



TS612 Network Interface

*Installation and
Operations Manual*

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Introduction ≡

Congratulations on the TS612 Network Interface. Designed to grow with your original TS612 system, the network interface allows interconnection from two to 10 TS612 Mainframes.

This manual explains how to install, set up and operate the interface step by step. It also provides instructions on how to resolve technical problems, should any arise.

If you need additional information on how to install, set up or operate your system, please contact us at Gentner Communications at the location noted below. We welcome and encourage your comments so we can continue to improve our products and serve your needs.

Gentner Communications Corporation

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Salt Lake City, Utah 84119

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Worldwide Web Page @ <http://www.gentner.com>

Warranty Registration ≡

Please register your TS612 Network Interface by completing the self-addressed, postage prepaid warranty registration card and return it to Gentner Communications by mail. You may also FAX it to the above listed fax number or call Gentner Communications. When your product is properly registered, Gentner Communications will be able to serve you better should you require technical assistance or desire to receive upgrades, new product information, etc.

Unpacking ≡

Ensure that the following equipment is included in your shipment:

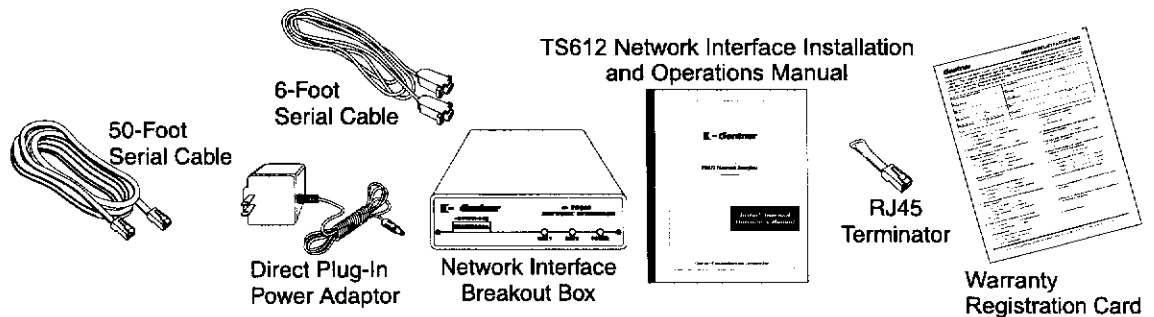


Figure 1. Equipment diagram

SHIPPING NOTE:

Gentner Communications is not responsible for product damage incurred during shipment. You must make claims directly with the carrier. Inspect your shipment carefully for obvious signs of damage. If the shipment appears to be damaged, retain the original boxes and packing material for inspection by the carrier. Contact your carrier immediately.

Product Description ≡

The basic TS612 telephone system provides the ability to use 12 lines in one studio, or 6 lines in two studios in a split-studio mode. With the TS612 Network Interface, 12 telephone lines can be brought into and used by up to 10 studios.

The network interface allows you to connect multiple TS612 systems together to share telephone lines among several studios. The network interface connects to the COM port (RS232) of the TS612 Mainframe to communicate the status of each telephone line, giving the status of all connected telephone lines instantly. When one studio picks up a line, that line is shown as "in use" in the other studios. Ringing lines or lines on hold are appropriately indicated and may be picked up by any studio.

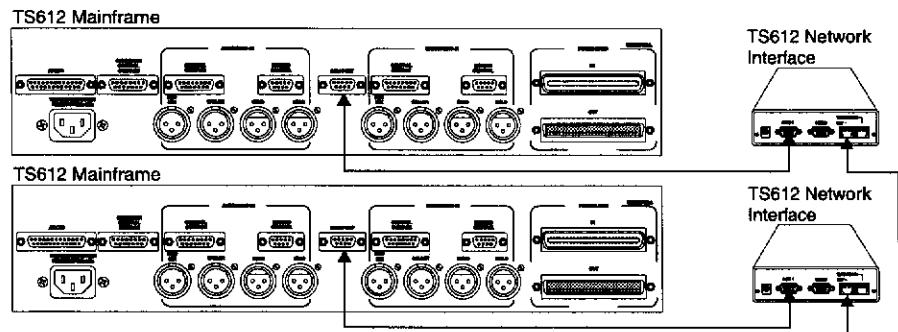
Each studio may have a dedicated call screener, who screens calls for a single studio only. When a call is placed on screened hold, it can be picked up only by the studio tied to that particular screener. All other studios see a screened call as a "line in use."

