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Information technology — Telecommunications and information exchange between systems — Interface connector and contact assignments for ISDN Basic Access Interface located at reference points S and T

*Technologies de l'information — Télécommunications et échange
d'informations entre systèmes — Connecteur d'interface et affectation
des contacts pour l'interface d'accès de base au RNIS située aux points
de référence S et T*



Foreword

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International Standard ISO/IEC 8877 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

This second edition cancels and replaces the first edition ISO 8877:1987 and ISO 8877:Amd.1:1991.

Annexes A, B, C and D of this International Standard are for information only.

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Information technology — Telecommunications and information exchange between systems — Interface connector and contact assignments for ISDN Basic Access Interface located at reference points S and T

1 Scope

This International Standard specifies the 8-pole connector (plug and jack) and the assignments of poles/contacts for use in physical interfaces of Integrated Services Digital Network (ISDN) basic access arrangements. These physical interfaces may be located at reference points S and T between TEs and NTs and between NT1s and NT2s and shall conform to CCITT Recommendation I.430.

This International Standard also specifies the requirements for ISDN basic access cords for use with TEs that conform with Recommendation I.430, where the specification of the TE calls for the use of such a cord.

CCITT Recommendation I.430 requires plugs and jacks on equipment connecting cords and interface cables as shown in figure 2/I.430 of that Recommendation (also see annex A).

For the purpose of this International Standard, when viewed from an NT1, an NT2 may be considered to be a TE.

NOTE – This International Standard specifies connector dimensions but only those to ensure mateability of the plug and jack. Complete detailed specifications of the plugs and jacks and all other dimensions are specified in IEC 603-7 (see annex D)

2 Normative references

The following International Standards and CCITT Recommendations contain certain provisions that, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All International Standards and CCITT Recommendations are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the Standards/Recommendations indicated below. Members of international standards bodies maintain registers of currently valid International Standards and CCITT Recommendations.

CCITT Recommendation I.411:1988, *ISDN user – network interface – Reference configurations*

CCITT Recommendation I.420:1988, *Basic user–network interface*

CCITT Recommendation I.430 :1988, *Basic user–network interface –Layer 1 specification*

NOTE – Section 8.9 of the above Recommendation is reproduced for information as annex C to this International Standard.

3 Definitions

For the purposes of this International Standard the following definitions apply:

3.1 pole: A position for a contact

3.2 contact: The electrical contact element which, for many connections, is referred to as a "pin".

3.3 plug and jack: The male and female connector parts, respectively.

Examples of interface cabling configurations are given in annex A.

4 Connector

Eight-pole connectors are specified for the interconnection of TEs and NTs. One plug and jack pair is used for the interconnection of TEs and NTs. One plug and jack pair is used to connect the TE connecting cord to the interface cable (at interface point I_A in CCITT Recommendation I.430, figure 2/I.430) and a second connector is used (optionally) to connect the NT connecting cord to the interface cable (at interface point I_B in CCITT Recommendation I.430, figure 2/I.430). Interface cabling may have a passive bus or a point-to-point configuration. (Both configurations are illustrated in annex A.)

NOTE The interface cable may be directly connected to an NT or, where the NT is a multi-port device, e.g., a PABX, the connection to the NT may involve a large connector which accommodates multiple interfaces

TE and NT connecting cords shall be terminated in plugs. Figure 1 illustrates the cord-terminating plug which provides for 4, 6 or 8 contacts. The number of physical contacts provided or required is dependent

upon the use by the associated equipment, TE or NT, of the optional provisions for powering across the interface. The optional powering capabilities are described in CCITT Recommendation I.430 and are summarized here in annex B.

Interface cables shall be terminated in jacks. Figure 2 illustrates the jack which provides 4, 6 or 8 contacts. As with the cord terminating plug, the number of contacts provided or required is dependent upon the provision for the powering options discussed in annex B.

