

GBPPR 'Zine



Issue #100 / The Monthly Journal of the American Hacker / August 2012

"The market prices of commodities vary from day to day and often several times a day. This occurs when there is no radical difference in the proportion of supply and the natural demands. This fact is conclusive proof that our system is controlled by manipulators and is fundamentally wrong. I have sought to elucidate this problem within this volume and have suggested a plan which, if adopted, would make the people themselves master of the world, instead of the present master – The Money Trust."

--- Quote from *Currency, Banking, and the Money Trust* by Minnesota Congressman Charles Lindbergh, Sr., the father of aviator Charles Lindbergh, Jr.

This book was originally titled *The Economic Pinch* and was first published in 1913. In 1917, Charles Lindbergh brought articles of impeachment against members of the Federal Reserve Board, including Paul Warburg and William Proctor Gould Harding. Lindbergh charged that the Federal Reserve Board members were involved "... in a conspiracy to violate the Constitution and laws of the United States."

Charles Lindbergh, Sr. and his son were true American heroes.

Table of Contents

- ◆ **Page 2 / Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS**
 - ◆ Description and maintenance for the digital carrier trunk frame in a #1A ESS.
- ◆ **Page 31 / 10 MHz Rubidium Frequency Reference**
 - ◆ Using a surplus Efratom LPRO-101 as a stand-alone 10 MHz frequency reference source.
- ◆ **Page 41 / Building a Centrex Service in a DMS-100 Switch**
 - ◆ Command procedures for building a Centrex with the "Assume 9" option in a DMS switch.
- ◆ **Page 49 / Bonus**
 - ◆ Stop Internet Censorship
- ◆ **Page 50 / The End**
 - ◆ Editorial and rants.

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

BELL SYSTEM PRACTICES
AT&T Co Standard

SECTION 231-037-021
Issue 2, September 1983

DIGITAL CARRIER TRUNK INTERFACE DESCRIPTION AND MAINTENANCE CONSIDERATIONS NO. 1 AND NO. 1A "ESS" SWITCHES

CONTENTS	PAGE	CONTENTS	PAGE
1. GENERAL	2	A. Maintenance Bank Test Set	13
2. DIGITAL CARRIER TRUNK FRAME DESCRIPTION	3	B. Common Unit Testing	15
PERIPHERAL UNIT CONTROLLER	3	3. MAINTENANCE	15
DIGITAL CARRIER TRUNK CHANNEL BANK	3	TESTS	16
DIGITAL CARRIER TRUNK BANK PLUG-IN UNITS	6	A. Installation Tests	16
A. Trunk Processing Unit	6	B. Growth	16
B. Combined Channel Unit	7	C. Testing from the Trunk Test Positions	16
C. Transmit Unit	10	D. Testing from the Digital Carrier Trunk Frame	17
D. Receive Unit	10	E. Testing from the Teletype	17
E. Syndes Unit	10	TROUBLE INDICATORS	17
F. Line Interface Unit	10	A. Carrier Group Alarm	17
G. Office Interface Unit	10	B. Automatic Line Monitoring	19
H. Alarm And Digroup Control Unit	10	FAULT ISOLATION	19
Alarm Control Unit	10	A. Raw Data Analysis	19
Digroup Control Unit	11	B. Looping	19
I. Power Distribution Unit	11	C. Voice Frequency Signal Flow and Looping	19
J. Power Converter Unit	13	PLUG-IN REPLACEMENT USING MAINTENANCE BANK PLUG-INS	25
MAINTENANCE BANK	13		

NOTICE

Not for use or disclosure outside the Bell System except under written agreement

* Trademark.

Printed in U.S.A.

Page 1

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

SECTION 231-037-021

CONTENTS	PAGE
4. CIRCUIT SWITCHED DIGITAL CAPABILITY (CSDC) FEATURE	25
OFFICE INTERFACE UNIT (OIU-4)	27
COMBINED ALTERNATE DATA-VOICE (CADV) CHANNEL UNIT	27
ALARM AND DIGROUP CONTROL UNIT (A&DCU)	27
TTY SLIP ERROR MESSAGE REPORTING	27
5. GLOSSARY OF ABBREVIATIONS AND ACRO- NYMS	27

Figures

1. Digital Carrier Trunk Frame	5
2. Digital Carrier Trunk Control Diagram	6
3. Channel Bank Layout	7
4. Mode Dependent Equipment Configuration	8
5. Channel Bank Plug-ins	9
6. Alarm and Digroup Control Unit	11
7. Maintenance Bank	14
8. Maintenance Bank Test Set	15
9. Looping Diagram for Mode 1	21
10. Looping Diagram for Mode 2	22
11. Looping Diagram for Mode 3	23
12. Looping Diagram for Mode 4	24
13. DCT-CSDC Mode Configuration	26
14. DCT Bank Configuration for CSDC	29

CONTENTS	PAGE
Tables	
A. List of DCT Common Equipment and Test Equipment	4
B. Bank Alarm Indicators	12
C. Maintenance Bank Test Set Controls	16
D. DCT Digroup to Circuit Number Conversion	20

1. GENERAL

1.01 This section describes the digital carrier trunk (DCT) frame and its application as used in the No. 1 and No. 1A ESS switches. Maintenance considerations for this frame are also included.

1.02 The reasons for reissuing this section are to add maintenance information contained in Section 231-049-101 and to add information on the circuit switched digital capability (CSDC) feature. Revision arrows are used to emphasize significant changes.

1.03 The DCT frame provides an intelligent interface between the T-carrier transmission lines and switching network of the central office.

1.04 The DCT frame provides an interconnection for processing 1 to 480 one-way or two-way voice frequency circuits between the No. 1/1A office and the far-end office with up to 40-T1, 20-T1C, or 10-T2 digital transmission lines. This is accomplished by a microprocessor controlled interface for signaling and status reporting. Digits are received, converted to digital data, and a channel unit is selected for outpulsing. There may be up to 10 banks contained in one DCT frame. Each bank has two digroups and each digroup contains 24 channels for a total of 480 channels per DCT frame.

1.05 The CSDC feature provides end-to-end circuit-switched transmission interface for 56 kilobit per second digital data signals. To provide the CSDC feature, the DCT bank must be equipped with combined alternate data/voice (CADV) channel

units, alarm and digroup control unit (A&DCU, List 2) and an office interface unit (OIU-4). See Section 231-390-380 for feature description. Refer to Part 4 for additional DCT-CSDC description.

1.06 The DCT frame common equipment and test equipment are listed in Table A.♦

2. DIGITAL CARRIER TRUNK FRAME DESCRIPTION

2.01 The DCT frame consists of a peripheral unit controller (PUC), ten DCT banks, and an optional maintenance bank mounted in a 7 foot high (2133 mm), 6 foot 6 inch wide (1981 mm) 3-bay frame. The PUC, two banks, and the optional maintenance bank are placed in the center bay and four banks are placed in each of the side bays (Fig. 1).

PERIPHERAL UNIT CONTROLLER

2.02 The PUC is a microprocessor duplex controller located in the top portion of the center DCT bay. With the BELLMAC*-8 microprocessor as the heart of the processing unit, the PUC is self-contained with memory and power supplies. Refer to Section 231-037-020 for a description of the PUC.

2.03 The function of the PUC may be defined as call processing, and it is located between the No. 1/1A central control (CC) and the digital carrier systems. Although the PUC handles signaling, channel assignment, bit formatting, error checking and diagnostics, the CC commands and externally controls the call processing functions. A hierarchical command structure controls data flow to and from the combined channel units (CCU) (Fig. 2).

2.04 The PUC receives instructions from the CC over the peripheral unit address bus (PUAB). The PUC reports back to the CC over the peripheral unit reply bus (PURB). These instructions include those to be executed within the PUC as well as those to be passed on to the individual digroups.

2.05 For outgoing trunk (or channel) selection, the PUC receives a command from the CC over the PUAB and selects an idle circuit to handle the call. Signaling is also provided by the PUC. One PUC is required for each DCT frame.

2.06 The information returned to the CC consists of PUC and digroup status. This information

* Trademark.

is returned to the CC over the PURB when the CC periodically interrogates the PUC.

2.07 ♦The PUC contains its own diagnostic tests and will report failures to the CC. Upon request, the status of the DCT is printed out on the maintenance teletypewriter (TTY) for use by maintenance personnel.

2.08 A DCT application program resides in the erasable programmable read only memory (EPROM) within the PUC. This program is the DCT application firmware. This firmware (identified as MC1A000) is used by the PUC to detect changes in trunk signaling, detect and report changes in trunk supervisory states, automatically detect and report transmission facility maintenance information, and receive or generate revertive and dial pulse digits.♦

DIGITAL CARRIER TRUNK CHANNEL BANK

2.09 The DCT channel bank is a 48-channel pulse code modulated (PCM) terminal which serves as the transmission interface between T-carrier lines and the No. 1 or 1A trunk distributing frame. The bank is compatible with other D-type channel banks and digital multiplexers over T1, T1C, or T2 digital carrier systems. The DCT bank layout is shown in Fig. 3.

2.10 ♦The function of the DCT bank is to translate analog voice frequency (VF) signals to and from PCM signals for transmission over digital line facilities. An exception to this is the digital data use by CSDC as explained in Part 4. The DCT channel units convert the VF signals to pulse amplitude modulation (PAM) samples. The PAM pulses from the 24 channel units are encoded in the transmit unit (TU) to form the PCM signal. The PCM signal is processed in the line interface unit for application to the digital T-line. The receiving unit (RU) performs the complementary decoding function.

2.11 In addition to VF processing, circuits are provided for the transmission of per-channel signaling and supervisory information.♦

2.12 The principle difference between the DCT bank and other channel banks is that the DCT bank is a 3-port device. The third port permits a direct exchange of signaling, supervisory and maintenance information in a digital format with the No. 1/1A ESS switch.

2.13 High-frequency line connections to the DCT bank are in the standard DS1/DS1C and DS2 formats.

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

SECTION 231-037-021

TABLE A

LIST OF DCT COMMON EQUIPMENT AND TEST EQUIPMENT

UNIT	EQUIPMENT CODE	SD/CD
660 Communication Panel	—	292
Alarm and Digroup Control Unit	J98732AA-1	3C298-01
Combined Channel Unit	J98732BA-1	3C329-01
D3/D4 Portable Test Set	J98718AL-1	3C113
DCT Channel Bank	J98732A	3C315-01
DCT Frame Application	J98732A	3C316-01
DCT Maintenance Bank Test Set	J98732MJ-1	3C401-01
DCT Maintenance Bank	ED-98732M	3C400-01
Digroup Control Unit	J98732AB-1	3C298-01
Line Interface Unit (LIU-1D)	J98732AC-1	3C300-01
Line Interface Unit (LIU-2)	J98726AF-1	3C301-01
Line Interface Unit (LIU-3)	J98726AH-1	3C302-01
Line Interface Unit (LIU-4R)	J98726AP-1	3C314-01
Line Interface Unit (LIU-4RA)	J98726AS-1	3C314-01
Line Interface Unit (LIU-4T)	J98726AN-1	3C313-01
Line Interface Unit (LIU-4TA)	J98726AR-1	3C313-01
Office Interface Unit (OIU-1)	J98726AJ-1	3C308-01
PUC/DCT Bus Control and Interface Unit	JA098AA-1	1A477-01
PUC/Digital Carrier Trunk Unit	J1A098A	1A477-01
Power Alarm and Control Circuit	J1A099AC	1A479-01
Power Converter Unit	J87380C-1	82371-01
Power Distribution Unit	J98726AK-1	3C312-01
Receive Unit	J98726AB-4	3C306-03
Shelf Assembly (DCT Bank)	—	3C315-01
Signaling Path Test Set (DCT)	J98732MH-1	3C294
Syndes Unit	J98726AG-1	3C303-01
Transmit Unit	J98726AA-1	3C305-01
Trunk Processing Unit	J98726AD-1	3C311-01
CSDC USE ONLY		
Alarm and Digroup Control Unit	J98732AA-2	3C298
Combined Alternate Data-Voice Channel Unit	J98732PA	7C300
Digroup Control Unit	J98732AB-2	3C298
Office Interface Unit (OIU-4)	J98726AY-1	3C470

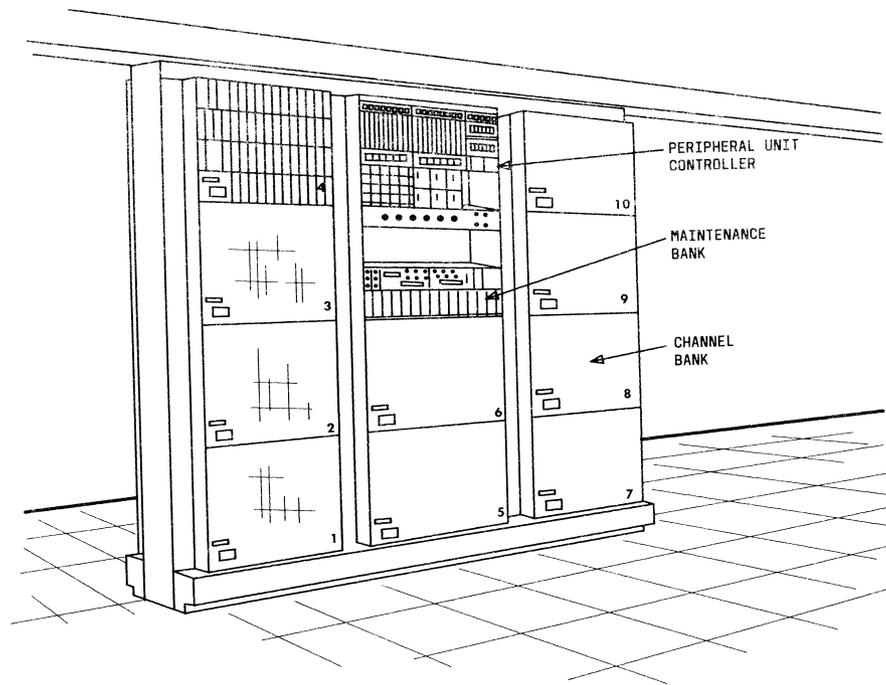


Fig. 1—Digital Carrier Trunk Frame

2.14 The DCT channels are formatted into two 24-channel digroups to make DCT compatible with D1D/D2, D2/D1D, D3, and D4 types of far-end terminal equipment. Each digroup contains an individual transmit unit and receive unit. These units connect to other common equipment as designated by the operational mode.