Before You Install ≡

Preinstallation Plan

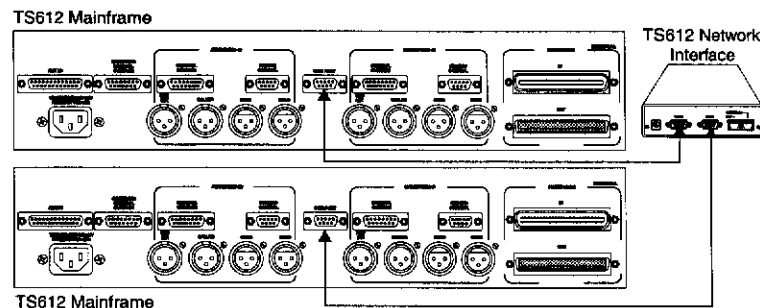
It is important to determine the number of network interfaces that will be needed. The best way to accomplish this is to find out where the network interfaces will be installed in relationship to the installed mainframes. If the distance is *greater* than 25 feet (See Figure 2, below.), each mainframe will need a network interface.

Figure 2. Interconnection, greater than 25 feet



If the distance is *less* than 25 feet, you can connect two mainframes to one network interface (Figure 3, below). However, Gentner Communications recommends that each mainframe be attached to an individual network interface.

Figure 3. Interconnection, less than 25 feet



Install TS612 Firmware

In order for the network interface to communicate with your TS612 system, a firmware upgrade must be installed in your TS612 Mainframe. To install the new firmware follow the steps below:

POWER NOTE:

For protection from electric shock, disconnect all power. If you have the TS612 Control Surface(s) installed in the studios, disconnect the power to the control surfaces to eliminate the power failure alarm.

Step 1

Disconnect the power from the TS612 Mainframe.

Step 2

Loosen the screws and remove the top cover.

Step 3

Locate and remove U27 (Figure 4, below).

