

Bell System
**TECHNICAL
REFERENCE**

CATALOG
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BELL SYSTEM TECHNICAL REFERENCES

GENERAL

Bell System Technical References provide interface information to designers and manufacturers of business machines, communications systems and terminal equipment. The subjects covered by these Technical References include data set interface specifications, data communications systems and terminals, data connecting arrangements, voice connecting arrangements, various transmission channels and services and PICTUREPHONE® service. At the present time, these Technical References fall into four basic categories: Data Communications, Voice Communications, Radio and Transmission Engineering and PICTUREPHONE service. As additional needs are determined, new Technical References within these categories and new categories will be provided.

Technical References are prepared in two forms, Standard and Preliminary. Standard Technical References (e.g., Data Sets 201A and 201B — August 1969) are provided for equipment and services which are expected to remain unchanged and available for a relatively long period of time. Preliminary Technical References (e.g., CDX — Preliminary — March 1970) are provided for new equipment and services and indicate information which may be changed or revised in a relatively short time. This does not mean that a manufacturer should not build equipment that is compatible with the information listed but it does offer a caution that the information presented may change.

This catalog of Technical References, to be published as required, lists all current Bell System Technical References. Included for each Technical Reference is the title, a synopsis and an ordering number (PUB 4XXXX). In addition, a listing is provided to permit ordering of complete sets of Technical References in either the Data Communications or Voice Communications categories. Companies on standing order distribution will automatically receive a copy of the catalog.

ORDERING OF TECHNICAL REFERENCES

One-Time Orders

All orders should indicate the Technical Reference(s) desired by catalog number and quantity using the following format:

(Quantity) Technical References (Catalog Number)

If all Technical References in either the Data Communications or Voice Communications categories are desired, they may be ordered as a set using the catalog number assigned to that particular category. For example:

(Quantity) — Complete Set of Voice Communications Technical References — PUB42000

Standing Orders

In addition to one-time orders it is also possible to place a standing order for all new and revised Technical References in a given category (i.e., Data Communication, Voice Communications, Transmission Engineering or PICTUREPHONE Service. To place a standing order use the following wording:

Standing order for (Quantity) copies of all new [Category, (e.g., Voice, Data or Transmission)] Technical References.

Bell System Companies

Bell System Organizations may order Technical References using Form SD-1.80.80 and address it to:

Western Electric Company, Incorporated
Indiana Publication Center
P.O. Box 26205
Indianapolis, Indiana 46226

Non-Bell Companies

Non-Bell Companies should purchase Technical References from:

Western Electric Company
Commercial Relations
P.O. Box 1579
Newark, New Jersey 07102

All purchase orders should include both billing and shipping addresses.

- # PUB41005 Data Communications Using The Switched Telecommunications Network — Revised May, 1971 Describes the structure and operation of the DDD network; presents switching and transmission performance data on the network and discusses topics related to data communications on the DDD network.
- PUB41007 1969-70 Switched Telecommunications Network Connection Survey (Reprints of Bell System Technical Journal Articles) — April 1971 Describes analog transmission parameter performance, low-speed data transmission performance, and high-speed voiceband data transmission performance of the Switched Telecommunications Network. This is a series of three Bell System Technical Journal Articles which summarize Bell Telephone Laboratories' 1969-70 Connection Survey.
- *PUB41008 Analog Parameters Affecting Voiceband Data Transmission — Description of Parameters — October 1971 A tutorial describing analog parameters which may affect data transmission over voice-band channels.
- *PUB41009 Transmission Parameters Affecting Data Transmission — Measuring Techniques January 1972 This Technical Reference briefly defines the parameters affecting data transmission described in the companion Technical Reference (PUB 41008) and describes the techniques used by the Bell System to measure these parameters. In addition, physical and environmental requirements of test equipment used by the Bell System are provided.

*Pub 41023 Dataphone switch
Digital Service Channel
interface specifications
Mar. 1976*