2.15 Four operating modes are provided to interface with the T1, T1C, or T2 digital carrier systems (Fig. 4). Selection among the modes depend upon the line facility and the far-end terminal equipment. The T1 (24 two-way channels), T1C (48 two-way channels), and T2 (96 two-way channels) lines are used with line interface units to configure the four operating modes.

(a) Mode 1 multiplexes up to 48 VF trunk circuits (channels) into a single 3.152 megabit per second bit stream for application to a TIC line where D4 or DCT banks terminate at the far-end of the system.

(b) Mode 2 multiplexes up to 48 VF trunk circuits into a single 3.152 megabit per second bit stream for application to a TIC line which terminates in an M1C multiplexer at the far-end of the system.

(c) Mode 3 multiplexes up to 48 VF trunk circuits into two digroups of 24 channels each for application to two T1 lines, each with a 1.544 megabit

SECTION 231-037-021

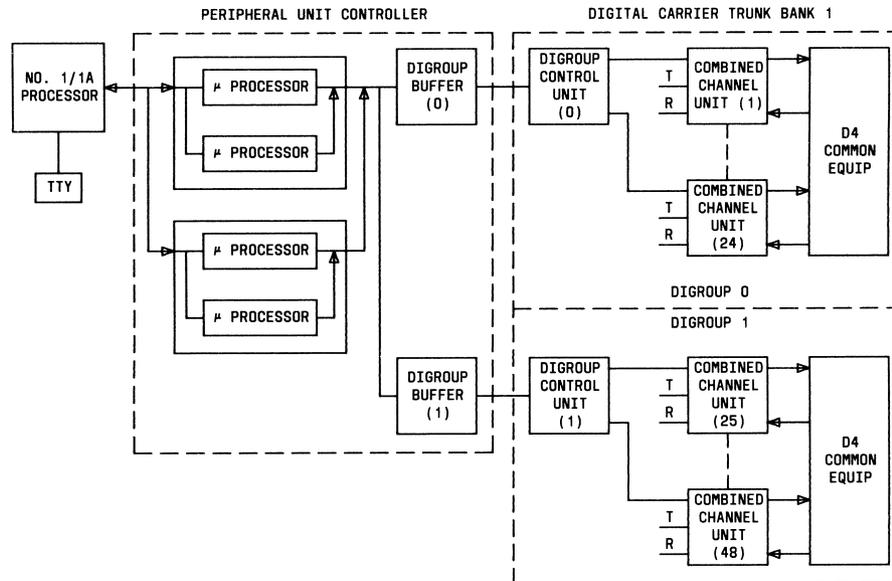


Fig. 2—Digital Carrier Trunk Control Diagram

per second bit stream. The far-end terminates in D1D, D2, D3, D4 or DCT banks.

(d) Mode 4 multiplexes up to 96 VF trunk circuits into a single 6.304 megabit per second bit stream for application to a T2 line, with the far-end terminating in D1D, D2, D3, D4, or DCT banks. Mode 4 operation requires two DCT banks (four digroups) to multiplex 96 lines. One bank is the transmit bank for an output of two digroups. The second bank is the receive bank for the two digroups.

2.16 Depending on the bank mode of operation, either one or two alarm and digroup control units (A&DCU) are provided. Mode 1 requires one such unit plus one digroup control unit. Modes 2, 3, and 4 require two alarm and digroup control units per bank.

DIGITAL CARRIER TRUNK BANK PLUG-IN UNITS

Note: The terms plug-in unit and circuit pack are synonymous when referring to DCT only.

2.17 The DCT bank contains two 24-channel digroups with associated plug-ins for control. The top two shelves are for units dedicated to digroup B and the bottom two shelves contain units for digroup A (Fig. 5).

2.18 In mode 1 both digroups operate synchronously, therefore a full complement of common equipment is required initially. In modes 2, 3, and 4, the two digroups operate independently and may be initially equipped for single digroup operation.

A. Trunk Processing Unit

2.19 The trunk processing unit (TPU) provides trunk processing control signals to the chan-

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

ISS 2, SECTION 231-037-021

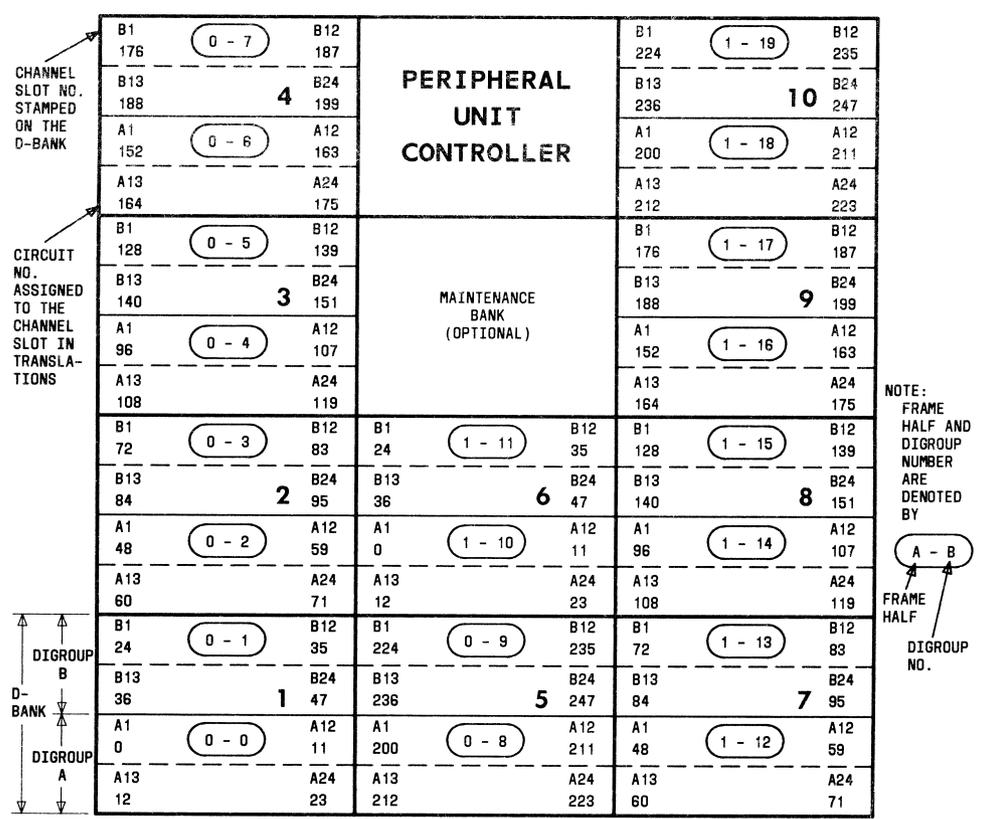


Fig. 3—Channel Bank Layout

nel units during carrier failure, sets the channel counting sequence, and provides equalizers to compensate for cable loss.

B. Combined Channel Unit

2.20 The combined channel unit (CCU) is used in the DCT banks to perform voice channel and trunk circuit functions. The CCU is designed to replace most of the standard 2-wire No. 1/1A ESS switch trunk circuit design functions. Refer to Sec-

tion 231-090-152 for a listing of trunk circuit types replaced by DCT-CCUs.♦

2.21 The CCU provides the interface between the office VF trunk link frames and the common equipment units. Each channel unit includes transmitting and receiving circuits plus signaling and supervisory circuits. In the transmitting circuit, outgoing VF information is sampled at an 8-kilohertz rate, providing PAM signals which are fed to the transmit unit. Also, outgoing per-channel signaling

SECTION 231-037-021

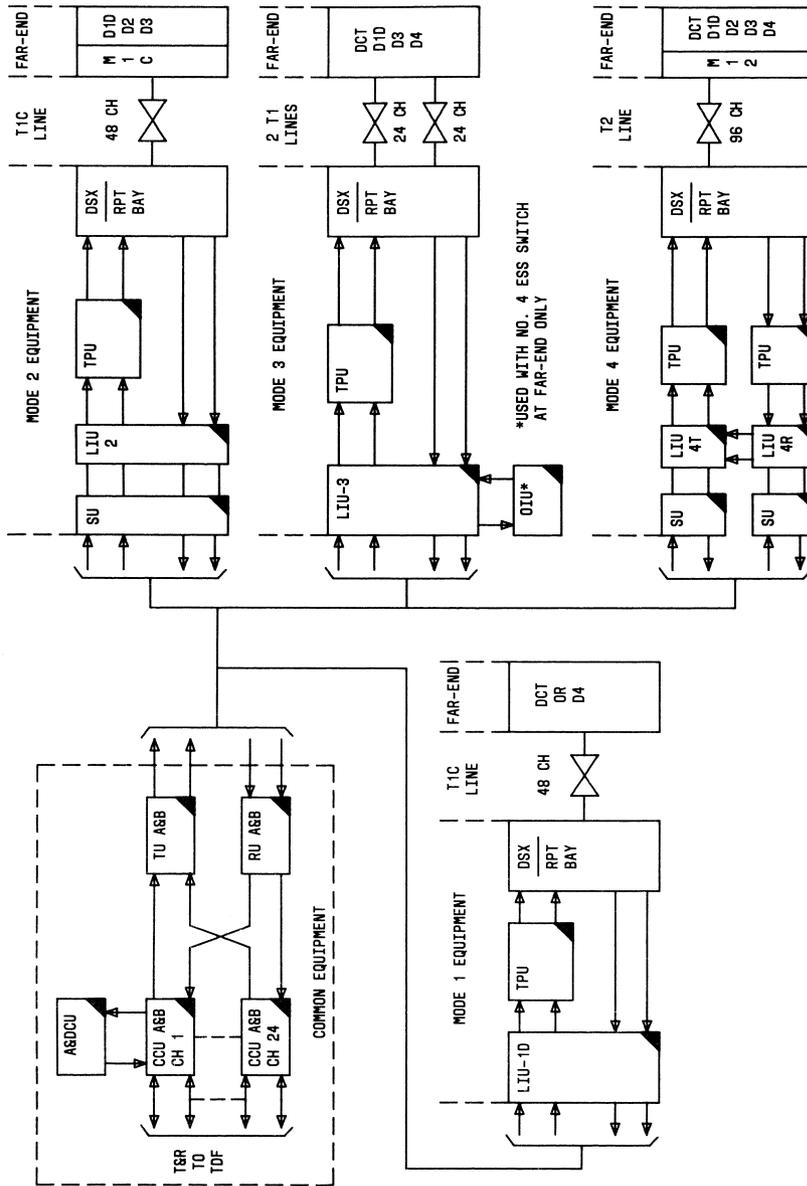


Fig. 4—Mode Dependent Equipment Configuration

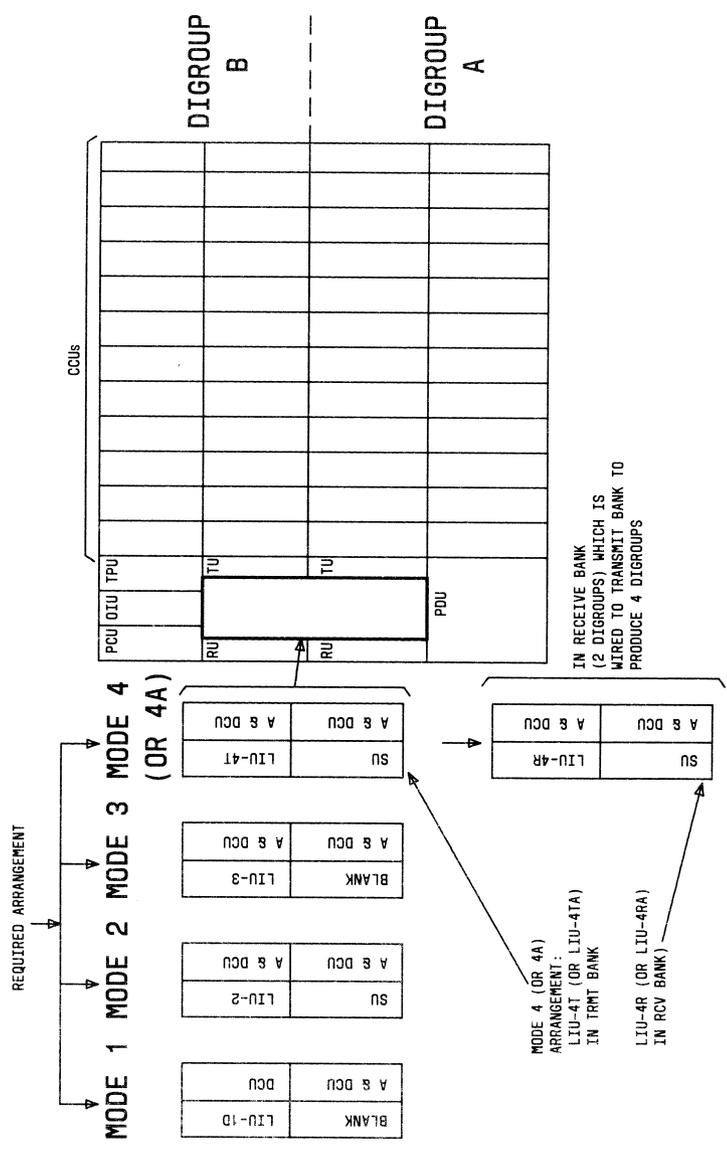


Fig. 5—Channel Bank Plug-ins

SECTION 231-037-021

information is separately supplied to the transmit unit for periodic multiplexing with the voice samples. On the receiving side of the channel unit, the PAM signals are accepted from the receive unit and converted back to VF. In addition, signaling information from the receive unit is demultiplexed and converted to signaling and supervisory information for connection to the VF trunk. Signaling and supervisory information on the office side of the trunk is supplied via channel data leads to the digroup controller where it is sent to the PUC.