PLEASE DISREGARD THIS PAGE

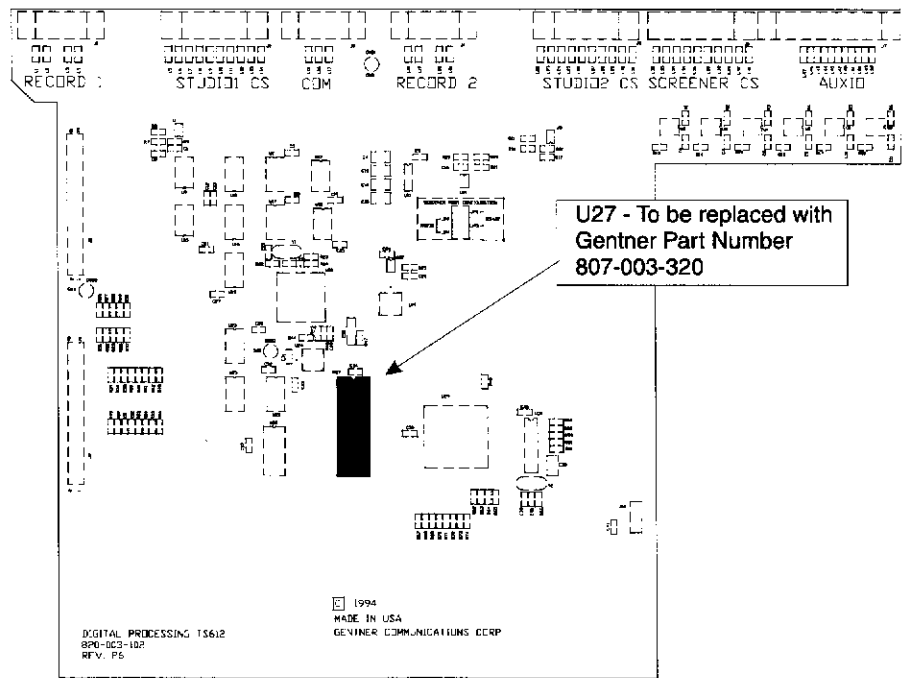


Figure 4. Firmware modification

Step 4

Replace U27 with new IC provided (Gentner part number 807-003-320).

Step 5

Replace top cover on the TS612 Mainframe and tighten screws.

Step 6

Remove front access cover located on the front of the TS612 Mainframe to reveal the dip switches. Turn dip switch 4 ON and replace cover.

Step 7

Reconnect power to the TS612 Mainframe and control surface(s).

Installation is now complete.

Installation ≡

To install your TS612 Network Interface, follow these step-by-step instructions:

INSTALLATION NOTE:

The TS612 should already be installed and operational before installing the network interface.

Network Interface Box

Figure 5 (below) shows the front and back panels of the Network Interface with a brief description of each connection and indicator.

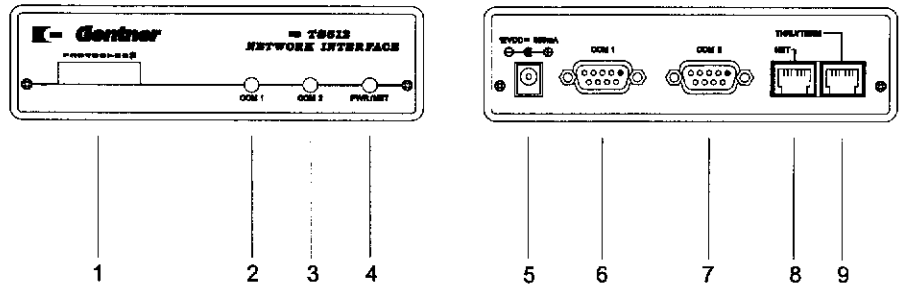


Figure 5. Front and back panels

- | | |
|--|---------------------------|
| 1 - Binary and Master Control Switches | 6 - COM 1 port (DB9) |
| 2 - COM 1 LED | 7 - COM 2 port (DB9) |
| 3 - COM 2 LED | 8 - NET port (RJ45) |
| 4 - Power/Network LED | 9 - THRU/TERM port (RJ45) |
| 5 - Power Input Connection | |

TS612-to-Network Interface Connection

With the provided six-foot DB9 serial cable, connect one end (See Figure 6, below.) to the TS612 Mainframe labeled COM PORT. Connect the other end of the cable to the network interface labeled COM 1.

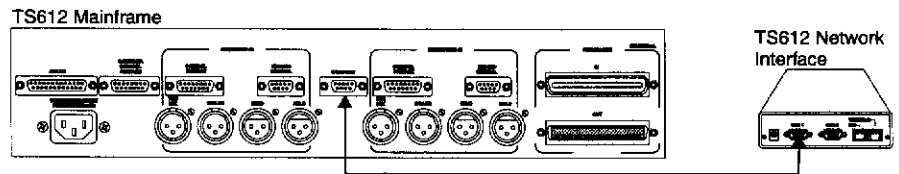


Figure 6. One mainframe connection

Connect each network interface with the DB9 serial cable into the port labeled COM 1 (Figure 7, below). Connect the other end of the serial cable into the TS612 Mainframe labeled COM PORT. Repeat this procedure until all network interfaces are connected to the TS612 Mainframe.

