

Bell System
**TECHNICAL
REFERENCE**

CATALOG
MAY, 1972



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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.

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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 request Technical References from:

American Telephone and Telegraph Co.
Supervisor – Information Distribution Center
195 Broadway, Room 208
New York, New York 10007

All requests should include both billing and shipping addresses. The current Commercial Price for Technical References is \$1.50 each except: PUB 44101 – \$3.50 each; PUB 40001 Binder – \$2.85 each. Prices subject to change without notice. Price does not include taxes or premium mailing charges.

ADMINISTRATION

- | | | |
|-----------|---|---|
| *PUB40000 | Technical Reference Catalog –
May 1972 | Lists all current Bell System Technical References and provides ordering information, catalog numbers and synopsis. |
| PUB40001 | Technical Binder | A general purpose four-ring binder suitable for all categories of Bell System Technical References. This binder will hold approximately 15 individual Technical References. |

DATA COMMUNICATIONS

- PUB41000 Complete Set of Data Communications Technical Reference

Facilities for Data Communications

- | | | |
|----------|--|---|
| PUB41001 | 30-Baud Private Line Channels
Interface Specification –
December 1967 | Describes a private line channel capable of transmitting two-state ("mark-space," "binary") signals at rates up to 30-baud for metering, supervisory control and miscellaneous signaling purposes. Metallic continuity, end-to-end, is not a requirement of this channel and will generally not be available. The interface signal is two-state direct current. |
| PUB41002 | 45- 55- & 75-Baud Private Line
Channels Interface Specification –
December 1967 | Describes three private line channels capable of transmitting two-state ("mark-space," "binary") signals up to their respective rated speeds for teletypewriter, data, metering, supervisory control and miscellaneous signaling purposes. Metallic continuity, end-to-end, is not a requirement of this channel and will generally not be available. The interface signal is two-state direct current. |
| PUB41003 | 150-Baud Private Line Channels
Interface Specification –
February 1968 | Describes a private line channel capable of transmitting two-state ("mark-space," "binary") signals at speeds up to 150-baud for teletypewriter, data metering, supervisory controls and miscellaneous signaling purposes. The interface to business machine is the EIA Standard RS-232B-type. |
| PUB41004 | Transmission Specifications for
Voice Grade Private Line Data
Channels –
March 1969 | Describes voiceband channel arrangements for private line data transmission; includes expected transmission parameter values, interface requirements for customer-provided equipment, channel design and maintenance considerations. |

* New Technical Reference.

- # PUB41005 Data Communications Using
The Switched Telecommunica-
tions Network —
Revised May, 1971
- PUB41007 1969-70 Switched Telecommuni-
cations Network Connection
Survey (Reprints of Bell System
Technical Journal Articles) —
April 1971
- PUB41008 Analog Parameters Affecting
Voiceband Data Transmission —
Description of Parameters —
October 1971
- PUB41009 Transmission Parameters Affect-
ing Data Transmission — Measur-
ing Techniques
January 1972
- 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.
- 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.
- A tutorial describing analog parameters which may affect data transmission over voice-band channels.
- 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.

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.

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 and PUB41206A	Data Set 205C2 Interface Specification — August 1967 Supplement 1 — September 1968	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. The supplement provides information on Data Auxiliary Set 811D1 which may be used with Data Set 205C2 for customer-furnished crypto ancillary equipment.

* Starting with this issue each addendum will be listed together with the PUB which it supplements. No additional charge for addenda.

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

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
and
303-Type Interface
PUB41302 A** **Specification –
August 1966
Supplement 1
March 1969**

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. Supplement 1 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.

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
and Specification – July 1963**
PUB41501 A **Data Set 602C Addendum 1
to Data Set 602A Interface
Specification –
January 1967**

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. 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 has been deleted because the service described has been sold to the Western Union Telegraph Company.

Data Communications Systems and Terminals

- PUB41701 83B3 Teletypewriter Selective Calling System — September 1967
- PUB41702 85A1 and 85A2 Data Selective Calling Service Stations — October, 1971
- PUB41703 86A1 and 86A2 Data Selective Calling Service Stations — June 1969
- PUB41704 86B-Types Data Selective Calling System Stations — November 1968
- #PUB41705 Data Line Concentrator System (DLCS) Arrangements — May 1971
- 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.
- 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.
- 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.
- 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.
- 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"

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.

