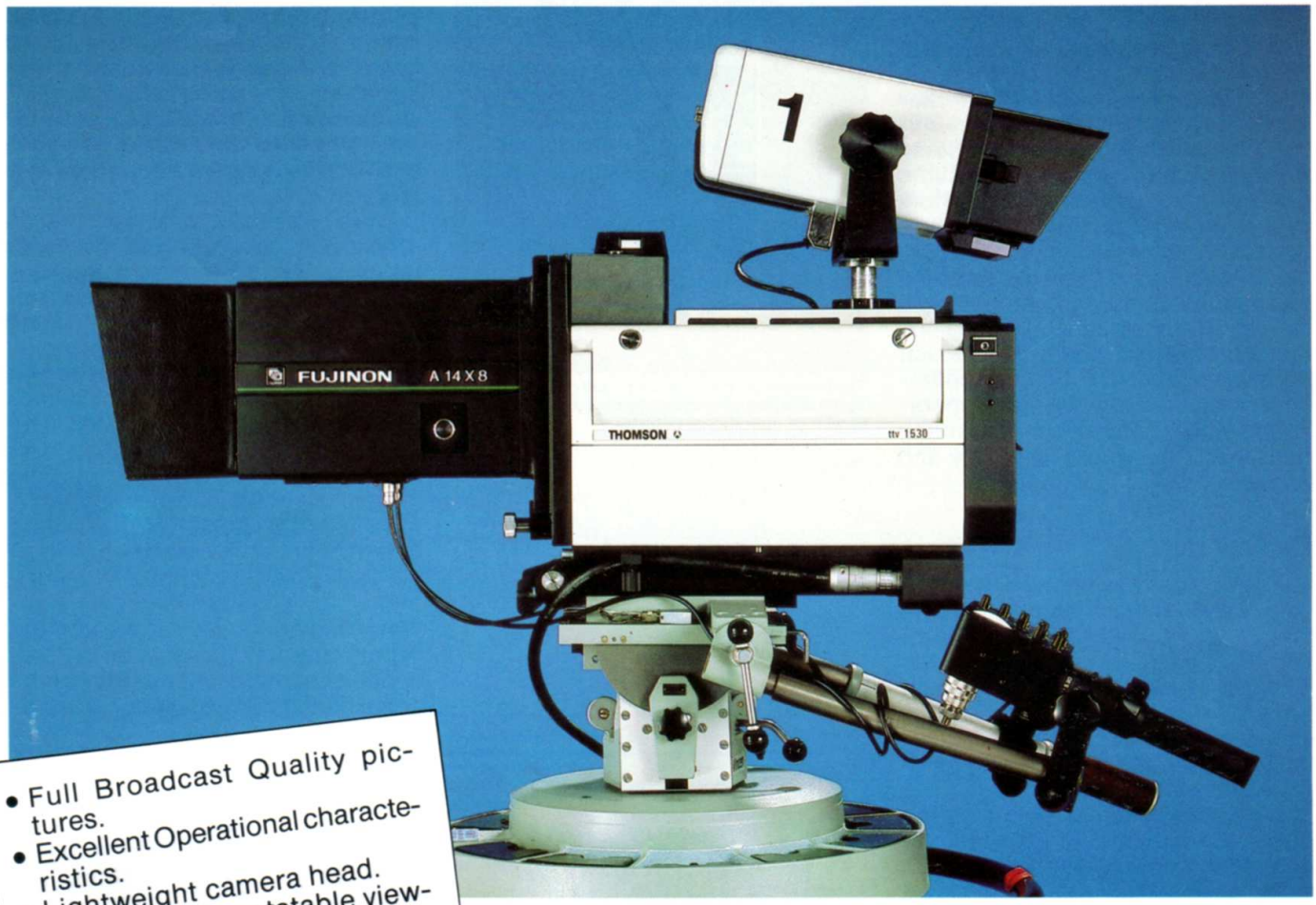
TTV 1530

2/3-inch studio/O.B. camera



- Full Broadcast Quality pictures.
- Excellent Operational characteristics.
- Lightweight camera head.
- 17 cm tiltable, rotatable viewfinder.
- Comprehensive Operational control panel.
- Automatic Setup.
- Compact Base Station.
- Excellent TTV 1623/1624 compatiblity.
- Stand-alone camera head operation.
- Multicore or Triax operation.
- RGB communication; Multicore and Triax.
- RGB, Component and Encoded Outputs.

