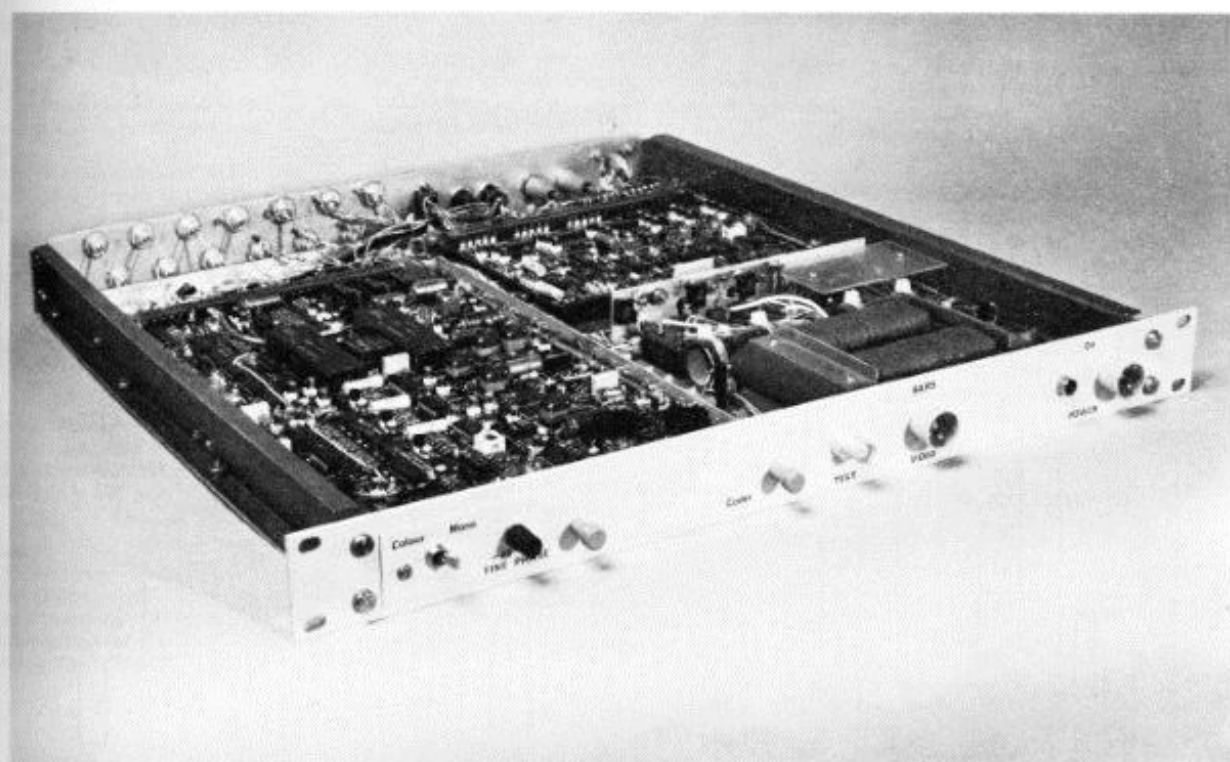




# Marconi Broadcasting Studio Systems

Black Picture Generator  
Colourizer  
Coder

B3376 —01 PAL  
—04 NTSC  
B3376 —02 PAL  
—05 NTSC  
B3376 —03 PAL  
—06 NTSC



## Features

Self contained  
BNC connectors  
525 NTSC or 625 PAL  
1½ in rack space

## Description

The equipment is constructed as a self contained unit complete with power supplies and is a 1½ in x 19 in rack mounted unit. By selection of the appropriate plug-in units any one of six editions can be assembled:

- as a Black Picture generator for PAL (Ed. 01)
- as a Colourizer with remote control for PAL (Ed. 02)
- as a Coder/bar generator for PAL (Ed. 03)

Editions 04, 05 and 06 are equivalent versions for NTSC.

## Black Picture Generator

This unit generates standard level colour burst plus set up (if required for 525 NTSC). It may also be used to add burst to a monochrome signal. Two 75Ω outputs are available.

