

ANNOUNCING

'CARRY-IT-AROUND'

TV

the new

EKCO

mains/battery

TV Portable and

V.H.F. radio

combined

RECOMMEND the

EKCO TV PORTABLE

to your customers:

IN THE HOME—brilliant picture plus V.H.F. radio.

AS A SECOND SET—no need now to confine family entertainment to one room only.

IN SICKROOMS OR HOSPITALS—for that occasional illness, semi-permanent invalid or for ward use.

IN THE OFFICE OR BOARDROOM—to watch important events and ITA commercial spots.

IN HOTELS AND GUEST HOUSES—ideal receivers for hiring out to guests, for room use or for daily viewing.

E. K. COLE LTD • EKCO WORKS • SOUTHERN-ON-SEA • ESSEX

EXPORT SALES DEPT • 3 VIGO STREET • LONDON, W1 • ENGLAND

Model TMB 272

TV portable incorporating multi-channel turret tuning and V.H.F. radio. Collapsible built-in aerial. Operates from A.C. mains or 12-volt car battery.

66 GNS

ON PICNICS—no need to miss favourite programmes while enjoying the good weather out-of-doors.

IN CARAVANS—this receiver makes the caravan more truly a home.

ON HOLIDAYS AND MOTOR TOURING—wherever the motorist goes, within reception range, he is completely self-contained for entertainment.

IN COUNTRY HOME AND WEEK-END COTTAGE—the TV Portable operates even when mains supply is not available.

An advert for the EKCO TMB 272 vacuum tube portable TV, 1956.



EKCO was involved in the manufacturing of RAF equipment, including that used in the Avro Anson reconnaissance aircraft..



EKCO's main assembly line, 1942.



## 1958

The EKCO car radios were installed into leading car brands and the 'Superbath' got awarded the Gold Seal for the Design of the Year Award by the Council of Industrial Design.

## 1958

Eric Cole received the CBE from Her Majesty the Queen at Buckingham Palace.

## 1959

The 1959 Radio Show experienced the Introduction of the slimmest television ever – the 'Ekcovision' portable.

## 1959

Extension of EKCO Plastics moulding shop was completed and so included the largest injection press which enabled the production of the first moulded refrigerator liners.

## 1960

Domestic manufacture encompassed mains and portable TV's, mains and portable radios, radiograms, tape recorders, car radio's electric heaters, thermotubes, electric blankets, plastic toilet seats, various plastic utensils, plastic bathroom fittings and 'Superbath' baby-baths.

## 1961

Resignation of Eric Cole and his son Derek Cole from the joint and the separate EKCO board.

## 1963

Start of developing colour television. Black and White television faced a strong decline in sales.

## 1964

The 625 line standard TV sets enter production in anticipation of launch of BBC-2.

## 1965

In this year, EKCO won the contract to develop the weather radar for Concorde.

## 1966

Death of Eric Kirkham Cole.

## 1967

Philips Electronics Industries emerged as the new owner of the business.

## 2005

International Audio Group Ltd. (IAG) acquired the trademark EKCO and it was added to its portfolio of British and Japanese consumer audio brands including Wharfedale, Audiolab, Quad, Mission and Luxman.

## 2008

International Audio Group Ltd (IAG) begin to develop strategies for the relaunch of the EKCO brand. Utilising their own expertise of audio equipment manufacturing and understanding the success of the 'golden age' of Ekco's early Bakelite radios, a plan was to develop a new consumer audio product range influenced by the retro charm of Eric Cole's original designs with a focus on high quality, enjoyable sound reproduction.

## 2010

EKCO's new strategy was implemented, firstly featuring the release of the EV55SE, integrated vacuum tube amplifier.

## 2012

EKCO announced and started producing the EV55DP, EKCO's first CD-Player ever, at the end of the year.