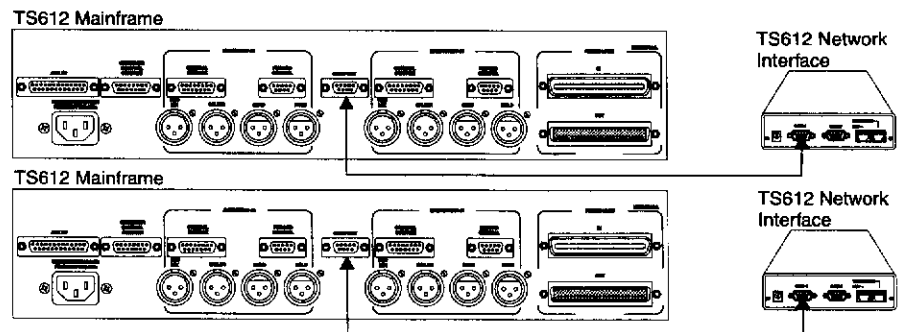


Figure 7. Additional network interface connection

Two mainframes can be attached to a single network interface if the Db9 serial cable is shorter than 25 feet. Connect the first mainframe to the COM 1 connector on the network interface (Figure 8, below). Connect the second mainframe to the network interface's COM 2 port.

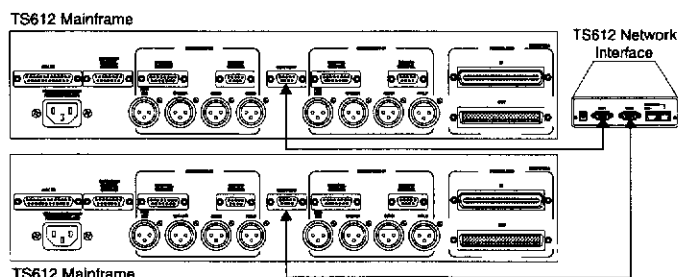


Figure 8. Two-mainframe connection

NETWORK INTERFACE NOTE:

Gentner Communications recommends that each TS612 Mainframe be attached to an individual network interface.

When the mainframe is properly attached, the COM LED should start to flash, indicating communication between the network interface and the TS612 Mainframe.

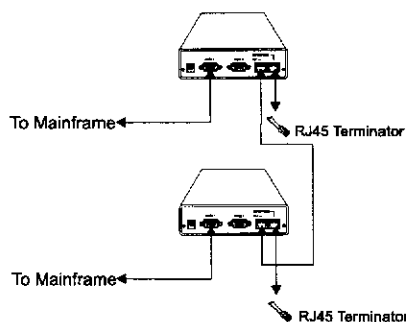


Figure 9. Network-to-network interface connection

Network-to-Network Interface Connection

Linking network interfaces together consists of linking the interfaces (See Figure 9, left.) via the NET and THRU/TERM ports. A standard 10 Base T 50-foot cable is provided for your convenience. Should your installation require a longer cable, refer to the Connection (Page 7) for the proper network-cable pinout.

Important things to remember when linking network interfaces together are: the first and the last network interface must use the RJ45 terminator (See Figure 10, left.) connected to the THRU/TERM port.

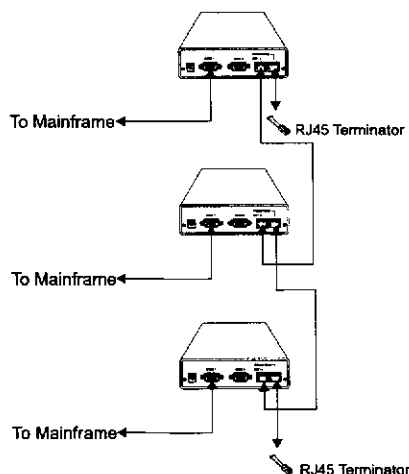


Figure 10. Network-to-network interface connection with RJ45 terminator

The RJ45 serial cable connecting the first and the second network interface will be connected in the NET port on both networks. All other network interfaces serially connect from the THRU/TERM port to the NET port until all networks are connected (except the first and second network interfaces).

