



SPH10

*Installation and  
Operations Manual*

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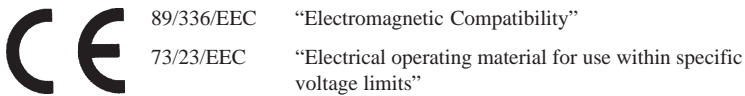
**SPH10 Installation and Operations Manual**

*Gentner Part No. 800-012-201 (Rev. 1.1)  
October 1997*

**Manual Development:** Bill Kilpack

**Artwork and Illustrations:** Jim Wright, Bill Kilpack

This equipment complies with the requirements of the EU guidelines:



Conformity of the equipment with the above guidelines is attested by the CE mark.



Gentner Communications Corporation is committed to protecting the environment and preserving our natural resources.

This manual has been printed entirely on recycled paper.

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## Introduction

Congratulations on purchasing the SPH10 Analog Hybrid. The SPH10 uses the latest technology to provide high quality telephone-interface equipment. The SPH10 is designed to interface incoming telephone calls to your audio equipment.

The SPH10 is a single analog hybrid, allowing connection of a single external telephone line for on-air use. When coupled with adherence to compliance standards in the United States, Canada, the United Kingdom and mainland Europe, the SPH10 is optimal for your telephone application.

This manual explains how to install, set up and operate the SPH10 in a step-by-step format. It also supplies instructions on how to resolve technical problems, should any arise.

If you need any 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

1825 Research Way  
Salt Lake City, UT 84119

TEL: Worldwide 801.975.7200 In U.S.A. 800.945.7730  
FAX: Worldwide 801.977.0087 In U.S.A. 800.933.5107  
FAX-On-Demand 24-Hour Information Service 800.695.8110  
FAX-On-Demand International Line 801.974.3661  
Worldwide Web Page @ <http://www.gentner.com>

### Warranty Registration

Please register your SPH10 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 items (See Figure 1, below.) were received with your shipment:

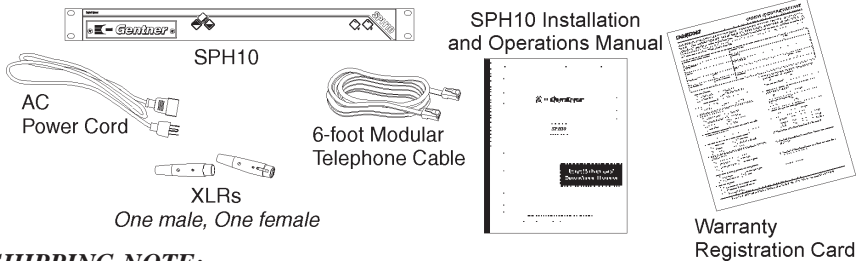


Figure 1. Equipment diagram

### 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.*

**Features and Benefits** ≡

- Optical telephone interface
- Analog filter minimizes hum and Central Office switching noise
- Push-button volume control on front panel
- Remote ON/OFF control via rear-panel connection
- Analog send filter/limiter for telephone line-noise reduction
- 1W power amp (no need for headsets on guests or talent)
- Balanced inputs and outputs
- Downstream mixing capability
- Compatible with any telephone system
- RF interference will not affect performance
- Simple installation and operation (no special equipment required)

**Product Description** ≡

The SPH10 provides superior analog telephone integration into broadcast applications. It contains a new optical telephone interface. The SPH10 also provides easy control of volume levels through front-panel push buttons.

**Front-Panel Controls**

The SPH10 front-panel controls (See Figure 2, below.) perform the following functions:

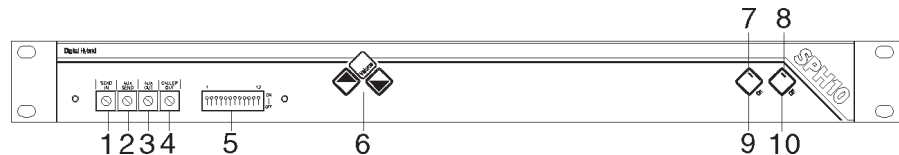


Figure 2. SPH10 front-panel controls

1. *Send In.* This trim pot adjusts the level of the send audio onto the phone line. At its midpoint, 12 o'clock, the trim pot is set for nominal send level (0dBm).
2. *AUX Send.* This trim pot will adjust the level of the aux send onto the telephone line. At its midpoint, 12 o'clock, the trim pot is set for a nominal level (0dBm).
3. *AUX Out.* This trim pot will adjust the level of the audio on the AUX OUT connector. At its midpoint, 12 o'clock, the trim pot is set for nominal caller level (0dBm).
4. *Caller Out.* This trim pot controls the caller level to the user equipment. At its midpoint, 12 o'clock, the trim pot is set for nominal caller level (0dBm).
5. *Dip Switches.* Four active dip switches (1, 3, 4, 12) configure the SPH10 system. Individual switch functions are defined in Operational Features (Page 6).

6. *Volume. Volume.* These up/down buttons control the audio level of the MONITOR amplifier.

7. *On LED.* This LED indicates the hybrid's ON state. The LED will illuminate green when the hybrid is in the ON state.

8. *Off LED.* This LED indicates the hybrid's OFF state. The LED will illuminate red when the hybrid is in the OFF state.

9. *On.* The ON switch (momentary), connects the hybrid to the telephone line.

10. *Off.* The OFF switch (momentary), disconnects the hybrid from the telephone line and mutes all audio.

### Rear-Panel Connectors

1. *Power.* The AC power cord input (See Figure 3, below.) is a NEMA type connector allowing use of premolded domestic US power cords as well as various other premolded international power cords.

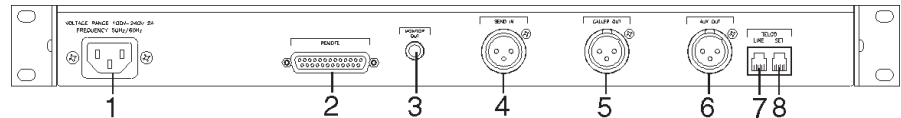


Figure 3. SPH10 back-panel connectors

2. *Remote.* This DB25 female connector provides parallel control and status of the hybrid.

3. *Monitor Out.* This quarter-inch phone jack provides a 1W amplified caller audio signal for monitoring.

4. *Send In.* This balanced, female 3-pin XLR input must be a mix-minus feed.

5. *Caller Out.* This balanced, male 3-pin XLR output contains caller audio only.

6. *Aux Out.* This balanced, male 3-pin XLR output contains caller audio mixed with send.

7. *Line.* This RJ11 connector provides connection of the telephone line to the hybrid.

8. *Set.* This RJ11 connector allows connection to a standard analog telephone set. Tip and ring from the phone line are present at this connector when the hybrid is in its OFF state. Tip and ring from the phone line are not present at this point when the hybrid is in its ON state.