## 2014

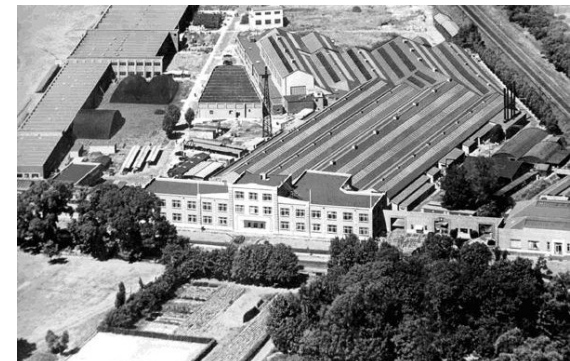
With continued success and the unique offering of EKCO's retro influenced valve products combined with modern technologies, the EKCO EV55DP picks up a 5 Globe review with industry recognised Hi-Fi World Magazine, for being a 'Well designed KT88 valve amplifier that sounds clean and punchy'.

## 2016

While the new strategy of EKCO's valve amplifiers struck a chord with consumers, the range was extended with two power amplifiers, the EV55ST, stereo power amplifier and EV80M, mono power amplifier.



A Lancaster cockpit wiring loom, 1946.



EKCO manufacturing facility, Priory Crescent Southend-On-Sea, 1947.



1945 EKCO Malmesbury Factory Logo.



Part of EKCO's current product line up, the EVA vacuum tube integrated amplifier

An exploded view diagram of an EKKO radio chassis and cabinet. The diagram shows the internal components of the radio, including the chassis, tuning eye, and various electronic parts, along with the external Bakelite cabinet and speaker components. The components are arranged in a way that shows their relative positions and how they fit together. The diagram is rendered in a light gray, semi-transparent style, allowing the text to be clearly visible over it.

## Technology

Classic EKKO valve radios are well-known for their Noise Suppressor Control and Super-Heterodyne features, which limited the static noise received from weak signal transmissions, and are renowned for their stunning Bakelite cabinet designs. In the '30s and '40s EKKO received the honour of being the only reference tuner used by the BBC and its classic designs are still featured in the V&A Museum in London.

Today, EKKO's audio products adapt a multitude of digital and analogue technologies to control noise, power and to create flexible audio systems the modern music listener can enjoy with ease.



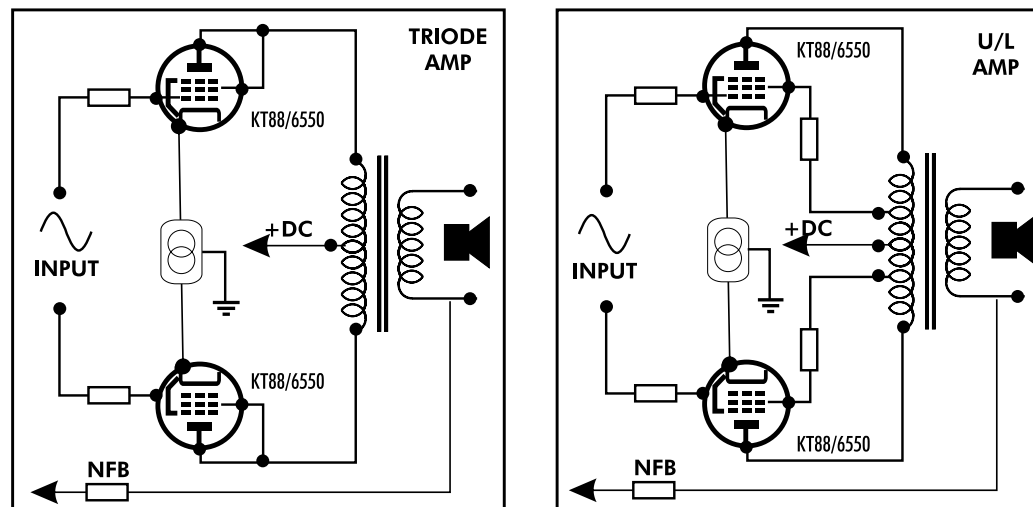
# Triode & Ultra Linear Switchable Modes

High power valve output stages are push pull. In this design the input signal is split into two halves via a phase splitter. Each half of the signal goes to one output valve and the signal is combined in the output transformer which is then coupled to the loudspeaker.

The triode push-pull output stage is the choice of many audio purists. The drawback is that because triodes are inefficient the output is limited and insufficient to drive many modern low sensitivity loudspeakers to high volumes.

A basic diagram of our triode output stage is given here. By connecting the screen grid to the anode a beam tetrode valve effectively becomes a triode with all its benefits and drawbacks. For many years the beam tetrode output stage was relegated to public address amplifiers because of its inherent non linearity and high distortion. Many attempts were used to improve tetrode operation but their output transformers were complicated and expensive.