NETWORK BUS NOTE:

The maximum total length of the network bus is 4,000 feet when using proper cable. Refer to the Connection (Page 7) for details.

Network Addressing

Up to 10 network interface units can be networked. Each network interface must be assigned a unique binary address, set using the dip switches (See Figure 11, next page, top.) located on the front of the network interface(s).

**Installation
Continued**

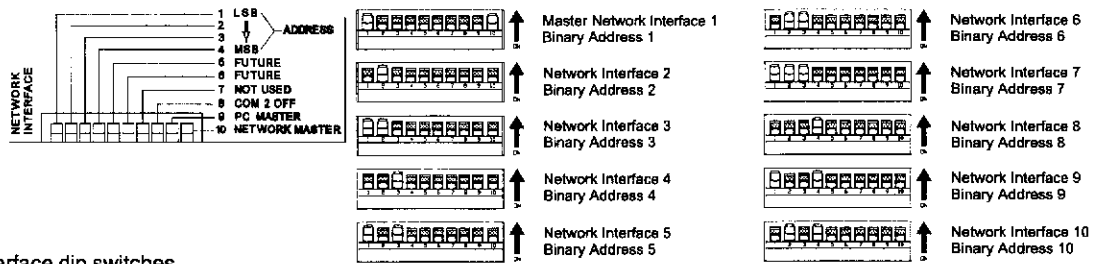


Figure 11. Network interface dip switches

Switches 1–4 designate the binary address. Establish a unique address for each network interface by setting the address switches on the network interface(s).

Switches 5–7 are not used.

Switch 8 activates/disables the COM 2 port.

Switch 9 activates/disables PC master status.

Switch 10 activates/disables network-master status.

BINARY ADDRESS ZERO NOTE:

Binary address 0 is designated for a specific application (PC Master). Do not use this address.

Network Interface Software

Dip switch 8 (COM 2) disables the COM 2 port of the network interface. *Do not* disable the COM 2 port on any network interface with a mainframe attached to the COM 2 port. Dip switch 9 (PC MASTER) must be disabled (OFF). *Do not* enable the PC MASTER switch.

Switching these functions from factory setting without the network-interface software package will disable your network interface. For more information about the network-interface software package, contact Gentner Communications Corporation.

Network Master

One of the network interfaces must be designated at the network master. Enable network-master mode by setting dipswitch 10 in the ON position.

MASTER NOTE:

Having multiple network masters in the network will cause the bus to lock up.

When changing dip-switch settings, the power must be cycled after switches are set for the changes to take effect.

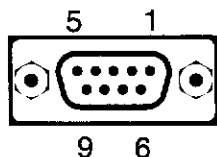
Connections ≡

Figure 12. DB9 connector

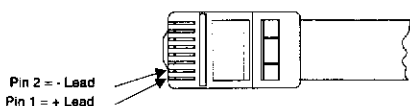


Figure 13. RJ45 cable

DB9 Connection

There might be circumstances that require custom cables. Information for pinouts (See Figure 12, left.) on the DB9 and the eight contact male modular plug are as follows:

Pin 2 - Tx Pin 3 - Rec Pin 5 - Gnd

RJ45 Connection

If you need to build a RJ45 network cable, the pinouts (See Figure 13, left.) are as follows:

It is important to note that when connecting the second eight-pin male modular connector that it must be a mirror image of the first connector (i.e. pin 1 to pin 1).

For correct pinout, the tab of the RJ45 is on the bottom and the cable direction is pointed toward the right. Cable must be twisted pair with a rating of 15pF/ft.

Power Connection

The network interface is provided with a direct plug-in power adaptor that can be used in any standard, 120Vac power outlet. Plug the barrel connector into port on the Network Interface labeled 12Vdc/500mA and plug the module into a standard power outlet.