**Before You Install** ≡

**Power Requirements**

The SPH10 automatically accommodates voltage requirements of 100–240Vac, 50/60Hz, no switching required.

**Telephone Line Requirements**

The SPH10 models operate on standard telephone lines and connect to the telephone system with a standard RJ11C modular jack. If you do not have an RJ11C jack where you want to install your SPH10, call your telephone company for installation.

**DRY LINE NOTE:**

*The SPH10 will not operate with telephone dry Telco lines.*

**Equipment Placement**

The SPH10 models are designed for installation into a standard 19-inch equipment rack.

**Installation** ≡

The SPH10 models are designed for easy installation and setup. All necessary interface connections are made through rear-panel connectors. This makes for easy installation, removal and, if necessary, service. Refer to SPH10 back-panel connections (See Figure 4, below.) for a description and placement of each of the connections you will be making. Each connection is numbered for easy identification.

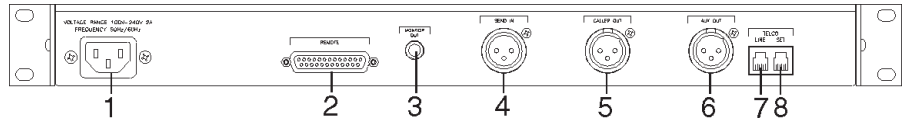


Figure 4. SPH10 back-panel connectors

**Completed Installation**

The block diagram below (See Figure 5, below.) illustrates a typical SPH10 interconnection.

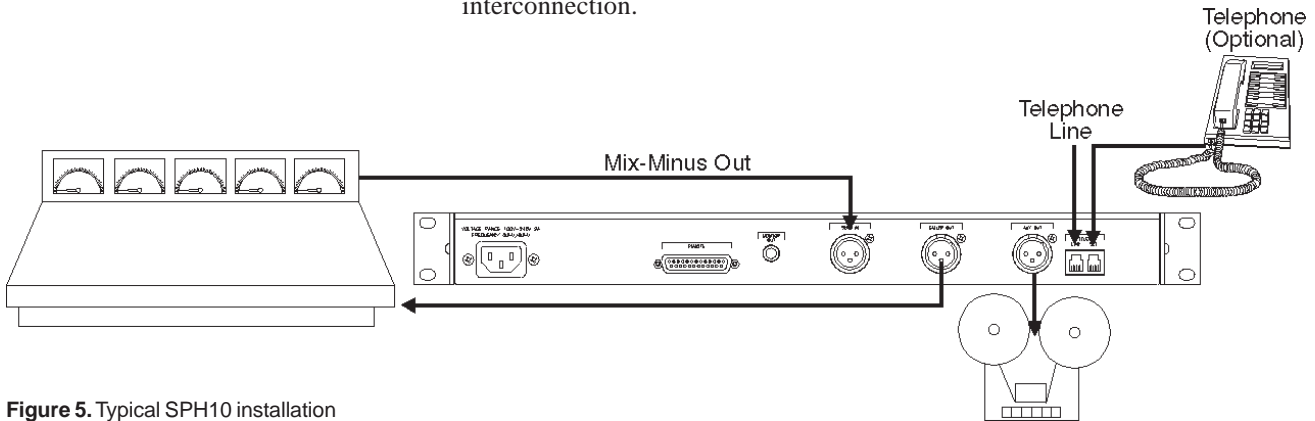


Figure 5. Typical SPH10 installation

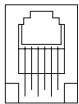
To install your SPH10, follow these step-by-step instructions:

**Step 1 — Telephone Connections**

**SPH10**

*Line.* Plug your telephone line into the RJ11C LINE jack [7] (Figure 6, left).

*Set.* Plug your telephone set into the RJ11C SET jack [8].



6 1

Figure 6. RJ11C telephone-line connector



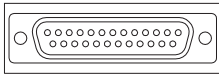


Figure 7. Remote DB25 connector

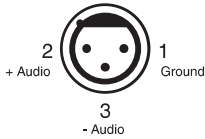


Figure 8. Send In female XLR connector



Figure 9. Caller Out male XLR connector



Figure 10. Aux Out male XLR connector

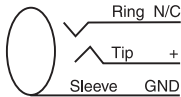


Figure 11. SPH10 monitor RCA jack

VOLTAGE RANGE 85V - 240V  
FREQUENCY 50 HZ / 60 HZ

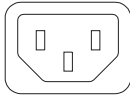


Figure 12. SPH10 power module

### Mix-Minus

## Step 2 — Back-Panel Connections

### Remote Control

If using a remote control for parallel control and hybrid status, plug it into the DB25 REMOTE connector [2] (Figure 7, left). For pinouts, see Appendix A: Connector Pinouts (Page 13).

### Send In

Connect the SEND IN female XLR plug [5] (See Figure 8, left.) to the studio console. This is balanced line-level audio.

### Caller Out

Connect the SPH10's CALLER OUT audio output to an input on your audio console [5] (Figure 9, left). This male XLR socket's audio *must* contain a mix-minus.

### Aux Out

Connect his male XLR connector [6] (See Figure 10, left, bottom.) to your recording device. This connector contains caller audio only. Select the AUX Mix dip switch to create a mix of send and caller on this connector.

### Monitor Out

Connect a speaker output feed to this quarter-inch TRS jack [3] (See Figure 11, left.) to monitor a 1W-amplified caller signal.

## Step 3 — Power Connection

The power cord [1] (See Figure 12, left.) will operate at any level between 100–240Vac, 50–60Hz.

Mix-minus refers to the audio that must be sent to callers to prevent feedback on the audio system through the hybrid. Mix-minus is a mix of all audio on the console, *minus* the caller's audio. Without a mix-minus feed, the caller audio appearing on the console will be sent back to the caller, where it will be retransmitted to the studio via the caller's telephone. This feedback can create anything from echo to a howling squeal. Many broadcast consoles provide a mix-minus feed via a telephone module.

When using the SPH10 with mix-minus, there are several ways of going about generating external mix-minus. If a mixing console is used to feed the SPH10's SEND input, the audio going down the line *must not* contain any caller audio. There are five ways to accomplish this: separate mix channel, internal mix bus, "build your own" mix-minus, discrete microphone mixer and one-channel send.

### Separate Mix Channel

If the console has an extra mixing output channel, use this channel to mix all the audio you want to send to the SPH10 *except* the channel that will be connected to caller audio.

### Internal Mix Bus

Mix-minus refers to a sum of all the audio sources in the console *minus* the caller audio. Many console manufacturers provide this feature as a telephone module.

**Mix-Minus**  
**Continued** ≡

**“Build Your Own” Mix-Minus**

You can build your own mix-minus by externally summing all audio sourced to be sent to the caller.