*Pub 41022 DDZ Multistation
Dataphone Digital Service Sep 1974*

*Pub 41021 Digital Data System
channel interface spec. Mar 1973*

*New Technical Reference

Revised — Supersedes August, 1970 Issue of PUB41005

Data Sets and Data Auxiliary Sets

PUB41101	Data Set 103A Interface Specification – February 1967	Data Set 103A provides full-duplex low speed serial data transmission at rates up to 300 bps. The 103A is used in conjunction with Data Auxiliary Set 804B1 and may be arranged for automatic origination, automatic answering and alternate voice. This data set is used for DATA-PHONE®service and in TWX-CE applications.
PUB41102	Data Set 103E, 103G, 103H Interface Specification – October 1968	Data Sets 103E, G, H provide full-duplex low speed serial data transmission at rates up to 300 bps. The 103E is a basic data set without power supply and attendant controls and is designed for multiple set installations. The 103G is similar to the 103E but has an integrated housing and provides a card dialer. The 103H is also similar to the 103E but is designed for mounting in a data terminal. These data sets are used for DATA-PHONE service and in TWX-CE applications.
PUB41103	Data Set 103F Interface Specification – May 1964	Data Set 103F provides full-duplex low speed serial data transmission at rates up to 300 bps. It is intended for use on private line channels and does not include a provision for voice transmission.
PUB41104	Data Set 113A Interface Specification – May 1969	Data Set 113A is an originate only, full-duplex low speed serial data set for use at rates up to 300 bps. This is a line powered data set designed for DATA-PHONE service applications.
*PUB41105	113-Type Data Station – Interface Specification – October 1971	Description: The 113-type Data Station provides for low-speed, serial, FSK, full-duplex data transmission over the switched telecommunications network. It is intended for use in multiple data set, answer-only installations such as those associated with a time-shared computer. The Data Station consists of Data Sets 113B, an appropriate cabinet (3 available sizes) and Data Auxiliary Set 804T.
PUB41201	Data Sets 201 A&B – August 1969	The Data Set 201-type transmits serial binary data over voice bandwidth facilities using PSK modulation. Operation is synchronous full-duplex or half-duplex and may be at 2000 bps for DATA-PHONE service over the switched telecommunications network or at 2400 bps over conditioned private line channels.

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*Revised – Supersedes the Preliminary Technical Reference of the same title dated February 1971.

- PUB41202 Data Sets 202C&D Interface Specifications – May 1964
- The Data Sets 202C&D provide a medium speed, binary, serial data transmission system. They operate at rates up to 1200 bps for DATA-PHONE service and up to 1800 bps on conditioned private line channels.
- #PUB41203 Data Set 202E Series – Revised September 1971
- The Data Set 202E series is a modularized family of data set transmitters designed primarily to be used as input stations in data collection systems. This data set may be used on either the switched telecommunications network or on private line channels and operates at speeds compatible with Data Sets 202 C&D.
- PUB41204 Data Set 203-Type – June 1970
- Data Set 203 family is designed to provide synchronous transmission and reception of high-speed digital data over the switched telecommunications network or conditioned private line data channels. These sets are capable of operating at bit rates between 1800 and 10,800 bps (7200 bps is the maximum speed currently available) and various options such as separate transmitter and receiver, secondary channel and alternate voice are available.
- PUB41205 Data Set 205B Interface Specification – January 1967
- The Data Set 205B is a full-duplex modem that uses synchronous PSK modulation for transmission of serial binary data at 600, 1200, and 2400 bits per second. It is intended for use in four-wire switched and non-switched private line applications. The 205B can be used as a terminal data set or as part of a regenerative repeater.
- PUB41206 Data Set 205C2 Interface Specification – August 1967
- The Data Set 205C2 is designed primarily for special military applications requiring a very stable clock. It uses synchronous PSK modulation for transmission of serial binary data at 2400 bits per second. Operation at half-speed, 1200 bps, may be used to improve the probability of successful transmission over degraded facilities. The 205C2 can be used as a terminal data set or as part of a regenerative repeater.

#Revised – Supersedes the Technical Reference of the same title dated March 1968 and Supplement 1 dated October 1968.

PUB41206A	Data Set 205C2 Interface Specification – Supplement 1 – September 1968	This supplement provides information on Data Auxiliary Set 811D1 which may be used with Data Set 205C2 for customer-furnished crypto ancillary equipment.
PUB41207	Data Set 207-Type-Interface Specification – October 1969	The Data Set 207-type is designed for transmitting secure speech or data over conditioned 4-wire voiceband telephone facilities. It is intended primarily for special military applications and contains features not generally required in commercial business machine data systems. The data set is principally used in global systems, such as the Automatic Voice Network (AUTOVON).
*PUB41208	Data Set 202R Interface Specification – June 1971	The Data Set 202R is a manual only, minimum feature data set. It may be used on either the telecommunications network or on private line channels and operates at speeds compatible with Data Sets 202C and D.
PUB41301	Data Set 301B Interface Specification – March 1967	The Data Set 301B provides for the transmission of binary serial synchronous data at 40,800 bps. This data set requires a group bandwidth channel and is used in private line applications only.
PUB41302	Wideband Data Stations 303-Type Interface Specification – August 1966	Data Stations 303 comprise a family of wideband data stations for use in the transmission of serial binary synchronous or nonsynchronous data. Speeds available range from 19.2 kbps to 230.4 kbps and operation may be over either analog or digital facilities.
PUB41302A	Wideband Data Stations 303-Type Supplement 1 – March 1969	Describes a new series of 303 Data Stations for limited distance transmission of 460.8 kbps. Also discusses switched wideband applications of the 303, an improved scrambler and non-synchronous service.

