



EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 280

February 1994

Source: ETSI TC-TE

Reference: T/TE 05-10

ICS: 33.080

Key words: Facsimile, Group 4, ISDN

**Terminal Equipment (TE);
Facsimile group 4 class 1 equipment
on the Integrated Services Digital Network (ISDN)
Terminal testing**

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 16

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Terminal Equipment (TE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is based upon a number of CCITT Recommendations and is closely related to 4 other ETSs. Details of these documents are highlighted in Clauses 1 (Scope) and 2 (Normative references) of this ETS.

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1 Scope

This ETS contains the details of the Terminal tests for equipment offering group 4, class 1 facsimile functionality.

This ETS is closely related to 4 other ETSs on group 4 class 1 facsimile equipment:

ETS 300 080 [1]	"Integrated Services Digital Network (ISDN); ISDN lower layer protocols for telematic terminals".
ETS 300 087 [2]	"Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; Functional specification of the equipment".
ETS 300 112 [3]	"Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; End-to-end protocols".
prETS 300 155 [4]	"Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; End-to-end protocols tests".

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For these undated references the latest edition of the publication referred to applies.

- [1] ETS 300 080: "Integrated Services Digital Network (ISDN); ISDN lower layer protocols for telematic terminals".
- [2] ETS 300 087: "Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; Functional specification of the equipment".
- [3] ETS 300 112: "Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; End to end protocols".
- [4] prETS 300 155: "Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; End to end protocols tests".
- [5] CCITT Recommendation T.6 (1988): "Facsimile coding schemes and coding control functions for group 4 facsimile apparatus".
- [6] CCITT Recommendation T.563 (1991): "Terminal characteristics for group 4 facsimile apparatus".
- [7] CCITT Recommendation T.521 (1992): "Communication application profile BT0 for document bulk transfer based on the session service (according to the rules in T.62 bis)".
- [8] CCITT Recommendation T.503 (1991): "A document application profile for the interchange of group 4 facsimile documents".
- [9] CCITT Recommendation T.21 (1988): "Standardized test charts for document facsimile transmissions".
- [10] CCITT Recommendation F.184 (1988): "Operational provisions for the international public facsimile service between subscriber stations with group 4 facsimile machines (telefax 4)".
- [11] CCITT Recommendation F.200 (1988): "Teletex service".

[12] CCITT Recommendation T.433 (1992): "Document transfer and manipulation (DTAM) - Services and protocols - Protocol specification".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the definitions given in the relevant CCITT series of Recommendations shall apply.

3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply.

CIL	Call Identification Line
ETS	European Telecommunication Standard
ETSI	European Telecommunications Standards Institute
ISDN	Integrated Services Digital Network
PEL	Picture Element
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
SUT	System Under Test

4 Test for the coding algorithm of Group 4 facsimile

4.1 Introduction

The coding algorithm for Group 4 facsimile is defined in CCITT Recommendation T.6 [5] and is tested as stated below.

The receiving capability of an equipment is tested using an electronic test chart, defined in Annex A and called T6Test, and with the test procedure defined in Test Number R1.

The transmission capability of an equipment is tested by the scanning tests defined in Clause 6.

4.2 Test R1

This test requires the following configuration:

- SUT receiving;
- tester transmitting.

Table 1: Test for reception

Test N°	Description	Reference
R1	Tester sends chart T6TEST. Check that SUT displays received image which shall have: - areas 1, 2, 3 and 4 with monotonic boundary between the white and black parts of the image; - areas 5, 6, 7 and 8 correctly represented.	

5 Tests for printing functions of Group 4 facsimile

5.1 Introduction

Printing functions of Group 4 facsimile shall be tested according to the set of tests reported in this Clause. Tests are based on an appropriate test chart whose definition is given in Annex B.

5.2 Set of tests

Printer functions that shall be tested have mainly been derived from the CCITT Recommendation T.563 [6].

They are:

- correct image representation: the left side of the copy has to correspond to the left side of the original, and the top side of the copy has to correspond to the top side of the original;
- correct page orientation (vertical);
- guaranteed reception area (for ISO A4 paper format);
- reception resolution;
- correct paper positioning (centred);
- printing capabilities: number of pels/line, scan line length, nominal number of scan lines/page, blanking margin handling.

Test sequences are reported in table 2.

This set of tests requires the following configuration:

- SUT receiving;
- tester transmitting.

Table 2: Test sequences

Test No.	Description	Reference
R2	<p>Test for correct representation of image and correct orientation of page. Tester sends chart PFTEST. Check that:</p> <ul style="list-style-type: none"> - it is represented with the correct orientation. 	
R3	<p>Test for printing resolution. Tester sends chart PFTEST. Check that:</p> <ul style="list-style-type: none"> - area 1 is between 188,1 and 191,9 mm; - area 2 is between 237,6 and 242,4 mm. 	
R4	<p>Test for paper positioning. Tester sends chart PFTEST. Check that:</p> <ul style="list-style-type: none"> - area 2 includes the imaginary vertical line located in the centre of the page (105 mm from the left or right border). 	
R5	<p>Test for printing capability. Tester sends chart PFTEST. Check that:</p> <ul style="list-style-type: none"> - areas 3 , 4 , 5 , 6 , 7 , 8 are represented and separated correctly. 	
R6	<p>Test for guaranteed reception area. Tester sends chart PFTEST. Check that:</p> <ul style="list-style-type: none"> - area 9 is represented with at least 2 pixels width on each side of the page i.e. pels 78 to 1 151 inclusive (for 200 ppi resolution); - at least portions of areas 10, 11, 12, 13 enclosed in area 9 are represented correctly; - if Call Identification Line (CIL) is not printed at the top, then top side of area 9 is completely represented, and at least 4 steps of area 10 outside area 9 are represented i.e. lines 33 to 2 276 inclusive (for 200 ppi resolution); - if CIL is not printed at bottom, then bottom side of area 9 is completely represented, and at least 4 steps of area 11 outside area 9 are represented; i.e. lines 66 to 2 309 inclusive (for 200 ppi resolution). 	

6 Scanning tests

Table 3: Requirements for the scanner of the facsimile equipment based on test chart n° 3 of CCITT Recommendation T.21 [9]

Test No.	Description	Reference
T1	<p>Test for basic scanned line length is 219,46 mm \pm 1 %.</p> <p>SUT scans and transmits chart n° 3 of CCITT Recommendation T.21 [9] as purchased from CCITT.</p> <p>Verify that:</p> <ul style="list-style-type: none">- the length of the horizontal scales 3,21 on the top or the bottom of the page is represented by 1 481 to 1 511 pixels when decoded (for 200 ppi resolution);- the image reconstructed is similar to the test chart.	
T2	<p>Test for scanning density.</p> <p>SUT scans and transmits chart n° 3 of CCITT Recommendation T.21 [9] as purchased from CCITT.</p> <p>Verify that:</p> <ul style="list-style-type: none">- the length of the vertical scales 3,21 on the left or the right of the page is represented by 2 026 to 2 068 pels (for 200 ppi resolution).	
T3	<p>Test for position of the document.</p> <p>SUT scans and transmits chart n° 3 of CCITT Recommendation T.21 [9] as purchased from CCITT.</p> <p>Verify that:</p> <ul style="list-style-type: none">- the top edge of the reproduced document corresponds to one of the first 4 mm of the test chart (Area 3.22 gives an easy reference).	

Table 4: Interpretation of zones of test chart n° 3

Interpretation of zones on original chart	Requirement on transmitted document
<p><u>Zone 3.3</u></p> <p>Black band covering the entire page width. Permits adjustment of characteristic "black" signals through the entire sequence of the electronic devices.</p>	<p><u>Zone 3.3</u></p> <p>This zone shall be reproduced with a homogeneous black colour.</p>
<p><u>Zone 3.4 - 3.5</u></p> <p>Isolated black and white lines, variable thickness, 2 complementary bands.</p> <p>Using this group, it is possible to define the limits of resolution for isolated black and white lines.</p> <p>Line thickness are indicated in microns.</p>	<p><u>Zone 3.4 - 3.5</u></p> <p>Black lines: at least the line with a thickness greater than 100 microns shall be reproduced.</p> <p>The whole black colour shall be obtained for lines with thickness greater than 250 microns.</p> <p>White lines: it shall be possible to recognise the lines with a thickness greater than 200 microns.</p> <p>The lines shall be completely white for thickness greater than 350 microns.</p>
<p><u>Zone 3.9</u></p> <p>Alternating lines, 4 lines per mm (black and white line thickness 250 microns).</p> <p>Permits verification of standardized facsimile machine definition.</p>	<p><u>Zone 3.9</u></p> <p>The black lines on the received copy shall be separated.</p>
<p><u>Zone 3.10</u></p> <p>Alternating lines, 2 lines per mm (black and line thickness 500 mm).</p> <p>This scale represents the minimum permissible definition for a facsimile machine.</p>	<p><u>Zone 3.10</u></p> <p>The black lines on the received copy shall white be clearly separated.</p>