2.22 Transmission measurements can be made using patch cords via jack access on the face of each channel unit.

C. Transmit Unit

2.23 The transmit unit (TU) encodes the PAM signal from each channel and combines the PCM words with framing pulses and signaling information.

D. Receive Unit

2.24 The receive unit (RU) performs the complementary function of the transmit unit. It decodes the PCM signals, demultiplexes the individual voice channel, and extracts framing and per-channel signaling information.

E. Syndes Unit

2.25 The syndes unit (SU) is used with the LIU2 unit for mode 2 operation, LIU4T and LIU4R for mode 4 operation, plus LIU4TA and LIU4RA for mode 4A operation. The SU and LIU2 furnish the functions provided by the MIC multiplexer used in 48 channel applications in existing systems; ie, it insures compatibility with the digital format required for TIC lines and that of two DCT digroups. This unit also adds synchronizing pulses to the data stream to synchronize digroup inputs. Unlike the other operational modes, digroup looping in modes 2 and 4 is performed in the SU rather than in the associated line interface unit when looping via the LT switch.

F. Line Interface Unit

2.26 The line interface unit (LIU), provides signal processing for the transmit and receive sections of each digroup. It converts the unipolar bit stream from the transmit unit to a bipolar bit stream

for application to the digital line. The LIU also contains the transmit clock and receiving bipolar to unipolar converter circuitry.

2.27 There are four types of LIUs for the four operational modes of the DCT bank. Modes 1, 2, and 3 require LIU 1D, LIU 2, and LIU 3, respectively. Two LIUs are required for mode 4 and mode 4A. Mode 4 requires LIU 4T and LIU 4R. Mode 4A requires LIU 4TA and LIU 4RA.

G. Office Interface Unit

2.28 The office interface unit (OIU) provides the means of locking the clock frequency of the DCT bank clock circuit to the incoming bipolar line bit rate. This circuit also provides interface between the T-carrier administration system (TCAS) and the bank alarms. The OIU is used in operational mode 3 with No. 4 ESS switch at far-end facility.

H. Alarm And Digroup Control Unit

2.29 The alarm and digroup control unit (A&DCU) is a plug-in consisting of two circuit boards. One board is the alarm control unit (ACU) and the other board is the digroup control unit (DCU). Separate alarm circuitry is not required for digroup B in mode 1 and in this case the digroup controller is self-contained in a DCU plug-in. In all cases, the functions of the digroup controller are independent of its physical association with the digroup alarm circuits.

Alarm Control Unit

2.30 The ACU provides the primary alarm indication and alarm control center for the DCT bank. It detects alarm conditions, controls local and remote office alarms, and initiates trunk processing for removal or restoration of service. The ACU also monitors particular -48 volt office battery leads and the output voltages of the bank dc-to-dc converter.

2.31 The ACU provides the means of testing bank performance by looping the high-frequency output to the input while holding the bank and trunks out of service.

2.32 Lamps and switches on the faceplate of the A&DCU are used for trouble indications and isolation (Fig. 6). When a trouble condition develops, the ACU initiates signals to the trunk processing unit and digroup controller which affects trunk con-

ditioning appropriate for the given situation. When the trouble clears, service is automatically restored. One ACU for mode 1 or two ACUs for modes 2, 3, and 4 are required for each DCT bank.

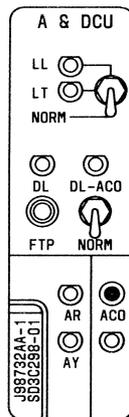


Fig. 6—Alarm and Digroup Control Unit

2.33 The ACU contains carrier group alarm (CGA) indicators identified as the AR (red) and AY (yellow) lamps located on the front panel to aid in maintenance. Refer to Table B for bank alarm lamp indicators and their causes. A data link-alarm cutoff switch (DL-ACO) is provided to inhibit remote reporting of data link failure. Bank operation and the receipt of information from the PUC is not affected by operation of the DL-ACO switch. An alarm cutoff pushbutton (ACO) is provided to turn off bank and office alarms.

2.34 The ACO pushbutton signals the alarm control unit to turn off the bank and office alarms. The ACO lamp is lit when the alarms are turned off. The AR and AY alarms are not extinguished until the trouble is cleared. If an alarm occurs as a result of a fuse failure, the ACO pushbutton cannot be used to turn off the bank and office alarms. In this case, the ACO lamp does not light. The defective fuse must be located and replaced to silence the alarms.

2.35 The ACU provides a three-position switch which is used as an aid in locating troubles. The positions are for normal (NORM) bank trunk looping (LT) and T-line looping (LL) operation. Two lamps are used to indicate LT or LL operation. This switch is used to condition the bank for looping procedures which are used in trouble locating. The switch is only functional when trunks are removed from service by the TPU, normally as a result of an AR or AY alarm, and after the ACO has been operated.

2.36 The LT operation can also be requested via the DCT-BANK TTY input message. The same restrictions as in the manual LT operation apply.

2.37 The LT operation causes the digital output of the bank to be looped at the LIU for operational modes 1 and 3. For operational modes 2 and 4, the looping occurs in the SU. Looping the digroup within itself aids in solving bank problems.

2.38 The LL operation causes a yellow alarm to be transmitted to the far-end. This will hold the far-end bank out of service and allow line troubleshooting. Proper operation of the LL feature requires that both banks (far-end and near-end) be in LL operation to avoid inadvertent restoration of one or both terminals under noisy line conditions.

Digroup Control Unit

2.39 The digroup control unit (DCU) receives status requests and trunk command information from the PUC via a serial data link. It selects the proper CCU and prepares it for service via channel data leads. Signaling and supervisory information from each CCU is received by the DCU via the same channel data leads. This information is then sent to the PUC. Two digroup controllers are required for each bank (digroup A and B).

I. Power Distribution Unit

2.40 The power distribution unit (PDU) accepts the -48 volt dc central office battery and provides a fused power distribution arrangement for application of power to the DCT bank. Office alarms are activated by any fuse operation.

2.41 The PDU also provides filtering for the talk battery to reduce noise and ripple.

SECTION 231-037-021

♦TABLE B♦
BANK ALARM INDICATORS

LOCATION OF LAMP	LAMP STATE (LIGHTED)	PROBABLE CAUSE OF TROUBLE OR FUNCTION	LOCATION OF LAMP	LAMP STATE (LIGHTED)	PROBABLE CAUSE OF TROUBLE OR FUNCTION
PDU	ALM	Bank alarm; fuse or signal failure	LIU-2	PASS	Fast loop test OK
PCU	FAIL ACO	Low converter output voltage PCU input switch off	LIU-4T LIU-4R	FAIL	Fast loop test fails; trouble in SU or LIU
		Loss of framing PCM receive signal		LOC	Incoming problem (LIU or SU)
A&DCU	DL	1. Loss of data from PUC 2. Loss of clock from PUC 3. Babbling CCU 4. Glare in DCU to PUC	TPU	REM	Remote (far-end) problem
AR	AR	Baml alarm for:	A&DCU RU	AR,RCV flashing	Improper cross-connect has been made. The T&R is reversed at DSX or office repeater bay
		1. Loss of -48F or -48S 2. Loss of PUC data 3. Loss of receive signal 4. Loss of receive multiplex			
AY	AY	1. Far-end failure 2. Near-end transmit failure	A&DCU	AR,AY flashing	Hierarchy failure Mode 2 and Mode 4 only. Multiplexer at far-end
		Office alarms have been cleared — depressing ACO			
DCU	DL	1. Loss of data from PUC 2. Loss of clock from PUC 3. Babbling CCU 4. Glare in DCU to PUC	A&DCU TPU	AY,TPD-A or B flashing	1. Bank in loop mode but digroup has not been removed from service 2. Incorrect attenuation (not enough) in CCU transmit 3. Open CCU (T&R without termination)

J. Power Converter Unit

2.42 The power converter unit (PCU) accepts a fused output from the PDU and converts the nominal -48 volt dc central office battery to regulated dc voltages of +5.0 volts, -12 volts, and +12 volts required for the operation of the DCT circuitry.

MAINTENANCE BANK

2.43 The DCT maintenance bank (Fig. 7) provides "hot spares" of plug-in units, testing facilities, and centralized maintenance. The heart of the maintenance bank is the maintenance bank test set (MBTS). The MBTS (Fig. 8) has circuits which, when used in conjunction with a digroup of DCT common equipment, will monitor the performance of CCUs and the common plug-ins. A thorough functional test of the CCU is performed in conjunction with the DCU using a microprocessor in the MBTS. In addition, network loss and distortion tests are performed on the CCU and common equipment. These tests, in conjunction with the built-in alarms on the common equipment, will verify that all units which test good will perform satisfactorily in a working bank.

2.44 One shelf of plug-ins is required for testing DCT banks operating in modes 1, 2, or 3. To test mode 4 functions, an additional shelf is required which is hard wired to the first shelf.

2.45 Testing configuration requires the DL-ACO/NORM switch on the ADCU be set to DL-ACO and the 3-position switch set to NORM.

A. Maintenance Bank Test Set

2.46 The MBTS, in conjunction with bank common equipment, tests all DCT plug-in units. The switches and lamps on the MBTS are used for testing as described in the following paragraphs. The switch and lamp functions are described in Table C.

2.47 The alarm disable switch (ALM DISABL) is used to disable maintenance bank alarms generated by the common equipment and the MBTS. This switch will turn off office alarms to which the maintenance bank is connected through the PUC power alarm and control unit. When testing, operate the alarm disable switch to silence any office alarms caused by the testing. When testing is not in progress, leave the alarm disable switch in the released position (out) so that office alarms will be activated in the case of a maintenance bank alarm.

2.48 The test jack is used to check looped common equipment using the D3/D4 test set and channel access unit (CAU). The MBTS CCU simulator is tested at its four-wire points.

2.49 The transmit and receive attenuator switches (TRMT and RCV) complete or build out the loss of the transmit or receive paths under test. With the attenuators set, a CCU VF problem can be detected via the voice tests generated by the MBTS. Attenuator buttons pushed in indicates zero attenuation. With the button out, the attenuation is as marked.

2.50 The following test switches are activated when pushed in and only one can be activated at a time. The PASS and FAIL lamps provide the result of the test performed.

2.51 The DIGL CCU-DCU tests the digital portion of the microprocessor in the MBTS. The supervisory and control functions are tested in a manner similar to the way the CCU operates in a working system with the microprocessor communicating with the CCU. The replies from the DCU to the microprocessor are then compared with the desired results in memory. When testing a CCU in the DIGL CCU-DCU mode, the first test may fail because a unit just plugged in could have its logic and relays in any state but the correct state that the test sequence expected. In this case, the test should be repeated after performing a test using the following test switches.

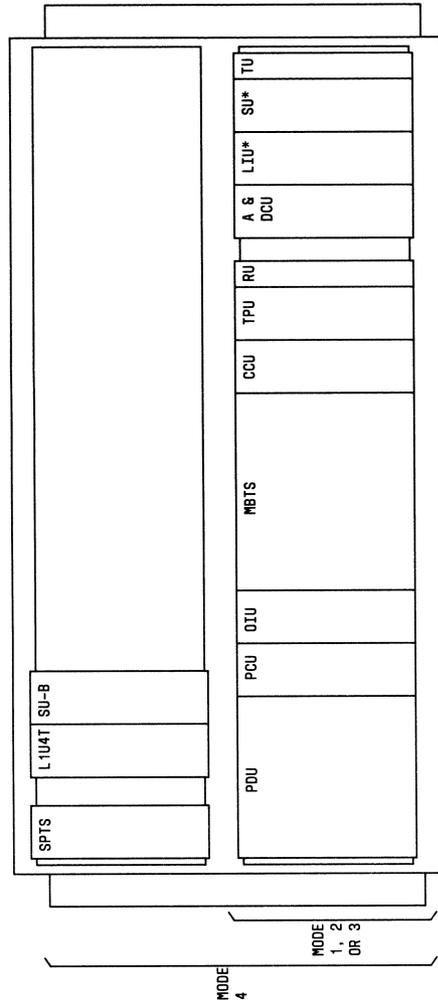
2.52 The VF TRMT switch tests the CCU transmit circuitry. It inserts a test tone into the tip/ring of the CCU under test, then routes its PAM pulses through the looped common equipment and into the receive side of the CCU simulator where it is detected. A deviation of ± 0.5 dB is detected as a failure.