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
- PUB41802 and PUB41802A Data Couplers CBS and CBT for Automatic Terminals – August 1970 Addendum – March 1971
- PUB41803 Acoustical Coupling for Data Transmission – Preliminary – November 1968
- 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.
- 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. The addendum describes 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.
- 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.

VOICE COMMUNICATIONS

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
- PUB42106 CEBAV – Preliminary –
August 1970
- PUB42107 CEBAW – Preliminary –
August 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.
- 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.
- 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. See SU6AQ.
# 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 – Revised April 1972
- Voice connecting arrangement that provides the means for automatically connecting customer-provided transmitting and receiving speech terminal equipment, e.g., telephone sets, utilizing a three-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.

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
- 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.
- 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.
- 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.

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 | <p>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 <u>will not follow</u> dial pulses.</p> <p>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 <u>opens</u> on each dial pulse.</p> |
| 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 (AIOD) service. |

Voice Connecting Arrangement – PBX Adjuncts

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.

RADIO AND TRANSMISSION ENGINEERING

PUB43000 Complete Set of Radio and Transmission Engineering Technical References.

Private Line Facilities

- | | | |
|----------|--|---|
| 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

- | | | |
|----------|---|---|
| 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. |
|----------|---|---|

PICTUREPHONE SERVICE

PUB44000 Complete Set of PICTUREPHONE Service Technical References

PICTUREPHONE Interconnection

- | | | |
|----------|------------------------------------|--|
| 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. |
|----------|------------------------------------|--|

DATA SET 103A1 & 2

GENERAL DESCRIPTION

Low speed, serial, frequency shift transmitter - receiver for use in DATA-PHONE and TWX service.

Arranged for full duplex operation on 2-wire voice circuits.

NOTE: The 103A1 has inverted marking and spacing frequencies and is not compatible with data sets used at regular teletypewriter stations with TWX service. The 103A2 has upright frequency assignments for DATA-PHONE Service.

Operating Speed: Up to 300 bits per second with DATA-PHONE service.
Up to 150 bits per second with TWX service.

Power Requirement: 117 volts, 60 cycle, 15 watts customer provided AC power.

Dimensions: 11" wide, 10" deep, 5-1/2" high

Color: two-tone gray cabinet

Weight: 18 pounds

Interface Specification: Electronic Industries Association Standard RS-232A

Telephone Set: Separate (804B Data Auxiliary Set)

Manufacturing Location: Hawthorne (Montgomery Shops)

COMPATIBLE AUXILIARY SETS

Automatic Calling Unit 801A - provides for automatic call origination under control of the customer's business machine.

Data Auxiliary Set 804B - provides for establishment of calls, voice communications, external control of the data set and controls the type of transmission (voice or data).

FEATURES

Remote test allows Data Set to be tested from a Data Test Center.

Echo suppressor disabling circuit.

Local mode which permits customer to check the continuity of the interface cable, the interface connector and the signal handling stages of the customer equipment adjacent to the interface without physically disconnecting the Data Set from this equipment.

Alternate voice communications provided by Data Auxiliary Set 804B.

OPTIONS

Manual or automatic answer (part-time or permanent).

Manual or automatic disconnect.

Manual or automatic call origination.

One way or simultaneous two way transmission.

COMPATIBLE BUSINESS MACHINES

Customer owned Teletypewriters

IBM 065, 066, 1050, 1912

G.E.

RCA "Daspan"

Friden

TECHNICAL REFERENCES

PEL 7189 dated 8/7/64

BSP 591-014 series

BSRS 480.025 (Repair Specification)

Bell System Data Communications Technical Reference

"Data Set 103A Interface Specification" July 1963.

DATA SET 103B1

GENERAL DESCRIPTION

Low speed, serial, frequency shift transmitter - receiver for use on private line data services (Point-to-point or multistation).
Arranged for full duplex operation on 2-wire voice circuits.
No provision for voice communication.

NOTE: This Data Set is rated A & M and replaced by the 103F.