* New Technical Reference

PUB41303	The Display Data Set F-58167 Used to Provide Computer Access Service for PICTURE-PHONE Stations – Preliminary August 1970	The Display Data Set F-58167 provides an interface between a customer-provided computer and the PICTUREPHONE switching network. This data set permits the PICTUREPHONE station to interact with the computer and generates character display signals which are displayed on the PICTUREPHONE screen.
#PUB41304	Wideband Data Set 306-Type Interface Specification – July 1971	Data Set 306A provides for the transmission of serial binary synchronous data at the transfer rate of 1.344 Mb/s over T1 carrier facilities.
PUB41401	Data Sets 401A & 401E Interface Specification – April 1966	Data Sets 401A- and 401E-Types are multi-frequency data transmitters used for DATA-PHONE service. Both sets provide parallel character transmission with the 401A using a 2-out-of-8 (numeric) and the 401E using a 3-out-of-14 (alphanumeric) coding scheme. Both sets are line powered.
PUB41402	Data Set 401H Interface Specification – March 1969	Data Set 401H-type is a multi-frequency data transmitter used for DATA-PHONE service. The 401H uses a 3-out-of-14 parallel character transmission scheme, is line powered and provides automatic answering.
PUB41403	Data Set 401J Interface Specification – September 1965	Data Set 401J is a multi-frequency data receiver intended for use on DATA-PHONE service. It can receive either 3-out-of-14 or 2-out-of-8 parallel signals at a speed of up to 20 characters/second.
PUB41404	Data Set 401L Interface Specification – April 1969	Data Set 401L-type is a multi-frequency data transmitter intended for use on DATA-PHONE service. The 401L uses a 3-out-of-14 parallel character transmission scheme and provides a one number automatic calling unit in one package.
PUB41405	Data Sets 402C & 402D Interface Specification – November 1964	Data Sets 402C (transmitter) and 402D (receiver) compose a medium speed, binary, parallel data transmission system for DATA-PHONE Service or private line service. The system will transmit any number of data levels up to 8 at any speed up to 75 characters per second.

Supersedes "Wideband Data Set 306-Type Interface Specification – Preliminary May 1970"

PUB41406	Data Sets 403D, 403E Interface Specification – November 1967	Data Sets 403D- and 403E-types are multi-frequency data receivers intended to be used for station reception over DATA-PHONE service of 2-out-of-8 signals generated by TOUCH-TONE® telephone sets. The data sets may also receive information generated by 401-type data set transmitters operating in the “numeric mode” (2-out-of-8 signals).
PUB41501	Data Set 602A Interface Specification – July 1963	Data Set 602A is designed for the transmission of analog facsimile information on DATA-PHONE service or private line facilities. Although designed primarily for facsimile, the data set can provide for the transmission of other analog data that matches the bandwidth, distortion, and signal-to-noise capabilities of the data set.
PUB41501A	Data Set 602C Addendum 1 to Data Set 602A Interface Specification – January 1967	Data Set 602C provides the same features of the 602A, but in addition, some new features have been incorporated. These new features are: optional removal of the sync. channel, optional removal of baseband pre-emphasis and post emphasis, optional availability of a reverse signaling channel, and the availability of a TOUCH-TONE dial.
PUB41502	Data Sets 603A, 603B and 603D Interface Specification – April 1966	Data Sets 603-type is a family of analog data sets used to transmit medical data such as electrocardiograms over DATA-PHONE service. The 603A is a fixed transmitter, the 603B is a fixed receiver, and the 603D is a portable transmitter.
PUB41503	Data Sets 604A, 604B – Special – Preliminary – June 1968	Data Set 604A is a transmitter and Data Set 604B is a receiver. Together they provide three simultaneous narrow band (0-120Hz) analog channels suitable for the transmission and reception of biomedical data such as electrocardiograms. The sets are rated “Special” due to special manufacturing methods and because another future version is being contemplated.