THOMSON VIDEO EQUIPEMENT

The TTV 1530 is the most recent member of the Thomson line of professional color television cameras. It is a full broadcast quality Color Television Camera designed to satisfy the needs of the professional user in both studio and outside broadcast applications. The TTV 1530 is designed to offer the maximum return on capital investment and minimum cost of ownership.

Picture Quality

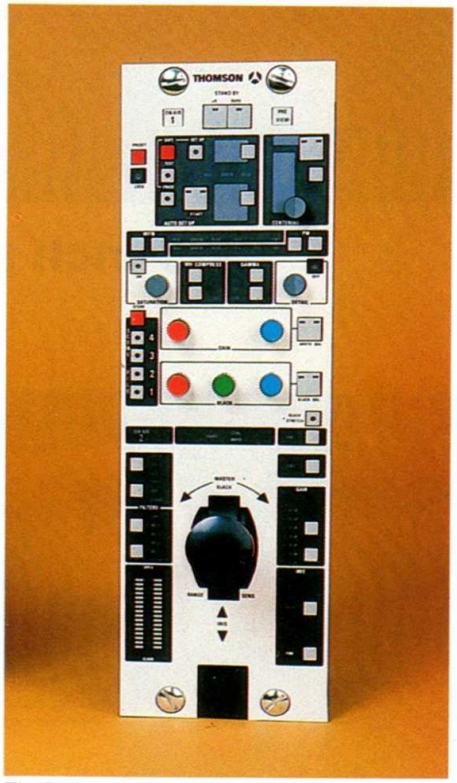
Superior measured and subjective picture quality is assured from the TTV 1530 by the use of state-of-the-art designs, components and manufacturing techniques. Automatic setup of engineering parameters assures consistent high technical performance; the availability of different gamma laws, white compression, black stretch and highlight handling techniques ensures that optimum results under all lighting conditions can be obtained; scene files which memorise complete camera operational settings allow the video operator to achieve the best possible image quality with maximum efficiency and convenience.

Camera Head

Full advantage has been taken of the use of 2/3-inch tubes and modern mechanical and electronic construction techniques in the design of the TTV 1530 head. The size and weight have been minimised within the limits imposed by these operational characteristics without compromising technical performance.
The camera head has both pleasing and practical lines. At 28 kg (62 lb) complete with viewfinder, and with well-placed handles it is easy to mount dismount in a mobile environment. The layout of switches, controls, cable entry, cue-card holder, etc. has been developed with the operator in mind.

Base Station

The Base Station occupies only 3U rack space, and contains no operational adjustments. This gives excellent installation flexibility. RGB video signals are transmitted from the camera head to the base station in both multicore and triax versions, allowing highest quality RGB, component and encoded outputs to be derived - simultaneously if required. High quality audio channels are included for both communication and program source requirements. Up to 300 m (980 ft) of multicore or 1.5 km (5000 ft) of triax camera cable may be used with the TTV 1530 camera.



The Remote Control Panel PT 1530 gives access to Automatic Setup functions and monitoring signals as well as operational controls.