Specifications ≡**TS612 Network Interface****Physical Dimensions**

1.5"/3.81cmHx5.5"/13.97cmDx5.5"/13.97cmW

Weight

1 lb./49 kg (dry)

Connectors

POWER:	Barrel-type connector
COM 1:	DB9 female
COM 2:	DB9 female
NET:	RJ45
THRU/TERM:	RJ45

Power Requirements

120Vac; 12Vdc; 500mA

Operating Temperature Range

32–100° F/0–38° C

Humidity Range

0–80 percent

Specifications are subject to change without notice.

Warranty ≡

Gentner Communications Corporation (Manufacturer) warrants that this product is free of defects in both materials and workmanship. Should any part of this equipment be defective, the Manufacturer agrees, at its option, to:

A. Repair or replace any defective part free of charge (except transportation charges) for a period of one year from the date of the original purchase, provided the owner returns the equipment to the Manufacturer at the address set forth below. No charge will be made for parts of labor during this period;

B. Furnish replacement for any defective parts in the equipment for a period of one year from the date of original purchase. Replacement parts shall be furnished without charge, except labor and transportation.

This Warranty excludes assembled products not manufactured by the Manufacturer whether or not they are incorporated in a Manufacturer product or sold under a Manufacturer part or model number.

THIS WARRANTY IS VOID IF:

A. The equipment has been damaged by negligence, accident, act of God, or mishandling, or has not been operated in accordance with the procedures described in the operating and technical instructions; or,

B. The equipment has been altered or repaired by other than the Manufacturer or an authorized service representative of the Manufacturer; or,

C. Adaptations or accessories other than those manufactured or provided by the Manufacturer have been made or attached to the equipment which, in the determination of the Manufacturer, shall have affected the performance, safety or reliability of the equipment; or,

D. The equipments original serial number has been modified or removed.

NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE, APPLIES TO THE EQUIPMENT, nor is any person or company authorized to assume any warranty for the Manufacturer or any other liability in connection with the sale of the Manufacturer's products.

Manufacturer does not assume any responsibility for consequential damages, expenses, or loss of revenue or property, inconvenience, or interruption in operation experienced by the customer due to a malfunction in the purchased equipment. No warranty service performed on any product shall extend the applicable warranty period.

In case of unsatisfactory operation, the purchaser shall promptly notify the Manufacturer at the address set forth below in writing, giving full particulars as to the defects or unsatisfactory operation. Upon receipt of such notice, the Manufacturer will give instructions respecting the shipment of the equipment, or such other matters as it elects to honor this warranty as above provided. This warranty does not cover damage to the equipment during shipping and the Manufacturer assumes no responsibility for such damage. All shipping costs shall be paid by the customer.

This warranty extends only to the original purchaser and is not assignable or transferable.

