Application Note

Panoramic view circuit

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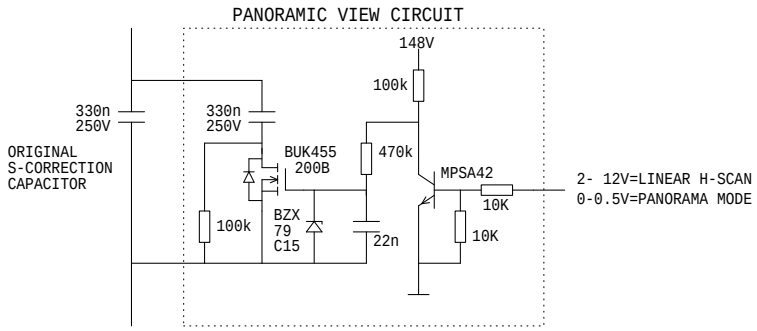
Summary:

This application note is a short description of the panoramic view mode for wide-screen tubes. This mode allows a hardware switch-over to a different horizontal S-correction, which can be used to display pictures with a 4:3 aspect ratio on a wide-screen (16:9) tube. The result is screen filling picture with reasonably linearity in the centre area and an increasingly expanded picture at the left and right hand side of the screen.
With a slightly reduced horizontal scan amplitude and a slightly increased vertical scan amplitude, this mode is generally accepted as a reasonable compromise for displaying 4:3 pictures on a 16:9 picture tube.

Panoramic view circuit

Technical description

The circuit diagram on the next page shows a complete horizontal output stage, optimised for the Philips 16kHz wide-screen tubes. This principle is also valid for different frequencies.



For a linear picture the digital control command must be a logic "1". The collector voltage of the MPSA42 will be low. The gate source voltage of the power MOS FET will be approximately -0.6V (FET switch open) and only one S-correction capacitor is active.
A logic "0" control will make the collector voltage of the MPSA42 high, the MOS-FET will be switched on and the second S-correction capacitor is activated. The gate-source voltage is filtered with a very long time constant, to block the high level line frequent signal.
The drain-source resistor is added to pre charge the second S-correction capacitor. This will prevent damage of the power MOS FET during switch on.

Application hints

1 In the panoramic mode some horizontal under-scan and vertical over-scan may be attractive. In a set with I²C bus, the geometry settings can be switched simultaneously with the S-correction capacitor. The value of the switched S-correction capacitor and the geometry settings can be chosen for the best visual result.

2 Philips wide-screen tubes do **not** need modulated S-correction. Using the simple diode modulator configuration will save costs, improve the performance and reduce power dissipation (especially in the line output transformer).

3 A larger S-correction capacitor will result in a reduced horizontal scan amplitude. For full horizontal scan in the panoramic view mode, it may be necessary to increase the scan voltage somewhat. If the collector voltage of the switching transistor (BU2508A(F)) becomes too high, a tap on the line output transformer can be used, or the anode voltage (EHT) can be slightly reduced.

Circuit diagram