Enter the Ultra Linear Output Stage. By connecting the screen grid to a special tapping on the output transformer a local feedback loop is incorporated around the output valves, lowering their output impedance, linearising the output and massively reducing distortion. The result is an amplifier with most of the advantages of the triode combined with the efficiency and power of a multi-grid valve.



# Negative Feedback (NFB)

Overall Negative Feedback is a process where a percentage of the output of an amplifier is fed back to the input in reverse or negative phase. This lowers the output impedance, reduces distortion and improves frequency response. This brings obvious benefits to sound reproduction.

On EKCO amplifiers, NFB can be toggled on or off, with benefits for each setting. If you have, for example, horn loudspeakers you may find that triode operation with low NFB is suitable. With conventional loudspeakers (particularly low sensitivity models), ultra linear operation with high NFB offers the best operating mode.

We feel it is preferable to have a relaxed generous soundstage which you can enjoy over long periods of time. Experiment with different sources and at different volume levels before changing modes and you can then use the one which offers the best result. It's all about enjoying the music, suited to your tastes.



# Flexible system controls & settings

Ekco amplifiers are designed to be flexible and easily changed to suit different sound sources and music. Aside from adjustable negative feedback and different valve configurations, users can also toggle between different speakers with an A/B switch. The EV55DP CD Player, DAC and Preamp also offers a Solid State and Valve output stage switch, again to tailor the listening experience for the user and music. The EV55DP also implements high quality P10 DAC circuitry, enabling audio resolution playback up to 24bit / 192kHz file resolutions.

# Pure Craftsmanship

Each EKCO product does not just offer superior realism in sound reproduction, but a high level of quality in its craftsmanship too.

Each chassis is fitted with protective of protective grilles finished with a proprietary high temperature black paint to protect the valve tubes. The sides of the chassis are fitted with matched pairs of hand crafted solid Deep Louro Preto wooden panels. The panels are hand finished using a multi-layer piano lacquer finish completing its elegant and retro charm.







EVH

**FkCo**

BAL. HEADPHONE

Left Channel

Right Channel

VOL

MAX

PRE

HEADPHONE

SELECT

OPT

COAX

USB

XLR

LINE



## Specifications

- Input Impedance: 50k $\Omega$
- Output Power: 500mW (32 $\Omega$ )
- Output Impedance: 32 $\Omega$ ~300 $\Omega$
- Input Sensitivity: 500mV (500mW at 32  $\Omega$ )
- Frequency Response: 20Hz~20kHz (+0dB,-0.5dB)
- Distortion: 0.5% at 1kHz
- Channel Balance:  $\pm$ 0.5dB
- Signal-to-Noise Ratio: 90dB
- Vacuum Tubes: 2x6SL7, 2x6SN7
- Digital Input Sampling Frequencies: 44.1kHz-192kHz, 384kHz (USB), DSD256 (USB)
- Input Jack: 3-pin balanced XLR, 1xRCA, 1xUSB, 1xCOAX, 1xOPT
- Output: 1x6.35mm headphone jack, 4-pin balanced headphone jack, 1xRCA output
- Size (WxDxH): 220mm x 300mm x 175mm
- Net Weight: 5.5kg

## EVH

### Vacuum Tube Headphone Amp & Pre Amplifier

The EVH implements EKCO's signature valve amplification techniques into a headphones and pre amplifier system, for a beautifully intricate performance in its purest form. EVH is dedicated to achieving the best possible sound quality from any set of headphones connected to it. As a powerful headphone amplifier, the EVH uses 6SN7 vacuum tubes in triode mode for delightfully natural tonal characteristics.

The circuit has no overall loop feedback, and the Negative Feedback (NFB) technology lowers the output impedance, reduces distortion and improves the overall frequency response. This brings obvious benefits to sound reproduction.

A whole host of connections; 3-pin balanced, RCA, USB, coaxial, and optical inputs make it easy to listen to music without ever having to ponder on decoding different formats.

A smart toggle switch on the front panel switches the features from headphone amplifier to pre-amp system. EVH is perfect for enjoying music personally via your hi-fi system too as an integral pre-amp.