## Colourizer

By changing the colour bar generator PWB for a synthesizer PWB the unit can be changed to a colourizer. A remote control panel is available which has six linear controls. By means of these controls the Green, Red and Blue hues of the background and the foreground may be adjusted. An additional control adjusts the transition, background to foreground from any part of the amplitude of the monochrome input. The principal application of this unit is for the colouring of captions which may be derived from an electronic character generator or a monochrome camera.

## Coder

The unit employs a standard Mark IX Camera Coder. A separate bar generator is used which can generate any of the standard type of colour bars. The standard required is selected by internal links. Either split or full field bars are available. On the NTSC Coder I and Q signals are also available in the lower half of the split field.

Changeover from signal source to bars is selected by a front panel switch.

The matrix coefficients conform to the equations listed in the data summary and are within 0.25% of nominal values.

V.I.T.S. Bars can also be available on the coded signal output.



## Data Summary

Modules	PAL		NTSC			
	01 B.P.G.	02 Colourizer	03 Coder	04 B.P.G.	05 Colourizer	06 Coder
Frame and P.S.U. Colourizer PWB	X	X	X	X	X	X
Bar Generator			X			X
Coder PAL	X	X	X			
Coder NTSC				X	X	X
R.C.P. and cable		X			X	

### Inputs

A.C. 100-125V or 200-250V, 48 to 65Hz.  
EP4 connector, 27VA.

### Video Inputs

G, R, B, and monochrome terminated internally by 75Ω 1% termination. BNC socket.

Return loss better than 30dB to 2T pulse and bar signal. 0-7V peak-to-peak non-composite signal.

### Sync, Blanking and Burst Gate Pulse

BNC 75Ω bridging input, 1-0-4-0V peak-to-peak.

Return loss 30dB to 2T pulse and bar.  
Burst gate not required for NTSC.

### Subcarrier input

BNC 75Ω bridging input. Return loss better than 30dB at subcarrier frequency. Input level from 0-5V to 3-5V peak-to-peak.

### Outputs (2)

BNC 75Ω source impedance. Return loss better than 30dB to 2T pulse and bar. Output isolation 40dB to 2T pulse and bar. A third internally terminated output is available at a front panel test socket.

## PERFORMANCE

### Subcarrier

Coarse phase shift adjustment by means of an internal switch in 90° steps. Fine adjustment by a front panel control covering a 100° range.

### Sync rise time

125ns ± 25ns (525 NTSC) or 250ns ± 50ns (625 PAL).

### Sync and burst gate delay

NTSC 1μs  
PAL 620ns.

### Frequency Response

Luminance channel ±0-25dB to 5-5MHz (PAL) and ±0-25dB to 4-5MHz (NTSC).

PAL. Chrominance channel U and V not more than 3dB down at 1-3MHz and not less than 20dB at 4-0MHz.

NTSC. I channel not more than 2dB down at 1-3MHz and not less than 20dB down at 3-6MHz.

Q channel not more than 2dB down at 0-4MHz, not more than 6dB down at 0-5MHz and not less than 6dB down at 0-6MHz.

### Luminance Notch Filter

A notch filter is provided at subcarrier frequency. The notch amplitude is 6 ± 1-5dB. The notch may be disconnected by adding a link.

## Matrix Coefficients

PAL	
Y	0-299R+0-587G+0-114B
U	0-147R-0-289G+0-437B
V	0-615R-0-515G-0-10B
NTSC	
Y	0-299R+0-587G+0-114B
I	0-60R-0-28G-0-32B
Q	0-21R-0-52G+0-31B

## Stability

After a 5 minute warm up period, over a temperature range of ±10° C of the setting up temperature within an operational ambient of -10° C to +45° C.

