

ANNEX A
TO DECISION NUMBER SIXTEEN
TEST PATTERNS USED IN CALIBRATION

The test patterns shall be obtained by the States Parties on removable magnetic disc from the OSCC, or shall be created based on the descriptions below.

Figure 1 of this Annex illustrates the six test patterns that shall be used in the calibration process. The overall image size shall be 480 image elements high by 512 image elements wide. Test Patterns 1, 2, 3, 5 and 6 shall have as a lower border a rectangular region 5 image elements high and 512 image elements wide with grey scale value 127. Test Pattern 4 shall have, as its lower border, a rectangular region 6 image elements high and 512 image elements wide with grey scale value 127. Each test pattern shall be referred to by its own coordinate system, beginning at $x = 0$, $y = 0$ in the upper left corner.

1. Pattern 1

Pattern 1 shall be a rectangular region 75 image elements high by 512 image elements wide, consisting of 15 adjoining bar groups. Each bar group shall consist of two bar pairs. All of the light bars shall have grey scale value 230 and all of the dark bars shall have grey scale value 20. All bars in the pattern shall have the same height as the region. The width of the bars in each successive bar group, from first to fifteen shall be: 21, 16, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2 and 1. The first bar shall be a dark bar whose uppermost left corner shall be designated as reference position at $x = 0$, $y = 0$.

2. Pattern 2

Pattern 2 shall consist of 512 adjoining bars, all of height 75 image elements, and all of width 1 image element. The grey scale values of the first 256 bars shall begin with 0 for the first bar and shall increase sequentially by 1 to 255 for the 256th bar. The grey scale values of the remaining 256 bars shall begin with 255 for the 257th bar and shall decrease sequentially by 1 to 0 for the 512th bar.

3. Pattern 3

Pattern 3 shall consist of 16 adjoining bar pairs of height 75 image elements and width 16 image elements per bar. Table 1 specifies the dark and light bar grey scale values for each bar pair, beginning with a dark bar at $x = 0$, $y = 0$.

4. Pattern 4

Pattern 4 shall be a rectangular region 65 image elements high and 512 image elements wide and shall have two components. The first component shall consist of a row of 12 adjoining bar groups, with all bar groups having the same starting (smallest) $y = 2$ coordinate. Each bar group shall consist of three bar pairs. All bars shall have a 5:1 aspect (height to width) ratio. Starting with a dark bar, the bars in a bar group shall alternate from dark to light. The first bar group shall begin at $x = 5$, and shall have width 12. Table 2 specifies the width, height and dark and light bar grey scale values for each

bar group. The bar group amplitude values are derived from the grey scale values of the light and dark bars in each group and are provided in Table 2.

The second component of Pattern 4 shall be a noise region, that is a rectangular region 50 image elements high and 100 image elements wide whose upper left corner shall be at $x = 399$, $y = 34$. The image element grey scale values in the noise region shall be randomly distributed. The distribution shall be gaussian, with mean 64, variance 1.2 and two-dimensional correlation radius of 2.5.

All image elements in Pattern 4 not otherwise assigned an grey scale value shall be assigned a background grey scale value of 200.

5. Pattern 5

Pattern 5 shall be a rectangular region 64 image elements high and 512 image elements wide with one component, which shall be an area of dark image elements (grey scale value 120) that had been a rectangle prior to being rotated. The area shall be contained within and superimposed on a background of light image elements (grey scale value 240). The location of the area shall be defined by the corner coordinates, beginning with the upper left and proceeding counterclockwise:

$x_1 = 103$, $y_1 = 31$; $x_2 = 104$, $y_2 = 46$; $x_3 = 403$, $y_3 = 23$; and $x_4 = 402$, $y_4 =$

6. Pattern 6

Pattern 6 shall be a rectangular region 95 image elements high by 512 image elements wide. Within the region shall be 15 adjoining bar groups, each consisting of two bar pairs, starting with a dark bar. Characteristics of the bar groups, prior to bar group rotation and pattern shifting, shall be as specified below and listed in Table 3.

The width of the bars in successive bar groups shall decrease, in decrements of one image element, beginning with 15 image elements for the first (largest) bar group to one image element for the narrowest bar group. The height of the bar groups shall decrease, in three line decrements, from 60 horizontal lines for the largest group to 18 horizontal lines for the smallest. The first bar shall be a dark bar with upper left coordinates at $x = 32$, $y = 24$. All bar groups shall have their lower edge at $y = 83$, prior to rotation of the bar groups. The grey scale values for the dark bars in successive bar groups shall increase, in increments of five, from 130 for the first group to 200 for the fifteenth group. The light bars in all groups shall be at a constant grey scale value of 240.

The entire test pattern shall be rotated five degrees counterclockwise using $x = 32$, $y = 83$ as the center of rotation. All image elements in Pattern 6 not otherwise assigned a grey scale value shall be assigned a grey scale value of 240.

After rotation, test pattern 6 shall be adjusted to simulate phase errors as follows. Rows 1, 5, 9, 13, ... $4k+1$..etc. shall remain unshifted. Rows 2, 6, 10, 14, ... $4k+2$..etc. shall be shifted one image element to the right. Rows 3, 7, 11, 15, ... $4k+3$..etc. shall be shifted two image elements to the right, and rows 4, 8, 12, 16, ... $4k$..etc. shall be shifted three image elements to the right. All image elements in Pattern 6 not assigned an grey scale value by this process shall be assigned a grey scale value of 240.

