

Kingray

PROFESSIONAL

Kingray Professional Series



KINGRAY Professional Series

Kingray TV signal distribution products have been the unwavering choice of the TV installation industry virtually from the advent of Television services in Australia. For over 50 years Kingray amplifiers, converters and modulators have consistently delivered crystal clear, interference free TV reception across the country and more recently across the Asia Pacific region.

Today as we witness a growing convergence of 'Free to Air' television, subscription services, 'pay per view' and Internet delivery techniques; Kingray remains at the forefront of this technological evolution with cost effective, pragmatic solutions to both terrestrial and satellite based signal distribution methodologies.

The new **Kingray Professional Series** sets a new standard in Headend equipment, engineered from the ground up to meet the exacting demands of system designers, carriers and regulators in both Australia and around the world.

At the heart of a **Kingray Professional Series** installation lies the KR-110 19" rack with its KLA-110 45 dB Launch Amplifier and low noise

power supply; to ensure total system flexibility, up to 10 KCC-110 Channel Converters/Processors, 10 KVM-110 Stereo Vestigial Modulators or a combination of either maybe mounted.

Ease of Installation, commissioning, and functionality were prime considerations during the development phase of the **Kingray Professional Series**, practical solutions like the simple daisy chain signal couplers, LED status indicators, upgradeable firmware and PC based calibration reflect the no-nonsense innovation incorporated in this remarkable product range.

To add further to the Kingray Professional Series flexibility particularly in smaller systems where a 'stand alone' processor or modulator, individual modules may be powered with a standard Kingray PSK24 power supply.

The **Kingray Professional Series** is proudly manufactured in Australia and is accompanied by a comprehensive 3 year warranty.

Professional Headend wins 2011 Engineering Excellence Award

Engineers Australia is the national body for the advancement of engineering and the professional development of its members; it plays a significant role in promoting engineering excellence and the contribution engineering makes to the broader community.

The Annual Engineering Excellence Awards celebrate the accomplishments of Australia's finest engineering organisations and individuals.

The 2011 judging panel under the chairmanship of Dr John Lear described the Kingray Professional MATV Headend as: "Beautifully designed and engineered. It compares favourably and in most cases better than anything from overseas. It is the most innovative product of its kind we have seen in all our time in this industry." On accepting the award, Warwick Clancy, Standard Communications General Manager of Operations, thanked the Kingray engineering team under project leader Henry Liu, then dedicated the award to the company's late founder Ted Dunn, whose lifetime passion for engineering innovation and commitment to Australian manufacturing had made the achievement possible. The Kingray Professional Series represents a quantum leap in the processing and delivery of television signal technology, it is also significant in currently being the only Australian designed and manufactured Headend MATV system.

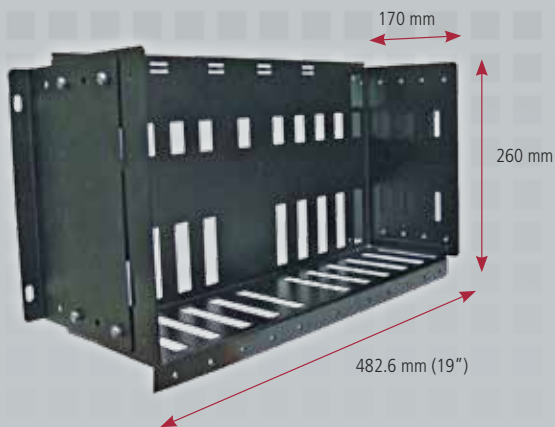


KR-110 Headend Rack

The KR-110 is a robust, dual purpose rack that will hold up to 10 modules and a KLA-110 launch amplifier/power supply. The rack can be wall mounted or installed in a 19" rack simply by reversing the side support brackets.

Features

- Strong press metal design
- Durable high quality powder coat finish
- Quick and easy to assemble



KCC-110 Channel Converter/Processor

The KCC-110 is the most advanced channel converter/processor available. Whether the KCC-110 is being used to output the same channel as its input channel (processing) or a different output channel to its input channel (converting), it is capable of adjacent channel operation on both input and output.

KCC-110 Features

- Superior adjacent channel performance due to double saw filtering.
- Very high MER level, up to 36 dB*
- Input AGC circuitry
- High linearity and low phase noise
- Adjustable output power level control
- Resolution 125 kHz steps
- Adjustable bandwidth
- Stand Alone or 19" rack mountable
- Programmable via any computer with an Ethernet connection.
- Programmable via USB when using as a 'stand alone' module.
- Remote control capability via KLA-110 with in a VPN
- Precision engineered die-cast housing