**Discrete Microphone Mixer**

If only microphone audio will be sent down the line, a separate microphone mixer (such as the Gentner MP4II Mixer/Power Amplifier) may be utilized. This audio can then be sent to the SPH10’s SEND input as well as the console input.

**One Channel Send**

If a single-source audio will be sent to the caller (i.e. from a microphone), simply use the line-level output from the microphone preamplifier.

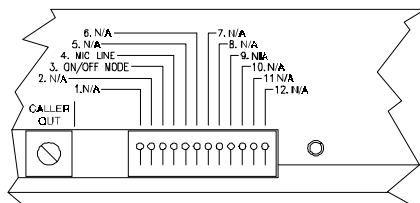
**Operational**  
**Features** ≡

**Remote ON/OFF Control**

Dip switch 3 (See Figure 13, left.) determines the type of external control used to turn the hybrid ON and OFF (Table 1, below).

**Table 1. Remote ON/OFF Dip Switch Settings**

<u>Dip Switch</u>	<u>Position</u>	<u>Description</u>
3	ON (UP)	Momentary
3	OFF (DOWN)	Latching



**Mic/Line Select**

Dip switch 4 determines the SEND input’s gain. When this dip switch is selected, the input will provide 55dB of gain to provide for an external microphone connection (Table 2, below).

**Figure 13. SPH10 dip switches**

**Table 2. Mic/Line Select Dip Switch Settings**

<u>Dip Switch</u>	<u>Position</u>	<u>Description</u>
4	ON (UP)	+55dB (Mic)
4	OFF (DOWN)	0dB (Line)

**Calibration** 

The following information will help you make adjustments to optimize your system performance. Verify all components and all connections. Ensure that proper power is supplied to the SPH10 and that the unit is OFF (the red OFF LED [7] will be lit; Figure 14, below). If the green ON LED [6] is lit, press the OFF button [9].

Figure 14. SPH10 front-panel controls

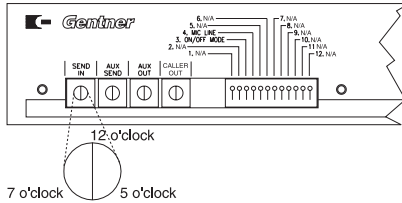
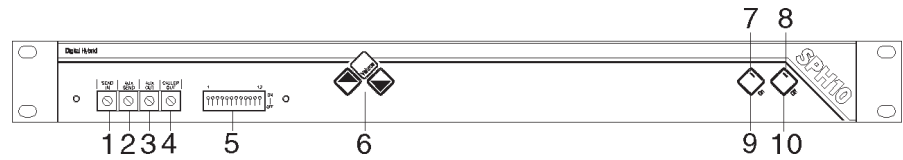


Figure 15. SPH10 trim-pot locations

**Step 1 — Trim Pot Levels**

Due to the various operating modes front-panel level settings will need to be preset as follows:

Set both the SEND IN trim pot [1] and CALLER OUT trim pot [4] at the 12 o'clock position (Figure 15, left).

**Step 2 — Caller Adjustment**

From another location, have someone call the SPH10. Answer the line by pressing the ON button [9].

As the caller talks, adjust *only* the CALLER OUT trim pot [4] identified in Step 1 (above), and/or your mixing board for a correct level going into your board.

**Step 3 — Send Adjustment**

Provide normal program audio to the hybrid's SEND IN input. Adjust your console or active SEND IN trim pot [1] until the caller verifies that this is a comfortable listening level.

Conclude your conversation and press the OFF button [10].

**Operation** 

Easy-to-access and read front-panel controls make operation of the SPH10 simple. Figure 16 (below) shows each front panel LED and button by number.

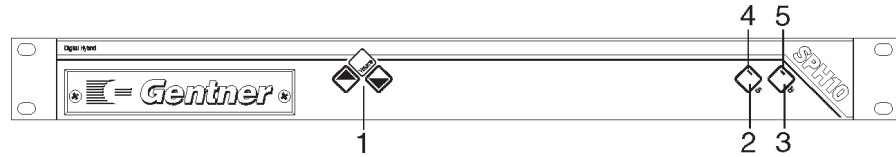


Figure 16. SPH10 front-panel controls

**Answering a Call**

An incoming call will ring on the telephone set connected to the SPH10. Answer the call by pressing the ON button [2] on either the front panel or from your remote control. This will route the call through the SPH10, and the green ON LED [4] will light. The red OFF LED [5] will extinguish.

Or

If you want to talk *off-air*, you can answer the call by picking up the telephone handset and talking to your party over the telephone. *Do not* activate the SPH10.

**Making a Call****Off-Air**

The SPH10 should be OFF (the red OFF LED [5] will be lit). Using your telephone set, dial the phone number of the party you wish to call. Conduct your call as you normally would and hang up the handset when finished.

**On-Air**

Call the party using your telephone set. After the other party has answered, put the call on-air by pressing the ON button [2]. The ON LED [4] will light and the SPH10 will take control of the call, disabling the telephone set. You may safely hang up the handset without disconnecting your call. When the conversation is complete, press the OFF button [3] to disconnect the call.

**Disconnecting a Call**

If the call is routed through the SPH10 (the ON LED [4] will be lit), press the OFF button [3]. The OFF LED [5] will light, and the ON LED [4] will extinguish.

If your call is through the handset only (the red OFF LED [5] will be lit), hang up when the conversation is complete.

**Remote Control Option**

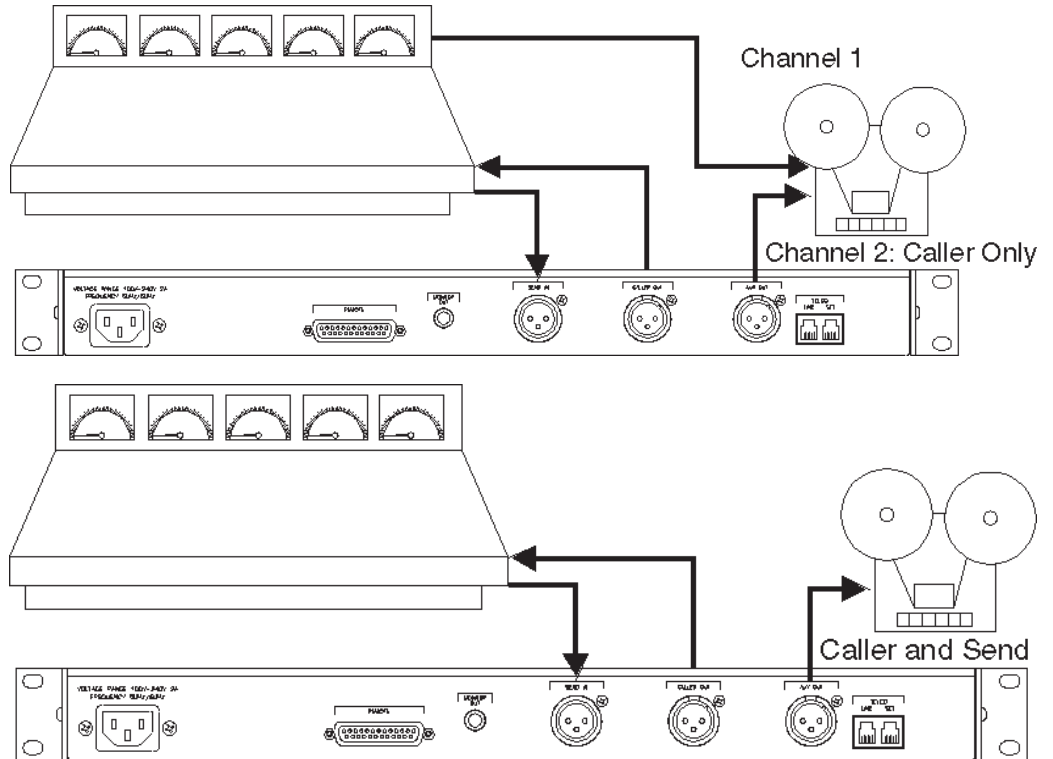
The remote control connector can be used to perform three functions: monitor mute on/off, system on and system off.

