

AS/NZS 3594:1994
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AS/NZS 3594

Australian/New Zealand Standard

**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**

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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

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT/1 on Information Systems—Interconnection to supersede AS 3594—1988, *Information processing systems—Interface connector and contact assignments for ISDN basic access interface located at reference points S and T*.

It is identical with and has been reproduced from ISO/IEC 8877:1992, *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*.

This Standard is issued as a Joint Standard under the terms of the Active Cooperation Agreement between Standards Australia and Standards New Zealand.

The objective of this Standard is to provide integrated services digital network designers with specifications of the 8-pole connector (including the poles/contacts assignments) for use in physical interfaces of the ISDN network, which shall conform with ITU-T Recommendation I.430.

This Standard is one of a series of Open Systems Interconnection (OSI) Standards which are currently under development. Since OSI Standards are developmental, there may be some minor difficulties encountered in their implementation. For this reason, Standards Australia will be providing, through the OSI Help Desk, a service to coordinate and disseminate information concerning difficulties which are identified in using this Standard.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

Users of this Standard are advised by Standards Australia and Standards New Zealand, under arrangements made with ISO and IEC, as well as certain other Standards organizations, that the number of this Standard is not reproduced on each page; its identity is shown only on the cover and title pages.

For the purpose of this Standard, the source text should be modified as follows:

- (a) **Terminology** The words 'this Australian/New Zealand Standard' should replace the words 'this International Standard' wherever they appear.
- (b) **Decimal marker** Substitute a full point for a comma where it appears as a decimal marker.
- (c) **References** The references to international Standards should be replaced by references, where appropriate, to the following Australian or Joint Australian/New Zealand Standards:

<i>Reference to International Standard or other publication</i>	<i>Australian or Joint Australian/New Zealand Standard</i>
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ITU-T Recommendation

I.411	ISDN user-network interface— Reference configurations	—
I.420	Basic user-network interface	—
I.430	Basic user-network interface— Layer 1 specification	—

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