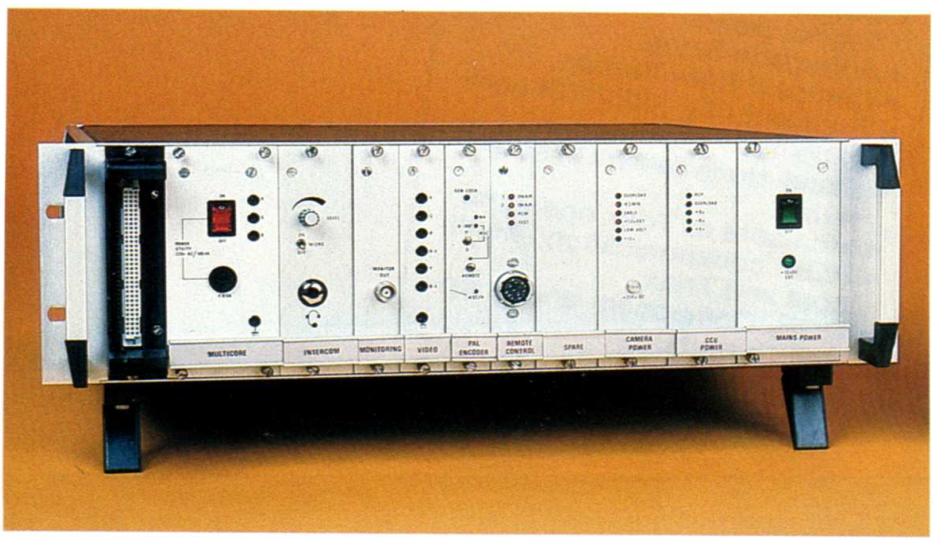
Control System

The TTV 1530 system does not require a central engineering setup control panel as part of a multi-camera system; the remote control panel gives access to all necessary engineering as well as operational controls. Comprehensive operational controls are provided on this panel, with clear status indication by means of LED displays. All controls except the iris joystick are a high resolution tachometer type.

Demands on control desk and rack space are minimised by the efficient design of this control panel layout and the ability to work without a central control system. A truly broadcast quality camera is thus made available even in situations where space is at a premium.

A central control panel will, however, be introduced to widen the application of this versatile camera. This system enhances the monitoring system, and makes available a more comprehensive diagnostics capability as well as giving central control of the cameras with which it is associated. The central control philosophy is based on a six-camera system, with multiple system capability giving central control of up to 36 cameras. As with the operational remote control panel, all controls are of the tachometer variety, and all switches are momentary action. The performance of the camera is thus only conditional upon the presence or non-presence of the control panel during the adjustment of a control.

The Base Station CV 1530 occupies only 3U rack space; it includes power supplies and Multicore or Triax modules. The absence of day-to day controls gives system installation freedom.



Portable Companion

Compatibility with the TTV 1623/1624 family of cameras is excellent. The 1530 Base Station may be used interchangeably with the 1530 camera head or 1623/1624 camera heads fitted with a CA 63 or CA 83 rear module. In this configuration the TTV 1623/-1624 becomes a Portable Companion to the TTV 1530, or an exceptionally high quality EFP camera transmitting RGB signals down Triax or Multicore camera cable. The degree of interchangeability of electronics and component type utilisation between the lightweight and studio/O.B cameras has been maximized.

This configuration is ideal for those O.B. applications where lack of space or difficult access make the use even of a TTV 1530 camera head difficult. The equipment and control system compatibility ensure consistently high quality and an absence of operator error which can result from dissimilar standard and lightweight camera control systems.

Automatic Setup

The automatic setup system is based on measurements and error corrections made in 182 zones in the active picture area. A test pattern, located in the diascope is normally used, although the same pattern may be used through the lens. This pattern gives an absolute reference, thus eliminating any need for a correctly set up reference channel. While comprehensive setup capability has been achieved in the TTV 1530, the "Full Setup" concept has deliberately not been adopted. Experience gained with the TTV 1624 lightweight cameras has allowed advantage to be taken of inherently stable systems wherever possible. The automatic functions have thus been optimised to achieve maximum benefit with minimum complexity and cost. The following principal automatic setup routines permit the TTV 1530 user to rapidly check all necessary adjustments to get "On Air" quickly and efficiently:

