Collins ATX-101 Audio\Video System

A switchless PABX to distribute audio and video

COLLINS

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Move into the future with the Collins ATX-101, and benefit today from new levels of flexibility, simplicity, and economy in telephone and video communications. Embodying a new concept in audio and video distribution, the ATX-101 can serve as a private automatic branch exchange (PABX) with from 30 to 3,000 stations.

Service for up to 3,000 subscribers is possible over a single coaxial cable system. Depending on the application, the same cable can simultaneously distribute signals for telephone, cable television (CATV), closed circuit TV, fire and burglar alarms, data transmission, radio communications, paging, dictation, background music, and other functions. Devices in the system can be controlled from the keyboard of the subscriber's telephone.

The large capacity of the coaxial cable enables concurrent use of a single cable for telephone and multiple channel video. The video can be included in the initial installation or easily added later with no extensive rewiring.

The ATX-101 is a unique application of Collins' telecommunications and aerospace know-how. A technique called frequency division multiplex is employed. Each communication channel occupies an assigned segment of the frequency range of the cable, enabling many simultaneous conversations on the same cable.

No central switching gear is employed. Switching is performed in each telephone instrument, under control of a central stored-program minicomputer. The calling party and called party are switched to one of the available channels.
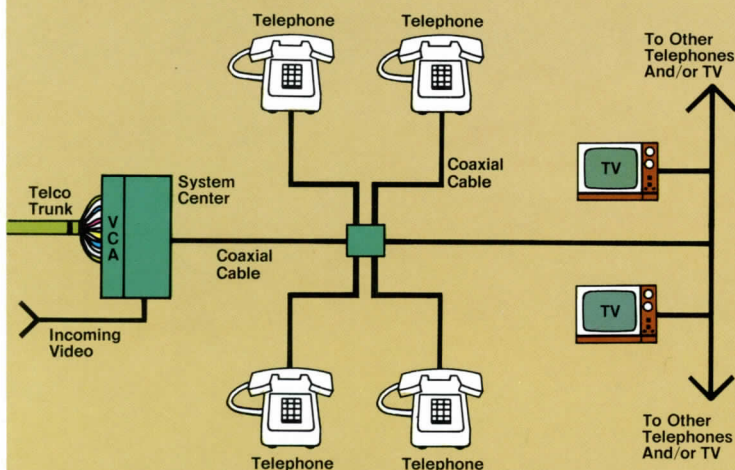
This arrangement results in unusual performance advantages, with substantial reductions in wiring and equipment size and weight — and corresponding cost savings — compared to hard-wired systems. It also facilitates simple, orderly growth to keep the system matched to the user's needs.

Terminal units can be provided to enable connection with any of a wide variety of services: telephone company trunks, CATV or closed circuit TV networks, data modems, radio communication facilities, public address systems, alarm systems.
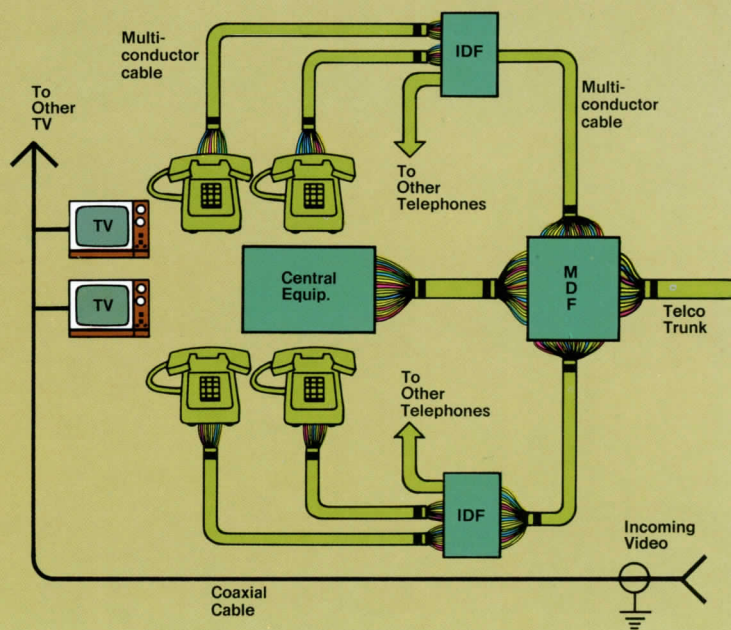
The elimination of central switching equipment and the application of highly reliable electronics assure long, trouble-free service. Phone malfunctions can be readily corrected by plug-in substitution. Dual system centers are provided with automatic switchover. There is also a no-break power system available to insure service continuity if commercial primary power should fail.