Operating Speed: Up to 300 bits per second.
Power Requirements: 120 volts, 60 cycle, 15 watts customer provided AC power.
Dimensions: 11" wide, 10" deep, 5-1/2" high
Color: two-tone gray cabinet
Weight: 15 pounds
Interface Specifications: (a) Electronic Industries Association Standard RS-232A
(b) Unipolar negative voltage
(c) Contact closures (current - no current)

Telephone Set: none
Manufacturing Location: Hawthorne (Montgomery Shops)

FEATURES

Remote test allows the Data Set to be tested from a Data Test Center.

OPTIONS

Three different interface options (see General Description).
Two-way nonsimultaneous or simultaneous transmission.
"Mark-hold" or "space-hold" operation.

COMPATIBLE BUSINESS MACHINES

Customer owned teletypewriters
IBM
G.E.

TECHNICAL REFERENCES

BSP 591-015 series
BSRS 480.016 (Repair Specification)
Bell System Data Communications Technical Reference
"Data Set 103B Interface Specification" October 1963

DATA SET 103E & MULTIPLE DATA SET INSTALLATION

GENERAL DESCRIPTION - 103E

Low speed, serial, frequency, shift keyed, transmitter - receiver for use in private line facilities or on Dial TWX facilities. Data Set consists of six printed wiring boards in a chassis, with cabling and plug-ended connections. It is intended for general use with first applications in:

1. 103G Data Sets (integrated)
2. switched data stations using 37 Type Teletypewriter
3. cabinet mounted multiple data set arrangements.

Set is arranged for full-duplex operation on 2-wire voice circuits.

NOTE: Screw switch option provides for operation on either "Normal" or "Inverted" TWX frequencies.

Operating speed: Up to 300 bits per second on private line voiceband facilities.
Up to 150 bits per second on TWX service

Power Requirements: Power is provided by (1) a transformer in the 103G Data Set arrangement, (2) power supply in the 820 Type Data Auxiliary Set in the 37 Type Teletypewriter stations and (3) a common power supply in the multiple 103E installations. The power requirements are 17 watts at 117 volts ± 10 volts and 60 Hzps

Dimensions: 8-1/4" wide, 5" high, 6-1/2" deep

Interface Specification: Electronic Industries Association Standard RS-232B

Manufacturing Location: Hawthorne (Montgomery Shops)

COMPATIBLE AUXILIARY SETS

The Automatic Calling Units, 801A5 (dial pulse) and 801C3 and 801C4 (touch-tone) provide for automatic call origination under control of the customers business machine.

FEATURES

Remote test allows Data Set to be tested from a Data Test Center.
Provides hands free data call origination for customer provided data terminals.
Automatic or manual disconnect.
Automatic or manual answer.

COMPATIBLE BUSINESS MACHINES

I.B.M. KLEINSCHMIDT
DURA
FRIDEN

TECHNICAL REFERENCE

BSP 591-025 Series
BSRS 480.066

GENERAL DESCRIPTION - MULTIPLE DATA SET INSTALLATION

A cabinet arrangement for up to 40 - 103E Data Sets in a cabinet designed along the lines of today's business machines.

The cabinet contains a common power source and common control features. Data Sets are plug-ended for easy installation.

DATA SET 103F2

GENERAL DESCRIPTION

Low speed, serial, frequency shift transmitter - receiver for use on private line data service (Point-to-point) or multistation).
Arranged for full duplex operation on 2 wire voice circuits.
Provisions for voice communication, if required, are made external to the Data Set.

NOTE: This Data Set replaces the 103B but is not compatible since in the 103F the "marking" and "spacing" frequencies are the same as those employed in the DIAL TWX data sets and opposite to those employed in the 103B.

Operating Speed: Up to 300 bits per second.
Power Requirements: 120 volts, 60 cycle, 15 watts customer provided AC power.
Dimensions: 11" wide, 10" deep, 5-1/2" high
Color: two-tone gray cabinet
Weight: 15 pounds
Interface Specification: Electronic Industries Association Standard RS-232A
Telephone Set: Separate
Manufacturing Location: Hawthorne (Montgomery Shops)

FEATURES

Local mode permits customer to check the continuity of the interface cable, the interface connection and the signal handling stages of the customer's equipment adjacent to the interface without physically disconnecting the data set from this equipment.
Test mode electrically divorces the data set and the data processing terminal equipment and conditions the data set for remote testing from a Data Test Center.