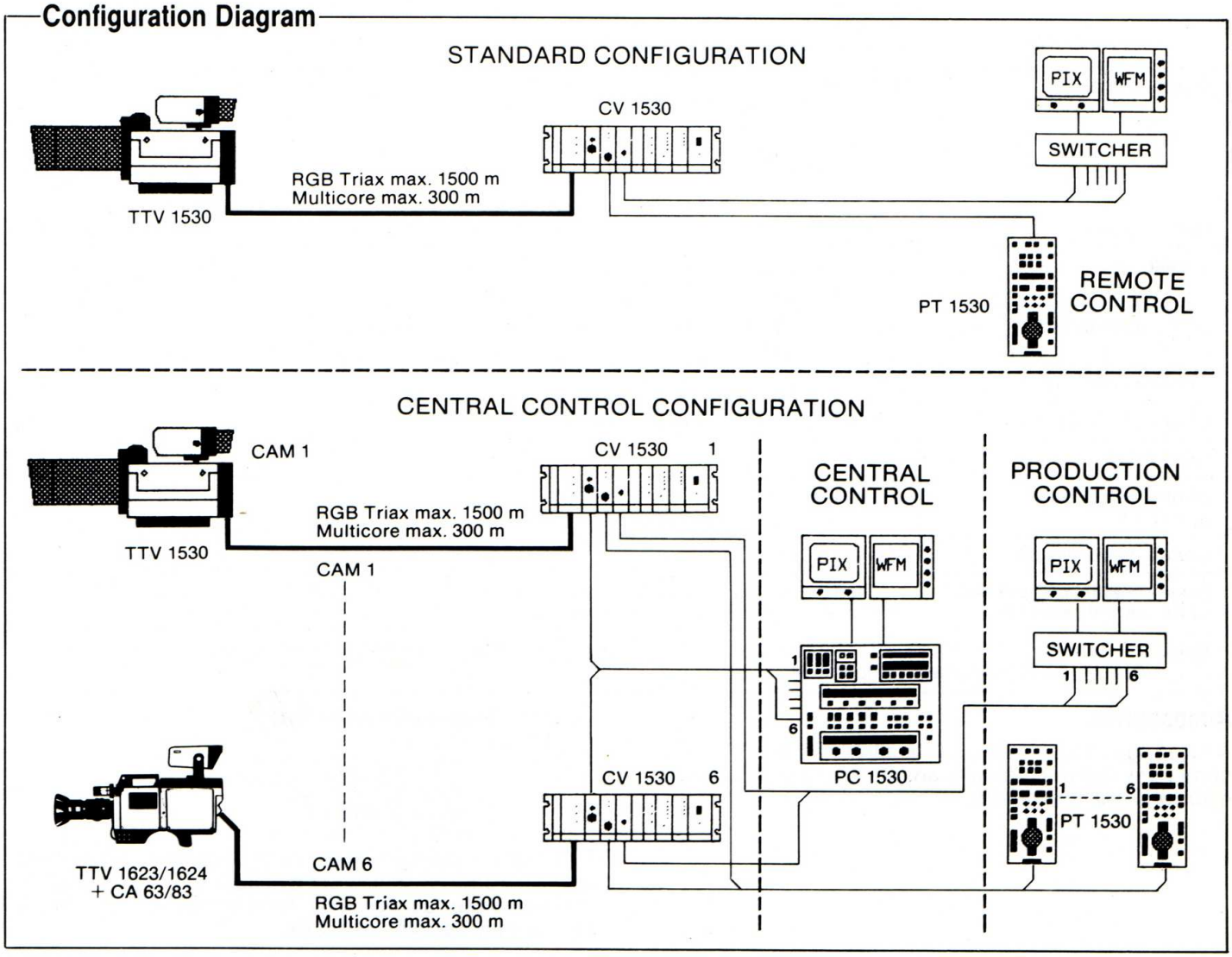
- Geometry (to absolute test pattern reference)
- Registration (Red and Blue, referenced to Green)
- Black Shading
- White Shading
- Centering

These engineering automatic setup functions are complemented with operational and production automatic features:

- Black Balance
- White Balance
- Black Level (pedestal)
- Iris (Center elipse weighted).