The conventional system with hard wiring employs a main distribution frame (MDF), several remote intermediate distribution frames (IDF's) and large multiconductor cables. None of these is required by the ATX-101.

ATX-101 System– Simple, Sophisticated

The simplicity of the ATX-101 cable system, achieved through sophisticated design, is dramatized by comparison with present-day hard-wired systems. The hard-wired system requires a main distribution frame (MDF) and several remote intermediate distribution frames (IDF's). Hundreds of wires and large multiconductor cables are used. Separate systems are required for video.

None of these is required by the ATX-101. A single coax cable system handles all telephones up to a 3,000-station capacity, or a combination of audio and video.

Floorspace Savings

Because ATX-101 switching is accomplished in the individual telephone, the ATX-101 central control is considerably smaller than that for hard-wired systems. Here is an example of two 300-line systems. The conventional switch (top right) requires 89 cubic feet with 29 square feet of floor space. The ATX-101 central control uses 26.8 cubic feet and 4.7 square feet.

At a $4-$6-per-square-foot rental rate per month, this could save $1,200 - $1,700 annually on a 300-line system. This saving is for the central equipment alone, and does not include the additional saving associated with the absence of the MDF and IDF's. On larger systems — 1,000-3,000 lines — savings are even more dramatic.

**Conventional** — *bulky central switch*

Floorspace needs are drastically reduced with the ATX-101. In a typical 300-line system, the central switch alone requires 29 square feet, to which must be added space for the main and intermediate distribution frames. The ATX-101 system uses only 4.7 square feet.

New — *compact central control*

Conventional

New

Subscriber can move his phone — whether single- or multi-line — simply by plugging it into an outlet in the new location. His phone number goes with him. To change his number he merely swaps tiny plug-in modules.
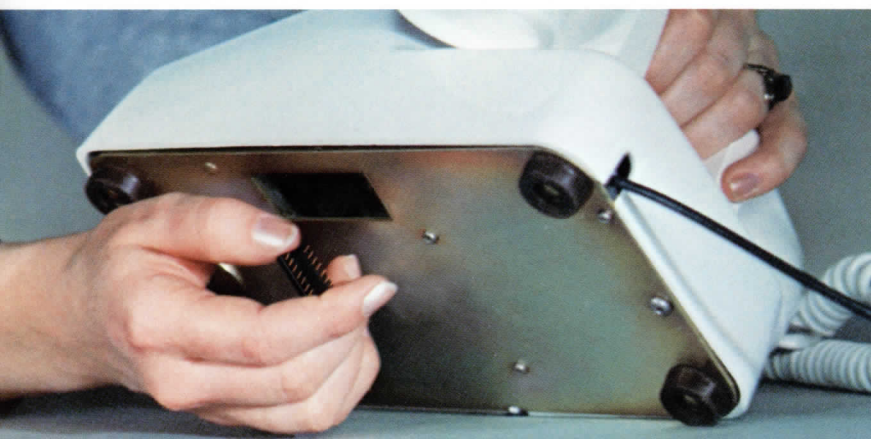
Easy Station Changes

Moving a phone in the ATX-101 system is simply a matter of disconnecting the coax plug at the present location and plugging it in a connector at the new office. Anyone can do it. The number stays with the phone.