OPTIONS

Operation in the answer or originate mode (can be permanently placed in either of these modes).

COMPATIBLE BUSINESS MACHINES

Customer owned teletypewriters
IBM
G.E.

TECHNICAL REFERENCES

PEL 7343
BSP 591-019 series
BSRS 480.030 (Repair Specification)
Bell System Data Communications Technical Reference
"Data Set 103F Interface Specification" May 1964

DATA SET 103G

GENERAL DESCRIPTION

A low speed, serial, full-duplex data set for use on the switched network.

Consists of a 103E electronics package in a new integrated housing.

PROPOSED CODING ARRANGEMENT

- 103G1 - Rotary Dial
- 103G2 - TOUCH-TONE Dial
- 103G3 - Rotary Dial with Card Dialer
- 103G4 - TOUCH-TONE Card Dialer

These sets provide "hands free" data call originating, a feature not previously offered. They are designed to be compatible with the new Automatic Calling Units 801A5 and 801A6 and the 801C3 and 801C4.

DATA SET 105A1, 2 & 3

GENERAL DESCRIPTION

Intended for use with 4-row teletypewriters.

A complete station consists of a Data Set 105A, an attendant set (supplied with the teletypewriter as part of the call control unit) and a 33 or 35 type, 100 w.p.m. teletypewriter (using 8 level ASCII code).

The Data Set provides a means of interconnecting 4-row teletypewriters.

Manufacturing Location: Hawthorne (Montgomery Shops)

COMPONENTS

105A1 - Basic Data Set

105A2 - Restraint-enables the station to communicate with the slower teletypewriter stations via data converters

105A3 - Dial tone Detector - automatic dialing can be initiated upon receipt of the dial tone.

FEATURES

Call Progress Tone Detection - automatic detection of an "all trucks busy," a "station busy" or a "nonworking subscriber."

OPTIONS

Half or Full Duplex Operation
Automatic or Manual Answer

COMPATIBLE BUSINESS MACHINE

4-row Teletypewriter equipment

TECHNICAL REFERENCES

BSP 591-018 series

DATA SET 108A, B & C

GENERAL DESCRIPTION

The 108 Type Data Sets are designed to operate on the private line telegraph network. The sets will have their main application on interexchange circuit end links but will also be used for 2-point direct station-to-station service.

The 108 Type Sets operate on either a half or full duplex basis on voice grade facilities.

The Data Set 108A is intended to work with a Data Set 108B for hub operation or a Data Set 108C for station-to-station service. The Data Set 108C is intended to work with a Data Set 108A for station-to-station service only.

Operating speed: 75 to 150 bauds on private line facilities

Power Requirements: Approximately 5 watts of filtered +24 and -24V dc normally supplied by the Data Auxiliary Set 820D or E

Dimensions: Single printed wiring board - 7" x 5-1/2"

Interface Specification: EIA RS-232B

Telephone Set: Nonintegrated

Manufacturing Location: Hawthorne (Montgomery Shops)

COMPATIBLE AUXILIARY SETS

Data Auxiliary Sets 820D and 820E, on private line facilities, provide mounting arrangements, power and circuitry interface. Data Auxiliary Set 811C is used in private line hubbing points.

FEATURES

Loss-of-carrier detection.

Data Set 108A has fixed mode of operation corresponding to the answer mode while Data Set 108C corresponds to the originate mode.

TECHNICAL REFERENCES

EL 58 dated 2/16/67
BSP 591-023 Series

DATA SET 109A & B

GENERAL DESCRIPTION

The 109 Type Data Sets are designed to operate over 2-wire metallic private line facilities. The sets were developed to provide an inexpensive half-duplex service. The Data Set 109A is intended for station application and the Data Set 109B is intended for use at private line hubbing points.