All cameras have an independent auto setup system, allowing parallel setup to be performed. The setup parameters are stored in memory, which has battery backup for several weeks of storage. A setup routine may be selected according to the level of correction or performance verification required.

Configuration Diagram



- The Portable Companion camera head(s) may be used in any camera position.
- CV 1530 is Base Station.
- PT 1530 is Remote Control Panel.
- PC 1530 is Central Control Panel.

Typical characteristics

Transmission standard	525/60 NTSC; 625/50 PAL/SECAM
Tubes	2/3 inch (18 mm) LOC diode Gun, lead oxide target layer
Optical system	f: 1.4 RGB beam splitter with integral quarter-wave filter dual 6 position filter wheel
Sensitivity	1400 lux (130 FC) at F: 4 for 0.7 V video output (3200 °K incident light: 89.9 % reflectance white Chart; lens at f4; nominal (0 dB) gain)
Minimum illumination	22 lux (2.0 F C) for 0.7 video output (as above, except lens at f: 1.4 gain + 18 dB)
Gain selection (dB)	0, + 3, + 6, + 9, + 12, + 18
Color temperature	Dual 6-position filter wheel 3200 °K or 5600 °K plus 1/2 ND, 1/4 ND, 1/8 ND, 1/16 ND plus special effects
Signal/noise	525/60: 58 dB-625/50: 57 dB (Unweighted, in luminance channel; 0 dB gain, correction signals off)
Depth of modulation at 400 TV lines (uncorrected)	50% in Green channel (correctable to 100% in luminance output with aperture correction)
Registration (1)	zone 1: 0.05% (20 ns); zone 2: 0.1% (40 ns); zone 3: 0.1% (40 ns)
Geometry (1)	zone 1: 0.1% (40 ns); zone 2: 0.2% (80 ns); zone 3: 0.2% (80 ns)
Maximum cable lengths	Multicore 300 m, 9 mm Triax 750 m; 13 mm Triax 1500 m
Input signals	• Genlock: composite video (loop input) • External video • Intercom • Program sound • Microphone (at cam. head)
Output signals	• 1 RGB + 1 component video or 2 RGB video • 1 RGB or component video (chroma key) • 3 encoded video • 1 picture monitor video • 1 waveform monitor video • 1 VTR (26-pin)
Power requirement	100/120 V 60 Hz or 220/240 V 50Hz 120 W
Viewfinder	17 cm high resolution, high brightness, flat-face tube. ± 50° tilt, ± 90° rotation
Camera Head Size (L x W x H)	460 x 250 x 379 mm (18 x 10 x 14.5 ins)
Camera Head Weight	28 kg (62 lb)
CCU Size (W x H x D)	483 x 133 x 490 mm (19 x 5.25 x 19.3 ins)
CCU Weight	14 kg (31 lb)
Control panel Size (L x W x D)	370 x 115 x 190 mm (14 x 4.5 x 7.4 ins)
Control panel weight	3.5 kg (7.7 lb)
Environmental camera head CCU, control panel (2)	— 10 °C + 45 °C (— 30 °C with cover); RH 95% non-condensing 0 °C + 40 °C; RH 95% non-condensing
Notes: 1) Zone 1 = circle 0.8 picture height; zone 2 = circle diameter equal to picture width; zone 3 = remainder of picture 2) Ambient still-air shade temperature	

Accessories

A full range of accessories is available for the TTV 1530 camera system including headsets, dust and rain covers, microphones, test charts.

Lenses: (Non-exhaustive list)

Angenieux	18 x 8.5
Canon	J15 x 8.5, J20 x 8.5
	J25 x 8.5, J40 x 9.5
Fuji	A15 x 8, A18 x 8
	A30 x 11, A44 x 9.5

TTV 1623/1624 lightweight lenses may also be used with the TTV 1530. All lenses are available in Full servo, Semi-servo and Manual versions. New lenses will be introduced as they become available.

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