2.53 The VF RCV switch tests the CCU receive circuitry. It inserts a VF tone into the transmit side of the CCU simulator. The PAM pulses from the simulator are then looped through the common equipment into the receive portion of the CCU under test. This tone is detected at the tip/ring of the CCU as VF. A deviation of ± 0.5 dB is detected as a failure.

2.54 The MC TRMT switch tests the CCU transmit side for multichannel interference or crosstalk.

2.55 The MC RCV switch tests the CCU receive side for multichannel interference.

SECTION 231-037-021



*EQUIP AS SHOWN:

MODE	LIU()	SU
1	LIU(1)	NOT INSTALLED
2	LIU(2)	INSTALLED
3	LIU(3)	NOT INSTALLED
4	LIU(4R)	INSTALLED

- LEGEND:
- ASDCU - ALARM & DIGROUP CONTROL UNIT
 - CCU - COMBINED CHANNEL UNIT
 - LIU - LINE INTERFACE UNIT
 - MBTS - MAINTENANCE BANK TEST SET
 - OTU - OFFICE INTERFACE UNIT
 - PDU - POWER DISTRIBUTION UNIT
 - PCU - POWER CONVERTING UNIT
 - PDU - POWER DISTRIBUTION UNIT
 - RU - RECEIVE UNIT
 - SPTS - SIGNALING PATH TEST SET
 - SU - SYNDES UNIT
 - TPU - TRUNK PROCESSING UNIT
 - TU - TRANSMIT UNIT

Fig. 7—Maintenance Bank

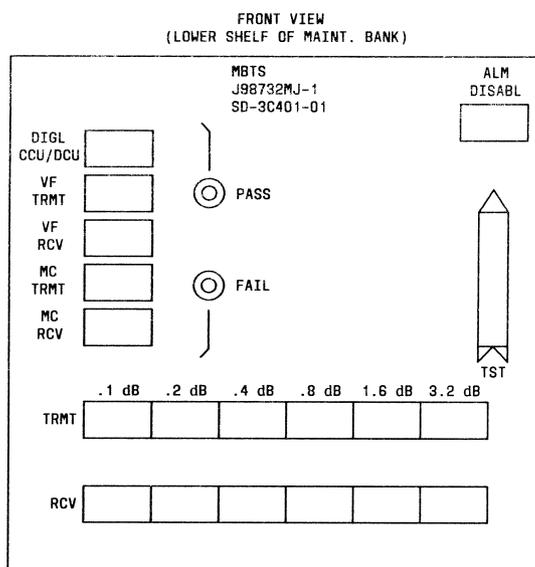


Fig. 8—Maintenance Bank Test Set

B. Common Unit Testing

2.56 Warning: Excessive plug-in removal and insertion in the maintenance bank may cause wear on the connector. This may lead to erroneous fault indications by the maintenance bank. Do not use the maintenance bank for routine testing of plug-ins. Common equipment plug-in units suspected of being faulty are tested by performing one of the VF tests and the DIGL CCU/DCU tests. To test the digroup control unit, place it into the alarm and digroup control unit position and perform the DIGL CCU/DCU test. The DL-ACO switch selection should be made during the test in order to silence the alarm.

3. MAINTENANCE

3.01 Maintenance procedures pertaining to DCT are contained in the following task oriented practice (TOP) documents:

- TOP 231-050-015: DCT frame maintenance (DCT and PUC)
- TOP 231-050-006: DCT trunk testing (1E6 or 1AE6 generic program)
- TOP 231-050-007: DCT trunk testing from the manual trunk test position (MTTP)
- TOP 231-050-008: DCT trunk testing from the supplementary trunk test position (STTP)
- TOP 231-050-009: DCT trunk testing from the trunk and line test panel (TLTP).

3.02 Maintenance for DCT is performed using TTY messages, switches and lamps on the DCT frame and various trunk test positions. Remote maintenance from a console at the Switching Control Center (SCC) is also available to the DCT which is similar to that available in the central office.

SECTION 231-037-021

♦TABLE C♦

MAINTENANCE BANK TEST SET CONTROLS

TEST KEY	FUNCTION
DIGL CCU-DCU	Test logic portion of the CCU and DCU. Causes DCU to set and check signaling bits, operates CCU relays K1 and K2, and compares the results with the desired result in memory.
VF TRMT	Tests the transmitting portion of the CCU. Signal path for the test includes common equipment.
VF RCV	Test the receiving portion of the CCU. Signal path for the test includes common equipment.
MC TRMT	Tests interference into other time slots.
MC RCV	Tests interference from other time slots.
ALM DISABL	Prevents maintenance bank alarms from being reported when depressed.
TRMT (.1dB — 3.2 dB) RCV (.1 dB — 3.2 dB)	Level adjust attenuators used to build out loss in channel unit transmit and receive paths.
PASS/FAIL LAMP	Indicates the result of test.

Printouts are available and maintenance messages are inputted to manually call up lists, diagnostics, etc.

TESTS

3.03 Tests are done to verify that the DCT and associated circuits are operating properly.

A. Installation Tests

3.04 The DCT banks must pass the installation requirements before they are ready for service. These tests include:

- Power verification
- Common unit configuration
- Bank functional tests.

3.05 For acceptance procedures, refer to TOP 231-050-015.

B. Growth

3.06 After adding a DCT bank (or a DCT frame) to an office, with connection being complete between central control and the T-lines, circuit order tests are required.

3.07 Refer to TOP 231-050-015 for growth procedures.

C. Testing from the Trunk Test Positions

3.08 The DCT tests from the trunk test positions consist of operational tests and signaling tests. These tests are contained in the following documents:

- TOP 231-050-006: DCT trunk testing (1E6 or 1AE6 generic program)
- TOP 231-050-007: DCT trunk testing from the manual trunk test position (MTTP)

- TOP 231-050-008: DCT trunk testing from the supplementary trunk test position (STTP)
- TOP 231-050-009: DCT trunk testing from the trunk and line test panel (TLTP).

3.09 The operational test is to verify that the CCU can be placed in all states by the central control. This is achieved by manual selection of each state from the MTTP, STTP, or TLTP.

3.10 The signaling test is to verify that the signaling is transmitted properly through the network and the CCU. From the MTTP, STTP, or the TLTP, the signaling tests are performed by selecting the trunk network numbers (TNN) as in any trunk circuit test. There are no visual indicators at the MTTP to inform the operator that the trunk under test is a DCT circuit. The channel unit is placed in a special access state using the same procedure (key operation at the MTTP or STTP) which would be used to place a conventional E&M trunk circuit into the E&M access state. Test results are obtained by observation of the E&M lamps.

D. Testing from the Digital Carrier Trunk Frame

3.11 End-to-end tests verify that the circuit is operating as a complete facility. These tests are contained in TOP 231-050-015. Tests that fall in this category are:

- Net loss
- Noise
- Signaling.

E. Testing from the Teletype

3.12 Maintenance messages for DCT can be inputted from the switching office maintenance TTY or from a remote location such as the SCC.

3.13 For the DCT, the input message for commands is DCT-BANK-aaa bb cc. and is used for:

- Looping
- Restoring the looped terminal
- Requesting alarm status
- Clearing out-of-frame count

- Displaying error history
- Clearing CGA count
- Reading and clearing CGA count
- Activating or removing digroups to or from service
- Requesting functional tests of digroup hardware.

3.14 Refer to the appropriate input and output message manuals for the format and description of TTY messages.

TROUBLE INDICATORS

3.15 Trouble associated with the DCT frame is indicated by audible office alarms, alarm lamps on the DCT frame, and TTY messages. Procedures contained in TOP 231-050-015 are used to clear troubles. Refer to Table B for bank alarm lamp indicators.

3.16 Facility maintenance and associated trouble indicators refer to the maintenance of all the equipment on the T-line side of the common channel unit. It extends from the bank common equipment transmit unit and receive unit out through the T-line proper. This equipment is partially self-checked in that some failures are detected internally and reported to the CC via the PUC as alarms.

3.17 The purpose of facility maintenance for DCT is to protect service and provide sectionalization information in the event of serious failure. The maintenance personnel is informed of certain conditions indicating that the system, end-to-end, is not performing at design levels.

A. Carrier Group Alarm

3.18 A carrier group alarm (CGA) relay is provided by the DCT on a digroup basis, with contact pairs for connection to a scan point in the master scanner. This alarm is remoted to the SCC and in turn remotes it to the T-carrier administration system (TCAS). The CGA gives an indication that the facility is unable to provide voice communications end-to-end. Upon a detection of a CGA, the following actions are initiated in the trunk hardware after a nominal 2.5 second delay:

- A disconnect is sent backwards on all channels to the network (in the affected digroup).

SECTION 231-037-021

- A seize forward is sent on all channels to the far-end.
 - The CGA is continuously monitored for bank restoral (an alarm will remain for at least 15-20 seconds).
- 3.19** The CGA is indicated by the AR and AY lamps on the alarm control unit.
- 3.20** The RED alarm (AR lamp lighted) is an indication that the near-end receive unit is unable to frame in the incoming bit stream.
- 3.21** The RED alarm is caused by one of the following:
- Loss of filtered talk battery (-48S). The circuit path for this alarm is from the fuse at the PDU to the CCU and then to the ACU. The cause of this alarm could be a fuse failure, ACU detection circuit, or backplane wiring error.
 - Loss of battery (-48S). The circuit path for this alarm is from the PDU to the ACU. The cause of this alarm could be fuse failure, ACU detection circuit, or backplane wiring error.
 - Receive framing (RFAL) out-of-frame or loss-of-clock alarm. This alarm is generated by the RU from the incoming PCM digital stream. The cause of this alarm at the near-end office could be a faulty RU, LIU, SU, cross-connect panel, office repeater, or line repeater. The cause of this alarm at the far-end office could be a faulty TU, SU, TPU, cross-connect panel, office repeater, or line repeater.
 - Digroup control unit failure (DCUF). This is caused by a loss of the serial bit stream and/or loss of the clock pulses from the PUC to the DCU. Possible causes of this alarm are a faulty PUC digroup buffer, PUC to DCU cable, A&DCU, DCU, TU, or CCU.
 - Loss of receive multiplex signal (LOSP). This alarm is caused by the loss of the bipolar signal from the T-line to the LIU for modes 2 and 4 only. Causes of this alarm at the near-end could be the cross-connect panel, office repeater, line repeater, SU, or LIU. At the far-end this alarm could be caused by the SU, LIU, TPU, cross-connect panel, or office repeater.
- 3.22** A YELLOW alarm (AY lamp lighted) is an indication that the far-end receive unit is unable to frame on the output of the near-end transmit unit. This alarm can be caused by a near-end transmit failure or a far-end receive failure. A unit with a RED alarm is able to transmit a signal causing a YELLOW alarm at the far-end (ie, when a RED alarm occurs at the far-end bank, it transmits a signal and causes a YELLOW alarm at the near-end bank).
- 3.23** A RED over YELLOW alarm occurs when an existing YELLOW alarm becomes a RED alarm because the far-end bank has been looped, opening the T-line. Both RED and YELLOW states are reported to the PUC.
- 3.24** Alternate RED and YELLOW alarms are a result of a failure higher up in the digital hierarchy. If the lamps alternate RED-YELLOW-RED-YELLOW — at a rate of approximately 1.8 seconds each, the indications imply the trouble is not in the local T1 system but a trouble in a higher order system (T2, T3 or above). If the failure occurs (above T1 rate), it creates down stream failures at the T1 rate; therefore, the first indication seen would be a RED (which would stay up long enough to create a CGA) then alternate YELLOW-RED-YELLOW-RED, etc.
- 3.25** When a CGA occurs, the following actions are automatically taken by the CC:
- Remove from service all idle circuits in the affected digroup (ie, place them in a software CGA state).
 - Camp on non-idle circuits until they are free to be removed from service.
 - If the No. 1/1A CC is the control end of the facility, the count of the CGA occurrence is incremented in translation records.
 - Print out on the maintenance TTY the following message:

```
FMO1 CGA DCT aa DIG bb cc ddd e ffff:ff
```
- and if the alarm is determined to be an hierarchy failure, then the second FM message is printed out:

FM02 DCT aa DIG bb HIERARCHY FAILURE

3.26 The data link alarm (DL lamp lighted) occurs when the DCU losses incoming serial data or clock from the PUC.

B. Automatic Line Monitoring

3.27 Automatic line monitoring and reporting to the PUC and CC is part of the overall maintenance plan. The error conditions reported are line error monitoring and line out-of-frame monitoring.

3.28 For line error monitoring, the receiving T-line's performance is monitored and reported back to the PUC. The bank and digroup controller will report to the PUC (and hence to the CC) when line error performance exceeds the low threshold (10^{-6} bit error rate) or the high threshold (10^{-3} bit error rate). These conditions will be reported in two separate reports; however, if the error rate exceeded both high and low threshold in one report interval, only the high threshold report will be made. Reporting is done via the FM03 DCT output message. When the high threshold is exceeded, the customer data transmission is significantly impaired. The information at the maintenance TTY will show the affected digroup and the error threshold exceeded.

3.29 The receiving T-line signal is continually monitored in the receive unit for an out-of-frame (OOF) state. The PUC accumulates the OOF count and a report is generated when OOF exceeds low threshold of 17 or high threshold of 512. Reporting is accomplished via the FM04 DCT output message.