Operating speed: 150 bauds on private line facilities

Power Requirements: Approximately 5 watts of filtered +24 and -24V dc normally supplied by the Data Auxiliary Set 820D or E

Dimensions: Single printed wiring board - 7" x 5-1/2"

Interface specification: EIA 232B

Telephone Set: Nonintegrated

Manufacturing Location: Hawthorne (Montgomery Shops)

COMPATIBLE DATA SETS

Data Auxiliary Sets 820D and 820E, on private line facilities provide mounting arrangements, power and circuitry interface. Data Auxiliary Set 811C is used in private line hubbing points.

FEATURES

Data Set 109A operates with another 109A in station-to-station operation and with a 109B in a station to hub operation.

TECHNICAL REFERENCES

EL 58 dated 2/16/67
BSP 591-024 Series

DATA SET 112A

GENERAL DESCRIPTION

The 112A Data Set is a low speed, serial, FSK half duplex, originate only, acoustic coupled data set. It can communicate with those 101 and 103 type data sets which use normal frequency assignments. Acoustic coupling may be provided with F-Type, G-Type or Trimline* telephone handsets, and also with most non-Bell System handsets. The interface to the associated business machine conforms to EIA RS-232-B specification. Speeds are asynchronous to 300 bauds.

Power Requirements: Data Set 112A-L1 receives power from the associated business machine.

Data Set 112A-L1/2 includes transformer for connection to 117V, 60 HZ. source.

Dimensions: 12.88 x 9.20 x 4.25

Weight: 6.25 Pounds

Color: Black and Gray

FEATURES

Self-testing, asynchronous operation

TECHNICAL REFERENCE

EL 269 dated 1-20-69

BSP 591-032-100

BSP 591-032-300

BSP 591-032-500

*REGISTERED TRADEMARK OF A.T. & T. CO.

DATA SET 201A 3 & 4

GENERAL DESCRIPTION

Medium speed (fixed rate), serial, phase modulated transmitter-receiver for use on DATA-PHONE service and private line facilities.

Permits data transmission in two directions simultaneously (full duplex) on 4-wire operation.

Coding: Data Set 201A3 has internal timing 201A4 has external timing.

Operating Speed: Fixed 2000 bits per second

Power Requirements: 117 volts, 60 cycle, 17 watts customer provided AC power

Dimensions: 17-1/2" wide, 11-5/8" deep, 7-3/4" high

Color: Two-tone gray cabinet

Weight: 35 pounds

Interface Specification: Electronic Industries Association Standard RS
232A (also available with Contact Closure interface).

Telephone Set: Separate

Manufacturing Location: Hawthorne (Montgomery Shops)

COMPATIBLE AUXILIARY SETS

Automatic Calling Units 801A and 801C - provide automatic call origination under control of the customer's business machine.

~~Data Auxiliary Set 804A - provides for establishment of calls, voice communications, external control of the data set and controls the type of transmission (voice or data).~~

FEATURES

Echo suppressor disable circuit*

Can be tested in a closed loop in conjunction with the business machine*

Alternate voice communication*

Automatic call origination

OPTIONS

Internal or external timing for synchronous operation.*Two-wire (network or private line), four-wire (private line) or four-wire continuous carrier (private line).*Full or part time automatic answer (selective or permanent) when telephone set is provided.*

TECHNICAL REFERENCES

PEL 6879 dated 11-21-61

PEL 7405 dated 6- 8-65

BSP 592-011 series

Bell System Data Communications Technical Reference "Data Set 201A and 201B Interface Specifications" September 1962 with Supplement 1

DATA SET 201B 1 & 2

GENERAL DESCRIPTION

Medium speed (fixed rate) serial, phase modulated transmitter-receiver for use on private line service.
Provides full duplex operation on a 4-wire system.
The same as the 201A except clock circuit and timing changed for increased speed.

Note: 201B1 has internal timing, 201B2 has external timing.

Operating Speed: Fixed 2400 bits per second
Power Requirements: 117 volts, 60 cycle, 17 watts customer provided AC power
Dimensions: 17-1/2" wide, 11-5/8" deep, 7-3/4" high
Color: two-tone gray cabinet
Weight: 35 pounds
Interface Specification: Electronic Industries Association Standard RS 232A
Telephone Set: Separate
Manufacturing Location: Hawthorne (Montgomery Shops)

FEATURES

Echo suppressor disabler circuit.
Can be tested in a closed loop in conjunction with the business machine.