If using a remote-control device, internal dip switch 3 will select a momentary or latching ON closure. See Table 2, Page 6.

**Recording Option**

To record a call, your recording device must be connected to the AUX OUT connector on the SPH10's back panel. While on a connected call, the mix of

both send and receive audio will be routed to the AUX connector. See Figure 17 (below) for possible configurations. Turn on your recording device and set it to record. Turn the recording device off when the call is finished.



**Figure 17.** Two typical recording configurations

***When Not in Use***

The SPH10 is inactive when the red OFF LED [7] lit.

***POWER NOTE:***

*Power should be maintained to the unit at all times.*

**Specifications** ≡

**SPH10**

**Dimensions**

17"/43.2cmW x 1.75"/4.5cmH x 8"/25.4cm D

**Weight**

7 lbs/3.2kg (dry)

12.1 lbs./5.5kg (shipping)

**Connectors**

POWER: Auto-adjusting power module from 100–240Vac, 50/60Hz

REMOTE: DB25 female connector.

MONITOR OUT: 1/4" stereo jack; tip = +phase, ring = -phase; sleeve = analog ground, 1W output into an 8ohm load

SEND IN: 3-pin female XLR; pin 1 = analog ground, pin 2 = +phase, pin 3 = -phase; +20dBm maximum input, -10dBu nominal level, >20kOhm impedance

CALLER OUT: 3-pin male XLR; pin 1 = analog ground, pin 2 = +phase, pin3 = -phase; +20dBm maximum into 600 Ohms, 0dBu nominal level

AUX OUT: 3-pin male XLR; pin 1 = analog ground, pin 2 = +phase, pin3 = -phase; +20dBm maximum into 600 Ohms, 0dBu nominal level

LINE: RJ11 connector; A-lead supervision provided

SET: RJ11 connector

**Power Requirements**

100–240Vac, 50/60Hz, 30W

**Audio Performance**

**Frequency Response**

1dB from 250Hz to 3.5kHz (with AGC disabled)

**Signal-to-Noise Ratio**

>56dB reference to 0dBu at -15dBm on the telephone line

**Receive Audio: Distortion**

<.3% THD, 250Hz to 3.5kHz (AGC disabled)

**Remote**

**Unbalanced Audio Out**

0dBu line level output with a <50ohm impedance

**Unbalanced Audio In**

0dBu line level >20kohm impedance

**On/Off Control**

Momentary closures to the switch common, unless latching-mode enabled

(dip-switch option); latching mode, hybrid remains active while closure from the ON control to switch common is present (OFF control nonfunctional in this mode).

***Send and Caller Presence Indication***

Open collector outputs go low when send and/or caller levels are nominal

***Monitor Mute***

Control input mutes monitor output with closure from mute input to switch common

***Operating Temperature***

32–100° F / 0–38° C

***Humidity***

0–80 percent

All 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 B 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.

**FCC Part 68  
Compliance** ≡

**FCC Registration Number: FBIUSA-31573-BR-N**  
**Ringer Equivalence Number (REN): 1.1B**

A label containing, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment is prominently posted on the top plate, near the rear of the equipment. If requested, this information must be provided to your telephone company.

USOC Jacks: This device uses RJ11C and RJ21X terminal jacks.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to obtain the maximum RENs for the calling area.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice for you to make the necessary modifications in order to maintain uninterrupted service.

If you experience problems with this equipment, contact Gentner Communications Corporation, 1825 Research Way, Salt Lake City, Utah 84119, or by phone at (801) 975-7200 for repair and warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

No user serviceable parts are contained in this product. If damage or malfunction occurs, contact Gentner Communications for instructions on its repair or return.

This equipment cannot be used on telephone company provided coin service. Connection to Party Line Service is subject to state tariffs.



**IC Compliance** 

**NOTICE:** The Industry of Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by Gentner Communications. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

**Ringer Equivalence Number (REN): 1.1**  
**IC Certification Number: 1970 8175 A**

**Safety**  
**Information** 

**CAUTION:** Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

## **BABT Recording Requirements**

This condition applies in circumstances where you wish to use telecommunications apparatus comprised in or connected to your system to record, silently monitor or intrude into live-speech telephone calls. (It does not apply where the apparatus in question is not telecommunications apparatus; i.e. is not apparatus that had been constructed or adapted for use in transmitting or receiving telecommunications messages.) Silent monitoring is the establishment of a receive-only transmission path to a third terminal, enabling a third party to hear the call. Intrusion is the establishment of a bothway speech transmission to another terminal enabling a third party to hear and be heard by at least one of the other parties to the call. The condition does not apply to the monitoring of telephone calls for a systems control or diagnostic purposes where the meaningful content of the call itself is monitored.

This condition provides that you should make every reasonable effort to inform all parties to a call that it may or will be recorded, silently monitored or intruded into. The particular means by which you choose to do this are not specified in the condition. Acceptable options, depending on circumstances, might include warning tones, prerecorded messages, spoken warnings by the operator or written warnings included in publicity material, telephone directories, contracts, terms of business, staff notices, etc. It may not always be possible to warn first-time callers with whom you have had no previous contact but what is important is that you have a systemic procedure in place which provides the necessary information wherever this is a realistic possibility.

For recording and silent monitoring, this condition recognises two forms of warning: a written notice before the call or a warning during the call itself. Both warnings should also inform all parties to a call why it is being recorded or silently monitored. In the case of intrusion, a warning before the intrusion takes place is sufficient as both parties will become aware that a third party has joined their conversation.

This condition does not specify the detail of how these forms of warning should be given. A written statement included in any of the following — contractual terms, conditions of employment, publicity material, staff notices, telephone directory entries — would be a possible method.

