SONY

Display

Video Products
Technical Bulletin 2001-128

Worldwide Technical Bulletins for Broadcast and Professional Products

Date: **July 16, 2001**

Subject: **GAMMA MODIFICATION**

Model: ***BVM-D24E1WE,*** **BVM-D24E1WU**
BVM-D32E1WE, **BVM-D32E1WU**

Serial No: **2,000,001 AND HIGHER**

Italicized information in green applies to Europe, Middle East and Africa.

DESCRIPTION

CAUTION: Before proceeding—and for units already modified as described below—please refer to technical bulletin 302001130:

Waveform Distortion after Gamma Modification

Due to the gamma curve of CRTs used in the above-specified units, brightness in a low luminance area cannot be adjusted to achieve the level desired, e.g., comparable to that achieved by CRTs used in HDM-3030/2830 series models.

When the black level is adjusted using the BRIGHTNESS control, the luminance between 5IRE and 20IRE becomes low and cannot be adjusted properly.

Examples:

HDM-3030
100IRE/100NIT,20IRE/2.25NIT,10IRE/0.42NIT,1.4IRE/0.02NIT

BVM-D24 (when shipped)
100IRE/100NIT,20IRE/2.75NIT,10IRE/0.75NIT,1.4IRE/0.12NIT

BVM-D24 (after brightness adjustment to lower luminance level of black level)
100IRE/100NIT,20IRE/1.65NIT,10IRE/0.27NIT,1.4IRE/0.02NIT

To achieve a gamma curve with the desired brightness level in a low luminance area, perform one of the following modification procedures, based on the BK board part number (silkscreened on the board).

Customers in the USA—Modified BK and C boards are available for customers (USA only) who do not wish to perform the following modifications. Contact your local Regional Service Center.

ORDERING INFORMATION

NOTE: For regional service center and parts ordering information, refer to the following document, which lists all contact telephone numbers:

Technical Bulletin *001999000*

Canadian customers: Please order parts from your usual supplier.

PARTS REQUIRED (1-674-655-XX BK Board)

Part No.	Description	Qty.
1-216-651-11	Res, Chip, 1 kΩ	6
1- 216-623-11	Res, Chip, 68Ω	3
1-216-639-11	Res, 330Ω	3
1-216-643-11	Res, 470Ω	3
8-729-107-31	Transistor, 2SC3545	3
1-216-691-11	Res, 47 kΩ	3
1-163-275-11	Cap, 1000 pF	3

PARTS REQUIRED (1-674-568-XX BK Board)

Part No.	Description	Qty.
1-216-651-11	Res, Chip, 1 kΩ	6
1- 216-623-11	Res, Chip, 68Ω	3
1-216-295-11	Res, Chip, 0Ω	3
1-216-639-11	Res, 330Ω	3
8-729-107-31	Transistor, 2SC3545	3
1-163-275-11	Cap, Chip, 1000 pF	3

MODIFICATION PROCEDURE
BK Board (1-674-655-XX)

Side B (See Figure 1.)

1. Replace R274, R474, and R674 (4.7 kΩ) with 1 kΩ chip resistors.
2. Replace R275, R475, and R675 (1.2 kΩ) with 68Ω chip resistors.
3. Replace R290, R490, and R690 (4.7 kΩ) with 1 kΩ chip resistors.
4. Remove 100Ω chip resistors R242, R442, and R642.
5. Remove diodes D110, D310, and D510 (1SS352).