- PUB41601** **Data Auxiliary Set 801A
(Automatic Calling Unit)
Interface Specification –
March 1964**
- The Data Auxiliary Set 801A is a dc dial pulse Automatic Calling Unit (ACU) which permits a business machine to place calls over the switched telecommunications network. In operation, a telephone number stored in the business machine is passed to the ACU which sets up the call and transfers the circuit to the associated data set for the automatic transmission of data.
- PUB41602** **Data Auxiliary Set 801C
(Automatic Calling Unit)
Interface Specification –
September 1965**
- The Data Auxiliary Set 801C is a TOUCH-TONE dialing Automatic Calling Unit (ACU) which permits a business machine to place calls over the switched telecommunications network. In operation, a telephone number stored in the business machine is passed to the ACU which sets up the call and transfers the circuit to the associated data set for the automatic transmission of data.
- PUB41603** **Station Arrangements to
Provide TWX Service for Customer-
Provided Terminals (Data
Auxiliary Set 811B) Interface
Specification –
September 1968**
- Data Auxiliary Set 811B provides an interface for the use of customer-provided terminal equipment on Teletypewriter Exchange Service. This arrangement provides for multiple installations, includes at least one Telephone Company-provided Teletypewriter, and provides two-way signal regenerations at TWX speeds.

*Pub 41024 Transaction Network
system description Apr 76*

*Pub 41025 T. N. Polled access
interface Spec Apr 76*

*Pub 41026 T. N. Dial in interface
Spec Apr 1978*

*Pub 41027 T. N. Synchronous inter-
face Spec. Apr 76*

Data Communications Systems and Terminals

- PUB41701 83B3 Teletypewriter Selective Calling System — September 1967
- The 83B3 Teletypewriter Selective Calling System is five-level half-duplex private line system using Model 28 equipment at speeds up to 100 words per minute. The traffic flow is governed by a control station which automatically polls the other stations to start their tape readers.
- *PUB41702 85A1 and 85A2 Data Selective Calling Service Stations — October, 1971
- The 85A-type Data Selective Calling Service Stations are used in providing eight-level, half-duplex, private line selective calling systems. The 85A1 station provides for 100 wpm operation using Model 33 or 35 equipment while the 85A2 station provides for 150 wpm operation using Model 37 equipment. The traffic flow is administered by a customer-provided computer (line control station) which sequentially polls the station-transmitter and selects the designated receivers.
- PUB41703 86A1 and 86A2 Data Selective Calling Service Stations — June 1969
- The 86A1 and 86A2 Data Selective Calling Service Stations are used in providing eight-level half-duplex selective calling systems. The 86A1 station provides for 100 wpm operation using Model 33 or 35 equipment while the 86A2 station provides for 150 wpm operation using Model 37 equipment. Control of these stations is from a customer-provided computer (line control stations). 86A-type stations are used in applications where the customer-provided computer controls both half- and full-duplex circuits.
- PUB41704 86B-Types Data Selective Calling System Stations — November 1968
- 86B-type Data Selective Calling System Stations are used in providing 8-level full-duplex selective calling systems. The 86B1 stations operate at 100 wpm using Model 33 and 35 equipment. The 86B2 stations operate at 150 wpm using Model 37 equipment. Control of these stations is from a customer-provided computer.
- #PUB41705 Data Line Concentrator System (DLCS) Arrangements — May 1971
- Data Line Concentrator System Arrangements provide for the connection of a number of stations to a smaller number of computer communications ports. The service includes a data line concentrator, private line transmission facilities and is used with Model 33 or 35 Teletypewriters and also customer-provided terminals.

#Supersedes "Initial DATREX® Service Arrangements with Bell System Teletypewriter Computer Port Interface — Preliminary — July, 1970"

* Revised — Supersedes April, 1968 Issue of PUB41702

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PUB41706	Model 37 Teletypewriter Stations for DATA-PHONE Service – September 1968	Describes the operating and line characteristics of the M37 Teletypewriter Station operating on DATA-PHONE Service. Included is a list of features that are available or are planned to be available.
PUB41707	DATASPEED® Type-4 System – September 1969	The DATASPEED Type-4 Service is a paper tape transmission system operating at either 1050 wpm or 1200 wpm. This system provides error-detection and correction by tape pull back and re-transmission on error indication.
PUB41708	Type-5 DATASPEED System – June 1970	The DATASPEED Type-5 system is a medium speed paper tape transmission operating at 750 wpm. The system uses a separate sender and receiver and can accommodate 5-, 6-, 7- or 8-level paper tape.
PUB41709	Receive-Only DATASPEED Printer Station Arrangements System Interface Specification – January 1970	The receive-only DATASPEED Printer is a high speed nonimpact terminal. It operates at either 1050 wpm or 1200 wpm using serial transmission and at 750 wpm using parallel transmission.
PUB41710	4200 Series Magnetic Tape Terminal – August 1970	The 4200 Series Magnetic Tape Set will send from or receive data and record it on magnetic tape in a 150,000-character capacity cartridge. This system accommodates an eight-level code and operates at speeds from 100 wpm to 2400 wpm.
PUB41712	DATASPEED Type 2 System – December 1970	The DATASPEED Type 2 system is a medium speed, serial data transmission system. The system consists of a Sending terminal, paper tape punch, and a Receiving terminal, paper tape punch. Operating speed is 1050 wpm using a 202-type data set. Information presented consists of on-line signaling and terminal characteristics.
* PUB41713	Models 33, 35 and 37 Stations for Point-to-Point Private Line Service – August 1971	Describes Point-to-Point Private Line Service in which Model 33, 35 or 37 Teletypewriter Stations are connected to one or both points on a communication link. The arrangements described are composed of two interconnecting stations and their communications control capability.