FAULT ISOLATION

3.30 When a DCT related trouble is indicated to maintenance personnel, raw data analysis and looping are used to isolate the fault.

A. Raw Data Analysis

3.31 A raw data TTY output message (MN02 DCT) is printed if the CC detects a DCT order failure. This message identifies the content of various registers at the time of failure. Conversion of the identified DCT circuit numbers in the message is necessary to identify the DCT bank and digroup having the order failure. Refer to Table D for this conversion.

B. Looping

3.32 If a DCT related fault is detected, it is important to determine which equipment is causing the fault. The failure is isolated by looping data back at different points in the transmission path and observing the lighted lamps on the channel banks. The looping procedures are contained in TOP 231-050-015. Looping diagrams for operating modes 1, 2, 3, and 4 are shown in Fig. 9, 10, 11, and 12, respectively.

3.33 The looping procedures should be used to isolate a fault to the DCT bank, near-end office repeater bay, transmission line, or far-end office. The far-end office is required to participate when setting up the looping configuration. Should the far-end office be unable to set up the proper loop, they should refer to the appropriate TOP volumes as follows:

- TOP 365-800-001: D1, D2, D3 Channel Bank
- TOP 365-170-000: D4 Channel Bank
- TOP 365-800-002: T-Carrier, T1 Line.

C. Voice Frequency Signal Flow and Looping

3.34 For mode 3 operation, the VF signal flow into the the channel units is converted to a PAM signal and sent to the transmit unit. The PAM signal is converted to a PCM signal in the transmit unit and sent to the line interface unit. The line interface unit converts the signal to the bipolar format required for the T1 line and sends it to the trunk processing unit equalizers. The signal is then sent out on the T1 line. The inverse occurs on the receive side.

3.35 For mode 3 operation, LT looping (LT position of 3-position switch on the A&DCU) causes the signal output to be looped back to the input in the line interface unit. This occurs on an individual digroup basis.

3.36 Mode 1 LT looping is identical to mode 3 looping except that both digroups are looped.

3.37 Operating modes 2 and 4 require the addition of the syndes unit between the transmit or receive unit and the line interface unit. Looping occurs on an individual digroup basis within the syndes unit for LT looping.

3.38 Looping can also be performed using the LP jacks on the line interface units. All looping

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

SECTION 231-037-021

♦TABLE D♦

**DCT DIGROUP TO CIRCUIT NUMBER CONVERSION
(NOTE)**

CCU NO.	DCT FRAME HALF 0										BANK
	1		2		3		4		5		
	A	B	A	B	A	B	A	B	A	B	DIGROUP
	0	1	2	3	4	5	6	7	8	9	DIGROUP
1	0	24	48	72	96	128	152	176	200	224	CIRCUIT NUMBERS (SOFTWARE)
2	1	25	49	73	97	129	153	177	201	225	
3	2	26	50	75	98	130	154	178	202	226	
4	3	27	51	75	99	131	155	179	203	227	
5	4	28	52	76	100	132	156	180	204	228	
6	5	29	53	77	101	133	157	181	205	229	
7	6	30	54	78	102	134	158	182	206	230	
8	7	31	55	79	103	135	159	183	207	231	
9	8	32	56	80	104	136	160	184	208	232	
10	9	33	57	81	105	137	161	185	209	233	
11	10	34	58	82	106	138	162	186	210	234	
12	11	35	59	83	107	139	163	187	211	235	
13	12	36	60	84	108	140	164	188	212	236	
14	13	37	61	85	109	141	165	189	213	237	
15	14	38	62	86	110	142	166	190	214	238	
16	15	39	63	87	111	143	167	191	215	239	
17	16	40	64	88	112	144	168	192	216	240	
18	17	41	65	89	113	145	169	193	217	241	
19	18	42	66	90	114	146	170	194	218	242	
20	19	43	67	91	115	147	171	195	219	243	
21	20	44	68	92	116	148	172	196	220	244	
22	21	45	69	93	117	149	173	197	221	245	
23	22	46	70	94	118	150	174	198	222	246	
24	23	47	71	95	119	151	175	199	223	247	
CCU NO.	10	11	12	13	14	15	16	17	18	19	DIGROUP
	A	B	A	B	A	B	A	B	A	B	DIGROUP
	6		7		8		9		10		BANK
	DCT FRAME HALF 1										

Note: Circuit numbers 120 through 127 and 248 through 255 are not used for DCT application.

