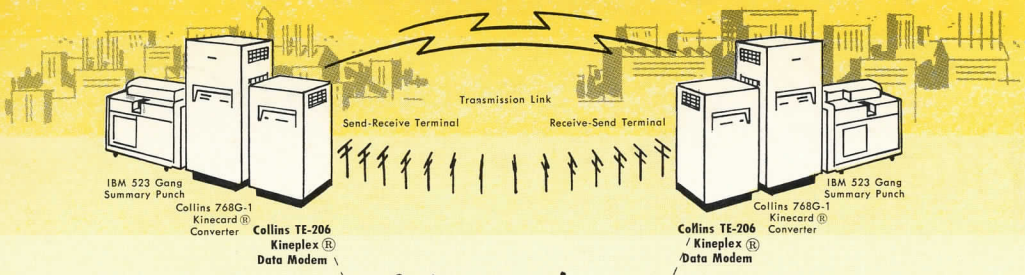
Introducing Kineplex®. Collins New High Speed Binary Data Transmission System

Kineplex Punched Card Data Transmission System



Collins TE-206 Kineplex® Data Modem

For Continuous, Accurate, High Speed Transmission of Digital Data, Such as Recorded on Punched Cards or on Computer Type Magnetic Tape

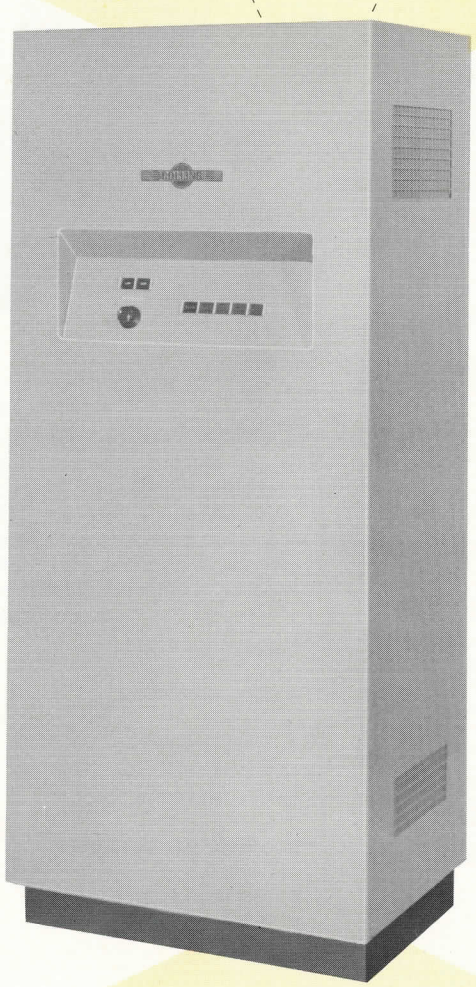
For 3kc Common Carrier Type Voice Channel Facilities

Completely Transistorized

Etched Circuit Card Design

2400 Bits/Second

Integral Test Facility



Front view of Collins TE-206 Kineplex Data Modem

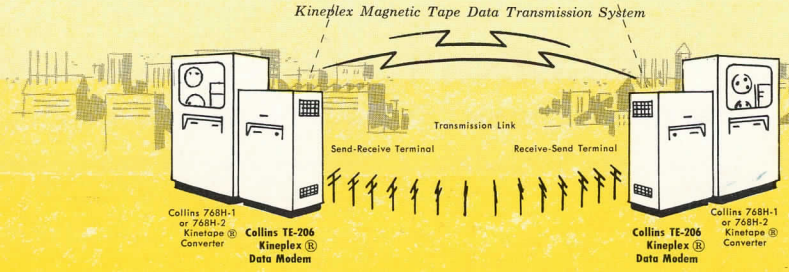
The Collins TE-206 Kineplex Data Modem is an accurate, high speed, terminal equipment for transmitting digital data over a voice bandwidth channel derived on wire line, cable, carrier, or microwave facilities.

Employed with suitable input/output data converter units, the TE-206 Kineplex Data Modem will accept and transmit digital data from punched cards, magnetic tape, paper tape, and other storage media. Data signalling and conversion equipment is identical at each end of the transmission link, with the equipment capable of full duplex operation (simultaneous transmission and reception in each direction).

Information is carried in the phase of four equally spaced audio tones with each of the tones encoded with two binary bits. A single tone is keyed at a 300 bit-per-second rate and the four audio tones with two inputs per tone provide a 2400 bit-per-second capability over the transmission facility.

At the receive terminals, the binary information is extracted from the audio tones using predicted wave detection techniques, the data regenerated and delivered synchronously to data conversion equipment.