(continued)

Table 4: Interpretation of zones of test chart n° 3 (concluded)

Interpretation of zones on original chart	Requirement on transmitted document
<p><u>Zone 3.11</u></p> <p>Vertical and horizontal bundles (converging patterns).</p> <p>This group of 3 bundles of converging lines permits quantization of the limits of horizontal and vertical definitions. The numbers shown along the bundles indicate the thickness of black and white lines in microns.</p>	<p><u>Zone 3.11</u></p> <p>The 15 black lines on vertical bundles shall be distinguished from thickness of 300 microns. The horizontal bundle is not considered.</p>
<p><u>Zone 3.13</u></p> <p>Black lines, thickness 250 microns, spaced 750 microns.</p>	<p><u>Zone 3.13</u></p> <p>Black lines shall be reproduced.</p>
<p><u>Zone 3.14</u></p> <p>Black lines, thickness 250 microns, spaced 1 000 microns. The two scales of 3.13 and 3.14 simulate character downstrokes.</p>	<p><u>Zone 3.14</u></p> <p>They shall be reproduced.</p>
<p><u>Zone 3.1</u></p> <p>Band of alternating black and white lines, thickness 5 mm. Permits measurement of scanning distortion and adjustment of the black and white levels.</p>	<p><u>Zone 3.1</u></p> <p>This zone shall be reproduced.</p>
<p><u>Zone 3.2</u></p> <p>2 density level bands in complementary order. These scales permit measurement of the scanners analogue response curves and definition of the white/black decision threshold level in digital transmission devices. The two bands, covering nearly the width of the page, are reversed for verification of the uniformity of the scanners response over the entire length of the horizontal line. The densities, varying between 0,2 and 1,5, are indicated in the margin of each of the bands.</p>	<p><u>Zone 3.2</u></p> <p>The grey gradation (level between 0,2 and 1,2) may be represented with black colour. Levels 0,8; 1; 1,2 shall not be represented with white colour.</p>

7 Miscellaneous tests

7.1 Automatic answering

Test by inspection.

7.2 User selected printing of Call Identification Line at the top of or below guaranteed reproducible area

Test by inspection.

7.3 Call Identification Line format according to CCITT Recommendations F.184/F.200

Receiving: test by inspection on received copy.

Transmitting: see test MG1 in prETS 300 155 [4].

7.4 Maximum receiving time

The tester sends an electronic synthesized "Slerexe letter" at 200 pels/25,4 mm.

Test that the transfer time, as measured from having received CONNECT-message to having received DISCONNECT message at the receiving side, shall not be greater than 30 seconds.

7.5 Ability to restore operability after a power failure

Test by inspection after a power failure of 5 minutes.

7.6 Date and Time

The SUT initiates the call:

- a) Date and Time is not provided in D-channel (by the Network/Tester).

Test that the SUT provides Date and Time information.

- b) Date and Time is provided in D-channel (by the Network/Tester).

Test that the SUT uses Date and Time information provided by the Network/Tester.

7.7 Activity Log (if provided)

- a) Content of information in chronologic order.

Test by inspection.

- b) Bufferisation.

Test by inspection after 5 minutes power breakdown.

8 Testing conditions

8.1 Environment for tests

All tests shall be performed at:

- a) an ambient temperature in the range 15°C to 35°C;
- b) a relative humidity in the range 25 % to 75 %;
- c) an air pressure in range 86 kPa to 106 kPa;

with the exception that tests shall not be performed outside the operating limits for the Group 4 class 1 facsimile equipment as stated by the applicant.

8.2 Power supply limitations

For Group 4 class 1 facsimile equipments that are directly powered from the main supply, all tests shall be carried out within $\pm 5\%$ of the normal operating voltage as declared by the applicant. If the power supply is ac, the tests shall be conducted within $\pm 4\%$ of the stated frequency as declared by the applicant.

If Group 4 class 1 facsimile equipments are powered by other means and those means are not supplied as part of the facsimile equipment (e.g. batteries, stabilised ac supplies, dc, etc...), all aspects-3-tests shall be carried out within the power supply limit declared by the applicant.

Annex A (normative): Definition of test chart T6test

The test chart is composed of:

- areas 1, 2, 3 and 4: 4 triangles composed of some blank lines and of 432 test lines used to test "Horizontal Mode";
- areas 5, 6, 7 and 8: 4 strips composed of several lines used to test "Pass Mode", "Vertical Mode" and short run lengths of "Horizontal Mode".

The formal description of the test chart is given below. An idea of the test chart T6test is given in figure A.1 (areas 1, 2, 3 and 4) and figure A.2 (areas 5, 6, 7 and 8).

NOTE: B = Black pixel;

W = White pixel.

A.1 T6test at 200 lpi on A4 paper

Table A.1

Lines	Description	Notes
Top margin 1 - 65	1 728W (all white lines)	
Areas 1,2,3,4 "Horizontal mode" 65+(TR-1)*450+J 65+(TR-1)*450+18+I	1 728W [(TR-1)+(I-1)*4]W + [1728-(TR-1)-(I-1)*4]B	From line 66 to 1 865 TR (number of the triangle) = 1-4 J = 1-18 I = 1-432
Area 5 "Horizontal mode", short run lengths 1 866 - 1 883 1 883 + I	1 728W 144W+ [160-((I-1)*4+1)]B + [(I-1)*4+1]W + [160-((I-1)*4+2)]B + [(I-1)*4+2]W + [160-((I-1)*4+3)]B + [(I-1)*4+3]W + [160-((I-1)*4+4)]B + [(I-1)*4+4]W + 160B+ [(I-1)*4+4]W + [160-((I-1)*4+4)]B + [(I-1)*4+3]W + [160-((I-1)*4+3)]B + [(I-1)*4+2]W + [160-((I-1)*4+2)]B + [(I-1)*4+1]W + [160-((I-1)*4+1)]B + 144W	From line 1 884 to 1 923 I = 1-40
Area 6 1 924 - 1 941 1 941 + I	"Vertical mode 1" 1 728W (all white lines) 84W+ two cycles of pattern {30B+(I-1)W+[60-(I-1)]B+ [(I-1)*2]W+[120-(I-1)*2]B+ [(I-1)*3]W+[180-(I-1)*3]B+ [180-(I-1)*3]B+[(I-1)*3]W+ [120-(I-1)*2]B+[(I-1)*2]W+ [60-(I-1)]B+[(I-1)]W+30B} +84W	From line 1 942 to 2 001 I=1-60

(continued)

Table A.1 (concluded)

Lines	Description	Notes
Area 7 2 002 - 2 019 2 019 + I	"Vertical mode 2" 17 28W 84W+ two cycles of pattern {30W+(I-1)B+[60-(I-1)]W+ [(I-1)*2]B+[120-(I-1)*2]W+ [(I-1)*3]B+[180-(I-1)*3]W+ [180-(I-1)*3]W+[(I-1)*3]B+ [120-(I-1)*2]W+[(I-1)*2]B+ [60-(I-1)]W+(I-1)B+60W}+ 84W	From line 2 020 to 2 079 I = 1 - 60
Area 8 2 080 - 2 097 2 098 - 2 132 2 133 - 2 167 2 168 - 2 202 2 203 - 2 237 2 238 - 2 276	"Pass mode" 1 728W 114W + three repetitions of {100B+100W+100B+100W+100B}+114W 114W + three repetitions of {100B+300W+100B}+114W 114W + three repetitions of {50W+100B+200W+100B+50W}+114W 114W + three repetitions of {50W+400B+50W}+114W 1 728W	
Bottom margin 2 277 - 2 339	1 728W	

A.2 T6test at 300 ipi on A4 paper

Table A.2

Lines	Description	Notes
Top margin 1 - 98	2 592W (all white lines)	
Areas 1,2,3,4 "Horizontal mode" 98+(TR-1)*675+J 98+(TR-1)*675+27+I	2 592W [(TR-1)+(I-1)*4]W + [2 592-(TR-1)-(I-1)*4]B	From line 99 to 2 798 TR (number of the triangle) = 1-4 J = 1-27 I = 1-648
Area 5 Horizontal mode, short run lengths 2 799 - 2 825 2 826 + I	2 592W 216W+ [240-((I-1)*4+1)]B + [(I-1)*4+1]W + [240-((I-1)*4+2)]B + [(I-1)*4+2]W + [240-((I-1)*4+3)]B + [(I-1)*4+3]W + [240-((I-1)*4+4)]B + [(I-1)*4+4]W + 240B+ [(I-1)*4+4]W + [240-((I-1)*4+4)]B + [(I-1)*4+3]W + [240-((I-1)*4+3)]B + [(I-1)*4+2]W + [240-((I-1)*4+2)]B + [(I-1)*4+1]W + [240-((I-1)*4+1)]B + 216W	From line 2 827 to 2 886 I = 1 - 60
Area 6 2 887 - 2 913 2 913 + I	Vertical mode 1 2 592W (all white lines) 126W+ two cycles of pattern {45B+(I-1)W+[90-(I-1)]B+ [(I-1)*2]W+[180-(I-1)*2]B+ [(I-1)*3]W+[270-(I-1)*3]B+ [270-(I-1)*3]B+[(I-1)*3]W+ [180-(I-1)*2]B+[(I-1)*2]W+ [90-(I-1)]B+[(I-1)]W+45B} +126W	From line 2 914 to 3 003 I = 1 - 90
Area 7 3 004 - 3 030 3 030 + I	"Vertical mode" 2 2 592W 126W+ two cycles of pattern {45W+(I-1)B+[90-(I-1)]W+ [(I-1)*2]B+[180-(I-1)*2]W+ [(I-1)*3]B+[270-(I-1)*3]W+ [270-(I-1)*3]W+[(I-1)*3]B+ [180-(I-1)*2]W+[(I-1)*2]B+ [90-(I-1)]W+(I-1)B+45W} +126W	From line 3 031 to 3 120 I = 1 - 90