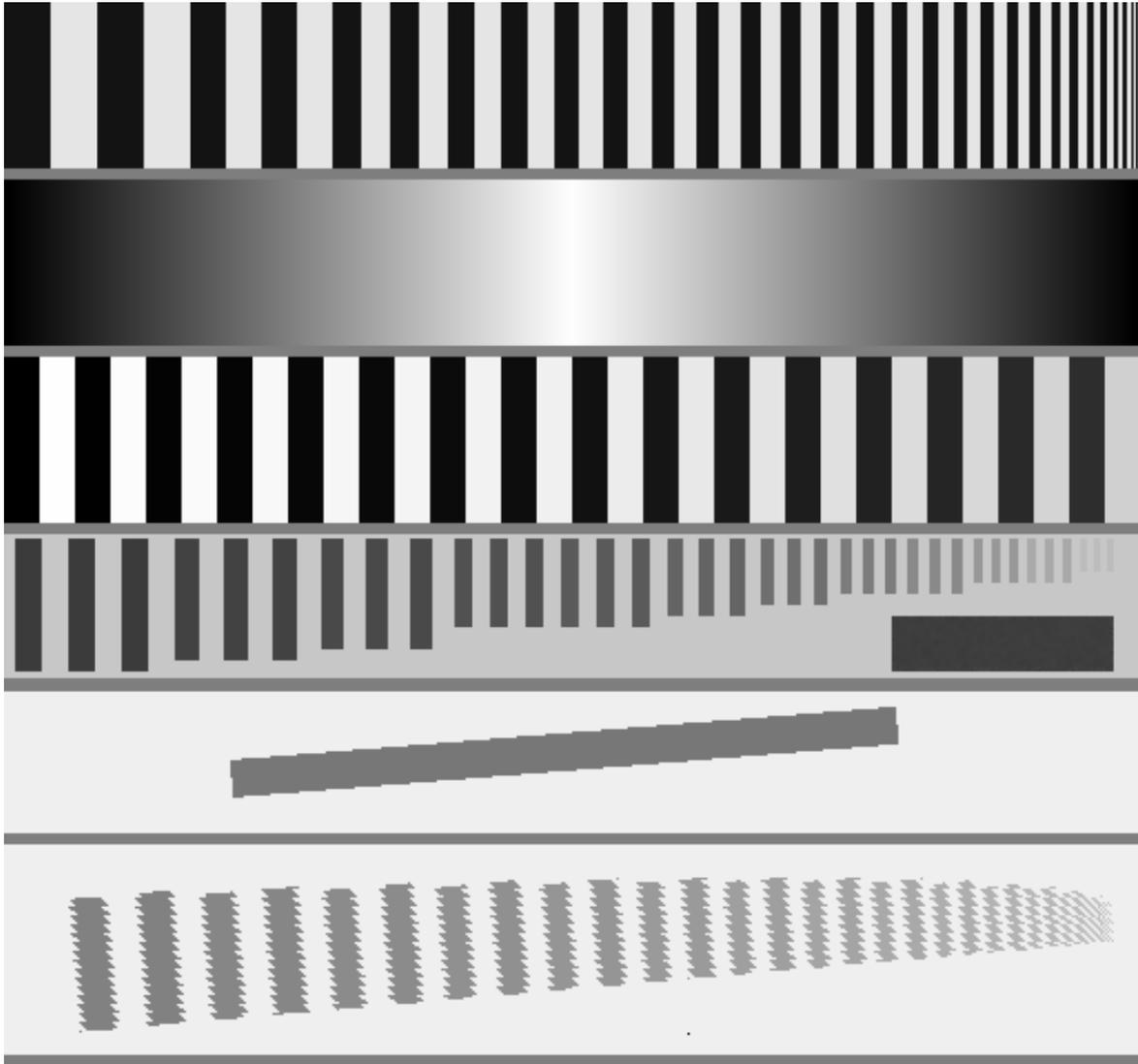


FIGURE 1
DIGITAL TEST PATTERNS USED IN CALIBRATION

Bar Group Number	Dark Bar Grey Scale Value	Light Bar Grey Scale Value
1	0	255
2	2	253
3	4	251
4	6	249
5	8	247
6	10	245
7	12	243
8	14	241
9	18	237
10	22	233
11	26	229
12	30	225
13	34	221
14	38	217
15	42	213
16	46	209

TABLE 1
BAR GREY SCALE VALUES FOR TEST PATTERN 3

Bar Group Number	Bar Width	Bar Height	Dark Bar Grey Scale Value	Light Bar Grey Scale Value	Bar Group Amplitude
1	12	60	60	200	70.0
2	11	55	67	200	66.5
3	10	50	74	200	63.0
4	8	40	82	200	59.0
5	8	40	91	200	54.5
6	7	35	101	200	49.5
7	6	30	112	200	44.0
8	5	25	125	200	37.5
9	5	25	138	200	31.0
10	4	20	153	200	23.5
11	4	20	170	200	15.0
12	3	15	189	200	5.5

TABLE 2
BAR CHARACTERISTICS FOR TEST PATTERN 4

Bar Group Number	Bar Width	Bar Group Height	Dark Bar Grey Scale Value	Light Bar Grey Scale Value	Bar Group Amplitudes
1	15	60	130	240	55
2	14	57	135	240	52.5
3	13	54	140	240	50
4	12	51	145	240	47.5
5	11	48	150	240	45
6	10	45	155	240	42.5
7	9	42	160	240	40
8	8	39	165	240	37.5
9	7	36	170	240	35
10	6	33	175	240	32.5
11	5	30	180	240	30
12	4	27	185	240	27.5
13	3	24	190	240	25
14	2	21	195	240	22.5
15	1	18	200	240	20

TABLE 3
BAR CHARACTERISTICS FOR TEST PATTERN 6