The essential point is that the equipment user must be able to demonstrate that a determined attempt has been made to reach prospective callers; as an illustration, we would expect any warning included in a company's publicity material to be presented in such a way that it would not be missed by anyone looking for that company's telephone number(s). A warning which is not clearly visibly would fail to meet this requirement.

Where the warning is to be given during the call itself, the possibilities include a recorded message at the beginning of the call or a spoken message at any time during the conversation.

You should also maintain a record of the means by which callers have been warned which the Director may request sight of. This does not mean that you have to log each phone call; rather, that should a dispute arise, it will be possible for you to show from records how callers were being made aware at the time.

This condition does not apply where apparatus is being used for the purpose of law enforcement or in the interests of national security or to calls involved the national Emergency Organisations. It also provides that other licensees may be excluded, by means of a Director's consent, where there are compelling factors that outweigh the normal expectation of privacy. Such factors might apply where security is a consideration or in the case of specialised users such as helplines. In accordance with Section 19 of the Telecommunications Act of 1984, these consents will be entered on a register open to public inspection.

This condition attempts to secure objectives similar to those which were previously achieved through an approval requirement that equipment capable of recording, silently monitoring or intruding into telephone conversations should emit warning tones as these operations take place. The removal of warning tones was permitted by an OFTEL General Variation provided that an alternative form of warning was given. The expectation is that procedures complying with the General Variation should, generally, also meet the requirements of this condition.

## Appendix A: Connector Pinouts

**Table 4. Remote Connector Pinout**

<u>Pin</u>	<u>Description</u>	<u>Pin</u>	<u>Description</u>
1	Remote hybrid 1 ON *	14	Hybrid 1 ON indication **
2	Remote hybrid 1 OFF *	15	Hybrid 1 OFF indication **
3	N/C	16	N/C
4	N/C	17	N/C
5	Switch/Indicator Common	18	Switch/Indicator Common
6	N/C	19	Hybrid 1 send presence indicator **
7	N/C	20	Hybrid 1 caller presence indicator **
8	N/C	21	Switch/Indicator Common
9	Unbalanced Send Audio Input (0dBu nominal)	22	Audio Common
10	Unbalanced Caller Audio Output (0dBu nominal)	23	Audio Common
11	Unbalanced Aux Audio Output (0dBu nominal)	24	Audio Common
12	Monitor Mute Control*	25	Switch/Indicator Common
13	Audio Common		

\* Remote control provided via contact closure to Switch/Indicator Common

\*\* Remote indicators provided via open collector outputs to Indicator Common (<15V, <39mA)