(continued)

Table A.2 (concluded)

Lines	Description	Notes
Area 8	"Pass mode"	
3 121 - 3 147	2 592W	
3 148 - 3 200	171W+three repetitions of {150B+150W+150B+150W+150B}+171W	
3 201 - 3 253	171W+three repetitions of {150B+450W+150B}+171W	
3 254 - 3 306	171W+three repetitions of {75W+150B+300W+150B+75W}+171W	
3 307 - 3 359	171W+three repetitions of {75W+600B+75W}+171W	
3 360 - 3 412	2 592W	
Bottom margin		
3 413 - 3 508	2 592W	

A.3 T6test at 400 ipi on A4 paper

Table A.3

Lines	Description	Notes
Top margin		
1 - 130	3 456W (all white lines)	
Areas 1,2,3,4 "Horizontal mode"		From line 131 to 3 730
130+(TR-1)*900+J	3 456W	TR (number of the triangle)
130+(TR-1)*900+36+I	[(TR-1)+(I-1)*4]W + [3 456-(TR-1)-(I-1)*4]B	= 1 - 4 J = 1 - 36 I = 1 - 864
Area 5 "Horizontal mode", short run lengths		
3 731 - 3 766	3 456W	
3 766 + I	288W+ [320-((I-1)*4+1)]B + [(I-1)*4+1]W + [320-((I-1)*4+2)]B + [(I-1)*4+2]W + [320-((I-1)*4+3)]B + [(I-1)*4+3]W + [320-((I-1)*4+4)]B + [(I-1)*4+4]W + 320B+ [(I-1)*4+4]W + [320-((I-1)*4+4)]B + [(I-1)*4+3]W + [320-((I-1)*4+3)]B + [(I-1)*4+2]W + [320-((I-1)*4+2)]B + [(I-1)*4+1]W + [320-((I-1)*4+1)]B + 288W	From line 3 767 to 3 846 I = 1 - 80

(continued)

Table A.3 (concluded)

Lines	Description	Notes
Area 6 3 847 - 3 882 3 882 + I	"Vertical mode" 1 3 456W (all white lines) 168W+ two cycles of pattern {60B+(I-1)W+[120-(I-1)]B+ [(I-1)*2]W+[240-(I-1)*2]B+ [(I-1)*3]W+[360-(I-1)*3]B+ [360-(I-1)*3]B+[(I-1)*3]W+ [240-(I-1)*2]B+[(I-1)*2]W+ [120-(I-1)]B+[(I-1)]W+60B} +168W	From line 3 883 to 4 002 I = 1 - 120
Area 7 4 003 - 4 038 4 038 + I	"Vertical mode" 2 3 456W 168W+ two cycles of pattern {60W+(I-1)B+[120-(I-1)]W+ [(I-1)*2]B+[240-(I-1)*2]W+ [(I-1)*3]B+[360-(I-1)*3]W+ [360-(I-1)*3]W+[(I-1)*3]B+ [240-(I-1)*2]W+[(I-1)*2]B+ [120-(I-1)]W+(I-1)B+60W} +168W	From line 4 039 to 4 158 I = 1 - 120
Area 8 4 159 - 4 194 4 195 - 4 264 4 265 - 4 334 4 335 - 4 404 4 405 - 4 474 4 475 - 4 552	"Pass mode" 3 456W 228W + three repetitions of {200B+200W+200B+200W+200B}+228W 228W + three repetitions of {200B+600W+200B}+228W 228W + three repetitions of {100W+200B+400W+200B+100W}+228W 228W + three repetitions of {100W+800B+100W}+228W 3 456W	
Bottom margin 4 553 - 4 678	3 456W	

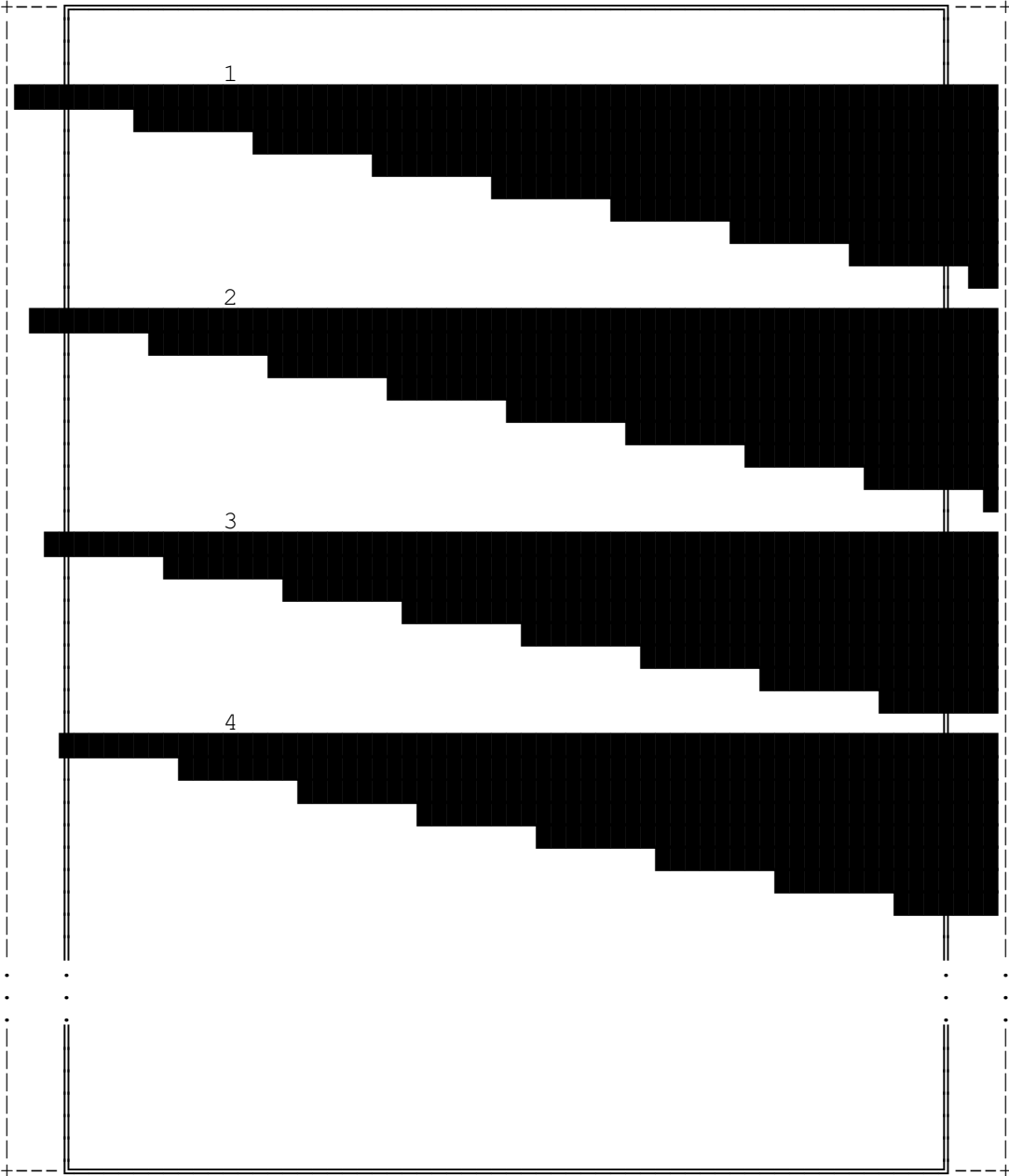


Figure A.1: Areas 1, 2, 3 and 4 of test chart T6test

Area 5 (amplified)



Area 6 (1 half, amplified)



Area 7 (1 half, amplified)



Area 8 (1 third, amplified)



Figure A.2: Areas 5, 6, 7 and 8 of test chart T6test

Annex B (normative): Definition of Test Chart PFTEST

B.1 Overall description of Test Chart PFTEST

Table B.1 describes the areas of the test chart PFTEST for 200 x 200 ppi resolution.