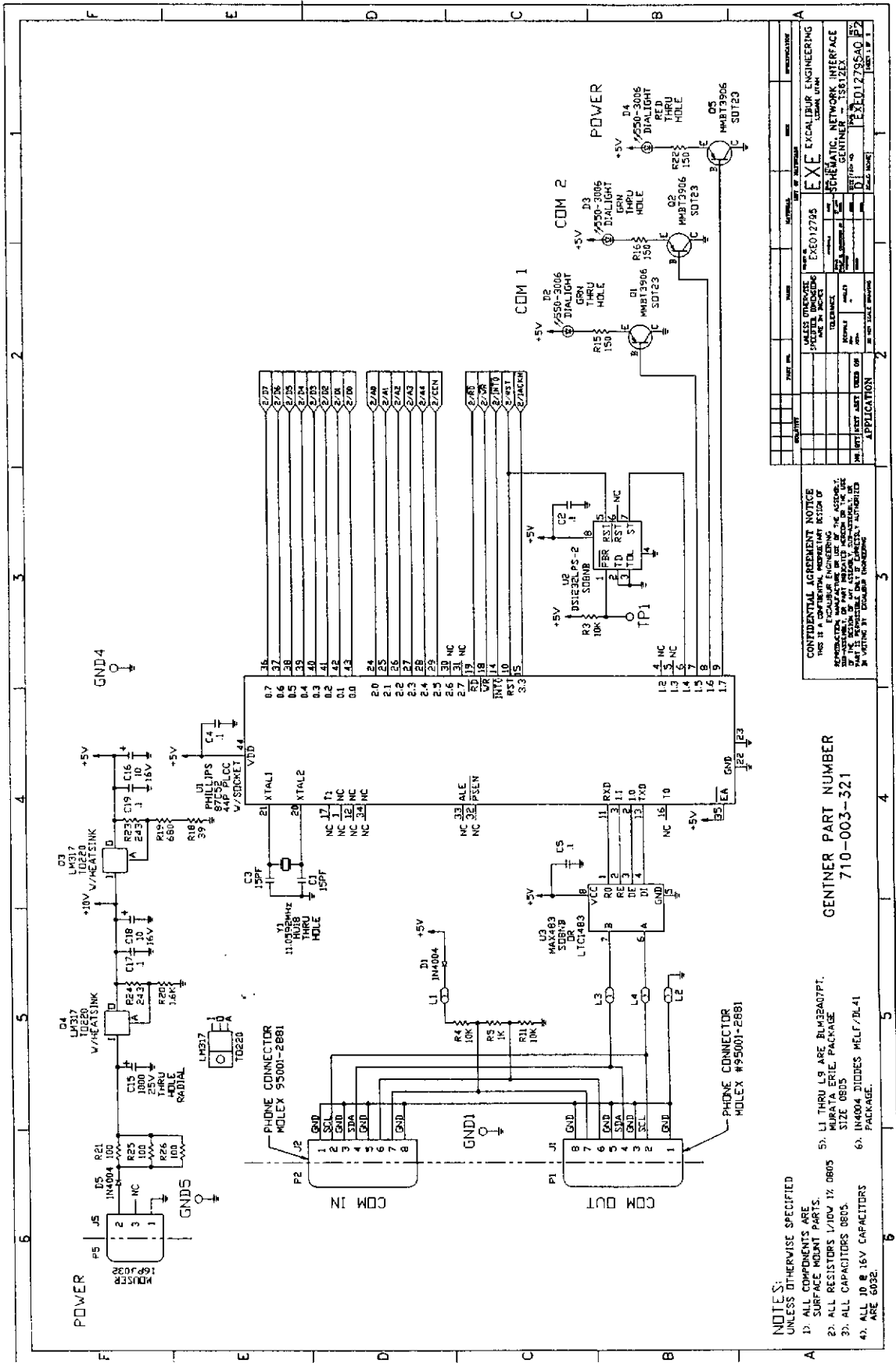
Gentner Communications Corporation, 1825 Research Way, Salt Lake City, Utah 84119

FCC Part 15 Compliance ≡

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

Changes or modifications not expressly approved by Gentner Communications Corporation could void the user's authority to operate the equipment.