### Key Features

- Integrated headphone and pre-amp system
- Redesigned internal valve circuitry with acclaimed 6SN7 tube implication
- 6.3mm headphone jack on the front panel
- Alps motorized rotary volume control
- Switchable impedance gain control for high and low gain





## Specifications

- Rated Power Output: 2 x 15w RMS (6Ω) 2 x 12w RMS (8Ω / 4Ω)
- Frequency Response: 20Hz - 50kHz (-3dB)
- Total Harmonic Distortion: 0.50%
- Signal-to-noise Ratio (S/N): 90dB
- Input Impedance: 50kΩ
- Digital Input Sampling Frequencies: 44.1kHz-192kHz, 384kHz(USB), DSD256(USB)
- Valves: 1 x ECC83, 2 x ECC82, 4 x EL84EH
- Input Connections: 1 x RCA, 1 x OPT, 1 x COAX, 1 x USB B, Bluetooth (aptX)
- Output Connections: 2 x speaker terminal, 1 x 6.35mm headphone jack
- Size(WxDxH): 220mm x 300mm x 180mm
- Net Weight: 7.2kg

## EVA

### Vacuum Tube Integrated Amplifier

Engineered to create a level of performance that goes beyond mere technicalities, the EKCO EVA Vacuum Tube Integrated Amplifier offers superbly realistic sound reproduction combined with stunning quality of craftsmanship. Powerful in its own right, it will delight with style and substance.

The EVA has a special 'Alps' motorized control knob for volume, and another for five input selections; RCA, OPT, COAX, USB, Bluetooth. A 6.3mm headphone jack is available for headphone devotees.

No undue softness or warmth and no blur. EKCO EVA sounds fast and clean, with a vast array of connectivity and compatibility.

### Analogue Charm, Digital Compatibility

- Redesigned internal valve circuitry with well-known EL84EH tube.
- USB accepts digital signals to maximum resolution with PCM playback up to 384 kHz and DSD256.











## EV55SE

### Integrated Vacuum Tube Amplifier

Engineered to create a level of performance that goes beyond mere technicalities, the EKCO EV55SE Vacuum Tube Integrated Amplifier offers superbly realistic sound reproduction combined with stunning quality of craftsmanship. While using the most suitable valves, this EV55SE is capable of producing a super sonic performance.

With 5 RCA inputs combined with 'tweakable' valve, negative feedback and speaker settings, the EV55SE is a joy to operate. Using 4 x KT88, 1 x 12AX7 and 4 x 12AU7 valves, users can expect an equally enjoyable sound.

## Specifications

- 5 x RCA inputs
- 4 x Speaker Terminal Outputs
- Ground Connection
- Speaker A/B Select
- Ultralinear / Triode Mode Select
- Adjustable Negative Feedback
- 20Hz – 30kHz Frequency Response ( $\pm 1$ dB)
- <1% at 1kHz Total Harmonic Distortion
- >90dB Signal / Noise Ratio
- 300mV Input Sensitivity Input Impedance 250 kOhms
- 4 x KT88, 1 x 12AX7, 4 x 12AU7 Valves
- 236mm x 356mm x 441mm
- 28kg / 61.73lbs Net Weight
- 55W / 8 Ohms (Ultralinear Mode)
- 28W / 8 Ohms (Triode Mode)







## EV55ST

### Stereo Vacuum Tube Power Amplifier

Engineered to create a level of performance that goes beyond mere technicalities, the EKCO EV55ST Vacuum Tube Power Amplifier offers superbly realistic sound reproduction combined with stunning quality of craftsmanship. While using the most suitable valves, this EV55ST is capable of producing a supersonic performance.

With 'tweakable' valve, negative feedback and speaker settings, the EV55ST is versatile in sound configuration and will drive a wide range of loudspeakers with ease and sonic detail.

