

IEEE Std 167A-1980 Facsimile Test Chart

Pattern Descriptions

The pattern number given in the following description may be identified from Figure 1. This chart is designed for scanning in either direction, horizontally across the page.

IEEE Std 167-1966, Test Procedure for Facsimile was based on previous issues of the IEEE Test Chart.

Patterns 1 and 2. 96 lines per inch (3.78 lines per millimeter) consisting of 48 dark and 48 light lines, substantially equal in width. In pattern 1, the black corresponds approximately to step 2 and gray to step 7 of pattern 8. In pattern 2, white represents paper white and gray to approximately step 11. These patterns are intended for generating low-modulation high-frequency signals at both ends of the density scale—useful for testing modulation characteristics at edges of band in a frequency shift system.

Patterns 3, 4, and 5. Vertical bar patterns at 10, 50, and 96 lines per inch (0.394, 1.97, and 3.78 lines per millimeter) of substantially equal width — useful for square-wave testing at several keying frequencies.

Pattern 6. A continuous density wedge designed so that at equal intervals of distance across the page, the variation in reflectance will be roughly equally perceptible to the eye. Reading left-to-right across the page, the relative reflection density values at the heavy dots are approximately as shown in Table 1. Pattern 6 is useful for cases where intermediate reflection densities are needed between the steps in Patterns 7 and 8.

Table 1
Pattern 6 Density Values

Dot	1	2	3	4	5	6	7
Density	1.95	1.75	1.23	0.73	0.38	0.14	0.03

Patterns 7 and 8. Reversed step tablets of 15 steps with reflection densities corresponding to the approximately equal perceptibility modified to provide smaller low density increments. Consistent with conventional practice, paper white is understood to be equal to 0.00 in density (approximately 0.07 on an absolute scale). For patterns 7 and 8 the relative reflection densities are shown in Tables 2 and 3 respectively.

These patterns will assist in appraising gradient and absolute scale. They are useful for checking half-tone characteristics. Reversed sequences are used since the dynamic half-tone characteristics may differ for a rising density or a falling density scale.

Pattern 9. National Bureau of Standards (NBS) type repeating tri-bar resolution test pattern. Twelve complete sets of three-line patterns are repeated across the sheet. Alternate groups are of different line spacing. Density values are shown in Table 4. This pattern is useful for checking definition.

Pattern 10. Rectangle with 45° diagonal marks at each corner — useful for checking index of cooperation, skew, and paper-feed error.

Patterns 11 and 17. White wedge on black background and black wedge on white background, 0.07 in (1.78 mm) to zero — useful for checking single-line definition.

Pattern 12. W. and L. E. Gurley type Pestrecov Star pattern. Outer circle 50, second circle 100, and third circle 200 lines per inch (1.97, 3.94, and 7.87 lines per millimeter).

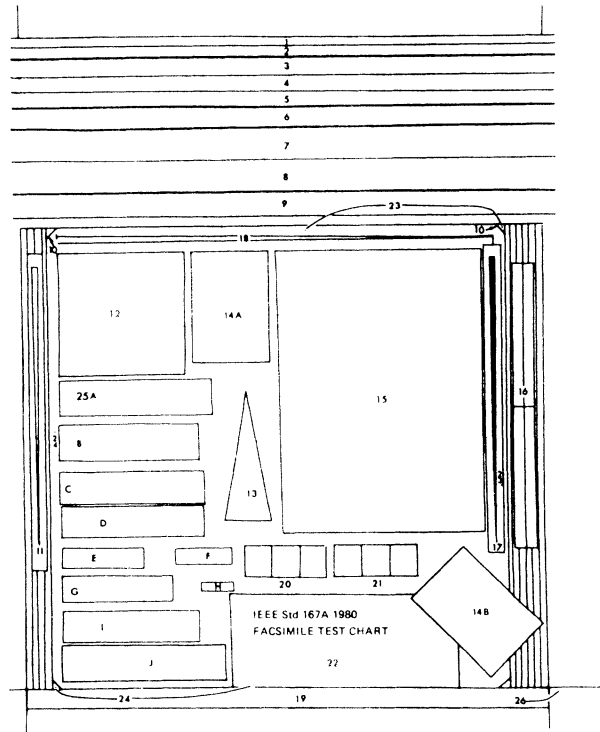


Fig 1
Pattern Arrangement

Pattern 13. Truncated fan-type multiple-line test pattern. Calibrated in lines per inch—useful for checking multiple-line definition along scanning line, envelope delay distortion, and ringing.

Patterns 14A and 14B. NBS type Microcopy Resolution test pattern. Numerals indicate the number of cycles (one black plus one white line) per millimeter (that is, line pairs)—useful in checking high definition systems.

Pattern 15. Photograph with detail in high-light and shadow. The limiting densities of the photograph approximate those of test patterns 7 and 8.

Pattern 16. Vertical gray steps with relative reflection densities of approximately 0.95 and 0.27 — useful in testing rising and falling transient characteristics and level variations.

Pattern 18. Horizontal "V" pattern with 0.13 in (3.3 mm) opening. Number of scanning line crossings of both lines, multiplied by 7.7 will equal number of lines per inch (multiply by 0.3 for number of lines per millimeter).

Pattern 19. "Fence" pattern with 0.01 in (0.254 mm) lines 0.10 in (2.54 mm) apart—useful for checking jitter and measuring available line length.