OPTIONS

Internal or external timing for synchronous operation.
Two-wire (private line), four-wire (private line) or four-wire continuous carrier (private line).
Full or part time automatic answer (selective or permanent) when telephone set is provided.

TECHNICAL REFERENCES

PEL 7072 dated 5/24/63
BSP 592-012 series
Bell System Data Communications Technical Reference "Data Sets 201A and 201B Interface Specifications" September 1962.

DATA SET 202C 5, 6, 7 & 8

GENERAL DESCRIPTION

Medium speed, serial transmitter-receiver which converts DC digital pulses to an FM signal for transmission over voiceband telephone facilities. At receiving terminal the Data Set restores the FM signal to DC digital pulses for delivery to customer's business machine. Used in DATA-PHONE service and on private line facilities (2-wire or 4-wire). Permits data transmission in two directions simultaneously (full-duplex) on 4-wire operation.

NOTE: Data Sets 202C1 and 202C2 are being replaced by the 202C5 and C6. The 202C7 and 202C8 will be TOUCH-TONE versions of the 202C5 and 202C6. The 202C3 and 202C4 were rated MD prior to production.

The distinguishing features are:

- 202C5 Rotary dial - no reverse channel
- 202C6 Rotary dial - with reverse channel

Operating Speed: Up to 1200 bits per second with DATA-PHONE service. Up to 1800 bits per second on private line facilities.

Power Requirements: 117 volts, 60 Hz, 15 watts customer provided AC power.

Dimensions: 10-1/2" wide, 14" deep, 5-1/2" high

Color: Two-tone gray housing

Weight: 15 pounds

Interface Specification: Electronic Industries Association Standard RS-232B

Telephone Set: Integrated

Manufacturing Location: Hawthorne (Montgomery Shops)

COMPATIBLE AUXILIARY SETS

Automatic Calling Units 801A and 801C - provide for automatic call origination under control of the customer's business machine.

FEATURES

Remote test allows Data Set to be tested from a Data Test Center.*Echo suppressor disabling circuit.*Alternate voice communication.*Reverse channel (Data Sets 202C2).*

OPTIONS

Manual or automatic answer (part-time or permanent)*Two-wire or four-wire operation.*Wiring option provides contact closure-type signal on several of the interface leads to make the 202C compatible with 202A installations.*Full duplex operation on 4-wire system.*

Three types of telephone line switching.

1. 2 line DDD back up of 4-wire private line.
2. 1 line DDD back up of 4-wire private line.
3. 1 line DDD back up of 2-wire private line.

TECHNICAL REFERENCES

PEL 7287 dated 7/14/64
PEM 8950 dated 9/9/64
PEM 9309 dated 6/17/65
PEM 9609 dated 1/20/66
EM 28 dated 9/15/66

BSP 592-015 series
BSRS 480.031
Bell System Data Communications Technical Reference "Data Set 202C and 202D Interface Specification" May 1964

DATA SET 202D3 & 4

GENERAL DESCRIPTION

Medium speed, serial transmitter-receiver which converts DC digital pulses to an FM signal for transmission over voiceband telephone facilities. At receiving terminal the Data Set restores FM signal to DC pulses for delivery to customer's business machines. Used in DATA-PHONE service and private line facilities (2-wire or 4-wire). Permits full duplex data transmission on 4-wire operation.

NOTE: Data Sets 202D1 and 202D2 are being replaced by the 202D3 and 202D4. 202D3 will not have reverse channel feature, 202D4 will have reverse channel feature. The 202D1 and 202D2 Data Sets will be rated MD when 202D3 and 202D4 are available.

Operating Speed: Up to 1200 bits per second with DATA-PHONE service. Up to 1800 bits per second on private line facilities.
Power Requirements: 117 volts, 60 Hz, 15 watts customer provided AC power.
Dimensions: 10-1/2" wide, 8-3/4" deep, 5-1/2" high
Color: Two-tone gray cabinet
Weight: 14 pounds
Interface Specification: Electronic Industries Association Standard RS-232B
Telephone Set: Separate
Manufacturing Location: Hawthorne (Montgomery Shops)

COMPATIBLE AUXILIARY SETS

Automatic Calling Units 801A and 801C - provide for automatic call origination under control of the customer's business machine. Data Auxiliary Set 804A - provides for establishment of calls, voice communications, external control of the data set and controls the type of transmission.