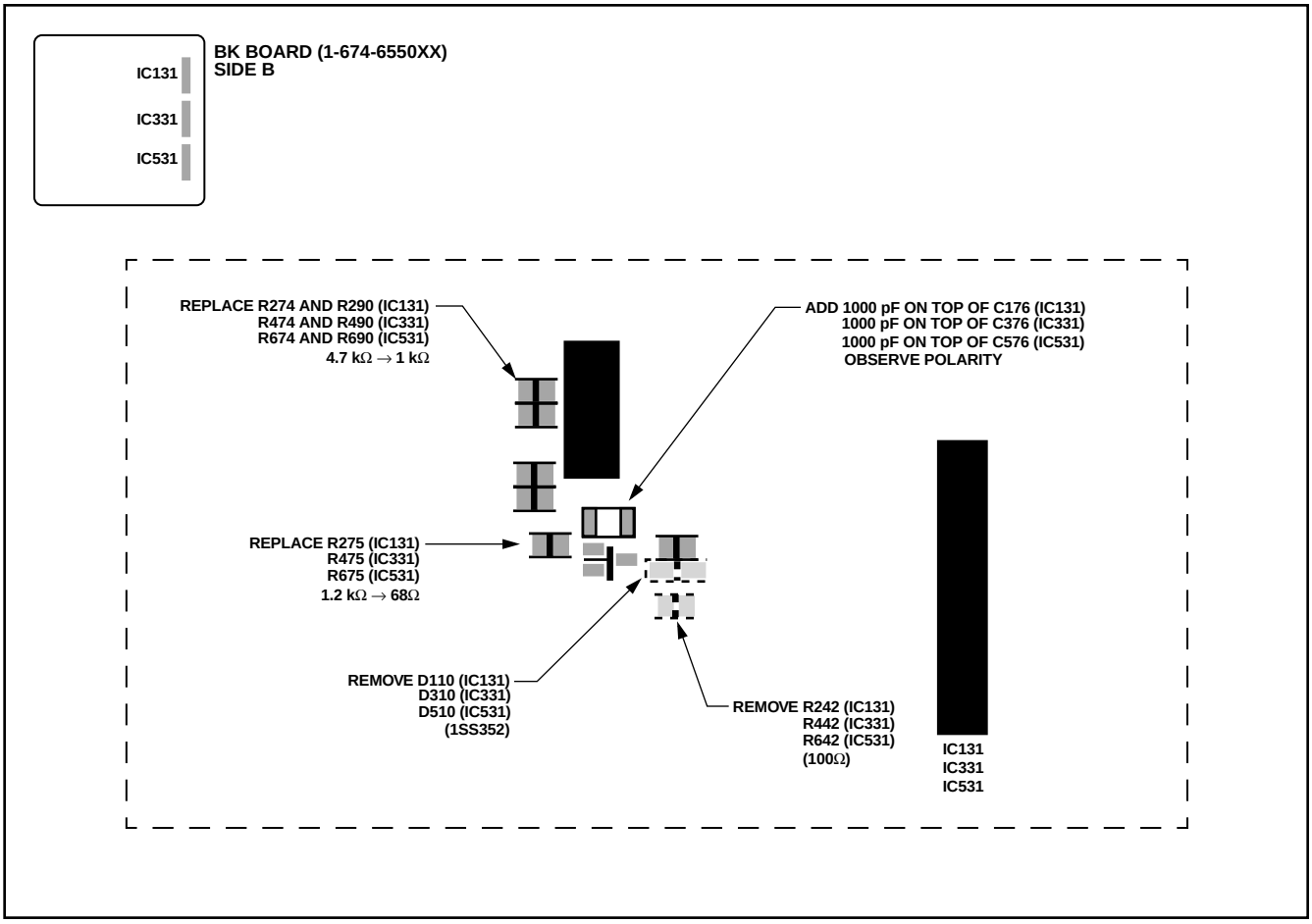

Figure 1

(See Figure 2.)