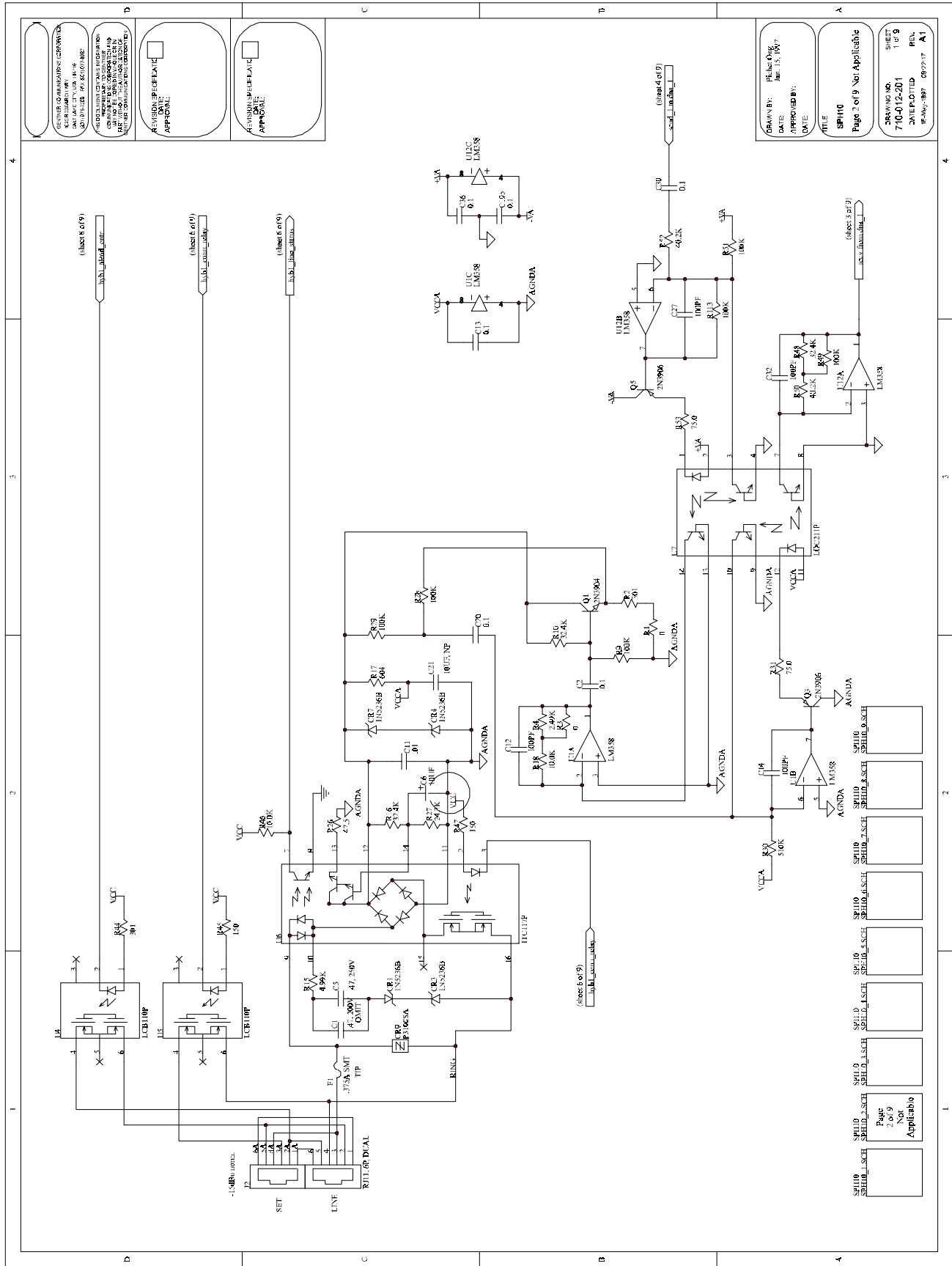
**Table 5. Line Connector Pinout**

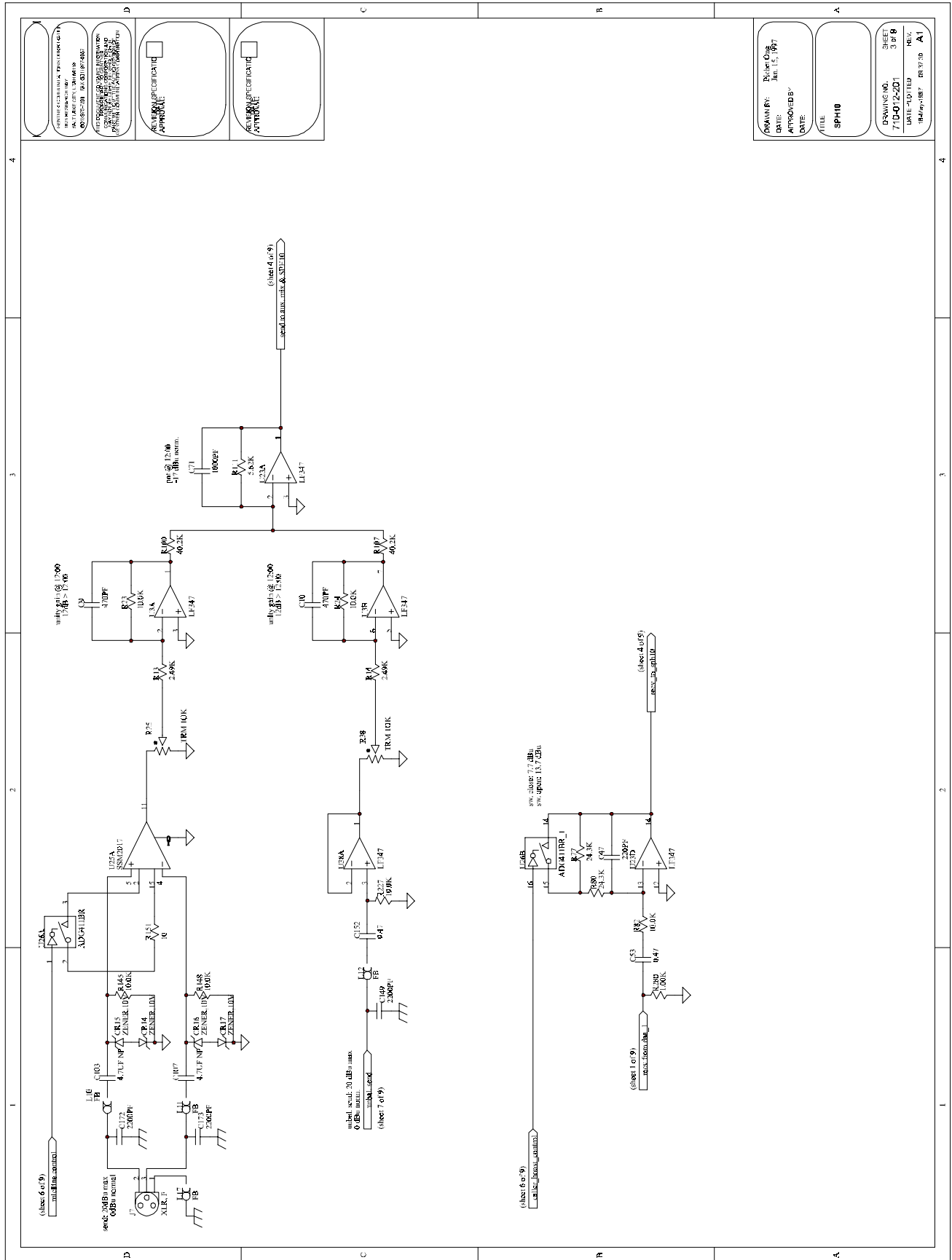
<u>Pin</u>	<u>Description</u>	<u>Pin</u>	<u>Description</u>
1	To pin 6 of SET RJ11C	4	Ring
2	To pin 5 of SET	5	To pin 2 of SET
3	Tip	6	To pin 1 of SET RJ11C

**Table 6. Set Connector Pinout**

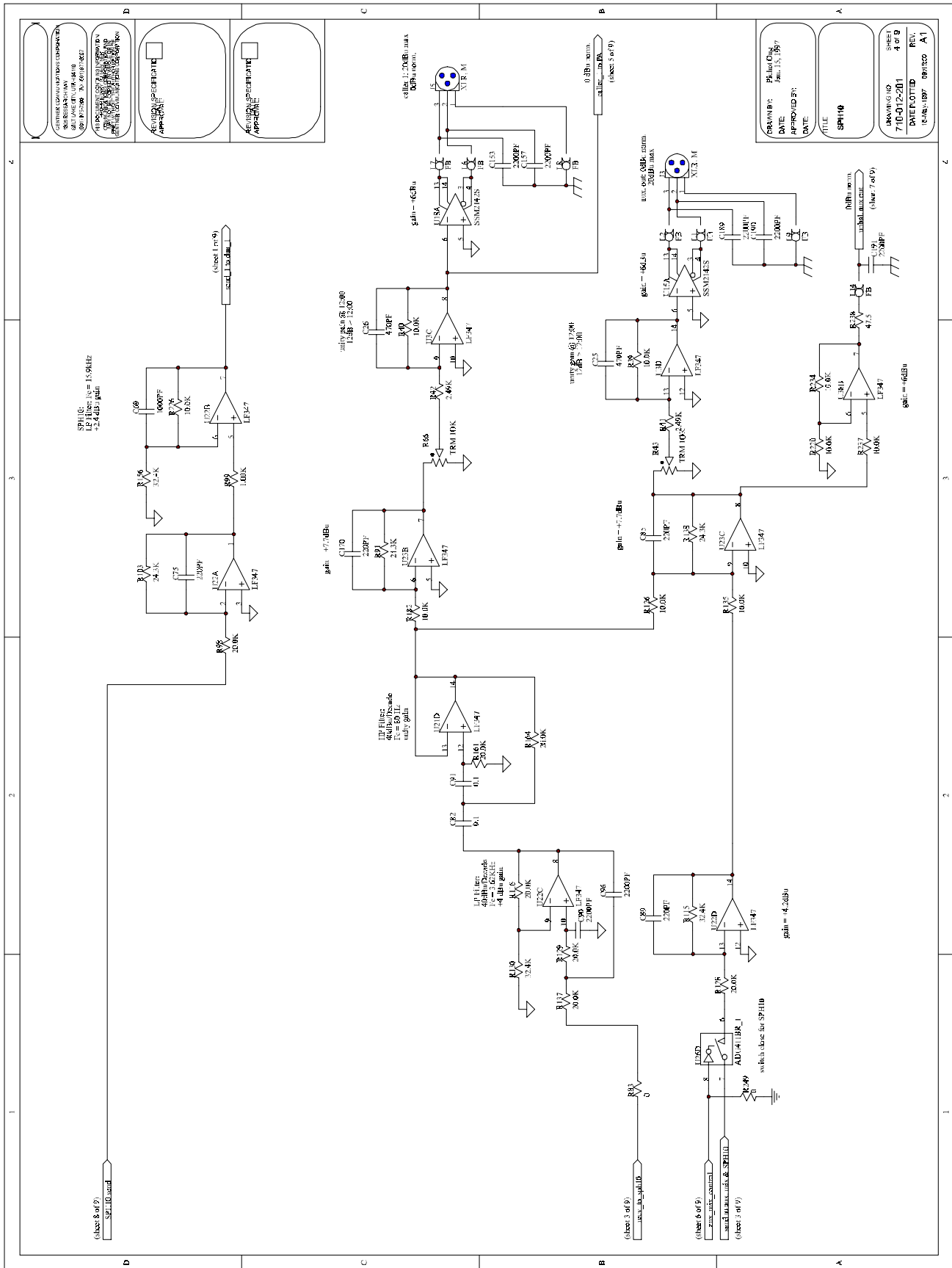
<u>Pin</u>	<u>Description</u>	<u>Pin</u>	<u>Description</u>
1	To pin 6 of LINE RJ11C	4	Tip
2	To pin 5 of LINE RJ11C	5	To pin 2 of LINE RJ11C
3	Ring	6	To pin 1 of LINE RJ11C

