

ATV NETWORK LIMITED D&M DEPT.

EMI 2005 Camera Evaluation

General

This camera is effectively an up-date version of the 2001 design. The luminance channel has been removed and the three colouring channels have had their video bandwidth increased to 5.5 MHz. Tungsten illumination has been introduced into the optical path, by the re-design of the prism block, to reduce lag effects, and Black and this tri-level shading has been incorporated. Port-hole correction is not included. The Viewfinder has been completely re-designed and no longer produces interference in the video channels.

The lens package is no longer mounted within the camera body and the latest lenses that are available can be fitted with the minimum. of modification. to the standard lens package.

This has resulted in the lens focal plane being further forward than in the 2001, with a consequent reduction in ease of operation.

The body of the camera has been completely re-styled with a flatter and wider assembly and the overall length, including the Angenieux 10 x 18 lens, is 32 inches as compared with the 2001 camera which is 29 inches.

A change of some importance is the decision to use a 50 ohm BIW camera cable. Apart from the fact that all our studio wall-boxes only accept DICC connectors, there is the problem that all our installation cables have a 75 ohm impedance. Replacement cables in Studio B will probably be required in any event, but if some degree of interchangeability were possible it would be an advantage.

Filter changing is particularly difficult and involves removing the lens, an internal cap held in position by Allen screws, and loosening a filter retention clamp held by a screw.

The Blue scanning yoke is positioned at the-bottom of the camera and is protected by a thin metal flap. It is considered that there is some danger of damage to this yoke when the camera is being handled.

The viewfinder incorporates a neutral density filter of 35% and provides a working highlight intensity of 70 ft. candles. It is mechanically arranged such that high level shots can be taken easily but is very restricted in upward movement in low level use. It is understood that a modification is available to improve this restriction. A shortcoming carried over from the 2001 is the clamping of viewfinder video to sync tips. This causes brightness variations when the Viewfinder mix facility is used.

The "On-Air" signal lights in the viewfinder are so positioned that it is impossible to see them with the viewfinder visor in position.

Continued use is still made of the 30 mm. diameter Plumbicon tubes. The extended red tube is employed, with its associated matrix, but advantage has not been taken of the availability of the 25.4 mm. ACT tubes. The shorter focal length lenses used with the smaller tubes results in increased tube exposure and less lag. The 25.4 mm XQ1080 tubes also incorporate light-pipes which allow individual control of lag. A further advantage of using tubes which provide an ACT facility, is that unscanned highlight areas of the target can be discharged, to avoid beam pulling at the edges of the scans.

It was noted that the new Black level Bend and Tilt controls provided, are in the camera, and would have to be adjusted by the camera operator via the talkback system.

Colour Analysis

Split screen operation with a 2001 camera, demonstrated that the analysis characteristics of the two cameras were almost identical. The extended red response of the 2005 model gave an improvement in the reproduction of the purple colours but the difference in overall characteristic is unlikely to cause problems with mixed camera operation.

Resolution

The following results were obtained from sine wave gratings at the output of the encoder with sub-carrier off.

1 MHz. 100%

3 MHz. 150%

4 MHz. 140%

5 MHz. 100%

6 MHz. 20%

Signal/Noise

As on previous tests, it was noted that at mid-grey levels, camera tube noise was limiting the noise performance. At 16% reflectance the signal/noise was 47.5 dB weighted. Measurements taken under a capped condition and also with linear gamma were as follows:-

	<u>Unweighted</u>	<u>Weighted</u>
Encoder o/p		
(Sub-carrier off)	50 dB	58.5 dB
Red	44 dB	52 dB
Green	48 dB	58 dB
Blue	31 dB	41 dB
Green (Gamma 0.45) at 5% lift.		45 dB

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