Kineplex Magnetic Tape Data Transmission System



Provides Efficient Utilization of Bandwidth

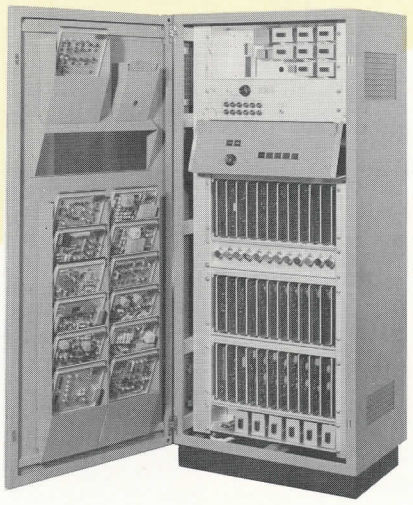
Maximum Tolerance to Noise and Delay Distortion

COLLINS

Collins TE-206 Kineplex Data modem

Specifications***

Front view of Collins TE-206 Kineplex Data Modem with panel swung open. Note compactness of unit, etched circuit cards, and spare circuit cards mounted within the door.



2400 Bits per Second in a 3kc Voice Band!

DATA INPUT: Eight parallel channels each with 300-bit-per-second synchronous data, 0 volts for "Space" (or "0") and -6 volts for "Mark" (or "1"). Input "Mark" line current 10 ma nominal Input is single wire to ground.

OUTPUT TO WIRE LINE: (Transmit Terminal) Composite signal including the four channel frequencies. Peak level may be varied from —45 dbm to 0 dbm into a 600 ohm nominal or 1135 ohm nominal line at 1000 cps.

INPUT FROM WIRE LINE: (Receive Terminal) Composite signal including the four channel frequencies. Peak input level: 0 dbm to —20 dbm from 600 ohm nominal or 1135 ohm source at 1000 cps. Composite signal is am modulated 3 db down from nominal received with 150 cycle square wave.

DATA OUTPUT: Eight parallel data channels, each with 300 bit-per-second synchronous digital data, 0 volts for "Space" (or "0") and —6 volts for "Mark" (or "1"). "Mark" line current 10 ma nominal. Output may be 2-wire or single wire to ground.

SYNCHRONIZATION: Obtained from 150 cps am modulation of the composite audio envelope.

EXTERNAL TIMING: The TE-206 transmitting terminal may be synchronized from external sources that provide a synchronizing frequency of 600 ± 0.6 cps. The TE-206 is designed to furnish a 300 ± 0.3 cps square wave to external transmitting data converter at 0 and —6 volt levels for readout control. The TE-206 receiving terminal furnishes a 300 ± 0.3 cps square wave at 0 and —6 volt levels for synchronizing the received data.

DATA RATES: Channel data rate—300 bits per second. Maximum data rate—2400 bits per second.

FREQUENCY CONTROL: ± 10 cps translation error allowable.

AUDIO CHANNEL FREQUENCIES:

Chan 1 and 2 — 935 cps
Chan 3 and 4 — 1375 cps
Chan 5 and 6 — 1815 cps
Chan 7 and 8 — 2255 cps

POWER REQUIREMENTS: 115 v a-c ± 10%, single phase, 60 cps, 100 watts.

SYSTEM TESTING: Integral test unit provides rapid test of all transmit and receive data channels.

ENVIRONMENTAL CONDITIONS: Temperature: 16° to 43°C (60°F to 110°F), humidity 0 to 90% without condensation.

DIMENSIONS: Cabinet—25″ wide, 58″ high, 18″ deep.

WEIGHT: 175 lbs.

*** As of February 23, 1959

Facility Requirements

The TE-206 Kineplex Data System is capable of being operated over any voice facility meeting the line requirements listed in the table below. The TE-206 equipment meets the requirements of good telephone practice with respect to transmitting levels, balance, and dielectric strength. Normal subscriber station protection devices are satisfactory in this application. Nominal composite signal output to line, 0 dbm.

Detailed Line Requirements:

**1.	Frequency Response	± 3 db, 900 — 2300 cps ± 6 db, 400 — 2700 cps
**2.	Differential Delay	1 ms, 800 — 2350 cps max. 1.7 ms, 400 — 2700 cps max.
*3.	Short Term Net Loss Variations	± 15 db
4.	Maximum Net Loss, Long Term	20 db
5.	Line Impedance	600 ohms nominal or 1135 nominal at 1000 cps.
*6.	Impulse Noise Threshold	4 db below rms level of received signal.
7.	Frequency Error	± 10 cps
8.	Broadband (Gaussian Noise)	30 db below rms level of received signal. Measured in 3,000 cycle band.

* impulse noise threshold measured relative to rms received signal level at time of impulse.

** for any given system the frequency dependent tolerances may be translated linearly from values specified by —100, +100, +200 or +300 cycles per second by special order.

e.g. With +200 cps deviation from standard specifications, the response and differential delay limits become:

1.	Frequency Response	± 3 db	1100 — 2500 cps
		± 6 db	600 — 2900 cps
2.	Differential Delay	1 ms	1000 — 2550 cps max.
		1.7 ms	600 — 2900 cps max.

COLLINS RADIO COMPANY

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