6. Solder one lead of 330Ω chip resistor vertically to IC131 pin 3.
7. Solder one lead of 470Ω chip resistor vertically to IC131 pin 2.
8. Position new 2SC3545 transistor with I.D. number facing down, and solder:
   - Emitter to remaining lead of 330Ω resistor
   - Base to remaining lead of 470Ω resistor
9. Solder new 47 kΩ resistor between collector and base of new transistor.
10. Repeat steps 6 through 9 for IC331 and IC531.
11. Solder three new 10 mm jumpers (AWG28), respectively, between the Collector of each of the three transistors added in step 8 and :
    - IC131 pin 1
    - IC331 pin 1
    - IC531 pin 1

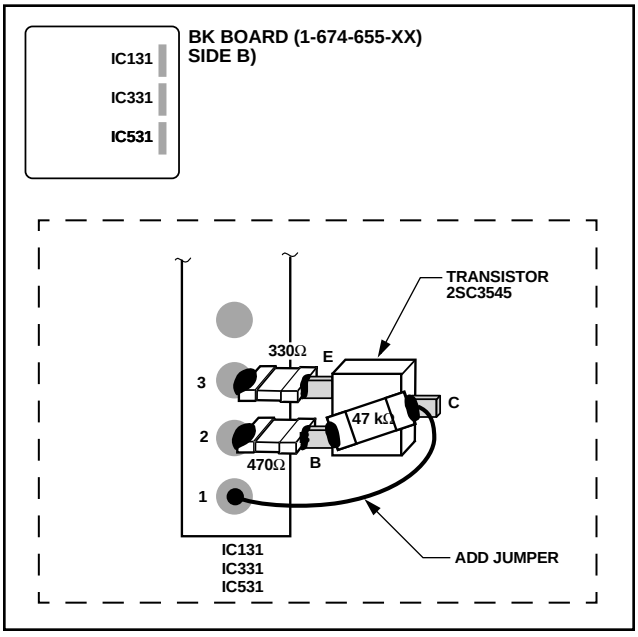

Figure 2

CAUTION: Before proceeding, refer again to technical bulletin 302001130; it may *not* be necessary to prepare or install the resistor/jumper combination described below.

Preparation—Resistor/Jumper
(See Figure 3.)

12. Prepare three resistor/jumper combinations:
    a. Shorten one lead of 22Ω resistor to 3mm
    b. Solder 25 mm jumper (28AWG) to other lead of 22Ω resistor.
    c. Cover resistor/jumper combination with 15 mm insulation tube (1.5 mm diameter).

Installation—Resistor/Jumper

13. Solder free end of jumper to collector of Q134.
14. Solder other resistor lead to IC131 pin 3.
15. Thread UL tubing to cover solder point at pin 3.
16. Repeat installation steps 13, 14, and 15 for Q334/IC331 and Q534/IC531, respectively.