* New Technical Reference.

PUB41711 is no longer available – the KSR DATASPEED Printer will not be a Bell System offering.

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Data Interconnection

PUB41800	Complete Set of Data Interconnection Technical References.	
# PUB41801	Data Access Arrangement CDT for Manual Originating and Answering Terminals – Revised May 1971	Data Access Arrangement CDT is used to connect customer-provided terminal equipment to the switched telecommunications network. It provides for manual origination and answering of calls and includes a standard telephone set equipped with an exclusion key used to manually transfer between the TALK and DATA modes.
PUB41802	Data Couplers CBS and CBT for Automatic Terminals – August 1970	Data Couplers CBS and CBT are used to connect customer-provided terminal equipment to the switched telecommunications network. They provide for automatic answering, terminating and/or dc dial pulse originating of calls and include a network control signaling unit and a data access arrangement. Data Coupler CBS provides EIA-RS 232C voltage type control leads. Data Coupler CBT provides contact closure type control leads.
PUB41802A	Data Coupler CBS and CBT for Automatic Terminals – Addendum – March 1971	The purpose of this addendum is to describe the conditions under which customer-provided data stations may generate tone signals for the purpose of addressing the switched telecommunications network. In those locations where TOUCH-TONE calling service is available, it also provides errata and supplemental information for the August 1970 issue of the Technical Reference.
PUB41803	Acoustical Coupling for Data Transmission – Preliminary – November 1968	Provides information of interest to the designer of acoustically coupled data transmission equipment. Information includes system design considerations, transmission speeds, transmission to other data sets, power limitations and a test instrument assembly.

Revised to include changes and information from the Addendum dated March, 1971.

VOICE COMMUNICATIONS ^{11/1}

PUB42000 Complete Set of Voice Communications Technical References

Voice Connecting Arrangements – Manual, Terminal

- # PUB42101 QKT –
Revised June 1971
- Manual connecting arrangement used for the connection of customer-provided voice transmitting and/or receiving equipment or communications systems to a PBX or Central Office station line through a Telephone Company-provided telephone set equipped with an exclusion key.
- PUB42102 CDX – Preliminary –
December 1969
- Manual Voice connecting arrangement used to connect a customer-provided device, typically patching devices, which enables the connection of an incoming call to a Telephone Company-provided PBX and an outgoing Central Office trunk line from a Telephone Company-provided PBX.
- PUB42103 CEBAX/CEBBX – Preliminary –
Revised June 1970
- Voice Connecting Arrangement CEBAX permits a customer to manually connect and disconnect customer-provided equipment, typically multi-line conferencing devices, to a specific line terminated on a Telephone Company-provided key set (control station). For use with customer-provided equipment with only one supervisory contact. Furnished on a per line per control station basis.
- Voice Connecting Arrangement CEBBX permits a customer to manually connect and disconnect customer-provided equipment, typically multi-line conferencing devices, to a specific line terminated on a Telephone Company-provided key set (control station). For use with customer-provided equipment with two supervisory contacts. Furnished on a per line basis.
- PUB42104 LOH – Preliminary –
July 1970
- Voice connecting arrangement permitting the connection of customer-provided background music or other recorded material to Central Office lines terminated in a Telephone Company-provided switchboard.

Revised – Supersedes "30-Type Voice Coupler (QKT) Preliminary – February 1969"

PUB42105	LVH – Preliminary – July 1970	Voice connecting arrangement permitting the connection of customer-provided background music or other recorded material to Central Office or PBX lines, terminated in Telephone Company-provided key telephone sets, while the line is in the hold mode.
PUB42106	CEBAV – Preliminary – August 1970	Voice connecting arrangement which permits a customer to manually connect and disconnect customer-provided equipment, typically manual announcement sets, which answers an incoming call, to a specific line terminated on a Telephone Company-provided key set (control station). For use with customer-provided equipment with only one supervisory contact.
PUB42107	CEBAW – Preliminary – August 1970	Voice connecting arrangement which permits the customer to manually connect and automatically disconnect customer-provided equipment, typically intercom systems, to a specific line terminated on a Telephone Company-provided key set (associated station). For use with customer-provided equipment with two supervisory contacts.