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

ISS 2, SECTION 231-037-021

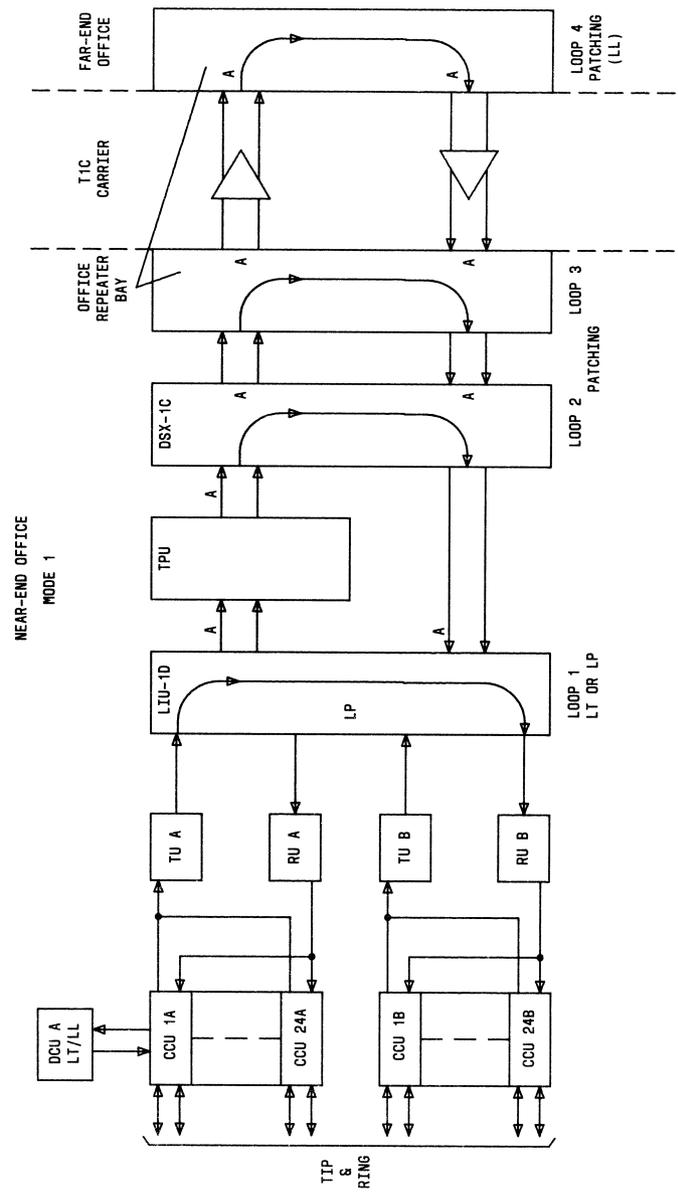


Fig. 9—Looping Diagram for Mode 1

SECTION 231-037-021

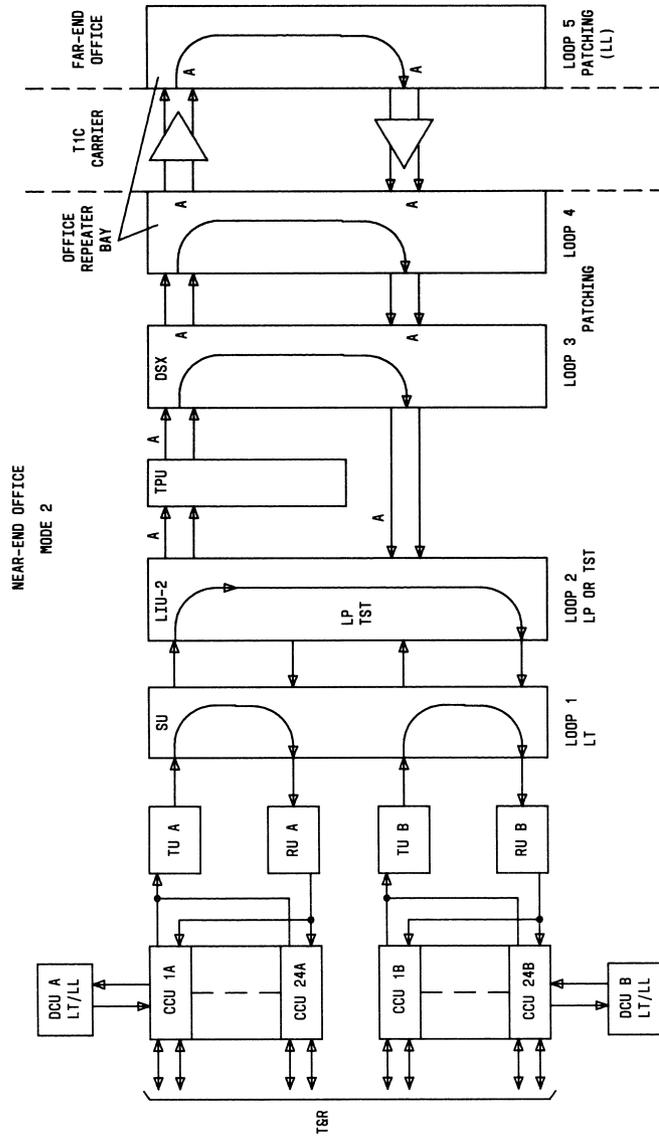


Fig. 10—Looping Diagram for Mode 2

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

ISS 2, SECTION 231-037-021

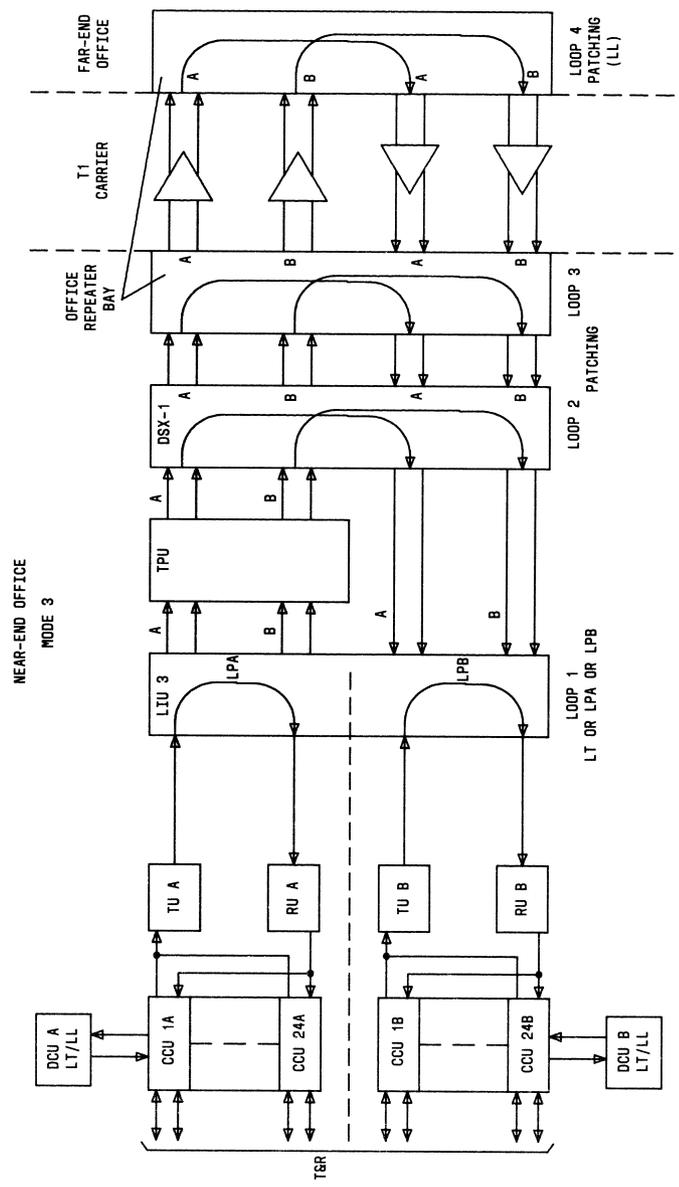


Fig. 11—Looping Diagram for Mode 3

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

SECTION 231-037-021

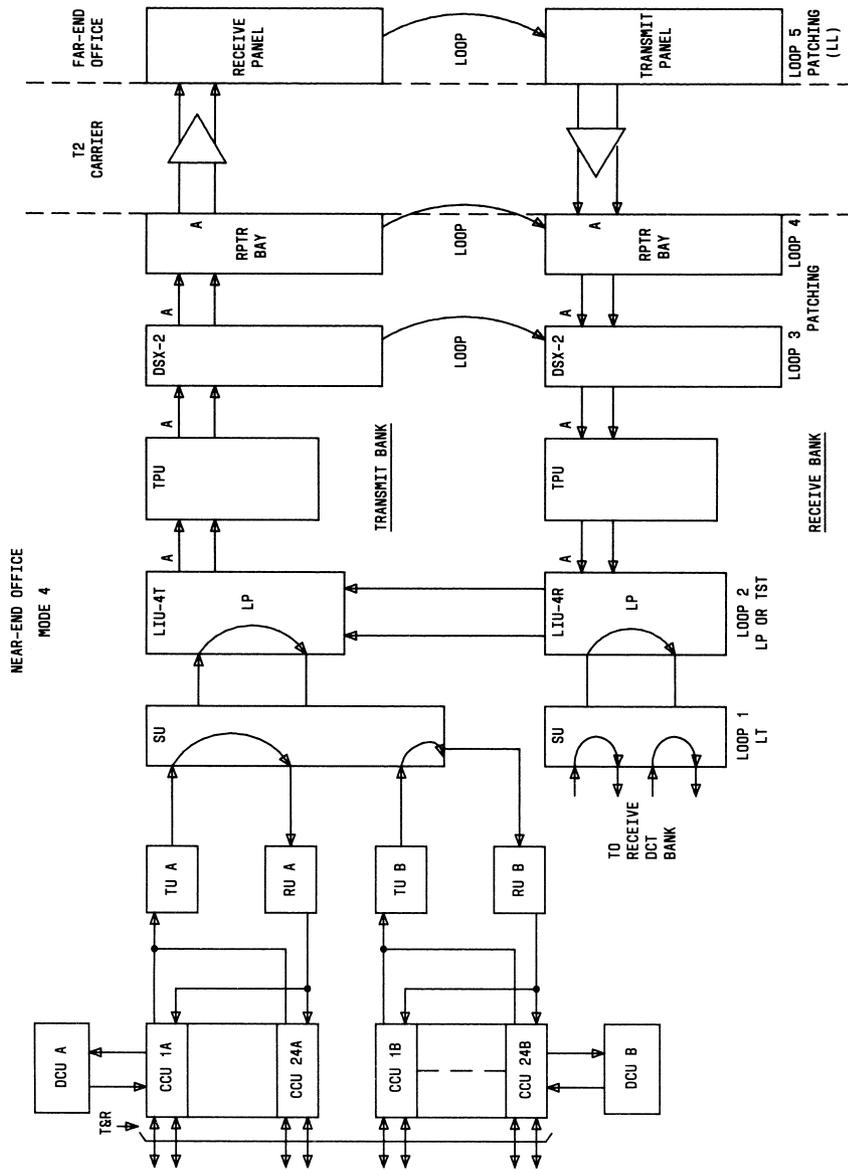


Fig. 12—Looping Diagram for Mode 4

will then occur within the LIUs. In modes 1 and 2, both digroups are looped. Mode 3 configuration has individual digroup LP jacks. In mode 4 all four digroups are looped.

3.39 Modes 2 and 4 have an additional form of looping called the "fast loop." The "fast loop" occurs internal to the line interface unit and is similar to a loop using the LP jack on the line interface unit. The difference is that the digroups to be looped need not be removed from service for a "fast loop." To avoid dropping customer connections, signal bit storage is used in all CCUs. If a receive failure alarm remains during an LT loop, the probable cause is the receive unit or syndes unit. If the alarm clears, the test (TST) pushbutton can be pressed to activate the "fast loop." This loops all digroups in the bank internal to the line interface unit for 300 milliseconds. If no receive failures are detected, the PASS lamp on the line interface unit lights which indicates that the trouble is outside the local bank. If a receive failure is detected, the FAIL lamp on the line interface unit lights which positively identifies the local syndes unit or line interface unit as defective. After the test, the LT switch should be returned to NORM. This will clear the test indications on the line interface unit.

PLUG-IN REPLACEMENT USING MAINTENANCE BANK PLUG-INS

3.40 If a fault is detected and looping procedures isolate the failure to a DCT bank, plug-in replacement can be used to determine the responsible plug-in. The plug-in replacement procedures are in TOP 231-050-015.

3.41 **Warning: Excessive plug-in removal and insertion in the maintenance bank may cause wear on the connector. This may lead to erroneous fault indications by the maintenance bank. Do not use the maintenance bank for routine testing of plug-ins.** Maintenance bank plug-ins are constantly diagnosed by the MBTS in order to be maintained fault free. These plug-ins are termed "hot spares" and should be used for plug-in replacement. If a DCT bank plug-in is suspected of causing a failure, the plug-in can be removed and replaced with a "hot spare."

3.42 After replacing the suspect plug-in, the equipment should be returned to service. If the problem is corrected, the "hot spare" should be left

in the bank and a new plug-in should be inserted in the maintenance bank. If it is still questionable whether the suspect plug-in caused the failure, it can be inserted in the maintenance bank for testing.

4. DCT/CCU SWITCHED DIGITAL CAPACITY (CSDC) FEATURE

4.01 The DCT provides the trunking requirements for CSDC voice/data end-to-end customer service with the far-end customer being accessed via No. 4 ESS search or No. 1A with DCT/CSDC. The local connect is made by any of three connections: a 2-wire loop and metallic facility terminal (MFT) for direct customer service; SLC-96 subscriber loop carrier; and D4 remote exchange trunk. The CSDC feature is available in the LART generic. The PUC firmware requirement is MCLA008.

4.02 The DCT bank is configured in any of three modes (Fig. 13) for T1 carrier facilities with the following equipment modification being required in the near-end DCT bank:

- Office Interface Unit (OIU-4) providing slip detection
- Combined alternate data/voice (CADV) channel units
- Alarm and digroup control unit (A&DCU), list 2, slip detection and reporting
- Digroup control unit (DCU), list 2, slip detection
- Channel bank wiring addition (option Y) providing A&SLIP, B&SLIP signals to A&DCU. Banks manufactured after 6/81 should contain this wiring option. This can be verified by "LIST 7" on the bay and "GROUP WA" on the bank (ED3C811).

4.03 See TOP 231-050-015 for DCT-CSDC frame growth.

4.04 A DCT frame need not be dedicated to CSDC banks only but can be mixed with standard DCT trunking application; the digroup also can be mixed but a channel restriction occurs. Because of high current drain, a digroup having some channels for CSDC cannot assign all 24 channels as it would normally for DCT. Channel assignment is dependent

* Trademark.

SECTION 231-037-021

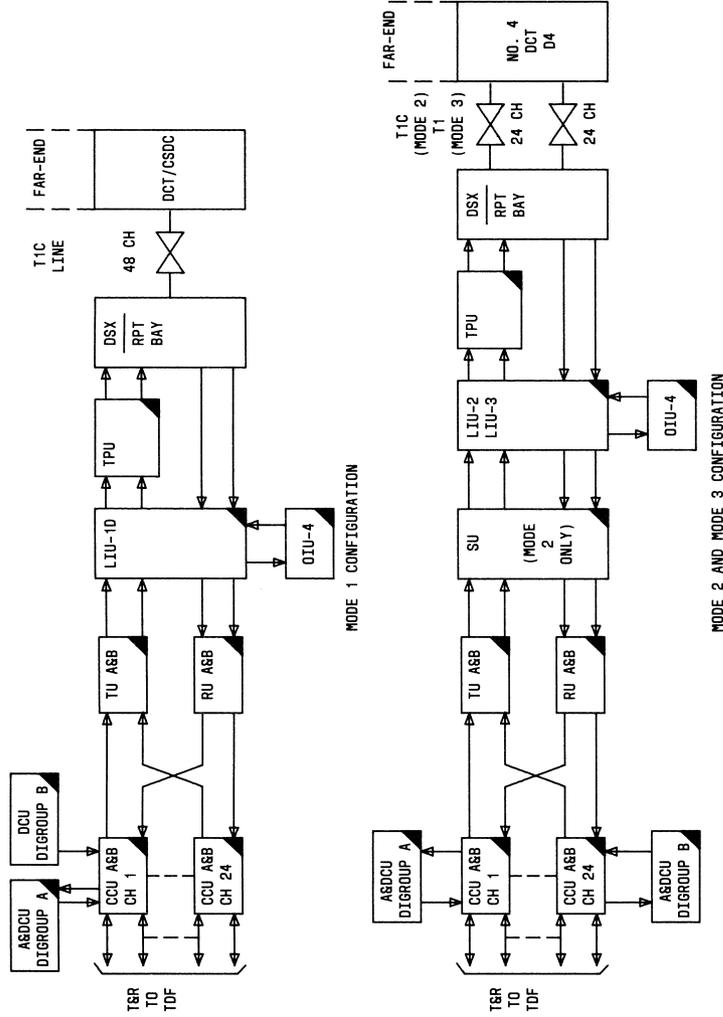


Fig. 13—DCT-CSSDC Mode Configuration

on CSDC channel use and engineering requirements. The plug-in units required for DCT bank configuration is shown in Fig. 14.

OFFICE INTERFACE UNIT (OIU-4)

4.03 The OIU-4 provides (1) synchronization for the line interface unit (LIU), (2) synchronization loss (slip) detection between the received T-carrier line timing and the external clock signal (3) clock for the combined alternate data/voice channel unit (4) composite clocks for office use as required.

4.05 The OIU-4 can be operated in any of three timing modes: external (EXT), loop (LT), and local (LOC T) timing.

(a) In the EXT mode an external 64 or 8 kHz clock signal is provided by a digital office timing supply (DOTS), digital data system (DDS) clock supply, or another OIU-4.

(b) The LT mode of timing does not use an external timing clock but derives its own synchronized 64 kHz clock (INCLK) by using an internal voltage controlled oscillator and phase comparator with input signals (4 kHz subframe clock) from the TU (ATMF or BTMF) and RU (ARIFT or BRIFT).

(c) The LOC T mode allows the LIU oscillator to free run at its nominal frequency, thus bypassing the OIU, but this mode cannot be used for CSDC.

4.07 The slip detection function is performed in the EXT mode only. A compare of the received T-carrier clock (ARIFT or BRIFT) with the external clock (CCIN) looking for a loss of synchronization between the two. A sampling of this synchronization phase comparison is done once per second for a non-compare condition known as a "slip." Should a slip be detected, the following occurs: (1) A&DCU notified of error condition (ASLIP or BSLIP goes to a zero) (2) PUC notified of error by A&DCU (3) slip detection counter incremented, and finally (4) comparison circuit is reset. Should more than 15 slips occur in a 5-minute interval, the LED on OIU-4 face plate will be lighted and will remain lighted until the slip circuit is reinitialized by depressing the RST SLIP switch on the OIU-4 (Fig. 14).

4.08 An office major alarm occurs when more than 255 slips are reported in a 24-hour period, and

a major alarm when the above slips occur in the same period. A slip detection alarm also occurs when improper timing selection has been made or a remote bank OIU-4 for which no external clock signal has been lost.

COMBINED ALTERNATE DATA-VOICE (CADV) CHANNEL UNIT

4.09 The CADV provides normal voice frequency transmission interface between the No. 1A ESS switch and the T-carrier line, similar to the CCU in standard DCT voice use. In addition, digital data transmission interface is provided to the customer at a 56 kilobit per second rate (56 kb/sec). Once the customer voice loop has been established, loop signalling from the customer will cause the CADV to configure for conversion of the customer's 56 kb/s data to 64 kb/s data (DS0) for T-carrier transmission. The conversion process in the CADV is the same for the received DS0 data from the far-end facility to the customer loop.

ALARM AND DIGROUP CONTROL UNIT (A&DCU)

4.10 The A&DCU functions the same as normal DCT operations but in addition, List 2 has been modified to provide slip detection and reporting to the PUC, the same is true for the DCU plug-in. Signaling and control are provided by the PUC through the A&DCU.

TTY SLIP ERROR MESSAGE REPORTING

4.11 Slip detection is reported by the PUC with TTY message formats FM10 and FM11. The FM10 is restricted to digroups having only CSDC use and will report the failure rate (major or minor) and number of slips detected. The FM11 reports both out-of-frame errors and slips for mixed digroups.*

5. GLOSSARY OF ABBREVIATIONS AND ACRONYMS

5.01 The following abbreviations and acronyms are used in this section.

A&DCU	Alarm and digroup control unit
CADV	Combined alternate data-voice
CAU	Channel access unit
CC	Central control
CCU	Combined channel unit

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

SECTION 231-037-021

CGA	Carrier group alarm	PUC	Peripheral unit controller
CSDC	Carrier group alarm	PURB	Peripheral unit reply bus
DCT	Digital carrier trunk	RFAL	Receive framing alarm
DCU	Digroup control unit	RU	Receive unit
DCUF	Digroup control unit failure	SCAB	Scanner answer bus
EPROM	Erasable programmable read only memory	SCC	Switching Control Center
LIU	Line interface unit	STTP	Supplementary trunk test position
LOSP	Loss of receive multiplex signal	SU	Syndes unit
MBTS	Maintenance bank test set	TCAS	T-carrier Administration System
MFT	Metallic facility terminal	TLTP	Trunk and line test panel
MTTP	Manual trunk test position	TNN	Trunk network number
OIU	Office interface unit	TOP	Task oriented practices
OOF	Out-of-frame	TPU	Trunk processing unit
PAM	Pulse amplitude modulated	TTY	Teletypewriter
PCU	Power converter unit	TU	Transmit unit
PDU	Power distribution unit	VF	Voice frequency.♦
PUAB	Peripheral unit address bus		