Table B.2 describes the areas of the test chart PFTEST for 300 x 300 ppi resolution.

Table B.3 describes the areas of the test chart PFTEST for 400 x 400 ppi resolution.

These tables contain values for pixels which are relative to the "address reference point" defined in table 3 of CCITT Recommendation T.563 [6]. In order to have a test chart definition fully covering the received line, the number of pels defined as "blanking margin" in the same table of CCITT Recommendation T.563 [6] has to be added to the number of pels calculated in column "Horizontal location" of table B.2. For the same reason a number of white pels equal to the blanking margin has to be added at the beginning and at the end of each "Formal description" reported in Clause B.2.

An idea of the test chart PFTEST is given in figure B.1.

NOTE: An ISO A4 paper is considered;
W = White pixel;
B = Black pixel.

Table B.1: Areas for test chart PFTEST at 200 x 200 ppi resolution

No.of Area	Description of area	Vertical location (line No.)	Horizontal location (pixel No.)	Height (lines)	Width (pixels)
1	190 mm black horizontal bar	551... 574	80...1 575	24	1 496
2	240 mm black vertical bar	354...2 243	816... 839	1 890	24
3	4 cycles/mm vertical lines, odd pixels black	157...235	80...1 575	79	1 496
4	4 cycles/mm vertical lines, even pixels	236... 314	80...1 575	79	1 496
5	4 cycles/mm horizontal lines, odd lines black	a) Left 394... 472 b) Right 394... 472	120... 591 1 064...1 535	79 79	472 472
6	4 cycles/mm horizontal lines, even lines black	394... 472	592...1 063	79	472
7	White cross on black background				
	Background	788...1 063	199... 592	276	394
	Vertical branch	796...1055	392... 399	260	8
	Horizontal branch	922... 929	207... 584	8	378

(continued)

Table B.1: Areas for test chart PFTEST at 200 x 200 ppi resolution (concluded)

No. of Area	Description of area	Vertical location (line No.)	Horizontal location (pixel No.)	Height (lines)	Width (pixels)
8	Black cross on white background				
	Top frame	788... 795	1 063...1 456	8	394
	Bottom fr .	1 056...163	1 063...1 456	8	394
	Left frame	796...1 055	1 063...1 070	260	8
	Right fr.	796...1 055	1 449...1 456	260	8
	Vertical branch Horizontal branch	796...1 055 922 ... 929	1 256...1 263 1 071...1 448	260 8	8 378
9	Frame around the perimeter of the guaranteed reception area				
	Top Side	61... 67	36...1 619	7	1 584
	Bottom Side	2 275...2 281	36...1 619	7	1 584
	Left Side	68...2 274	36... 42	2 207	7
	Right Side	68...2 274	1 613...1 619	2 207	7
10	Two rotated squares with ragged margins on the top side of area 9				
	a) Left	5... 123	43... 161	119	119
	b) Right	5... 123	1 494...1 612	119	119
11	Two rotated squares with ragged margins on the bottom side of area 9				
	a) Left	2 219...2 337	43... 161	119	119
	b) Right	2 219...2 337	1 494...1 612	119	119
12	Two rotated squares with ragged margins on the left side of area 9				
	a) Top	89... 165	1... 77	77	77
	b) Bottom	2 177...2 253	1... 77	77	77
13	Two rotated squares with ragged margins on the right side of area 9				
	a) Top	89... 165	1 578...1 654	77	77
	b) Bottom	2 177...2 253	1 578...1 654	77	77

Table B.2: Areas for Test chart PFTEST at 300 x 300 ppi resolution

No.of Area	Description of area	Vertical location (line No.)	Horizontal location (pixel No.)	Height (lines)	Width (pixels)
1	190 mm black horizontal bar	826... 861	120...2 363	36	2 244
2	240 mm black vertical bar	531...3 365	1 224...1 259	2 835	36
3	8 cycles/mm vertical lines, odd pixels black	235... 352	120...2 363	118	2 244
4	8 cycles/mm vertical lines, even pixels black	353... 470	120...2 363	118	2 244
5	8 cycles/mm horizontal lines, odd lines black	a) Left 591... 708	180... 887	118	708
		b) Right 591... 708	1 596...2 303	118	708
6	8 cycles/mm horizontal lines, even lines black	591... 708	888...1 595	118	708
7	White cross on black background				
	Background	1 182...1 595	297... 888	414	592
	Vertical branch	1 194...1 583	587... 598	390	12
	Horizontal branch	1 383...1 394	308... 876	12	568

(continued)

Table B.2: Areas for test chart PFTTEST at 300 x 300 ppi resolution (concluded)

No. of Area	Description of area	Vertical location (line No.)	Horizontal location (pixel No.)	Height (lines)	Width (pixels)
8	Black cross on white background				
	Top frame	1 182...1 193	1 593...2 184	12	592
	Bottom fr.	1 585...1 596	1 593...2 184	12	592
	Left frame	1 194...1 584	1 593...1 604	390	12
	Right fr.	1 194...1 584	2 173...2 184	390	12
	Vertical branch	1 194...1 583	1 883...1 894	390	12
	Horizontal branch	1 383...1 394	1 605...2 172	12	568
9	Frame around the perimeter of the guaranteed reception area				
	Top Side	91... 101	54...2 429	11	2 376
	Bottom Side	3 412...3 422	54...2 429	11	2 376
	Left Side	102...3 411	54... 64	3 310	11
	Right Side	102...3 411	2 419...2 429	3 310	11
10	Two rotated squares with ragged margins on the top side of area 9				
	a) Left	7... 185	64... 241	179	179
	b) Right	7... 185	2 241...2 418	179	179
11	Two rotated squares with ragged margins on the bottom side of area 9				
	a) Left	3 328...3 506	64... 241	179	179
	b) Right	3 328...3 506	2 241...2 418	179	179
12	Two rotated squares with ragged margins on the left side of area 9				
	a) Top	134... 249	1... 116	116	116
	b) Bottom	3 265...3 380	1... 116	116	116
13	Two rotated squares with ragged margins on the right side of area 9				
	a) Top	134... 249	2 367...2 482	116	116
	b) Bottom	3 265...3 380	2 367...2 482	116	116

Table B.3: Areas for Test chart PFTEST at 400 x 400 ppi resolution

No.of Area	Description of area	Vertical location (line No.)	Horizontal location (pixel No.)	Height (lines)	Width (pixels)
1	190 mm black horizontal bar	1 101...1 148	159...3 150	48	2 992
2	240 mm black vertical bar	707...4 486	1 631...1 678	3 780	48
3	8 cycles/mm vertical lines, odd pixels black	313... 470	159...3 150	158	2 992
4	8 cycles/mm vertical lines, even pixels black	471... 628	159...3 150	158	2 992
5	8 cycles/mm horizontal lines, odd lines black	a) Left 787... 944	239...1 182	158	944
		b) Right 787... 944	2 127...3 070	158	944
6	8 cycles/mm horizontal lines, even lines black	787... 944	1 183...2 126	158	944
7	White cross on black background				
	Background	1 575...2 126	397...1 184	552	788
	Vertical branch	1 591...2 110	783... 798	520	16
	Horizontal branch	1 843...1 858	413...1 168	16	756

(continued)

Table B.3: Areas for test chart PFTEST at 400 x 400 ppi resolution (concluded)

No. of Area	Description of area	Vertical location (line No.)	Horizontal location (pixel No.)	Height (lines)	Width (pixels)
8	Black cross on white background				
	Top frame	1 575...1 590	2 125...2 912	16	788
	Bottom fr.	2 111...2 126	2 125...2 912	16	788
	Left frame	1 591...2 110	2 125...2 140	520	16
	Right fr.	1 591...2 110	2 897...2 912	520	16
	Vertical branch Horizontal branch	1 591...2 110 1 843...1 858	2 511...2 526 2 141...2 896	520 16	16 756
9	Frame around the perimeter of the guaranteed reception area				
	Top Side	121... 134	71...3 238	14	3 168
	Bottom Side	4 549...4 562	71...3 238	14	3 168
	Left Side	135...4 548	71... 84	4 414	14
	Right Side	135...4 548	3 225...3 238	4 414	14
10	Two rotated squares with ragged margins on the top side of area 9				
	a) Left	9... 246	85... 322	238	238
	b) Right	9... 246	2 987...3 224	238	238
11	Two rotated squares with ragged margins on the bottom side of area 9				
	a) Left	4 437...4 674	85... 322	238	238
	b) Right	4 437...4 674	2 987...3 224	238	238
12	Two rotated squares with ragged margins on the left side of area 9				
	a) Top	177... 330	1... 154	154	154
	b) Bottom	4 353...4 506	1... 154	154	154
13	Two rotated squares with ragged margins on the right side of area 9				
	a) Top	177... 330	3 155...3 308	154	154
	b) Bottom	4 353...4 506	3 155...3 308	154	154

B.2 Formal Description of Test Chart PFTEST

The rules to build each area are given below. These apply to every line defined in column "Height" of tables B.1, B.2 and B.3.