Voice Connecting Arrangements – Automatic, Terminal

PUB42201	CAU/SU3/SU6 Preliminary – November 1969	Voice Connecting Arrangement CAU is an alarm coupler which provides one-way transmission for use with customer-provided alarm device with dial pulse signaling. SU3 is a tone signaling unit for use with Voice Connecting Arrangements CAU or SU6 – permits the operation of the alarm device to be tested or verified from a remote location. Voice Connecting Arrangement SU6 is an alarm coupler modified to provide two-way transmission, to permit detection of dial tone or proper signal from a remote point.
# PUB42202	SU7QW – Preliminary – Revised May 1971	Voice Connecting Arrangement SU7QW provides the means for automatically connecting customer-provided dial pulse repertory dialers.
PUB42203	RTT – Preliminary – January 1970	Connecting arrangement that generates a tone to both parties under control of a customer-provided call duration timer.
PUB42204	RDL/RDM – Preliminary – March 1970	Voice Connecting Arrangement RDL is a recorder coupler arranged for one-way recording or one-way announcements – not arranged for both at the same time. Voice Connecting Arrangement RDM is a recorder coupler modified to provide two-way simultaneous transmission. See RDMZR.
PUB42205	RCZ – Preliminary – June 1970	Recorder connector used to connect customer-provided two-way recording equipment which provides a distinctive “beep” tone and includes a filter.
# PUB42206	RC1 – Preliminary – Revised June 1971	Connecting arrangement which provides the means for customer-provided equipment to cause a short burst of 1400Hz tone to be sent to the local party; used for call duration timing.

Revised – PUB42202 Supersedes “SU7 – Preliminary – December 1969”
Revised – PUB42206 Supersedes “RC1 – Preliminary – February 1971”

- *PUB42207 C2ACP/C2AKS – Preliminary – April 1971
 Voice Connecting Arrangement C2ACP is an automatic arrangement used to connect customer-provided terminal equipment to a WATS access line, a Central Office station line, or a PBX/Centrex extension line.
- Voice Connecting Arrangement C2AKS is an automatic arrangement used to connect customer-provided terminal equipment to a WATS access line, a Central Office station line, or a PBX/Centrex extension line which concurrently terminates in a Telephone Company-provided station.
- *PUB42208 STC – Preliminary – May 1971
 Voice connecting arrangement that provides the means for automatically connecting customer-provided transmitting and receiving speech terminal equipment, e.g., telephone sets, utilizing a thru-wire interface.
- *PUB42209 RDMZR/RDY – Preliminary – June 1971
 Voice Connecting Arrangement RDMZR provides the means for automatically connecting customer provided receive-only speech terminal equipment, e.g. answering sets; it supercedes and replaces Voice Connecting Arrangement RDM.
- Voice Connecting Arrangement RDY provides all of the features of Voice Connecting Arrangement RDMZR and, in addition, provides volume-limited receive transmission.
- *PUB42210 SU6AQ/STS – Preliminary – June 1971
 Voice Connecting Arrangement SU6AQ provides the means for automatically connecting customer-provided transmitting and receiving speech terminal equipment, e.g., alarm systems, utilizing a multi-wire interface; it supercedes and replaces Voice Connecting Arrangement SU6.
- Voice Connecting Arrangement STS provides all of the features of Voice Connecting Arrangement SU6AQ and, in addition, permits the transmission of customer-provided supervisory tone signals; it provides an alternative to Voice Connecting Arrangement SU3.
- *PUB42211 CEZ – Preliminary – November 1971
 Voice connecting arrangement which permits the manual connection and automatic disconnection of customer-provided equipment (typically conferencing devices) to a specific line on an Associated Telephone Company provided key telephone set.