FEATURES

Remote test allows Data Set to be tested from a Data Test Center.*Echo suppressor disabling circuit.*Alternate voice communication provided by Data Auxiliary Set 804A.*Reverse Channel (Data Set 202D2).*

OPTIONS

Manual or automatic answer (part-time or permanent)*Two-wire or four-wire operation.*Wiring option provides contact closure - type signals on several of the interface leads to make the 202D compatible with 202B installations.*Full-duplex operation on 4-wire system.*

Three types of telephone line switching.

1. 2 line DDD back up of 4-wire private line
2. 1 line DDD back up of 4-wire private line
3. 1 line DDD back up of 2-wire private line

TECHNICAL REFERENCES

PEL 7287 dated 7/14/64
PEM 8950 dated 9/9/64
BSP 592-016 series
BSRS 480.031

Bell System Data Communications Technical Reference "Data Sets 202C and 202D Interface Specifications" May 1964
EM 28 dated 9/15/66

DATA SET 202E

GENERAL DESCRIPTION

The 202E series of data sets are modular transmitters compatible with existing 202 series sets. The 202E provides serial transmission of data.

The modular construction of the 202E series allows addition or build-up of features in accordance with customer requirements.

CODING

202E1 Basic Set (modulator only)
202E2 Adds Reverse Channel Receiver
202E7 Adds Automatic Answer and EIA Interface to 202E1
202E9 Adds Reverse Channel Receiver to 202E7

Data Sets 202E 10, 11, 12 & 13 are TOUCH-TONE* versions of the above sets.

Operating Speed: 1200 bps on DATA-PHONE* Service, 1800 bps on private line facilities (600 bps available through optional keying arrangement on 202E1).

Power Requirements: 120v - 60 Hz line power is connected by an external transformer to a +8v and -8v regulated output. A 21 to 35v unregulated output is also available.

Dimensions: 11-1/2" deep, 9" wide, 4-1/2" high

Color: Two-tone gray housing

Weight: 7-3/4 pounds (202E9)

Interface Specifications: RS-232B

Telephone Set: Integrated

Manufacturing Location: Hawthorne Works (Montgomery Shops)

OPTIONS

Reverse Channel
Automatic Answer
Voltage Interface
Remote Testing
600 bps speed

TECHNICAL REFERENCES

EL 158 dated 11/15/67
BSP 592-018 series
BSRS 480.068

*Trade Mark of A.T. & T. Co.

DATA SET 203B & C

GENERAL DESCRIPTION

Data Sets 203-Type use 2, 4 or 8 level AM modulation and vestigial Rideband (VSB) spectrum shaping to provide high speed binary serial data transmission over the DDD Network and 2- and 4- wire private lines. The data sets are designed on a modular plug-in basis to provide various configurations and data speeds.

CODING

203A - Transmitter/Receiver
203B - Transmitter Only
203C - Receiver Only

OPERATING SPEEDS

3600 bps on the DDD Network
4800 bps on C2 Conditioned Private Lines

Additional speed capabilities now under development: 7200, 9600 and 10,800 bps on private lines.

DIMENSIONS

2' high x 2' wide x 1' deep (when mounted in KS-20018, L3 Cabinet)
203A & C-20" high x 23" wide (rack mounted)
203B-14" high x 23" wide (rack mounted)

OPTIONS

Auxiliary Channel
Variable Line Impedance
Bit Rate Control
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TECHNICAL REFERENCES

E.L. 286 dated April 17, 1969
BSP 529-019 Series
Technical Reference covering Data Set 203 Type

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Acoustical Coupling for Data Transmission - Preliminary

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NOTE: ALL "BELL SYSTEM DATA COMMUNICATIONS TECHNICAL REFERENCES" NOT LISTED ON THIS "INDEX AND CHECKING LIST" ARE OBSOLETE AND SHOULD BE DESTROYED.