Digital Carrier Trunk Interface – Description and Maintenance / #1A ESS

ISS 2, SECTION 231-037-021

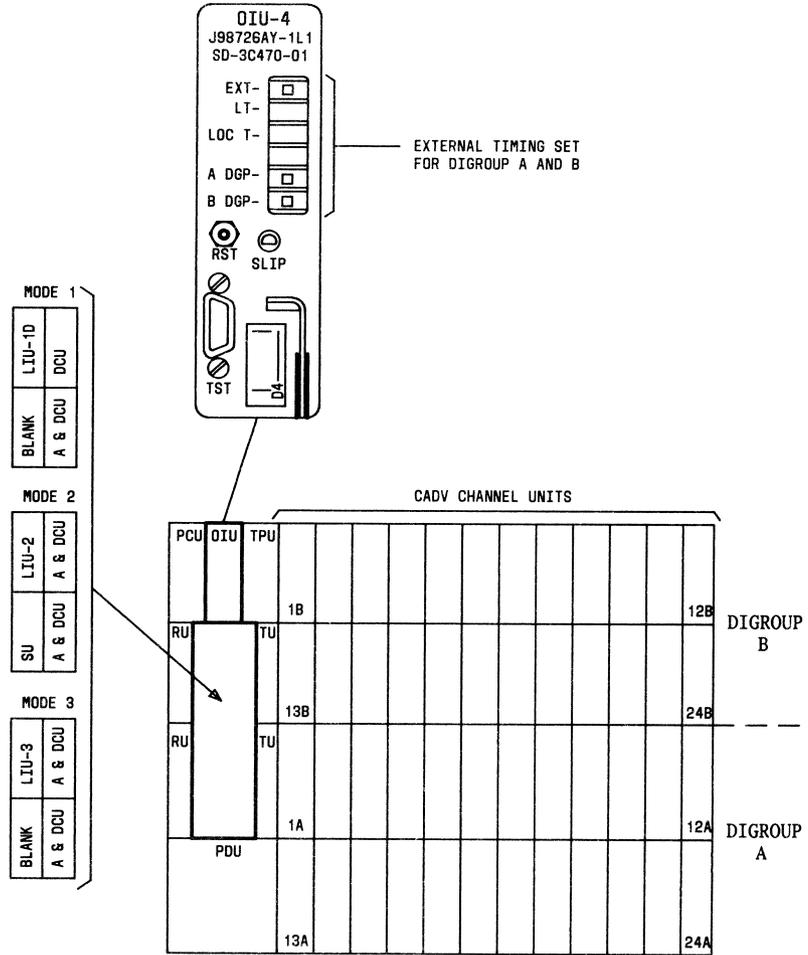


Fig. 14—DCT Bank Configuration for CSDC

10 MHz Rubidium Frequency Reference

Overview

Low-cost 10 MHz rubidium frequency references ("clocks") are starting to hit the amateur radio surplus market for under \$100. Most of these rubidium clocks were originally used as the backup frequency standard in cellular phone and pager base stations. Because the rubidium "clock" inside the frequency reference itself has about a 10 year lifespan, they are constantly being swapped out as part of a preventive maintenance move. As long as you don't keep these surplus rubidium clocks continuously powered, they should still last for many more years..

The 10 MHz rubidium frequency reference discussed here is the common Efratom (DATUM) LPRO-101. This frequency reference is based on the atomic resonance of a rubidium gas discharge lamp exposed to a RF signal near its transition frequency of 6,834,682,612 Hz. There is a "dip" in the discharge lamp's output when the exact atomic resonant frequency is found. This frequency is then used as a phase-lock source which is eventually divided down to just about exactly 10 MHz. The datasheet for the LPRO-101 dives into the technical operation in much more detail, so you should read that before starting this project.

There is really no long warmup period for the LPRO-101. After about 3 to 5 minutes from applying +20 VDC (1.7A) to the LPRO-101, the unit will come into "lock." After coming to lock, the current draw will then drop to around 500 mA. At this point, the 10 MHz output signal is already about 1,000 times more accurate than zero-beating a regular clock oscillator to WWV! After about a 15 minute warm-up period, the unit will be operating at its most accurate frequency, within a few millihertz of exactly 10 MHz

The LPRO-101 does get fairly warm and **SHOULD NOT** be run without proper heatsinking. One trick which can be used to reduce the overall heating of the unit is to run it at only +19 or +20 VDC, instead of at +24 VDC.

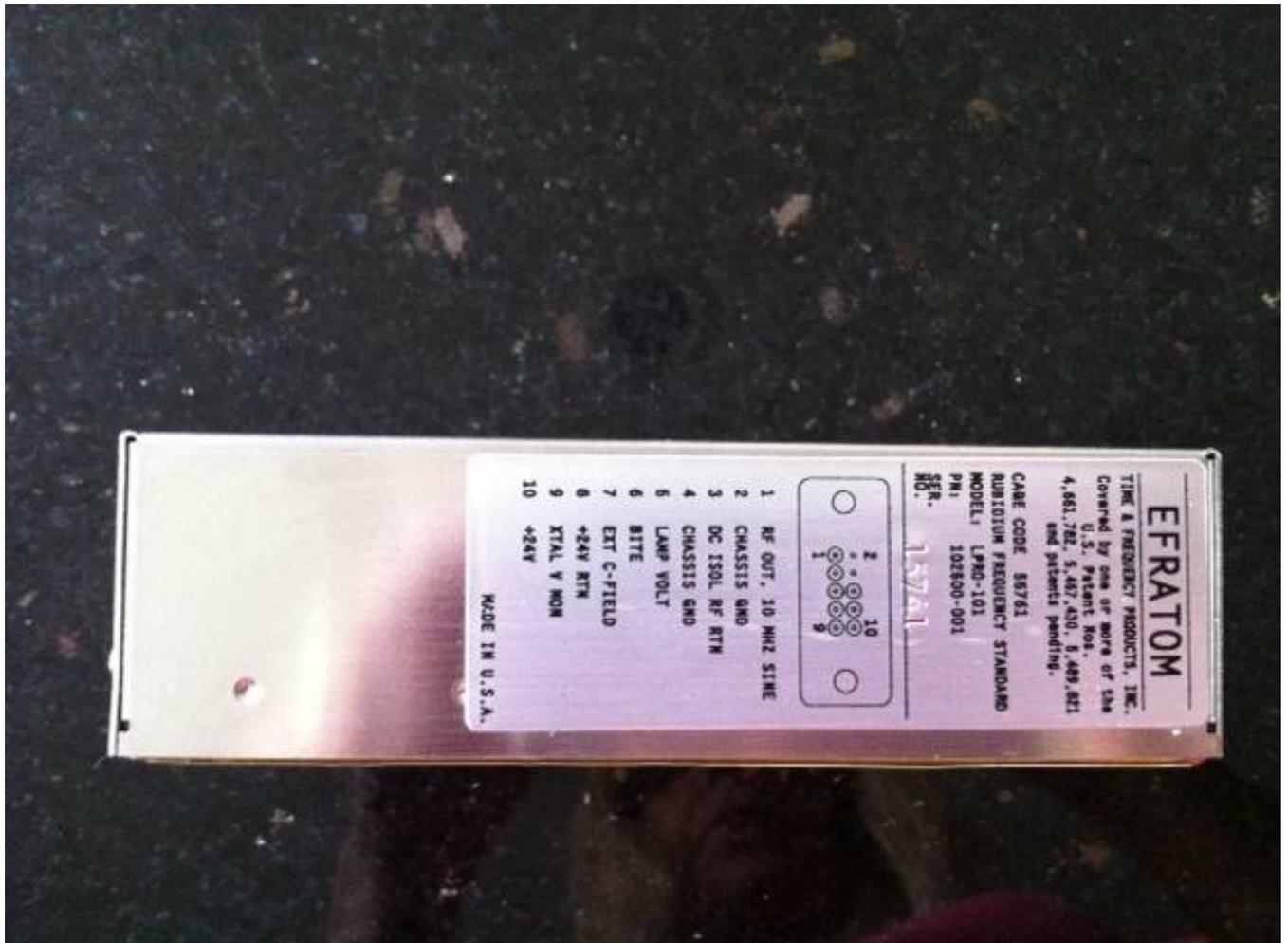
The LPRO-101 has a Built-In Test Equipment (BITE) signal (pin 6) which can be used to determine if the unit is locked. When this pin is "high," the unit is unlocked and the output frequency will not be accurate. When the BITE signal goes low, the unit is locked and should be on frequency. A simple 74HCT04 hex inverter and two LEDs will be used to monitor the status of the BITE signal. A **RED** LED will light when the unit is unlocked, and a **GREEN** LED will light when the unit comes into lock.

One of the signal pins is for monitoring the rubidium lamp voltage (pin 5) which can be used to determine the remaining life of the unit. This pin should measure above 3 volts in a "good" unit.

There is also an "External C-Field" tuning line (pin 7) which can be used to tweak the final output frequency a few millihertz up-or-down. This makes it possible to sync the LPRO-101 with an even *more* accurate clock source, like from a cesium or GPS-based reference source. Bertrand Zauhar (VE2ZAZ) has an article entitled "A Simplified GPS-Derived Frequency Standard" in the Sep./Oct. 2006 issue of *QEX* which should be compatible with the LPRO-101.

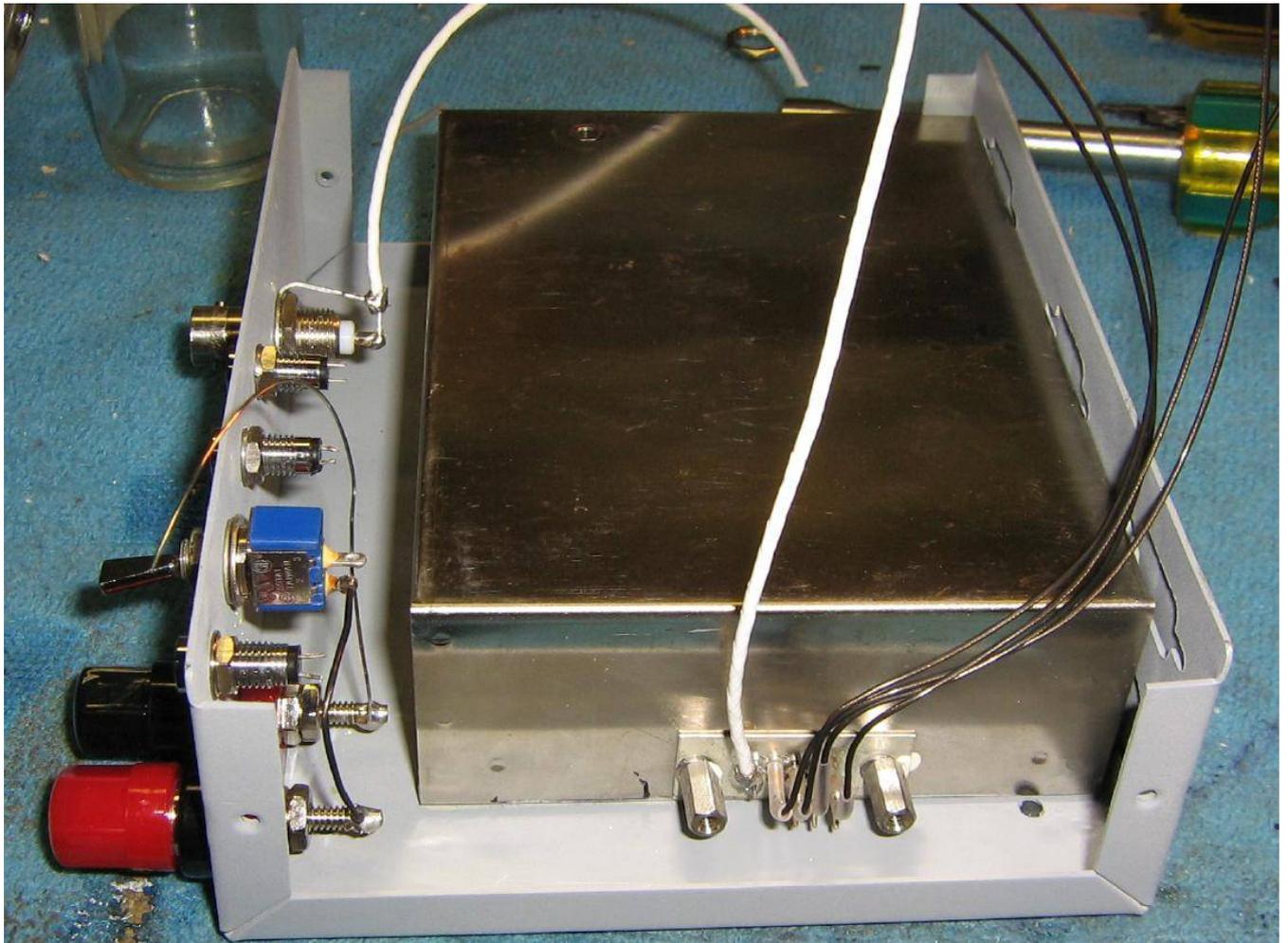
The 10 MHz output from the Efratom LPRO-101 is around +7 dBm, with a standard impedance of 50 ohms. It's safe to assume that the unit could drive a number of external devices, but just to be safe we'll be adding a simple buffer amplifier. This should also help to protect the Efratom LPRO-101 from any external mismatches. Depending on your load requirement, you may want to avoid "squaring up" the 10 MHz sine wave output signal to reduce the number of spurs and harmonics generated.

Pictures & Construction Notes



Overview of the label on a surplus Efratom LPRO-101 10 MHz rubidium frequency reference.