Voice Connecting Arrangements – Manual, System

PUB42301	2A (CDB) – Preliminary – February 1969	Manual voice connecting arrangement used to connect a line from a customer-provided system, which provides supervisory signals, to a Central Office trunk line through a Telephone Company-provided cord switchboard position.
PUB42302	1A (CDA) – Preliminary – June 1969	Manual voice connecting arrangement used to connect a cord switchboard position of a customer-provided system, which provides supervisory signals, to an exchange trunk line.
PUB42303	3A (CDN) – Preliminary – June 1969	Manual voice connecting arrangement used to connect a line from a customer-provided system, which provides supervisory signals, to an exchange line through a Telephone Company-provided key station.
PUB42304	CD1 – Preliminary – July 1969	Manual voice connecting arrangement used to connect a cord switchboard position of a customer-provided system, which does not provide supervisory signals, to an exchange trunk line.
PUB42305	CD4 – Preliminary – August 1969	Manual voice connecting arrangement used to connect a line from a customer-provided system, which does not provide supervisory signals to an exchange trunk line through a Telephone Company-provided cord switchboard position.
PUB42306	CD5 – Preliminary – August 1969	Manual voice connecting arrangement used to connect a line from a customer-provided system, which does not provide supervisory signals, to an exchange line through a Telephone Company-provided key telephone station.
PUB42307	CDY – Preliminary – October 1969	Voice connecting arrangement used to terminate – without exchange connection – a line from a customer-provided system in a Telephone Company-provided key telephone station.

Voice Connecting Arrangements – Automatic, System

PUB42401	CDH – Preliminary – Revised October 1970	Automatic voice connecting arrangement used to connect the attendant position and dial switching equipment of a customer-provided system to an exchange trunk line arranged for two-way combination rotary or TOUCH-TONE service.
PUB42402	CD7/CD8/CD9 – Preliminary – Revised January 1971	<p>Voice Connecting Arrangement CD7 is an automatic arrangement used to connect the attendant position of a customer-provided system to an exchange trunk line arranged for one-way outgoing rotary or TOUCH-TONE service.</p> <p>Voice Connecting Arrangement CD8 is an automatic arrangement used to connect the dial switching equipment of a customer-provided system to an exchange trunk line arranged for one-way outgoing rotary or TOUCH-TONE service.</p> <p>Voice Connecting Arrangement CD9 is an automatic arrangement used to connect the attendant position of a customer-provided system to an exchange trunk line arranged for two-way rotary or TOUCH-TONE service.</p>
PUB42403	CET – Preliminary – October 1970	Automatic voice connecting arrangement used to connect a customer-provided system to an exchange trunk line arranged for one-way service to the operator position of a Telephone Company long distance switchboard (the equivalent of a toll terminal).
PUB42404	CD6 – Preliminary – December 1969	Automatic voice connecting arrangement used to connect an exchange trunk line arranged for one-way incoming service to the attendant position of a customer-provided system.
PUB42405	CED – Preliminary – April 1970	Automatic voice connecting arrangement used to connect a customer-provided system to an exchange trunk line, arranged for two-way service, to the operator position of a Telephone Company long distance switchboard (the equivalent of a toll terminal).
PUB42406	C22 – Preliminary – March 1971	Automatic voice connecting arrangement used to connect an exchange trunk line arranged for one-way direct inward dialing (DID) service to the dial switching equipment of a customer-provided system.

*PUB42407 C24/C2H – Preliminary –
October 1971

Voice Connecting Arrangement C24 is an automatic arrangement used for two-way service which provides a four-wire voice transmission interface for connecting customer-provided channel facilities to a Telephone Company PBX. An E and M type signaling interface is provided.

Voice Connecting Arrangement C2H is an automatic arrangement used for two-way service which provides a four-wire voice transmission interface for connecting customer-provided channel facilities to Telephone Company Centrex service. An E and M type signaling interface is provided.

*PUB42408 C27/C2K – Preliminary –
October 1971

Voice Connecting Arrangement C27 is an automatic arrangement used for two-way service which provides a two-wire voice transmission interface for connecting customer-provided channel facilities to a Telephone Company PBX. An E and M type signaling interface is provided.

Voice Connecting Arrangement C2K is an automatic arrangement used for two-way service which provides a two-wire voice transmission interface for connecting customer-provided channel facilities to Telephone Company Centrex service. An E and M type signaling interface is provided.

*New Technical Reference

Voice Connecting Arrangements — Private Line

PUB42501	CDQ4W — Preliminary — August 1969	Automatic voice connecting arrangement arranged for two-way service, which provides a four-wire voice transmission interface to customer-provided dial switching equipment — used with a Telephone Company-provided four-wire private line channel equipped with Telephone company-provided channel signaling with a contact-type signaling interface.
*PUB42502	CDQ2W/CDQ2X — Preliminary — June 1971	<p>Voice Connecting Arrangement CDQ2W is arranged for two-way service, and provides a two-wire interface to customer-provided dial switching equipment. Used with Telephone Company-provided private line channel and Telephone Company-provided channel signaling with a contact-type signaling interface.</p> <p>Voice Connecting Arrangement CDQ2X is arranged for two-way service, and provides a two-wire interface to customer-provided dial switching equipment. Used with Telephone Company-provided private line channel and Telephone Company-provided channel signaling with an E- and M-type signaling interface.</p>
PUB42503	C234W — Preliminary — February 1971	Voice connecting arrangement, arranged for two-way service, which provides a four-wire voice transmission interface to customer-provided dial switching equipment. Used with a Telephone Company—provided four-wire private line channel and customer-provided channel signaling.
*PUB42504	C232W — Preliminary — September 1971	Voice connecting arrangement arranged for two-way service, which provides a two-wire interface to customer-provided dial switching or station terminal equipment. Used with a Telephone Company-provided private line channel and customer-provided channel signaling (inband signaling only).
*PUB42505	CDQ4X — Preliminary — October 1971	Automatic voice connecting arrangement, arranged for two-way service, which provides a four-wire interface to customer-provided dial switching equipment. Used with a Telephone Company-provided four-wire private line channel equipped with Telephone Company-provided channel signaling with an E and M signaling interface.