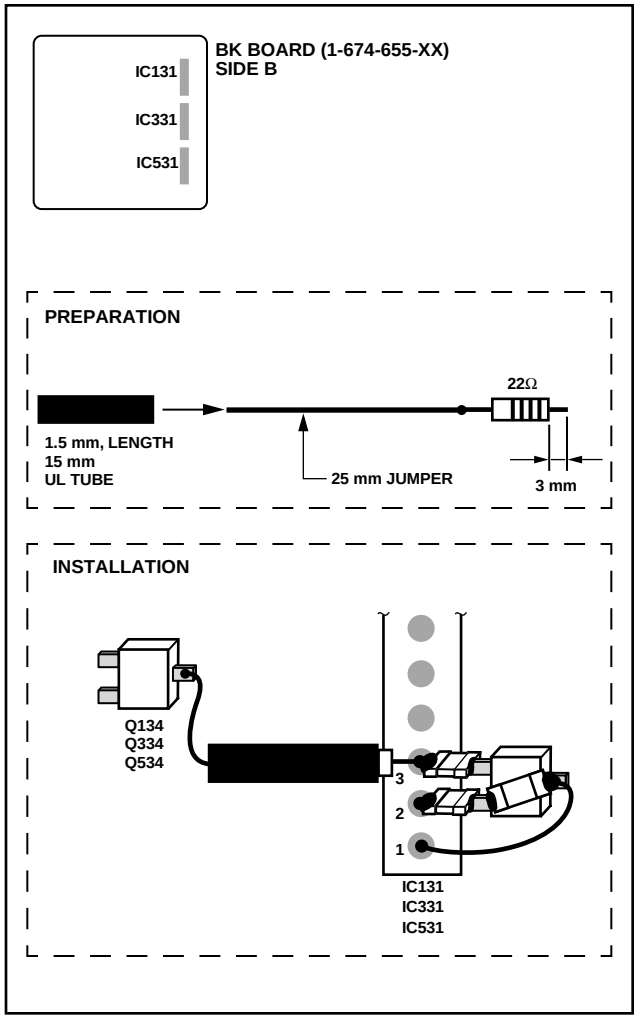

Figure 3

MODIFICATION PROCEDURE
BK Board (1-674-568-XX)

Side B (See Figure 4.)

1. Replace R274, R474, and R674 (4.7 kΩ) with 1 kΩ chip resistors.
2. Replace R275, R475, and R675 (1.2 kΩ) with 68Ω chip resistors.
3. Replace R290, R490, and R690 (4.7 kΩ) with 1 kΩ chip resistors.
4. Remove 100Ω chip resistors R242, R442 and R642.
5. Remove diodes D110, D310 and D510 (1SS352).
6. Solder new 22Ω chip resistors to R298, R498, and R698.
7. Solder new 330Ω chip resistors to R297, R497, and R697.
8. Solder new transistors, with I.D. number facing up, to Q190, Q390, and Q590.

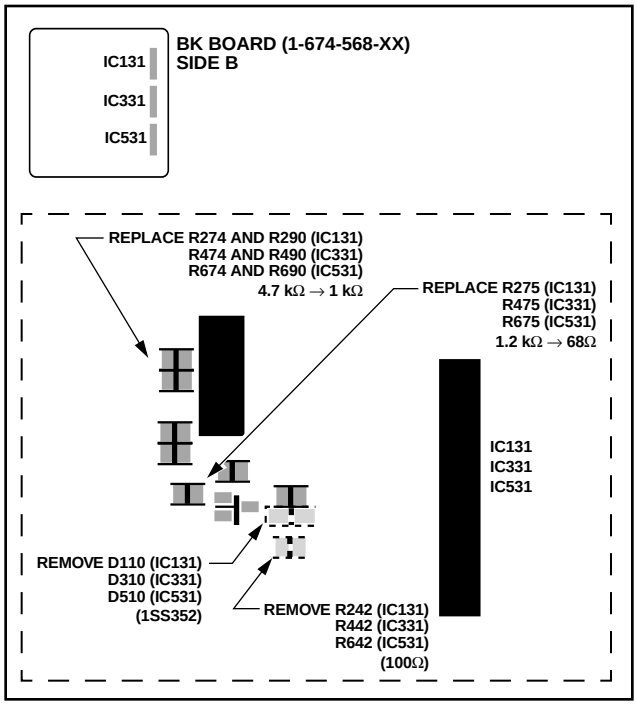

Figure 4

CONFIRMATION/ADJUSTMENT

1. Input a color bar signal, and confirm that noise and abnormal color are not observed.
2. Aging Test: Input a 100% white signal continuously for approximately 30 minutes.
3. Auto Landing: Perform the landing adjustment.
4. Auto Setup: Input a color bars signal, and perform the CONTROL RESET ADJUSTMENT/AUTO.
5. Adjust White Balance: Input 100IRE and 20IRE signal, and adjust to 100IRE/100nit and 20IRE/2.7nit.

Adjustment with Reference Monitor: If a reference monitor (i.e., HDM-3030/2830) is available, perform the following steps after modification and confirmation/ adjustment:

1. Using a VG-854 signal generator, input 100IRE and 20IRE (1080/60I) signals), and measure their luminance.
2. Adjust the white balance of BVM-D24/D32 series to meet those values.

When complete, gamma curves in low luminance are matched in both HDM-3030/2830 and BVM-D24/D32.