Rules for 200 x 200 ppi resolution

Area 1: 190 mm black horizontal bar

79W + 1 496B + 79W

Area 2: 240 mm black vertical bar

815W + 24B + 815W

Area 3: 4 cycles/mm vertical lines (black odd pixels)

79W + 748 (1B + 1W) + 79W

Area 4: 4 cycles/mm vertical lines (black even pixels)

79W + 748 (1W + 1B) + 79W

Area 5: 4 cycles/mm horizontal lines (black odd lines)

a) Left side

Odd lines: 119W + 472B + 1 063W

Even lines: 1 654W

b) Right side

Odd lines: 1 063W + 472B + 119W

Even lines: 1 654W

Area 6: 4 cycles/mm horizontal lines (black even lines)

Odd lines: 1 654W

Even lines: 591W + 472B + 591W

Area 7: white cross on black background

First 8 lines: 198W + 394B + 1 062W

Next 126 lines: 198W + 193B + 8W + 193B + 1 062W

Next 8 lines: 198W + 8B + 378W + 8B + 1 062W

Next 126 lines: 198W + 193B + 8W + 193B + 1 062W

Last 8 lines: 198W + 394B + 1 062W

Area 8: black cross on white background

First 8 lines: 1 062W + 394B + 198W

Next 126 lines: 1 062W + 8B + 185W + 8B + 185W + 8B + 198W

Next 8 lines: 1 062W + 394B + 198W

Next 126 lines: 1 062W + 8B + 185W + 8B + 185W + 8B + 198W

Last 8 lines: 1 062W + 394B + 198W

Area 9: Frame along the perimeter of the guaranteed reception area

First 7 lines: $35W + 1\ 584B + 35W$
Next 2 207 lines: $35W + 7B + 1\ 570W + 7B + 35W$
Last 7 lines: $35W + 1\ 584B + 35W$

Area 10: Two rotated squares on the top side of area 9

a) Left square

First 7 lines: $98W + 7B + 1\ 549W$
Next 7 lines: $91W + 21B + 1\ 542W$
Next 7 lines: $84W + 35B + 1\ 535W$
Next 7 lines: $77W + 49B + 1\ 528W$
Next 7 lines: $70W + 63B + 1\ 521W$
Next 7 lines: $63W + 77B + 1\ 514W$
Next 7 lines: $56W + 91B + 1\ 507W$
Next 7 lines: $49W + 105B + 1\ 500W$
Next 7 lines: $42W + 119B + 1\ 493W$
Next 7 lines: $49W + 105B + 1\ 500W$
Next 7 lines: $56W + 91B + 1\ 507W$
Next 7 lines: $63W + 77B + 1\ 514W$
Next 7 lines: $70W + 63B + 1\ 521W$
Next 7 lines: $77W + 49B + 1\ 528W$
Next 7 lines: $84W + 35B + 1\ 535W$
Next 7 lines: $91W + 21B + 1\ 542W$
Last 7 lines: $98W + 7B + 1\ 549W$

b) Right square

First 7 lines: $1\ 549W + 7B + 98W$
Next 7 lines: $1\ 542W + 21B + 91W$
Next 7 lines: $1\ 535W + 35B + 84W$
Next 7 lines: $1\ 528W + 49B + 77W$
Next 7 lines: $1\ 521W + 63B + 70W$
Next 7 lines: $1\ 514W + 77B + 63W$
Next 7 lines: $1\ 507W + 91B + 56W$
Next 7 lines: $1\ 500W + 105B + 49W$
Next 7 lines: $1\ 493W + 119B + 42W$
Next 7 lines: $1\ 500W + 105B + 49W$
Next 7 lines: $1\ 507W + 91B + 56W$
Next 7 lines: $1\ 514W + 77B + 63W$
Next 7 lines: $1\ 521W + 63B + 70W$
Next 7 lines: $1\ 528W + 49B + 77W$
Next 7 lines: $1\ 535W + 35B + 84W$
Next 7 lines: $1\ 542W + 21B + 91W$
Last 7 lines: $1\ 549W + 7B + 98W$

Area 11: Two rotated squares on the bottom side of area 9

a) Left square

First 7 lines : $98W + 7B + 1\ 549W$
Next 7 lines : $91W + 21B + 1\ 542W$
Next 7 lines : $84W + 35B + 1\ 535W$
Next 7 lines : $77W + 49B + 1\ 528W$
Next 7 lines : $70W + 63B + 1\ 521W$
Next 7 lines : $63W + 77B + 1\ 514W$
Next 7 lines : $56W + 91B + 1\ 507W$
Next 7 lines : $49W + 105B + 1\ 500W$

Next 7 lines : $42W + 119B + 1\ 493W$
 Next 7 lines : $49W + 105B + 1\ 500W$
 Next 7 lines : $56W + 91B + 1\ 507W$
 Next 7 lines : $63W + 77B + 1\ 514W$
 Next 7 lines : $70W + 63B + 1\ 521W$
 Next 7 lines : $77W + 49B + 1\ 528W$
 Next 7 lines : $84W + 35B + 1\ 535W$
 Next 7 lines : $91W + 21B + 1\ 542W$
 Last 7 lines : $98W + 7B + 1\ 549W$

b) Right square

First 7 lines : $1\ 549W + 7B + 98W$
 Next 7 lines: $1\ 542W + 21B + 91W$
 Next 7 lines: $1\ 535W + 35B + 84W$
 Next 7 lines: $1\ 528W + 49B + 77W$
 Next 7 lines: $1\ 521W + 63B + 70W$
 Next 7 lines: $1\ 514W + 77B + 63W$
 Next 7 lines: $1\ 507W + 91B + 56W$
 Next 7 lines: $1\ 500W + 105B + 49W$
 Next 7 lines: $1\ 493W + 119B + 42W$
 Next 7 lines: $1\ 500W + 105B + 49W$
 Next 7 lines: $1\ 507W + 91B + 56W$
 Next 7 lines: $1\ 514W + 77B + 63W$
 Next 7 lines: $1\ 521W + 63B + 70W$
 Next 7 lines: $1\ 528W + 49B + 77W$
 Next 7 lines: $1\ 535W + 35B + 84W$
 Next 7 lines: $1\ 542W + 21B + 91W$
 Last 7 lines: $1\ 549W + 7B + 98W$

Area 12: Two rotated squares on the left side of area 9a) Top square

First 7 lines : $35W + 7B + 1\ 612W$
 Next 7 lines: $28W + 21B + 1\ 605W$
 Next 7 lines: $21W + 35B + 1\ 598W$
 Next 7 lines: $14W + 49B + 1\ 591W$
 Next 7 lines: $7W + 63B + 1\ 584W$
 Next 7 lines: $(0W) + 77B + 1\ 577W$
 Next 7 lines: $7W + 63B + 1\ 584W$
 Next 7 lines: $14W + 49B + 1\ 591W$
 Next 7 lines: $21W + 35B + 1\ 598W$
 Next 7 lines: $28W + 21B + 1\ 605W$
 Last 7 lines: $35W + 7B + 1\ 612W$

b) Bottom square

First 7 lines : $35W + 7B + 1\ 612W$
 Next 7 lines: $28W + 21B + 1\ 605W$
 Next 7 lines: $21W + 35B + 1\ 598W$
 Next 7 lines: $14W + 49B + 1\ 591W$
 Next 7 lines: $7W + 63B + 1\ 584W$
 Next 7 lines: $(0W) + 77B + 1\ 577W$
 Next 7 lines: $7W + 63B + 1\ 584W$
 Next 7 lines: $14W + 49B + 1\ 591W$
 Next 7 lines: $21W + 35B + 1\ 598W$
 Next 7 lines: $28W + 21B + 1\ 605W$
 Last 7 lines : $35W + 7B + 1\ 612W$

Area 13: Two rotated squares on the right side of area 9

a) Top square

First 7 lines: 1 612W + 7B + 35W
Next 7 lines: 1 605W + 21B + 28W
Next 7 lines: 1 598W + 35B + 21W
Next 7 lines: 1 591W + 49B + 14W
Next 7 lines: 1 584W + 63B + 7W
Next 7 lines: 1 577W + 77B +(0W)
Next 7 lines: 1 584W + 63B + 7W
Next 7 lines: 1 591W + 49B + 14W
Next 7 lines: 1 598W + 35B + 21W
Next 7 lines: 1 605W + 21B + 28W
Last 7 lines: 1 612W + 7B + 35W

b) Bottom square

First 7 lines : 1 612W + 7B + 35W
Next 7 lines: 1 605W + 21B + 28W
Next 7 lines: 1 598W + 35B + 21W
Next 7 lines: 1 591W + 49B + 14W
Next 7 lines: 1 584W + 63B + 7W
Next 7 lines: 1 577W + 77B + (0W)
Next 7 lines: 1 584W + 63B + 7W
Next 7 lines: 1 591W + 49B + 14W
Next 7 lines: 1 598W + 35B + 21W
Next 7 lines: 1 605W + 21B + 28W
Last 7 lines : 1 612W + 7B + 35W

Rules for 300 x 300 ppi resolution

Areas 1 to 9 are defined in the preceding listings.
Areas 10, 11, 12 and 13 have some extra details which are defined in the following listings.