Patterns 20 and 21. Halftone dot screens. Reproduced in approximately 10, 50 and 90 percent black, left to right and at 65 dots per inch (2.56 dots per millimeter) at a 45° angle for pattern 20, and 120 dots per inch (4.72 dots per millimeter) for pattern 21.

Pattern 22. Title and credit box. Three sizes of Times Roman type font.

Patterns 23 and 24. Fiducial dots forming a 3, 4, 5 right triangle—useful for indicating the presence of skew by comparing the hypotenuse of the two patterns.

Pattern 25. Type faces as indicated—useful for checking readability.

Pattern 26. Extension lines to permit measurement of available line and useful length of copy.

Table 2
Pattern 7 Density Test

Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Density	0.01	0.03	0.13	0.25	0.41	0.56	0.70	0.84	0.94	1.05	1.17	1.32	1.49	1.66	1.80

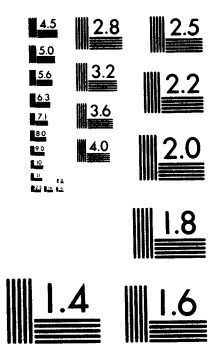
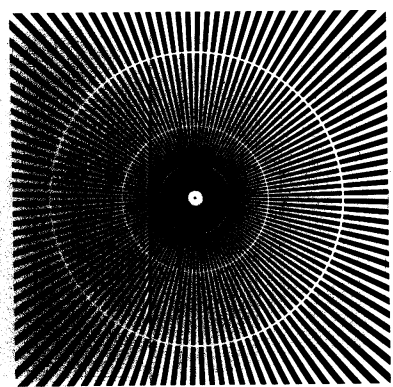
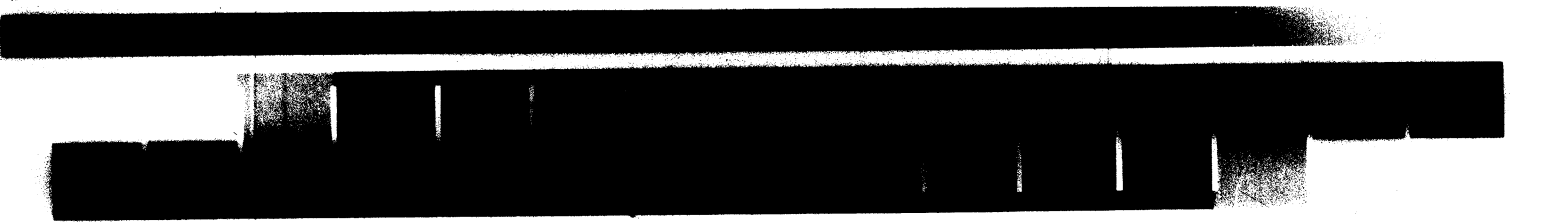
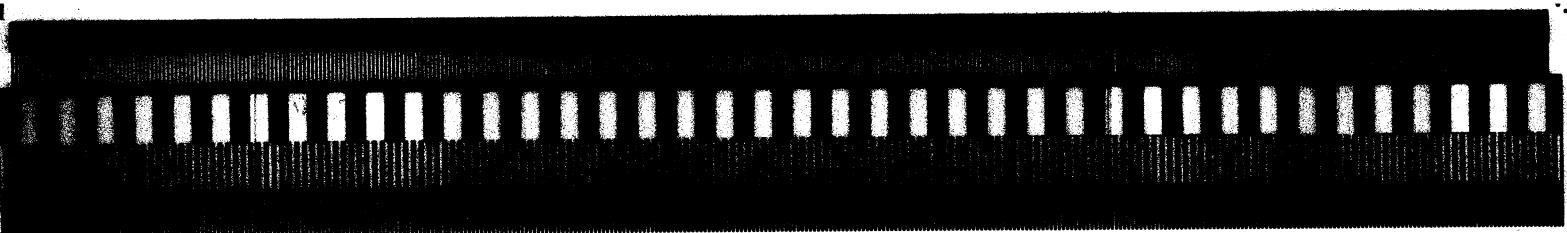
Table 3
Pattern 8 Density Values

Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Density	1.70	1.55	1.39	1.25	1.16	1.06	0.94	0.84	0.70	0.56	0.43	0.27	0.15	0.05	0.01

Table 4
Pattern 9 Density Values

	Group A						Group B					
	1	2	3	4	5	6	1	2	3	4	5	6
Lines per Inch	61.0	86.4	122	173	244	345	406	284	203	142	102	71.1
Lines per Millimeter	2.40	3.40	4.80	6.81	9.60	13.6	16.0	11.2	7.99	5.59	4.02	2.80

NOTE: Group A has coarse lines starting at the left. Group B has coarse lines starting at the right.

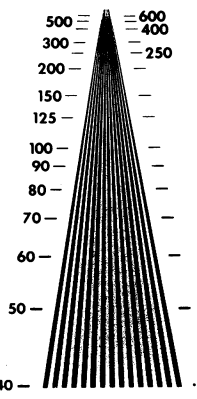


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XYZabcdefghijklmnopqrst
uvwxyz0123456789 OCR-B

ABCDEFGHIJKLMN OPQRSTUVWXYZ
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z1234567890 Elite



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IEEE Std 167A-1980 FACSIMILE TEST CHART

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