*New Technical Reference

Connecting Arrangements – Miscellaneous

PUB42601 CEK – Preliminary –
April 1970

Connecting arrangement used to associate customer-provided message registers where the customer is providing the communications system and the necessary equipment to associate the station with the message registers with a Central Office trunk line.

PUB42602 CAK – Preliminary –
Revised November 1970

Specification CAK describes a procedure used by AT&T Co. for the evaluation of customer-provided antique/decorator set housings. Replaces B drawings previously furnished by the local Telephone Companies.

PUB42603 C1V/RCX – Preliminary –
December 1970

Connecting Arrangement C1V is used to connect customer-provided elapsed time or pen register equipment to PBX WATS lines, PBX Central Office trunks or station lines. This arrangement provides a closure that is maintained when the line is off-hook and will not follow dial pulses.

** CTX
LINES*

Connecting Arrangement RCX is used to connect customer-provided elapsed time or pen register equipment to PBX WATS lines, PBX Central Office trunks, or station lines. This arrangement provides a closure that is maintained when the line is off-hook and opens on each dial pulse.

*PUB42604 C25 – Preliminary –
July 1971

Connecting arrangement used to connect the customer-provided automatic number identification equipment of a customer-provided communications system to a Bell System Central Office for automatic identified outward dial (AIDD) service.

* New Technical Reference

Voice Connecting Arrangement – PBX Adjuncts

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| * PUB42701 | DCT – Preliminary
June 1971 | Voice connecting arrangement (formerly designated Recorded Telephone Dictation Trunk Circuit) which provides trunk level access, e.g., dial "7", from a station on a Bell System PBX or centrex system to customer-provided dictation equipment. |
| *PUB42702 | DCW – Preliminary –
July 1971 | Voice connecting arrangement (formerly designated Interface Trunk Circuit) which provides a two-part trunk level access, e.g., dial "7," from a station on a Bell System PBX or Centrex system to customer-provided equipment capable of receiving dialed digits (serial or parallel coded) for central purposes. |

* New Technical Reference

RADIO AND TRANSMISSION ENGINEERING

PUB43000 Complete Set of Radio and Transmission Engineering Technical References.

Private Line Facilities

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| PUB43101 | Voice Grade Entrance Facilities for Extending Customer-Provided Communications Channels – Preliminary – May 1969 | Describes the various entrance facility serving arrangements, provides transmission characteristics of entrance facilities, describes signal power limitations and discusses the division of responsibility for design, operation and maintenance. |
| PUB43201 | Private Line Interconnection Voice Applications – Preliminary – June 1970 | Describes the standard private line offerings for voice applications which may be interconnected at one or both ends with customer-provided voice communications systems or terminal equipment. Also describes minimum protection criteria, signaling arrangements and maintenance techniques. |
| *PUB43401 | Transmission Specifications for Private Line Metallic Circuits – Preliminary – December 1971 | Describes the signal level criteria objectives for private line metallic circuits (cable pairs without signal battery or amplification devices). This material is provided for those who use the metallic continuity of local private line channels implemented by wire pairs. It should be noted that the Telephone Companies have no obligation to provide private line channels on a metallic basis. |

Mobile Radio

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| *PUB43301 | Domestic Public Land Mobile Telephone Service – Customer – Provided Dial Stations – Preliminary – June 1971 | Provides information needed to interface customer-provided mobile telephone dial stations with Telephone Company-provided mobile telephone radio systems. |
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PICTUREPHONE SERVICE

PUB44000 Complete Set of PICTUREPHONE Service Technical References

PICTUREPHONE Interconnection

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| PUB44101 | PVF – Preliminary – September 1970 | PICTUREPHONE connecting arrangement which permits the connection of customer-provided video/audio terminal equipment to PICTUREPHONE facilities using a Telephone Company-provided TOUCH-TONE telephone set. |
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* New Technical Reference.