**Appendix B:**  
**Schematics** 





**Appendix B:**  
**Continued**



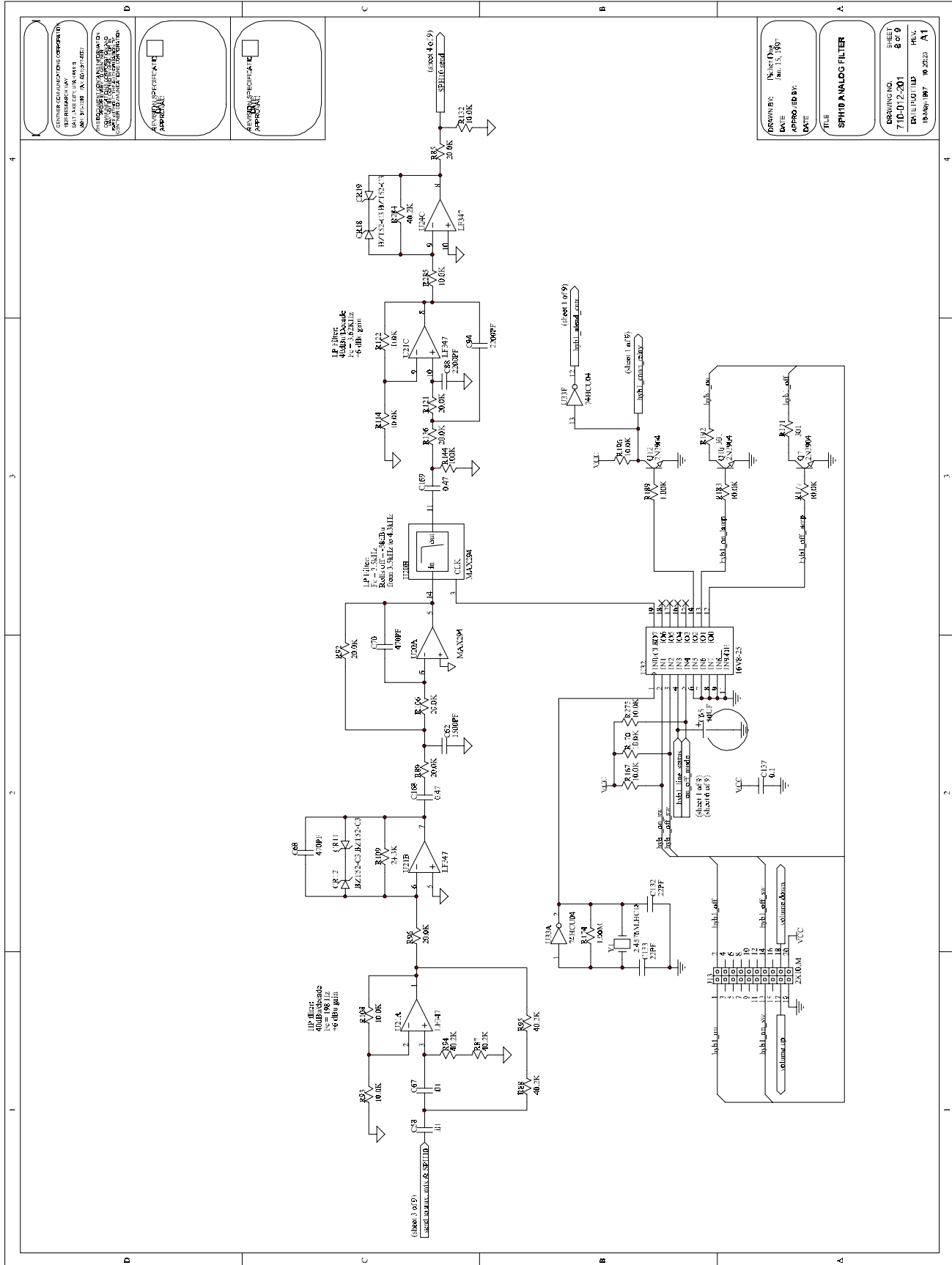




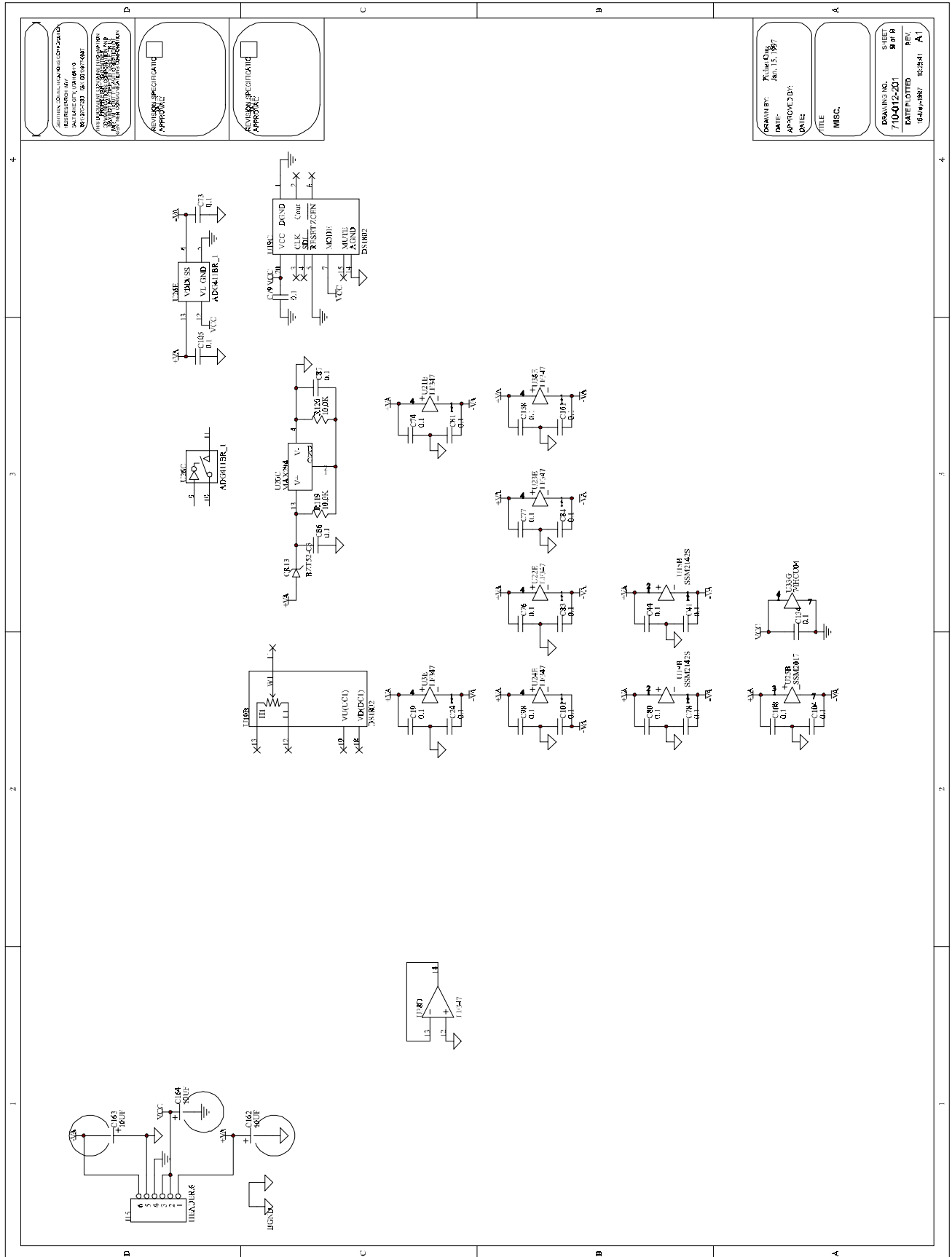




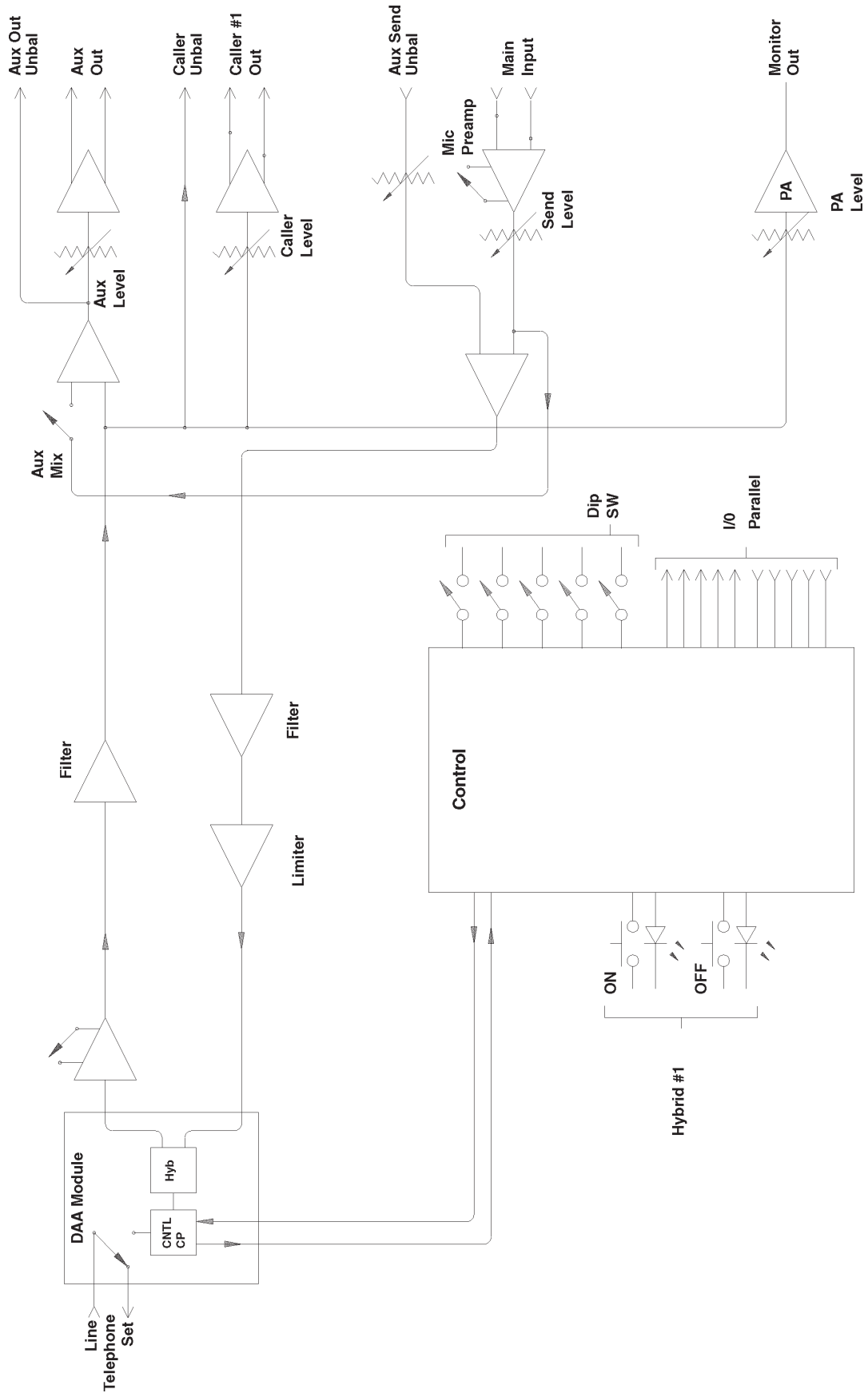
**Appendix B:**  
**Continued** 



DRAWN BY: Phil D'Angelo  
 DATE: Jan. 15, 1997  
 APPROVED BY:  
 DATE:  
 FILE: SPH10 ANALOG FILTER  
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 DATE PLOTTED: 10/20/23  
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**Appendix C: SPH10  
Block Diagram**





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GENTNER COMMUNICATIONS CORPORATION  
Sales and Technical Assistance  
1825 Research Way  
Salt Lake City, Utah 84119

Toll Free 800.945.7730  
Telephone 801.975.7200  
FAX 801.977.0087  
FAX-On-Demand 800.695.8110  
FAX-On-Demand International Line 801.974.3661  
Worldwide Web Page @ <http://www.gentner.com>

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