Schematics



REV.	DATE	DESCRIPTION
1		INITIAL RELEASE
2		REVISION
3		REVISION
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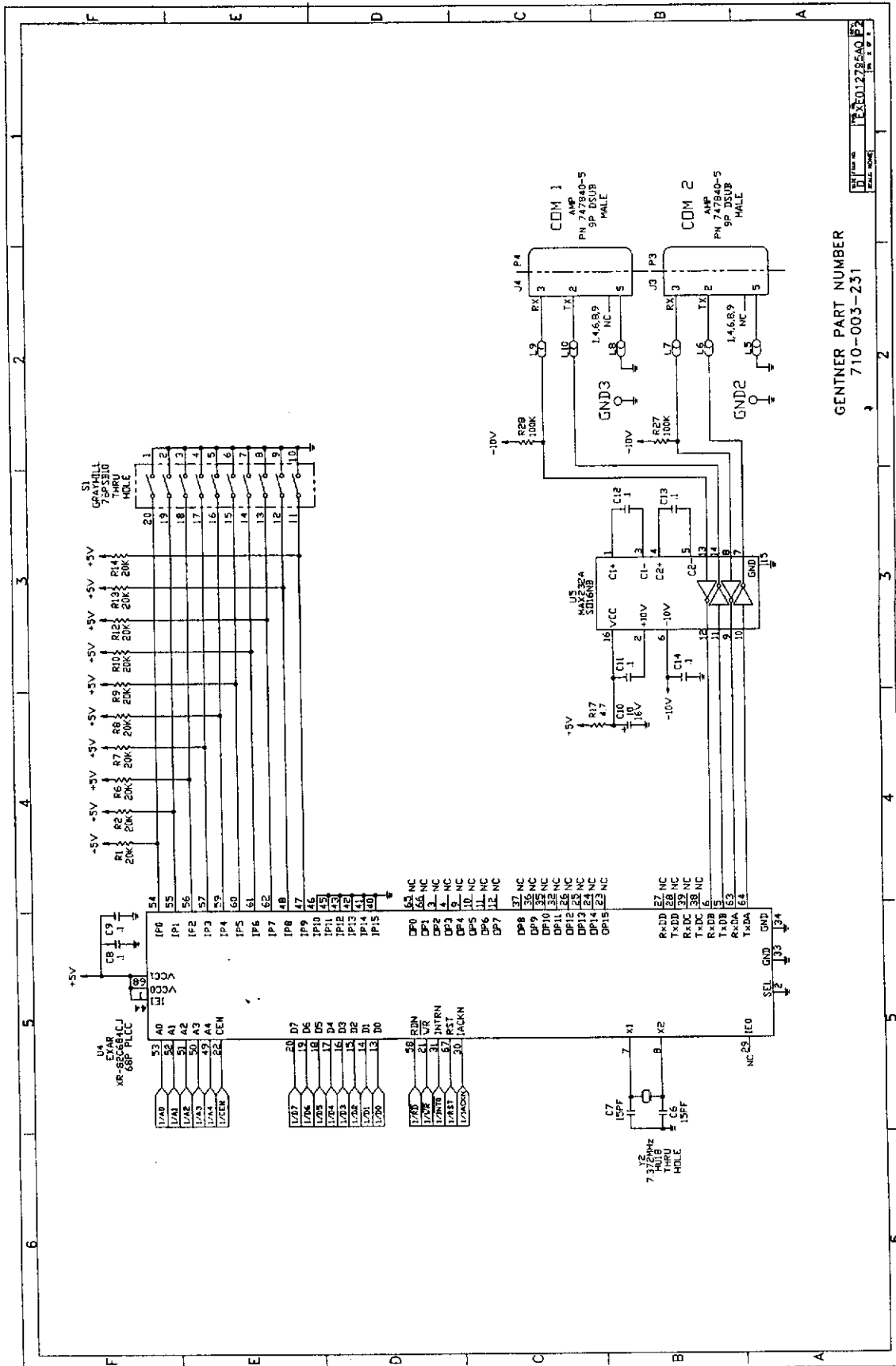
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EXCALIBUR ENGINEERING
 12345 MAIN STREET
 GENTNER - 15812EX
 TEL: 800-945-7730
 FAX: 800-945-7730
 APPLICATION

- NOTES:
- 1) ALL COMPONENTS ARE SURFACE MOUNT PARTS.
 - 2) ALL RESISTORS 1/10W 1% OHMS SIZE OHMS
 - 3) ALL CAPACITORS OHMS
 - 4) ALL 10, 8, 16V CAPACITORS ARE 50VDC
 - 5) L1 THRU L9 ARE BLM3607PT.
 - 6) MURATA ERIE PACKAGE
 - 7) IN4004 DIODES MELF/DL-41 PACKAGE.



Schematics
Continued 



GENTNER PART NUMBER
710-003-231

REV. 01/27/84
12/27/84