KCC-110 Specifications

Input frequency range	44 – 862 MHz
Output frequency range	44 – 862 MHz
Frequency resolution	0.125 MHz
Input / output channel naming	By frequency (software selectable)
Channel bandwidth	7/8 MHz
Output S/N and spurious	>55 dB
Input level range	65 – 95 dB μ V 80 dB μ V optimum analogue 60 dB μ V optimum digital
AGC range	30 dB Min. automatic
Output level adjustment	60-80 dB μ V
Phase noise	<-85 dBc/Hz at 10 kHz, <-103 dBc/Hz at 100 kHz
Monitor output	-30 dB
AGC LED (signal condition)	Green - within range, flashing Amber - low level or high level, Red - RF output OFF.
Supply voltage	24 V DC
Power consumption	12 W MAX
Operating temperature range	0 to 55° C
RF shielding	>70 dB

* Dependent on quality of the incoming signal

KVM-110 Stereo VSB Modulator

The KVM-110 is an agile Vestigial Side Band A2 Stereo Television PAL B/G Modulator capable of producing an analogue television channel between 44 – 862 MHz. The KVM-110 accepts a composite video signal (AV) at the input via RCA connectors. Being Vestigial Sideband, the KVM-110 maintains spectrum efficiency by allowing adjacent channel operation. This module may be installed in a 19" rack or operated as a 'stand alone' modulator.

KVM-110 Features

- One model covers 44 MHz to 862 MHz
- Resolution 125 kHz steps
- Adjustable output level
- Vestigial sideband (7 MHz bandwidth)
- Adjacent channel capability
- Rack mountable
- 'Stand alone' or 19" rack mount
- Programmable via any computer with an Ethernet connection.
- Programmable via USB when using as a 'stand alone' module.
- Group Delay Correction
- Remote control capability via KLA-110
- Stereo sound
- Harmonic filtering
- Precision engineered die-cast housing



KVM-110 Specifications

Output frequency range	44 – 862 MHz
Frequency resolution	0.125 MHz
Input / output channel naming	By frequency (software selectable)
RF output level	60 - 80 dB μ V
Spurious output level	<-55 dB C
Video system	PAL B/G
Audio system	Stereo A2
Audio carrier level	Adjustable -10 to -20 dB relative to video carrier
Video input level	0.5 - 2 Vp-p, AGC controlled
Video input connector	RCA 75 Ω
Audio input level	0.2 - 2 Vp-p (impedance >10 k) Factory set to 1 Vp-p
Audio connector	RCA
Audio frequency response	30 Hz - 14.5 kHz each channel @ -3 dB
Supply voltage	24 V DC
Power consumption	8 W MAX
RF shielding	>70 dB
LED	Green - module ON, Red - RF output OFF

Harmonic Filtering

Harmonic filtering is used to remove unwanted signals that are produced when modulating. When you select a frequency to modulate on to, e.g. channel 0 (46.25 MHz), the first harmonic appears at 92.5 MHz and the second harmonic will appear at 185 MHz. These harmonics can interfere with other frequencies that are already in these bands, such as FM and band 3 when combined with the modulator if there is no filtering present. All Kingray modulators have this filtering to ensure a quality installation.

Group Delay Correction

The Group Delay correction circuitry ensures the Chrominance and Luminance are synchronised. With the ever increasing size of flat panel televisions, Group Delay is of paramount importance to maintain a crisp sharp picture.

AGC Video Input Level Control

The KVM-110 has the ability to automatically adjust the video signal level to maximise picture quality independently of the input video level.

KLA-110 Launch Amplifier/Power Supply

The unique design of the KLA-110 incorporates a Launch Amplifier, Power Supply and Programming Interface. Designed to be mounted in the middle of the KR-110. The power supply is designed to power 10 modules, it can also provide external power to a masthead or pre amp if required.

Features - Amplifier

- High output
- Low noise figure
- Low insertion loss, input separator / output combiner.
- Adjustable output level
- Adjustable gain
- -30 dB test point
- Wide bandwidth 44 MHz to 862 MHz
- Embedded web based program
- Efficient low noise switch mode power supply



KLA-110 Specifications - Distribution Amplifier

Input frequency range	44 – 862 MHz
Output frequency range	44 – 862 MHz
Output S/N and spurious	>55 dB
Maximum input level	95 dB μ V
Maximum output level	118 dB μ V* @ -60 dB IMR (DIN45004B)
Maximum gain	45 dB
Noise figure	<2 dB (After combiner)
Monitor output	-30 dB
RF Input / output level monitor	Via USB on power supply unit
Supply voltage	24 V DC
Power consumption	5 W MAX
Operating temperature range	0 to 55° C
RF shielding	>70 dB

* 2 channel input non adjacent

KLA-110 Specifications - Power Supply

Operating voltage	110 to 240 V AC, 50/60 Hz
Supply voltage	24 V DC
Stability	+/- 100 mV
Power capability	150 W MAX
Operating temperature range	0 to 55° C
RF shielding	>70 dB
Power lead	Standard 3 pin IEC power cable

ACCESSORIES

24 V DC 750 mA Power Supply
- **PSK24**



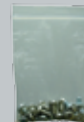
KLA-110 power cord 240V
- **KLE02**



RF links for modules
- **KLE03**



KR-110 Rack screw pack
- **SCREWPK**



Power/data bus cable
- **KLE04**



RF link support bracket
- **KSBO1**



USB connector label
- **KPLABEL**



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