## Specifications

- 2 x RCA Inputs
- 4 x Speaker Terminal Outputs
- Ground Connection
- Speaker A/B Select
- Ultralinear / Triode Mode
- Adjustable Negative Feedback
- 18Hz – 35kHz Frequency Response ( $\pm 1$ dB)
- 2 x 55W Output Power (Ultra-linear Mode)
- 2 x 28W Output Power (Triode Mode)
- <1% at 1kHz Total Harmonic Distortion
- >90dB Signal/Noise Ratio
- 560mV RMS Input Sensitivity
- Input Impedance 100K  $\Omega$
- Output Impedance 4 / 8  $\Omega$
- 230V,  $\pm 5\%$ , 50Hz Power Supply
- 280W Max. Power Consumption
- 4 x KT88, 1 x 12AX7, 4 x 12AU7 Valves
- 236mm x 356mm x 420mm
- 28kg / 61.73lbs Net Weight











## EV80M

### Mono Vacuum Tube Power Amplifier

The EKCO EV80M implements our signature valve amplification techniques into a mono power amp, for a beautifully intricate performance in its purest form.

Using a combination of 1 x 6SN7GT, 2 x 6SL7GT and 2 x KT120 valves, users can toggle negative feedback operation, triode / ultra-linear modes and speaker A/B outputs, proving an adaptable amp for different speakers, sound sources and musical tastes.

## Specifications

- 2 x single RCA inputs
- 2 x Speaker Terminal Outputs
- Ground Connection
- Speaker A/B Select
- Ultralinear / Triode Mode
- Adjustable Negative Feedback
- 18Hz – 35kHz Frequency Response ( $\pm 1$ dB)
- 1 x 80W Output Power (Ultralinear Mode)
- 1 x 55W Output Power (Triode Mode)
- <1% at 1kHz Total Harmonic Distortion
- >90dB Signal/Noise Ratio
- 1V RMS Input Sensitivity
- Input Impedance 100K  $\Omega$
- Output Impedance 4 / 8  $\Omega$
- 230V,  $\pm 5\%$ , 50Hz Power Supply
- 160W Max. Power Consumption
- 1 x 6SN7GT, 2 x 6SL7GT, 2 x KT120 Valves
- 236mm x 241mm x 453mm (HxWxD)
- 20.5kg Net Weight





## Specifications

- 24 Bit
- 44.1kHz – 192kHz Sampling Frequency
- 20Hz – 20kHz Frequency Response ( $\pm 0.2\text{dB}$ )
- >95dB Dynamic Range
- >100dB Signal/Noise Ratio
- 2 x Coaxial Inputs
- 1 x USB Input
- 1 x Coaxial Output
- 1 x Optical (TOS-Link) Output
- 1 x Unbalanced Line with Fixed Level Output
- 1 x Unbalanced Line with Variable Level Output
- 1 x 6.3mm Headphone Output
- 1 x ECC82 (12AU7) Vacuum Tube
- 21W Power Consumption
- 0.6W Standby Power Consumption
- 114.5mm/4.51" x 420mm/16.54" x 314mm/12.36" (HxWxD)
- 6.8kg/14.99lbs Net Weight

## EV55DP

### CD Player & DAC

The EKCO EV55DP is a compact disc player which plays regular music CDs as well as digital media through a USB input. At first look the EV55DP catches the eye due to its classic wood enclosure, however on the inside it is equipped with the best possible circuitry used in present day digital engineering. Built to mouthwatering specifications; this is a pure music lover's CD player through and through.

It has the capability to increase the detail levels in your CD collection as well as link up with coaxial and USB sources. It can be used as a stand-alone player with use of its remote handset and headphone output, or integrated with the EV55SE Integrated Amplifier.

The debate of the sonic superiority between valve and solid state can be argued either way. At EKCO, we love the sound of valve amplification, yet we also realise that this can work differently from varying speakers, sound sources and music selections. For the EV55DP, you don't have to choose, an output selection switch gives you the choice to change the output circuit to either the vacuum tubes or the solid state IC amplifier, enabling you to suit your personal music taste and preference. On selecting the vacuum tube output, the vacuum tube front panel window will light up, in all its glory.

The EKCO EV55DP is equipped with the P10 Digital-to-analogue-converter (DAC), selected for its resolution capabilities and complementary sound when combined with EKCO's valve and solid-state amplifier circuitry. It supports up to 24/bit 192kHz sampling frequencies which can be enjoyed through USB, Coaxial or optical inputs giving you EKCO signature sound on all your digital audio sources.







IAG House, 13/14 Glebe Road, Huntingdon, Cambridgeshire, PE29 7DL, UK

Tel: +44(0)1480 452561 Email: [service@ekcoaudio.com](mailto:service@ekcoaudio.com) <http://www.ekcoaudio.com>

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