Area 10: Two rotated squares on the top side of area 9.

a) Left square

First 11 lines: 147W + 11B + 2 322W
Next 10 lines: 136W + 32B + 2 312W
Next 11 lines: 126W + 53B + 2 301W
Next 10 lines: 115W + 74B + 2 291W
Next 11 lines: 105W + 95B + 2 280W
Next 10 lines: 94W +116B + 2 270W
Next 11 lines: 84W +137B + 2 259W
Next 10 lines: 73W +158B + 2 249W
Next 11 lines: 63W +178B + 2 238W (NOTE)

NOTE: This line is masked by the edge of the frame around the reproducible area.

The rest of the definition is a mirror image about the horizontal axis of the first half.

b) Right square

The definition of the right square is a mirror image of the left square about the vertical centre line of the page. Thus the first line is as follows.

First 11 lines: 2 322W + 11B+ 147W

Area 11: Two rotated squares on the bottom side of area 9

a) Left square

The definition of this square is the same as square (a) in area 10 apart from the vertical location.

b) Right square

The definition of this square is the same as for square (b) in area 10 apart from the vertical location.

Area 12: Two rotated squares on the left side of area 9

a) Top square

First 11 Lines: $53W + 11B + 2\ 416W$
Next 10 lines: $42W + 33B + 2\ 405W$
Next 11 lines: $32W + 53B + 2\ 395W$
Next 10 lines: $21W + 75B + 2\ 384W$
Next 11 lines: $11W + 95B + 2\ 374W$
Next 10 lines: $(0W) + 117B + 2\ 363W$

The rest of the definition is a mirror image about the horizontal axis of the first part of the definition given above.

b) Bottom square

This is identical to the top square apart from the vertical location.

Area 13: Two rotated squares on the right side of area 9

a) Top square

The definition of this square is the same as the top square in area 12 but reflected about the centre line of the page.

b) Bottom square

This has the same definition as the top square apart from the vertical location.

Rules for 400 x 400 ppi resolution

Areas 1 to 9 are defined in the preceding tables.

Areas 10, 11, 12 and 13 have some extra details which are defined in the following listings.

Area 10: Two rotated squares on the top side of area 9

a) Left square

First 14 lines: $196W + 14B + 3\ 098W$
Next 14 lines: $182W + 42B + 3\ 084W$
Next 14 lines: $168W + 70B + 3\ 070W$
Next 14 lines: $154W + 98B + 3\ 056W$
Next 14 lines: $140W + 126B + 3\ 042W$
Next 14 lines: $126W + 154B + 3\ 028W$
Next 14 lines: $112W + 182B + 3\ 014W$
Next 14 lines: $98W + 210B + 3\ 000W$
Next 14 lines: $84W + 238B + 2\ 986W$

The rest of the definition is a mirror image about the horizontal axis of the first half.

b) Right square

First 14 lines: $3\ 098W + 14B + 196W$
Next 14 lines: $3\ 084W + 42B + 182W$

The rest of the definition is a mirror image of the left square about the vertical centre line of the page.

Area 11: Two rotated squares on the bottom side of area 9

a) Left square

The rest of the definition is the same as square (a) in area 10 apart from the vertical location.

b) Right square

The definition is the same as for square (b) in area 10 apart from the vertical location.

Area 12: Two rotated squares on the left side of area 9

a) Top square

First 14 lines: $70W + 14B + 3\ 224W$
Next 14 lines: $56W + 42B + 3\ 210W$
Next 14 lines: $42W + 70B + 3\ 196W$
Next 14 lines: $28W + 98B + 3\ 182W$
Next 14 lines: $14W + 126B + 3\ 168W$
Next 14 lines: $(0W) + 154B + 3\ 154W$
Next 14 lines: $14W + 126B + 3\ 168W$

The rest of the definition is a mirror image about the horizontal axis of the first part of the definition given above.

b) Bottom square

This is identical to the top square apart from the vertical location.

Area 13: Two rotated squares on the right side of area 9

a) Top square

First 14 lines: $3\ 224W + 14B + 70W$
Next 14 lines: $3\ 210W + 42B + 56W$
Next 14 lines: $3\ 196W + 70B + 42W$
Next 14 lines: $3\ 182W + 98B + 28W$
Next 14 lines: $3\ 168W + 126B + 14W$
Next 14 lines: $3\ 154W + 154B + (0W)$
Next 14 lines: $3\ 168W + 126B + 14W$

The rest of the definition is a mirror image about the horizontal axis of the first part of the definition given above.

b) Bottom square

This has the same definition as the top square apart from the vertical location.

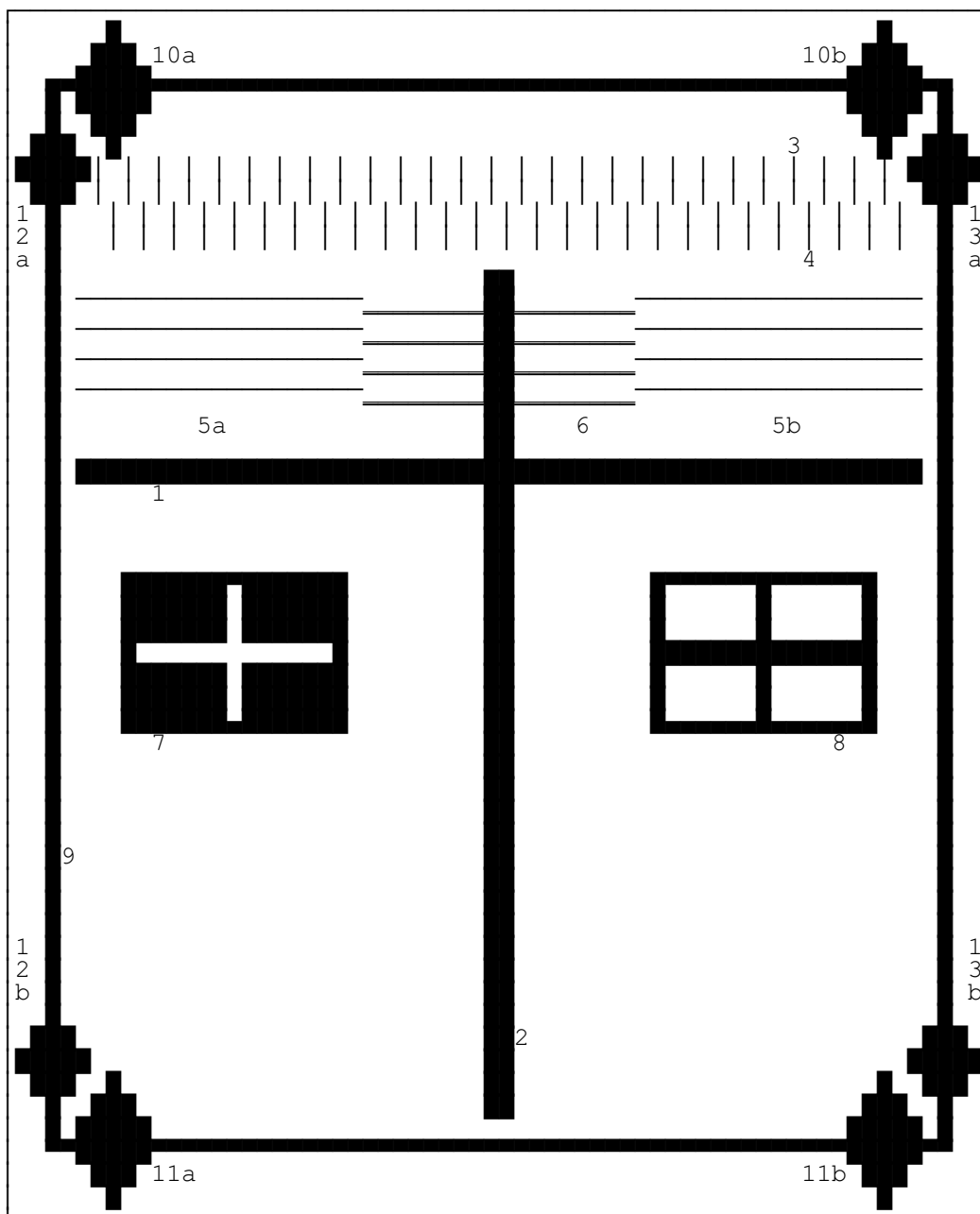


Figure B.1: Test Chart PFTEST

Annex C (informative): Explanation of the Guaranteed Reception Area

The facsimile image, received at the ISDN line interface by a facsimile equipment, is formed, after decoding, by lines and each line is formed by picture elements. The number of lines/page and picture elements/line is given in CCITT Recommendation T.563 [6] depending on pel resolution.