Hard-wired systems involve some disruption of service as the necessary changes in wiring for desired services and telephone number are made.

Should you want to change a telephone number in the ATX-101 system, this can be done easily with a plug-in address module accessible at the bottom of the instrument.

Grows With Your Organization

Because switching is performed inside the telephone, expansion of the ATX-101 system is simply a matter of attaching a cable to taps in the nearest existing cable run. Depending on the number of phones added, additional line amplifiers and power supplies may be required, but this is quite inexpensive compared to the wiring and switch equipment required in hard-wired systems. Some users of complex communication systems find that the flexibility of the "switchless" exchanges gives them the opportunity to introduce new configurations and services on a trial basis.
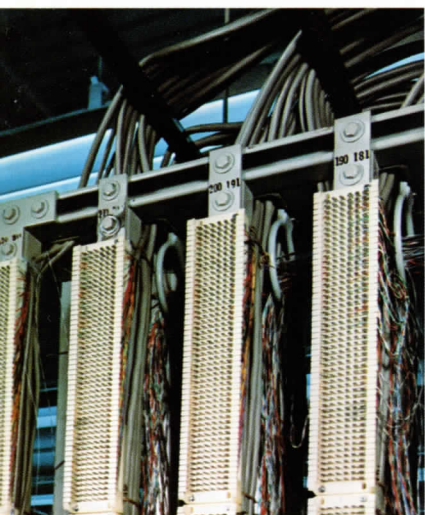

In hard-wired systems, additions or alterations to cabling, distribution frames, and switching are necessary for major expansions.
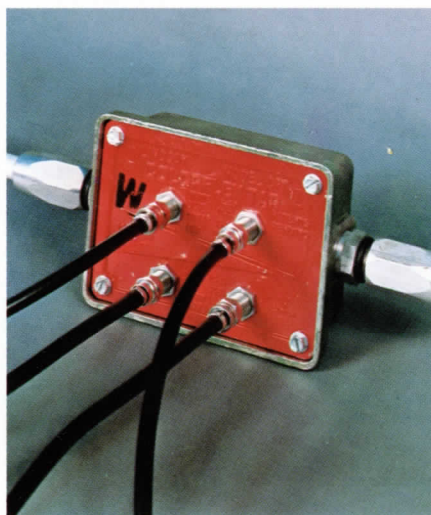

Taps in the existing cable runs in user facilities are a simplified means of expanding the number of telephones in the ATX-101 system.

Collins ATX-101 Features

Flexibility *Reconfigure or expand your system by merely adding or moving phones — 1 at a time if you want. No rewiring. No lengthy downtime.*
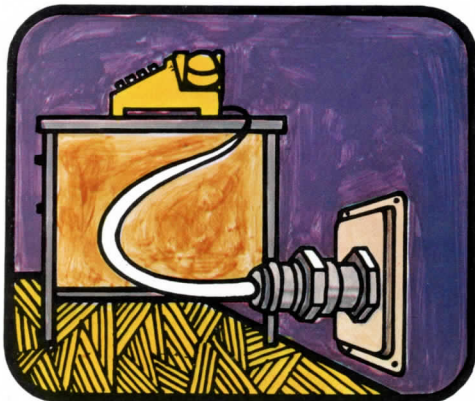
Versatility *Handles as many as 3,000 phone stations. You can distribute voice, television video, data, fire or burglar alarms, radio control and audio, and a variety of other information on the same system.*
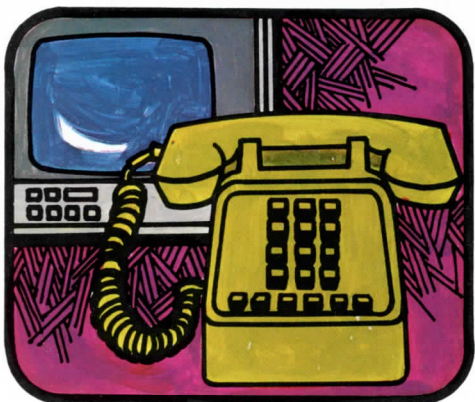
Economy *High capacity results in low cost per channel. Total cost is less than comparable conventional hard-wired systems. Savings are also significant when the time comes to move stations or add to the system.*

