IBM 360/370

IBM 360/370

DISK CONTROL

DISK

CONSOLE

MUX CHANNEL INTERFACE

PERI-PHERAL

COMTEN 476

INTER-FACE

SAM

256 LINE INTERFACES

TAPE CONTROL

TAPE

TAPE

AT & T 8A SERVICES

86B

TAPE

IBM 2780

81D

TWX

IBM 2260

CARD READ/ PUNCH

IBM 360

83B

TTY 33/35/37

IBM 1030

IBM 1050

86A

BURROUGHS TC 500

IBM 1060

PRINTER

IBM 2740

IBM 1130

IBM 2741

TDM

IBM 3270

IBM SDLC

Orderly flow of work through the COMTEN communication system is controlled and maintained by the COMTEN Supervisor. This versatile executive system assures maximum system efficiency by overlapping compute and I/O tasks of several programs.

Supervisor functions include:

- Concurrent, multi-sequential task scheduling by priority.

- Program execution on variable time basis via Real Time Clock.

- Peripheral allocation and I/O control.

- Communications I/O initiation and coordination.

- Interrupt tabling.

- Console control.

The COMTEN Telecommunications Access Method (CTAM) provides the communications control functions and interfaces to many different types of lines, services, and terminal devices. CTAM consists of two unique software packages: the Network Control Package (NCP) for the COMTEN Processor and the Computer Interface Package (CIP) for the IBM 360/370. NCP provides stand-alone message switching, and when used in conjunction with CIP, provides front-end capabilities as well as message switching. CTAM provides the means of describing the system configuration, the procedure to be applied to each message and the generation of the system tailored to these descriptions. By having the capability of defining the system by the user's parameters, only the necessary code is generated. This eliminates the unnecessary overhead, time delays, and storage space requirements of a completely generalized system.

The Network Control Package (NCP), the COMTEN resident portion of CTAM, is responsible for controlling the communication lines and terminal devices, validating message header information, line error processing, queueing messages to the proper destination, delivery of messages to their proper destination, and inter-

facing to the Computer Interface Package in the IBM 360/370 when used in a "front-end" environment.

NCP is a set of procedures (PROCS, MACROS) which are called from the COMTEN software libraries at system generation time. The user's own System Configuration Definition (SCD) and Line Procedure Statements (LPS) generate the code necessary to support the Network Control and Front-End requirements. Outstanding features of NCP include:

- Dynamic table entry at start up time.

- System recovery.

- Queueing, both in core and on disk.

- Priority message selection.

- Host processor support.

- Complete header analysis support.

- Wide variety of terminal and communication services support.

The Computer Interface Package (CIP) is the IBM 360/370 resident software which interfaces to NCP when the COMTEN Communications Processor is used in a "front-end" application. CIP provides the user with a file level interface which facilitates access to messages being queued by the NCP. CIP consists of a COMTEN device handler that is appended to the IBM operating system nucleus which follows IBM protocol and interfaces to worker programs by means of a SVC and parameter packet. CIP also provides MACROS which are added to the user's IBM System MACRO library. The MACROS are called by the IBM 360/370 applications programs and provide an interface to the system at the file control level which is independent of individual device characteristics.

In summary, the COMTEN 476 Communications System offers the user a cost effective, flexible, high performance system capable of reducing host processor overhead, reducing line and network costs, and most important, providing more efficient system operation.

# SPECIFICATIONS

## INSTRUCTION SET

- Instruction Repertoire consists of a 52 instruction subset of standard IBM Instruction Set
- 8 special instructions to facilitate handling of communications data
- RR, RS and RX formats

## STORAGE

- 750 ns. cycle time (32 bit plus parity)
- Expandable in 32K byte increments to maximum of 512K bytes
- 4 byte interface between storage and CPU
- Parity checking per byte
- Storage protection provided for 64 memory increments on 8K byte boundaries

## PROCESSOR

- 16 general registers (32 bit)
- Initial Load Device
- Operator console with complete console utilities
- Hardware tabling of interrupts

## COMMUNICATION I/O

- 256 communication channels
- Full or half duplex protocol
- Asynchronous, synchronous or binary synchronous modes
- Standard Industry Interfaces: RS-232, Mil 188, DC Loop
- Auto Baud Rate Detection
- Auto Answer/Auto Dial
- Any mix of line speeds up to 230.4K bps
- Code levels of 5, 6, 7 or 8 bits

## PERIPHERAL SUPPORT

- Disk Storage (I/O Channel Interface)
  - COMTEN 7312/6312 6.25 megabytes, avg. access - 80 ms
  - COMTEN 7214/6214 59 megabytes, avg. access - 35 ms
  - COMTEN 7108/6108 2 megabytes, head/track, avg. access - 8.7 ms.
- Magnetic Tape (I/O Channel Interface)
  - COMTEN 7320/632X 1600 bpi; phase encoded; NRZI compatible option; Maximum of 8 drives, 25 ips/45 ips
- Punch Card (RS 232 BSC Interface)
  - COMTEN 730X
  - 80 or 96 column read/punch capability
  - 300 cards/minute Reader
- Printer (RS 232 BSC Interface)
  - COMTEN 7405/7406
  - 136 character print line
  - 300/600 lines/minutes for 64 character set
  - 96 character set optional

## PHYSICAL

**Power**
208V ±10% 60 Hz

**Weight**
1000 pounds

**Temperature**
62° -80° Operational

**Humidity**
35-60% - Normal

**Dimensions**
Height - 75 3/4 inches
Width - 57 3/8 inches
Depth - 27 1/8 inches

**Heat**
11,600 BTU/Hour
1000 CFM Airflow