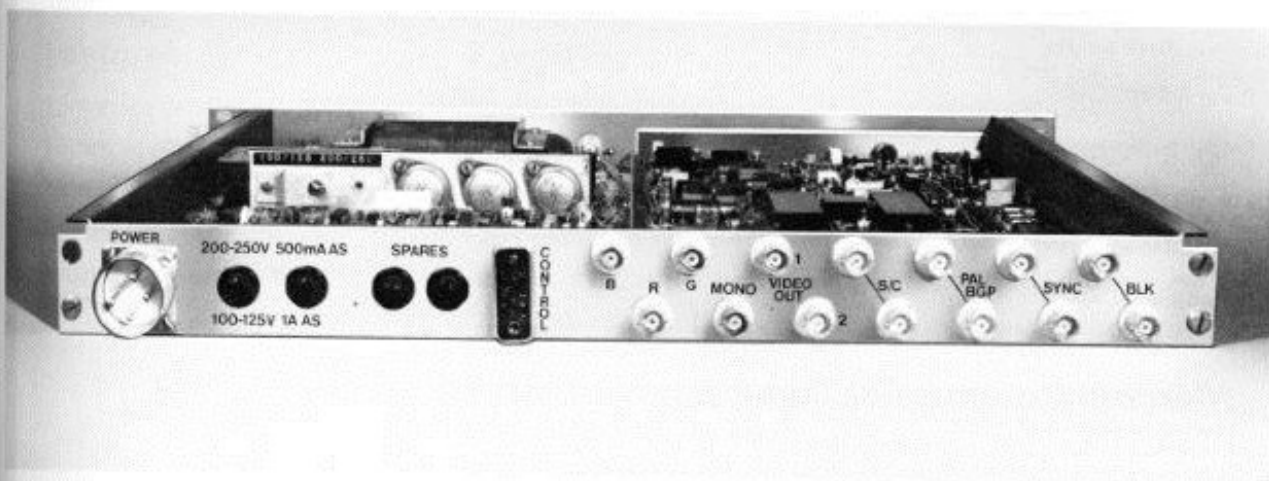
- Output signal amplitude 2%.
- Chrominance-luminance gain equality 0-5%.
- Burst and chrominance phase 1° with respect to subcarrier.
- Carrier unbalance, 7mV peak-to-peak.
- Vector accuracy of chrominance signal with respect to burst 1°.

## Ambient temperature

- Storage -20° C to +60° C.
- Equipment may be switched on without damage over the range -20° C to +45° C.
- No change in performance (other than specified under stability) will occur over the range ±10° C with respect to temperature during line up procedure within the range -10° C to +45° C.

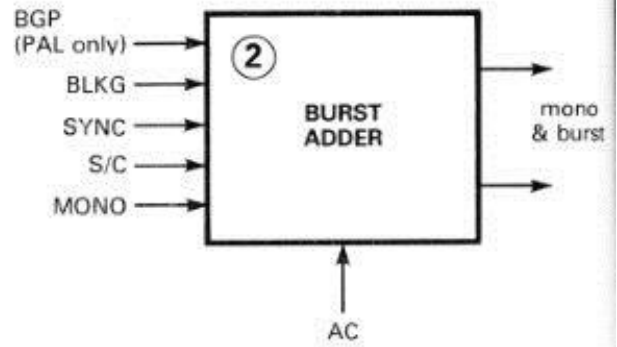
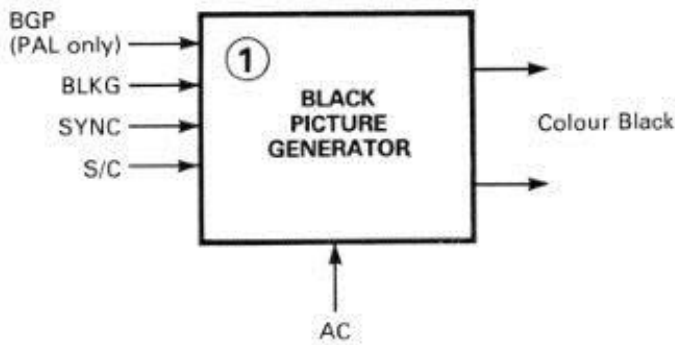
## Dimensions

Height	43-5mm (1-75in)
Width	483mm (19in)
Depth	483mm (19in)
Weight	4-7kg (10-4lb).