Connector dimensions necessary to assure mating of plugs and jacks are specified in figures 3 through 5. Connectors for use in the applications covered by this International Standard shall conform to the mechanical dimensions specified in these figures and no additional provisions for keying shall be provided.

Figure 3 gives the mechanical specification for mating of the 8-pole plug. Figure 4 gives the plug/jack contact specification for mating. Figure 5 gives the mechanical specification for mating of the 8-pole jack. While physical contacts are indicated for poles 1, 2, 7 and 8 of the plug and jack, contacts corresponding to these numbers are not required in some applications and, in such applications, may be omitted.

5 Assignment of contact numbers

Four contact numbers are assigned for the conductors of the two pairs used for the signal transmission from NT to TE and from TE to NT. Two contacts each are assigned for TRANSMIT and RECEIVE directions at TEs and, correspondingly, to RECEIVE and TRANSMIT directions at NTs. Contacts are also assigned, for sources and sinks at TEs and NTs, individually, for the two optional conductor pairs used for powering TEs from NTs or from other TEs (or NTs from TEs). The provision of twisted pairs for TRANSMIT and RECEIVE circuits and of conductors for powering shall be in conformance with CCITT Recommendation I.430, in all applications. The assignments applicable to the interface on the NT1 side of NT2s shall be the same as for the interface at TEs.

The contact number assignments for plugs and jacks are given in the table. The individual contact, for each conductor pair, is designated "+" or "-". For TRANSMIT and RECEIVE pairs, the contact designated "+" indicates the conductor (lead in Recommendation I.430) of the pair for which the framing pulse should be relatively positive. However, it is unnecessary to distinguish the individual conductors of transmit and receive circuit pairs in interface cables or extension cords in point-to-point interconnections.

For pairs used for powering across the interface (see source 1 or 2 in section 9 of CCITT Recommendation

I.430), the contact designated "+" indicates the conductor (lead in CCITT Recommendation I.430) of the pair that carries the relatively positive dc voltage.

Table - Contact assignments for plugs and jacks

Contact number	TE	NT	Polarity
1	Power source 3	Power sink 3	+
2	Power source 3	Power sink 3	-
3	Transmit	Receive	+
4	Receive	Transmit	+
5	Receive	Transmit	-
6	Transmit	Receive	-
7	Power sink 2	Power source 2	-
8	Power sink 2	Power source 2	+

NOTE - For its use in TE-to-TE interconnections, power source/sink 3 shall conform to the requirements, specified in CCITT Recommendation I.430, section 9.2, for power source 2.

6 ISDN basic access TE cord

Unless specified as a 4-wire ISDN basic access TE cord (see clause 7) a cord assembly shall consist of a cord having eight conductors arranged in pairs, fitted with a plug at each end.

The plug at each end of the cord shall be as specified in clause 4 and figures 1, 3 and 4.

Cord assemblies up to 7 m in length shall comply with CCITT Recommendation I.430, section 8.9a).

Cord assemblies over 7 m and up to 10 m in length shall comply with CCITT Recommendation I.430, section 8.9b).

The maximum length of the cord assembly shall be 10 m.

Contact assignments for conductors and pairs shall be as specified in the table in clause 5. Contact numbers apply to both plugs, i.e. contact number 1 shall be connected to contact number 1, etc.

7 4-wire ISDN basic access TE cord

A 4-wire cord assembly shall be as specified in clause 6 but with the following changes:

- the cord shall have four conductors arranged in pairs;
- The plug at each end of the cord shall be an 8-pole

plug as specified in clause 4 and figures 1, 3, and 4, but with physical contacts fitted only in contact positions 3, 4, 5, and 6. Contacts shall not be fitted in positions 1, 2, 7 and 8.

- contact assignments for conductors and pairs shall be as specified in the table in clause 5 for contact numbers 3, 4, 5 and 6.

NOTE – Omission of contacts from positions 1, 2, 7 and 8 is to permit visual identification of the 4-wire cord.