Tables C.1 and C.2 define, for an A4 page and for each pel resolution, which picture elements of the received image will be reproduced assuming worst case tolerances and CIL printing at the top and bottom of the page. Pel resolution tolerance is not considered since definitions are given in picture elements.

This annex is given for information only and, in figure C.1, shows the dimensions of the Guaranteed Reception Area (for an ISO A4 paper) tested by means of Areas 9, 10, 11, 12 and 13. Measurements are expressed in No. of pixels for 200 x 200 ppi resolution.

This set of picture elements shapes an area inside the page which is the Guaranteed Reception Area (a graphic view is given in figure C.1 for an A4 page).

Page size = ISO A4
Table C.1 - G.R.A. Horizontal definition

Table C.1

Pel resolution (ppi)	200 x 200	240 x 240	300 x 300	400 x 400
Nominal No. of received picture elements/line (No. of pels)	1 728	2 074	2 592	3 456
No. of discarded pels before reproduction - each side (No. of pels)	37	45	56	74
Left and right margins (No. of pels)	40	48	60	80
Equivalent approximate dimension (millimetres)	5,08	5,08	5,08	5,08
1.st picture element that shall be reproduced (pixel No.)	78	94	117	155
Last picture element that shall be reproduced (pixel No.)	1 651	1 981	2 476	3 302
No. of picture elements that shall be reproduced (No. of pels)	1 574	1 888	2 360	3 148
Equivalent approximate dimension (millimetres)	199,90	199,81	199,81	199,90

Page size = ISO A4
Table C.2 - G.R.A. Vertical definition

Table C.2

Pel resolution (ppi)	200 x 200	240 x 240	300 x 300	400 x 400
Nominal No. of received lines/page (No. of lines)	2 339	2 806	3 508	4 677
Top margin (No. of lines)	65	78	98	130
Equivalent approximate dimension (millimetres)	8,25	8,25	8,30	8,25
1.st line that shall be reproduced (line No.)	66	79	99	131
last line that shall be reproduced (line No.)	2 276	2 730	3 413	4 551
No. of lines that shall be reproduced (No. of lines)	2 211	2 652	3 315	4 421
Equivalent approximate dimension (millimetres)	280,80	280,67	280,67	280,73
Bottom margin (No. of lines)	63	76	95	126
Equivalent approximate dimension (millimetres)	8,00	8,04	8,04	8,00

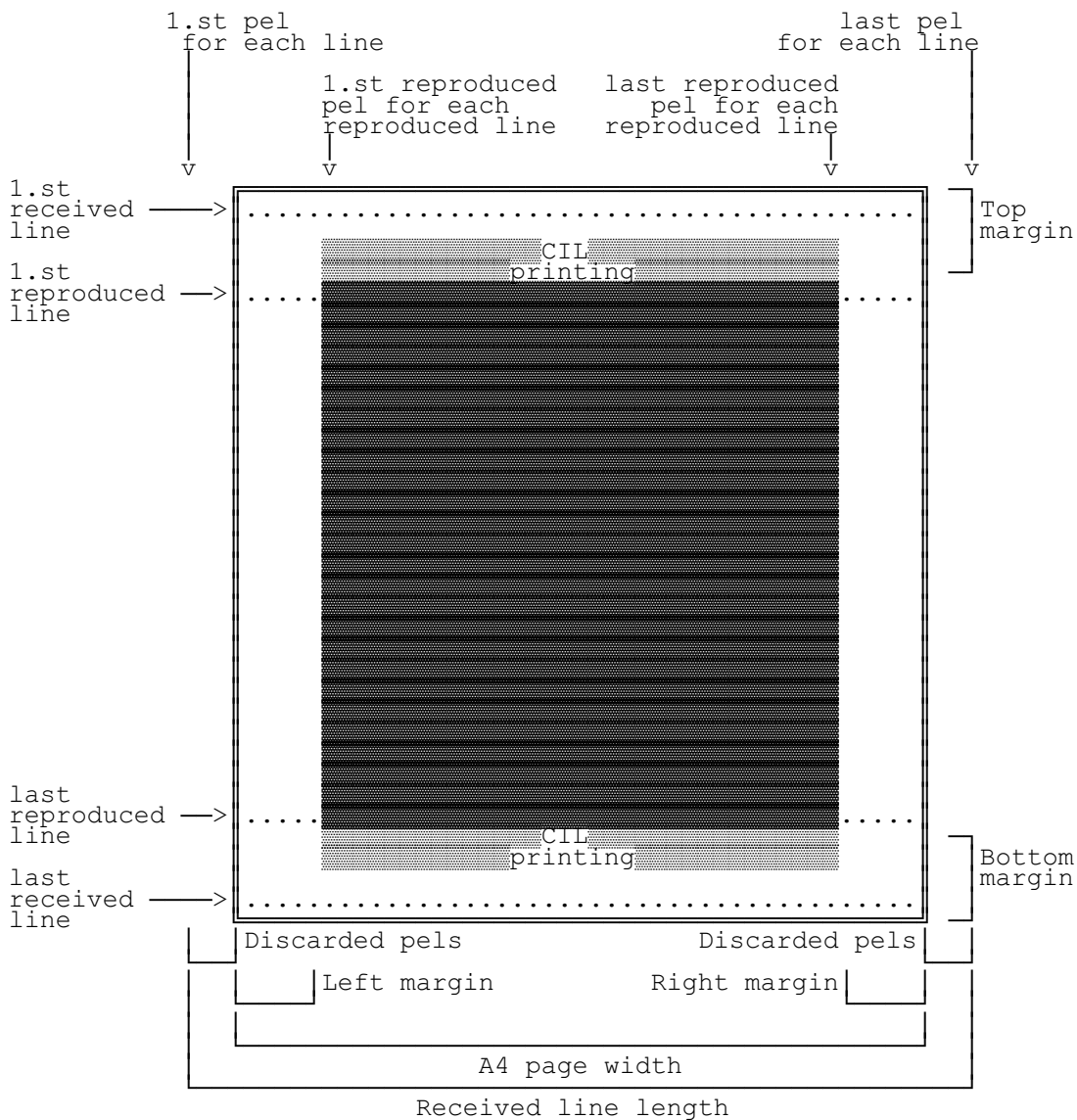


Figure C.1: Guaranteed Reception Area

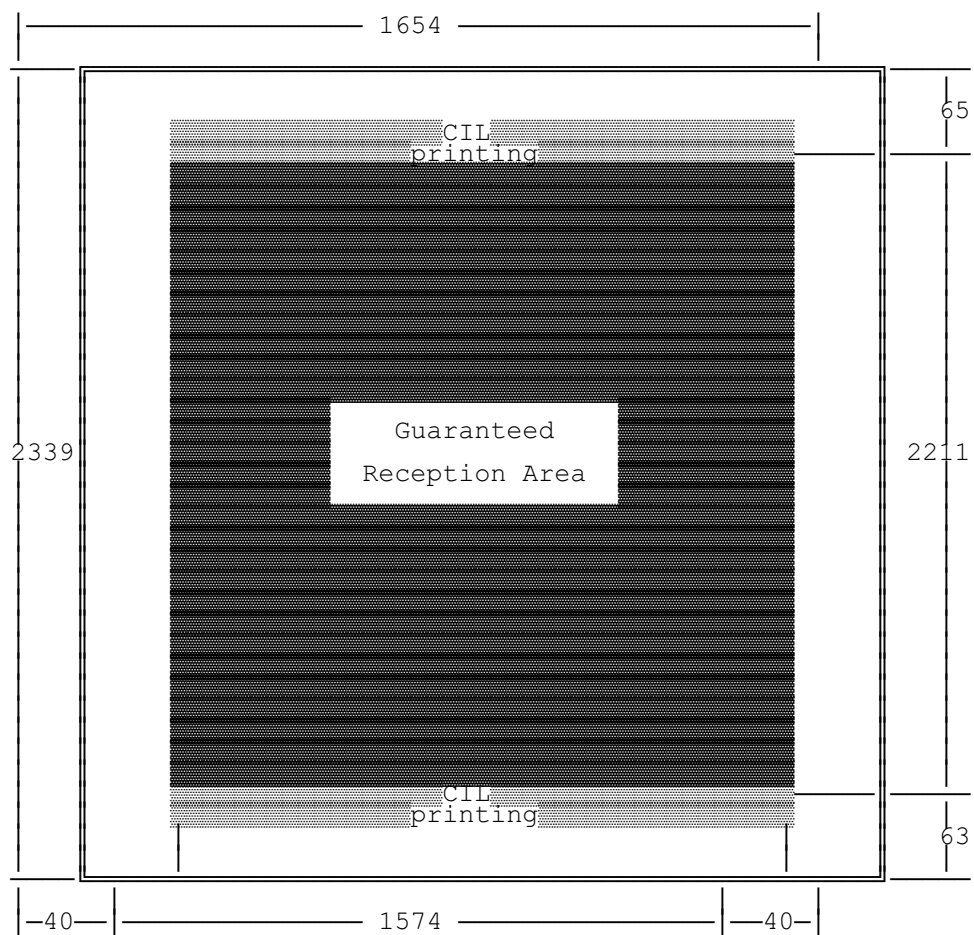


Figure C.2: Guaranteed Reception Area

Annex D (normative): Protocol Implementation Conformance Statement (PICS) for Terminal Testing of ISDN facsimile Group 4 class 1 Equipment, B-channels part, using ISDN basic access and circuit-switched mode (DTE-DTE communication)

D.1 Introduction

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a given protocol. Such a statement is called a **Protocol Implementation Conformance Statement (PICS)**.