Simple Installation *A single coax cable system replaces hundreds of wires. Phones may be tapped anywhere on the cable.*


Reduced Floorspace *Distribution frames and central switches have been eliminated. Switching occurs in each telephone set. The central control equipment is packaged compactly and attractively so it could go right into an office area.*

Reliability *The central switching equipment has been eliminated. Proven components and reliability-engineered circuits in the ATX-101 assure dependable operation. A redundant configuration is provided to assure full continuity of service.*

More Operating Features *The ATX-101 brings a line-up of operating features that means simplified communications and time savings. To name a few: 20-station conferencing or multi-party monitoring, add-on, camp-on, automatic call forwarding, automatic call back, abbreviated dialing, "meet-me" conferences, executive override.*
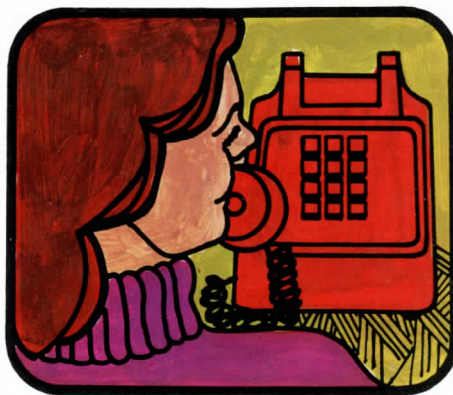
Wide Choice of Features

Because the ATX-101 is controlled by a programable minicomputer, a whole range of operating features is offered to streamline communication.

- Direct Inward and Outward Dialing
- Station Hunting — Incoming calls connected to the first free line in a department according to a flexible sequence.
- Camp-On — Incoming call held and busy station automatically called when free.
- Call Transfer — Subscriber can transfer incoming or outgoing call to another station.
- Consultation Hold — Call placed on "hold" while subscriber talks in private with another station.
- Add-On Conference — Up to 20 stations can be added on for conference, with multiple simultaneous conferences possible on a system.
- "Meet-Me" Conference — Any number of stations may call predetermined number to join conference.
- Answer From Any Station — Any station may pick up ringing call from any other station, or may place call on "hold" and pick up call from any other station.
- Executive Override — Permits designated stations to come in on call in progress.
- Call Forwarding — Subscriber can dial instructions to automatically forward his calls to another station.
- Call Pick-Up — Designated stations may pick up held or ringing calls on other stations.
- Automatic Recall — Attendant is periodically alerted when call not completed for "camp-on," "hold," or "no answer" conditions.
- Automatic Call Back — If called station busy, system automatically rings caller and called station when latter is free.
- Abbreviated Dialing — Frequently called stations can be called with shortened number.
- Speaker Phone
- Universal Night Service — Enables any station to answer an incoming call after hours.
- Attendant Console — Indicator lights, digital readout and controls for easy station selection.
- Classes of Service — Individual stations can be allowed outside calls for combinations of local, regional, or national destinations.

Easy push-button calling

Available in single-line, 6-button and 12-button models

Single plug connects phone to system at any outlet

Number can be changed with tiny plug-in module at bottom of phone

ATX-101 Telephone Instrument

Versatile in Application

Flexibility of function, ruggedness of construction, and reliability of design suit the ATX-101 for a wide range of uses:

- Commercial and institutional PABX systems
- Commercial and institutional video distribution systems
- Air Traffic Control centers
- Shipboard communications
- Airborne communications
- Base communications
- Mine communications

A Collins sales engineer will be pleased to answer any questions and work with you in surveying your particular communication needs. Call or write: Collins Radio Company, Telecommunications Equipment Division, Cedar Rapids, Iowa 52406. Phone: 319/395-5369.

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