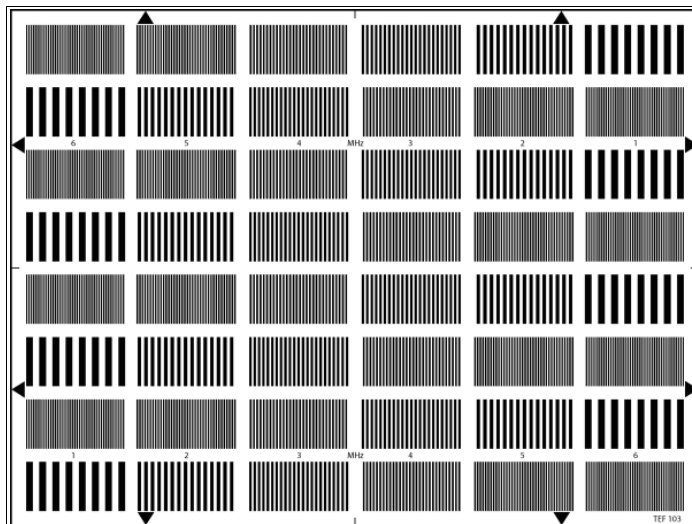




MULTI BURST TEST CHART (1 - 6 MHz)

REFLECTANCE



The test chart is designed for resolution measurements, mainly for visual tests.

The chart consists of 8 rows with each 6 fields of multiburst of frequencies from 1 to 6 MHz. The order of fields is switched in every second row. Only a limited depth of modulation measurement is possible because there is no 0.5 MHz reference on the chart. You can use the 1 MHz as a reference but be aware, that the result is not comparable with usual measurements with e.g. T03, T07, TE99 and TE 07. But there are more fields with different frequencies better distributed over the picture area compared to e.g. the T07, TE99 and TE107.

Measuring equipment: video oscilloscope, preferably with memory function.

Measuring conditions: The camera settings must be as follows

Shading correction: On
 Aperture correction: OFF
 Gamma correction: OFF
 Contour correction: OFF
 Color correction: OFF

Iris: F/5.6 for 2/3" CCD, F/4 for 1/2" CCD

The test chart is evenly illuminated so that for the frequency burst at 1 MHz the amplitude of the video signal at the output of the correctly positioned and focussed camera is 0% (0V) for the black bars and 100% (700mV/ 75 Ohms) for the white bars. Care must be taken to avoid clipping of the signal to be measured at the black and white level.



Measurement procedures

Measurements can be made on the various camera output signals, but preferably on the Y luminance signal (or coded Y with perfect B and W balance). The measurement is made at the center of the image and at the corners so that account is taken of lateral chromatic aberration of the lens. In addition to determining camera response to the particular value of 5 MHz, measurement of the response at the other frequencies serves to plot a curve giving contrast loss according to the spatial frequency of the test chart. Frequency bursts of 1MHz and 2 to 6 MHz are recommended for this measurement. The measurements give the contrast loss of the camera response at the value of 2 to 6 MHz. The obtained response is a contrast transfer function (CTF).

Mathematical relations can be used to calculate the MTF according to the CTF values:

$$\text{MTF}(N) = \pi/4[\text{CTF}(N) + 1/3 \text{CTF}(3N) - 1/5 \text{CTF}(5N) + 1/7 \text{CTF}(7N) - 1/9 \text{CTF}(9N) + 1/11 \text{CTF}(11N) \dots]$$

where N is spatial frequency of the test chart analysed; N in TVL/H