A client who requests an interconnection capability test or a full conformance test shall provide a completed PICS proforma for each OSI layer to be tested to the test laboratory.

This annex comprises the application layer PICS proforma related to terminal testing of the B-channels part of ISDN facsimile Group 4 class 1 equipment for ISDN basic access and circuit-switched mode (DTE-DTE communication).

NOTE 1: Application layer PICS items related to end-to-end protocols tests are found in prETS 300 155 [4], Annex D.

NOTE 2: In addition to the information provided by a PICS, information relating to the implementation and its testing environment is essential. Such extra information is called a **Protocol Implementation eXtra Information for Testing (PIXIT)**. PIXIT proformas are produced and provided by the test laboratory.

D.2 References

CCITT Recommendations: T.6 [5], T.563 [6], F.184 [10].

ETSI Standard: ETS 300 087 [2].

D.3 PICS proforma contents and structure

The PICS proformas consist of tables structured as indicated in the following documents:

ISO/IEC 9646-1: OSI Conformance Testing Methodology and Framework, Part 1: General Concepts.

ISO/IEC 9646-2: OSI Conformance Testing Methodology and Framework, Part 2: Abstract Test Suite Specification.

D.4 Pre-printed table contents

The pre-printed contents of the PICS tables provide the following:

- table/item identification, see Clause D.5;
- item names or short descriptions;
- references to the Standards;
- status attributes specifying the status of the items;
- column to be filled in by the client, see Clause D.6.

The status attribute in the "STATUS" column reflects the conformance requirements defined in the referenced Standard as follows:

- | | |
|-----------------|---|
| m (mandatory) | The item is specified as "mandatory" i.e. the capability is required for conformance. |
| o (optional) | The item is specified as "optional" i.e. the capability is not required for conformance, but if it is implemented it shall conform to the specifications. |
| c (conditional) | The requirement on the capability depends on the selection of other optional or conditional items; the PICS proforma cannot define in advance a definite status for the capability, it can only indicate that the status depends on the evaluation of a predicate. Such predicates are addressed by notes in the PICS proforma. |

However, in order to reduce the time required for interconnection capability testing, some of the status attributes are denoted "Interconnection capability testing not applicable" meaning that the associated items shall not be interconnection capability tested.

D.5 Table/item identification

The table/item identification in the PICS tables are as follows:

- the table headers contain a label composed of an initial capital letter which is the first letter of the layer name, and a serial (integer) number;
- the rows, each corresponding to an item, are numbered by serial (integer) numbers.

To identify an item, the table label and the item number are combined by use of a slash (solidus), "/", e.g. the third item in the second table in the application layer PICS is identified by "A2/3".

D.6 Filling in guidance

The filling in is done in the right table column named "Support". Each row of the column is filled in as follows:

- for implemented items a Y, y, Yes, yes or YES is entered;
- for not implemented items an N, n, No, no or NO is entered.

For each "not implemented" mandatory item, the client shall give a justification.

D.7

APPLICATION LAYER PICS

=====

for

Terminal Testing

of

ISDN Facsimile Group 4 Class 1 Equipment, B-channels part,

using ISDN basic access and circuit-switched mode (DTE-DTE communication)

References
CCITT Recs.T.6 [5], T.433 [12], T.563 [6], F.184 [10]
ETS 300 087 [2]

TABLES:

- A1 TERMINAL CLASS and CONFIGURATION
- A2 MAIN CAPABILITIES
- A3 OPTIONAL CAPABILITIES
- A4 INDICATORS

NOTE: Application layer PICS items related to end-to-end protocols tests are found in prETS 300 155 [4], Annex D.

Table D.1

A1 TERMINAL CLASS and CONFIGURATION					
Item No.	ITEM	Reference		STATUS	Support
		CCITT Recs.	ETS 300 087		
1	Class 1 operation	F.184: 1.2.1 T.563: 1.5	1	m	
2	Extended features configuration	-	9	o	

Table D.2

A2 MAIN CAPABILITIES					
Item No.	ITEM	Reference		STATUS	Support
		CCITT T.563	ETS 300 087		
1	Restoring operability automatically after power failure	3.1.8	8	m	(1)
2	Means for automatic reception		4.1	m	
3	Transfer time from a tester to IUT for an electronically synthesized "slerexe letter": ≤ s at 200 pels resolution		6	m	
4	Basic facsimile coding as defined in T.6	3.2.1 c)	3	m	
5	Control functions for basic facsimile coding as defined in T.6	3.1.6, 3.2.1 d)		m	
6	Picture element processing (scanning from left to right etc.)	3.2.2a), 3.2.5	4.1, 4.2, 4.3	m	
7	Output to a printer possible	3.2.2 b)	4.4	m	
8	Vertical page orientation	3.2.3 a)	3	m	
9	Paper size of ISO A4	3.1.4, 3.2.3 b)		m	
10	Reproducible area/printable area	3.2.3 c), 3.2.6	5	m	
11	Terminal Identification (TID): - Means for inserting TID	3.2.4	4.5	m	(1)
12	- Means for entering called address and/or called terminal number			m	
13	- TID in CSS consistent with assigned value			m	
14	- TID in CSS complies with F.184 (F.200, T.61)			m	
15	Pel transmission density: 200 pels/25,4 mm	3.2.7, 3.2.8	4.2.1	m	
16	Assuming default conditions	3.5	3	m	
17	Call Identification Line (CIL): - According to F.184 (F.200)	5.2, Annex A	4.6, 5.2	m	
18	- Ability to obtain date and time per call from the network			m	
19	- Ability to obtain date and time from internal source			m	
20	- User selected printing on top or below reproducible area			m	
21	Negotiation and indication mechanism according to T.433	5.3	3	m	
22	Document architecture class=FDA (formatted), see T.412	5.4	3	m	

(1) Specify details in the PIXIT.

Table D.3

A3 OPTIONAL CAPABILITIES					
Item No.	ITEM	Reference		STATUS	Support
		CCITT T.563	ETS 300 087		
1	Page memory	5.1, 7.2		o *)	
2	Optional coding as defined in T.6			o *)	
3	Control functions for optional coding as defined in T.6	3.2.9.2, 3.3.3		o *)	
4	Formatting and provision of image areas for: - ISO B4 paper size			o *)	
5	- ISO A3 paper size			o *)	
6	- Japanese legal paper size	3.3.4		o *)	
7	- Japanese letter paper size			o *)	
8	Pel transmission density: - 240 pels/25,4 mm			o *)	
9	- 300 pels/25,4 mm	3.2.7, 3.2.8	4.2.1	o	
10	3-400 pels/25,4 mm			o	
11	Presentation of received documents: - Hard copies using separate paper sheets	3.2.3 c), 3.2.6	5	m	
11	Terminal Identification (TID): - Means for inserting TID			o *)	
12	- Hard copies using paper rolls			o *)	
13	- Soft copies visually displayed	3.1.6, 3.2.2b)	4.4	o *)	
14	- Soft copies on other means			o *)	
15	Entering and handling the mnemonic part of TID	3.2.4	4.5	o *)	
16	Other options (see subclause 1.2.3 of F.184): - CCITT-standardized	3.3	3	o *)	
17	- National/private use	3.4		o *)	
18	- Provision of activity log			c.1	
19	- Ability to obtain date and time from internal	-	8,9	c.1	
*) Interconnection capability testing not applicable. c.1 Mandatory if item A1/2 is supported					

Table D.4

A4 INDICATORS					
Item No.	ITEM	Reference		STATUS	Support
		CCITT T.563	ETS 300 087		
1	Alarm indication of: - "Unable to transmit"			m *)	
2	- "Unable or soon unable to receive"			m *)	
3	- "Operator assistance required"			m *)	
4	- "Message received in store"			c.1 *)	
5	- "Message in store while power failure present"			c.1 *)	
6	- "ABORT or DISCARD received at Session layer"			m *)	
*) Interconnection capability testing not applicable. c.1 Mandatory if item A3/1 is supported.					

Annex E (informative): Bibliography

The following text is given for information in this ETS:

CCITT Recommendation T.412: "Open document architecture (ODA) and interchange format - Document structures".

ISO 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework." Part 1: General concepts.

ISO 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework." Part 2: Abstract test suite specification.

History

Document history	
February 1994	First Edition
February 1996	Converted into Adobe Acrobat Portable Document Format (PDF)