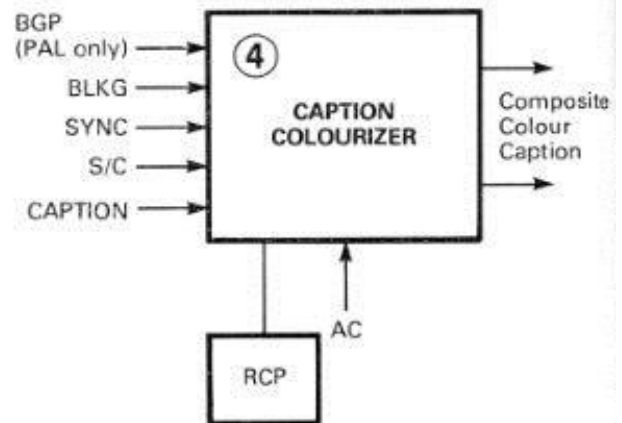
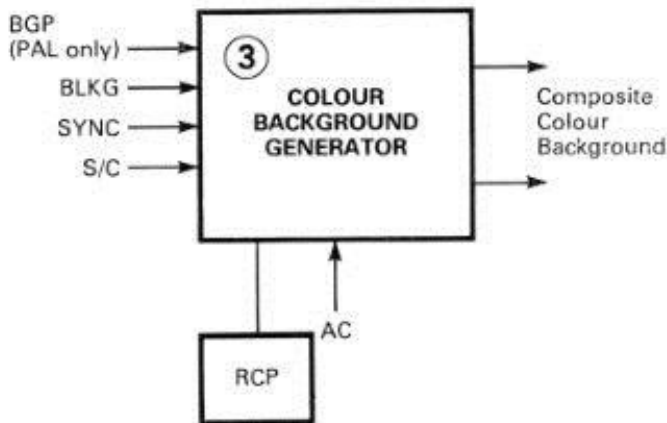


Rear panel connections

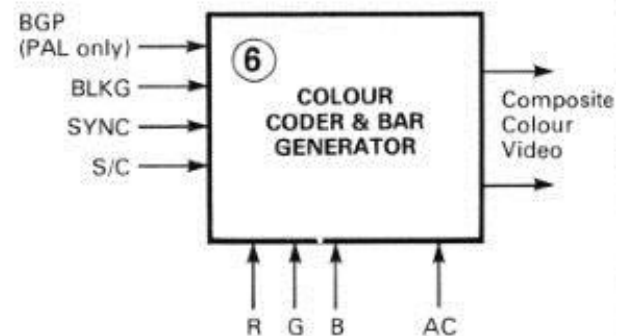
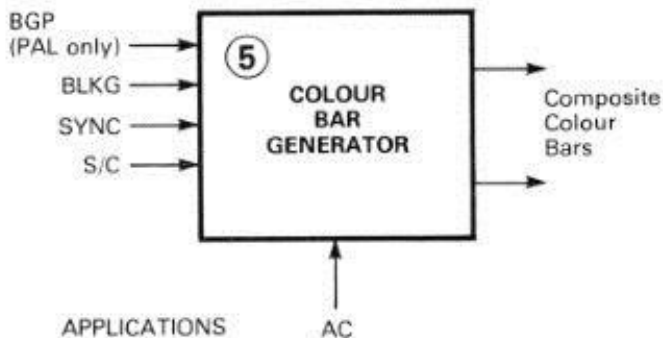
**BLACK PICTURE GENERATOR – BURST ADDER Edition –01 PAL –04 NTSC**



**COLOURIZER Edition –02 PAL –05 NTSC**



**CODER Edition –03 PAL –06 NTSC**



APPLICATIONS

- ① Colour Black Source
- ② Burst Adder
- ③ Colour Background Generator
- ④ Colourizing of Captions
- ⑤ Colour Bar Generator
- ⑥ Coded Signal Source

This document gives only a general description of the product(s) and shall not form part of any contract. From time to time changes may be made in the products or in the conditions of supply.

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