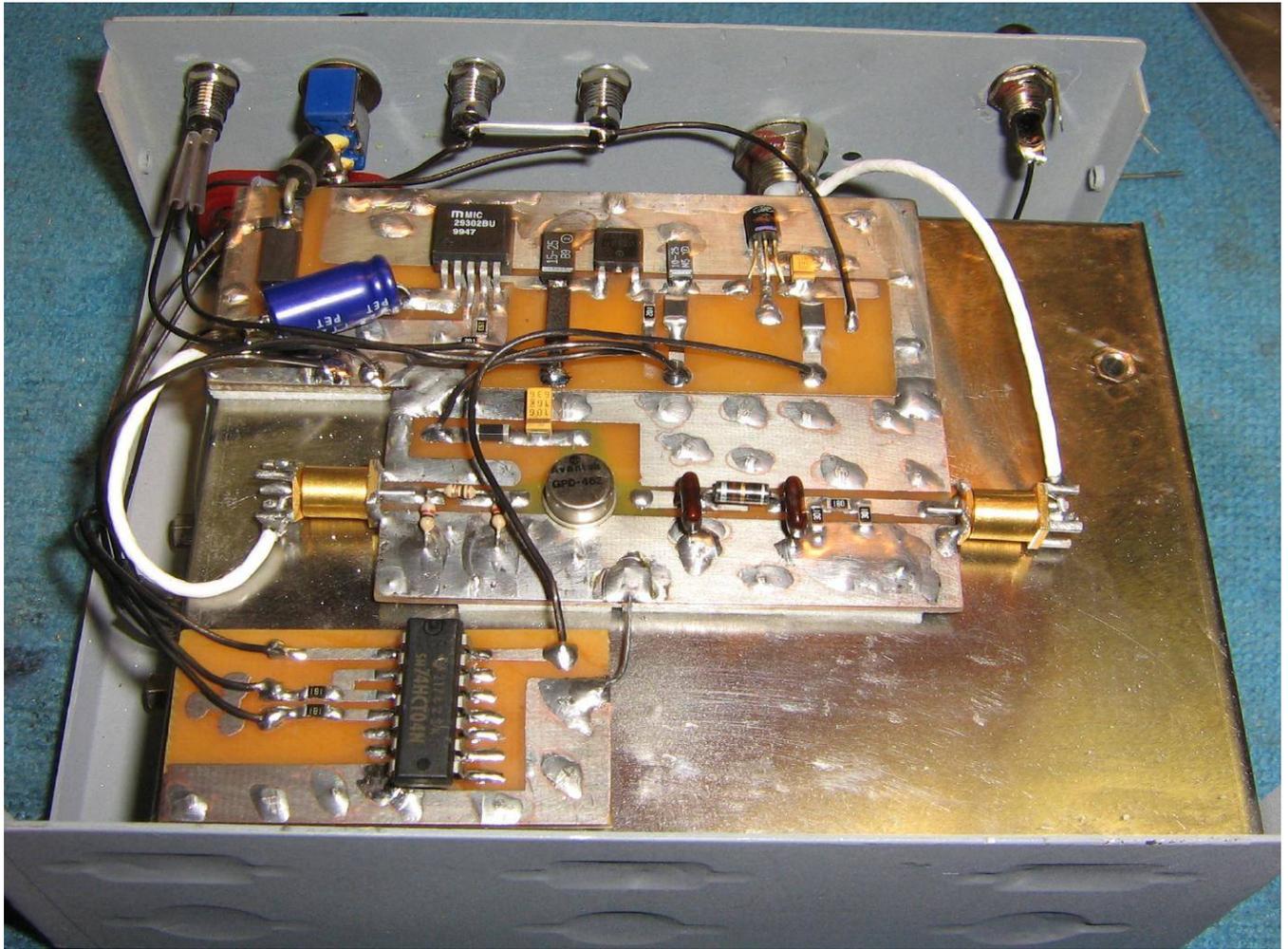
<u>Pin #</u>	<u>Description</u>	
1	10 MHz RF Output	(Sine wave, 50 ohms, +7 dBm)
2	Chassis Ground	
3	DC Isolated RF Ground	(Isolated ground in case of ground loops)
4	Chassis Ground	
5	Lamp Voltage	(Above 3 volts = unit is good)
6	BITE	(HIGH = unlock, LOW = lock)
7	External C-field	(Remote frequency control)
8	+24V Ground	
9	Crystal Voltage Monitor	(Voltage monitor of the internal sweep oscillator)
10	+24V	



Mounting the Efratom LPRO-101 10 MHz rubidium frequency reference in an old printer switch case.

The bottom of the printer switch case was sanded down to the bare metal and coated with heatsink compound before mounting the LPRO-101.

The front-panel has banana jacks for the +24 VDC input and some LEDs for the lock status indicators.

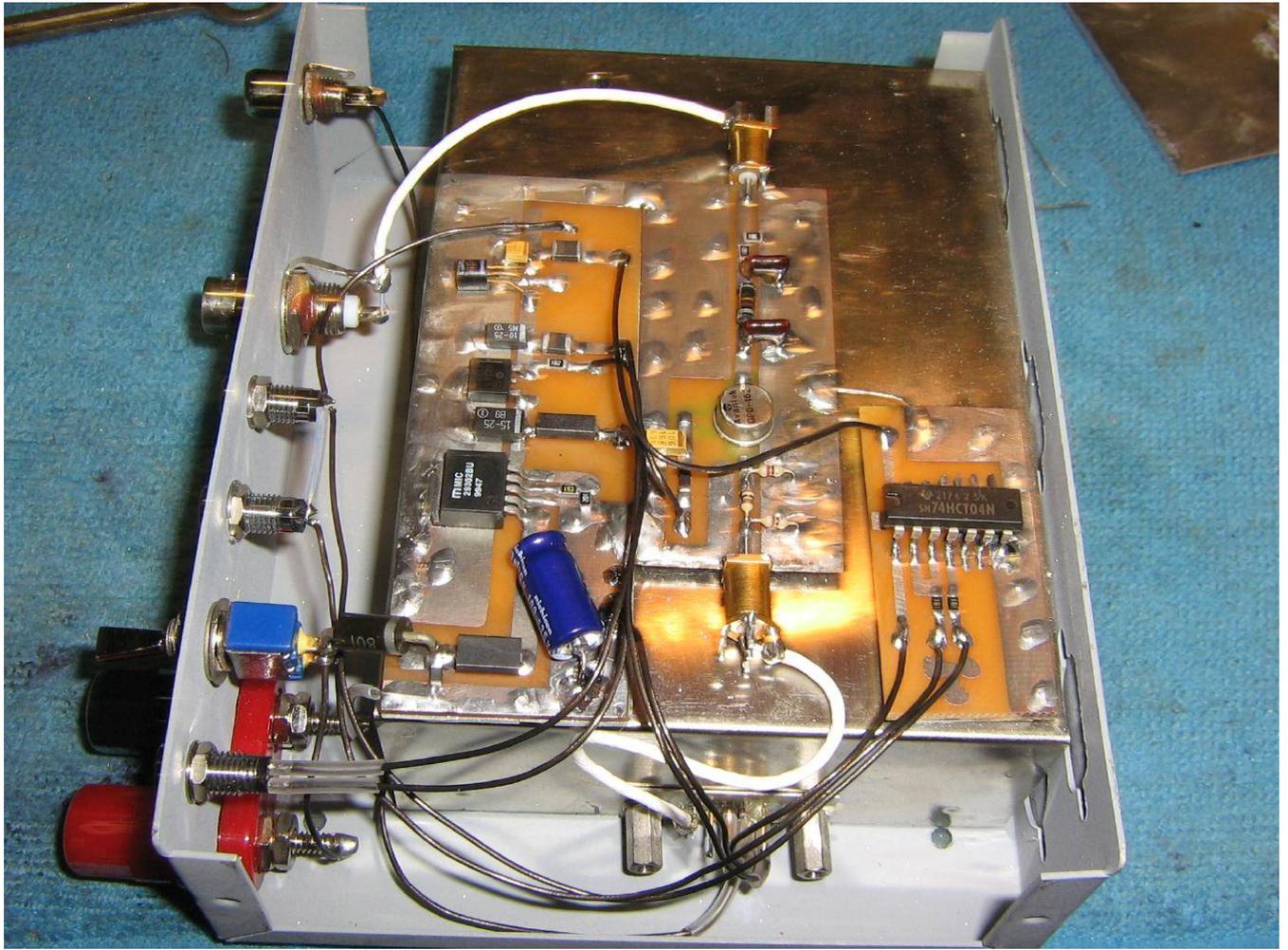


Three circuit boards were added for controlling the Efratom LPRO-101 10 MHz rubidium frequency reference.

One is a voltage regulator board based around a Micrel MIC29302, a 78M12, and a 78L05. This takes the incoming +24 VDC and converts it down to +20 VDC, +12 VDC, and +5 VDC, respectively

The middle circuit board contains an optional buffer based around an Avantek GPD-462 amplifier. This buffer probably isn't needed, but it will help to isolate the LPRO-101 from any external devices and will be capable of driving a longer run of coax.

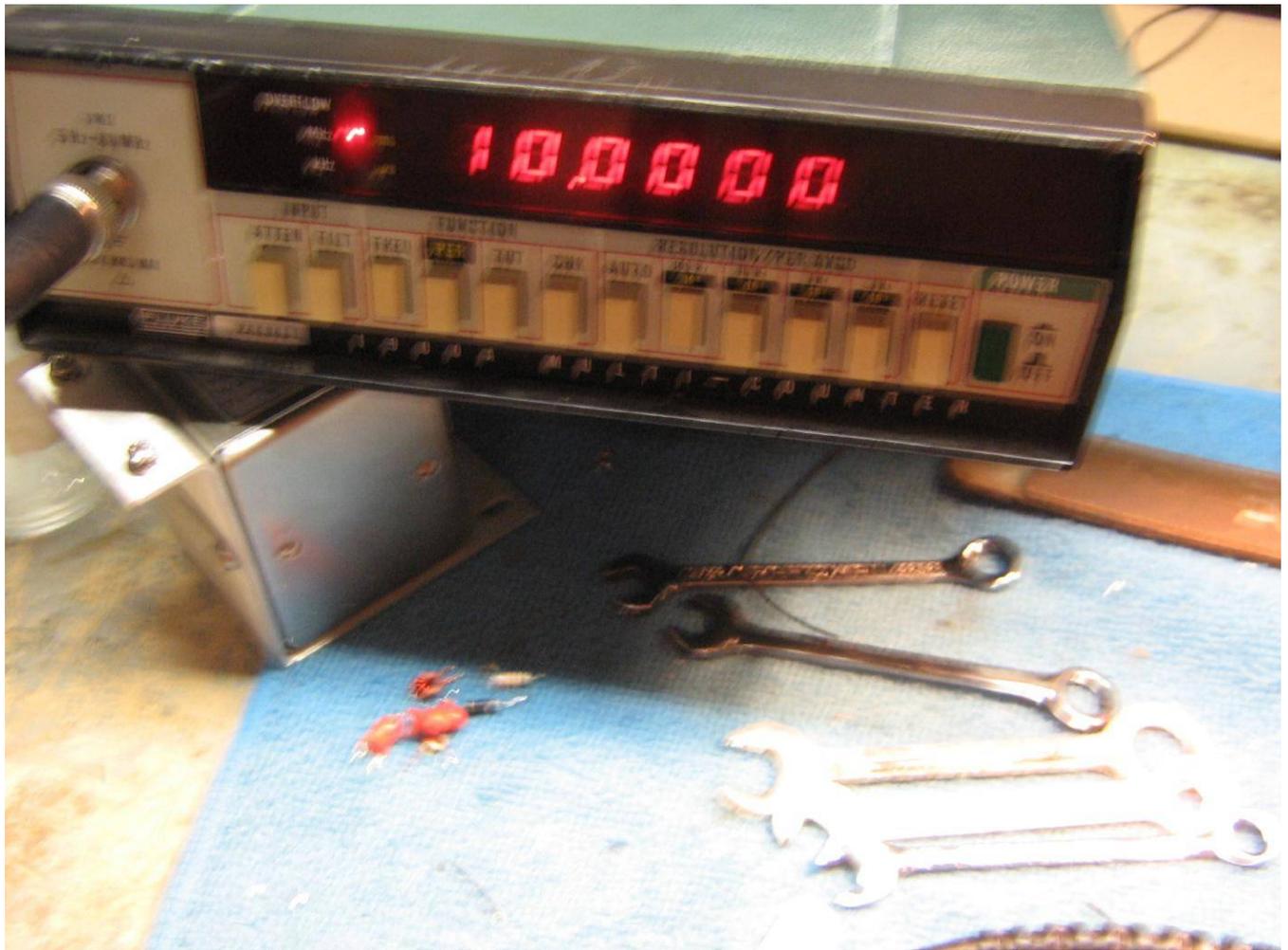
The bottom circuit board contains a 74HCT04 hex inverter to monitor the LPRO-101's BITE signal status. This is used to control the respective LEDs on the front panel.



Alternate view.

The (buffered) 10 MHz output is via a panel-mounted BNC jack.

A panel-mounted RCA jack connects to pin 7 on the LPRO-101, for an optional external tuning circuit



Testing the Efratom LPRO-101 on a low-cost Fluke frequency counter.

It's safe to assume the LPRO-101 is "on" frequency and any observed frequency errors are from the reference clock timebase within the frequency counter itself.

Because the rubidium gas within the LPRO-101's lamp is "consumed" when the unit is operating, there will be a finite lifespan for these units. Use them sporadically, like only as an external reference source for test equipment.

For longer-life operations, stick with quality oven- or temperature-compensated crystal oscillator and use the rubidium reference source to "zero-beat" tune the final output frequency.

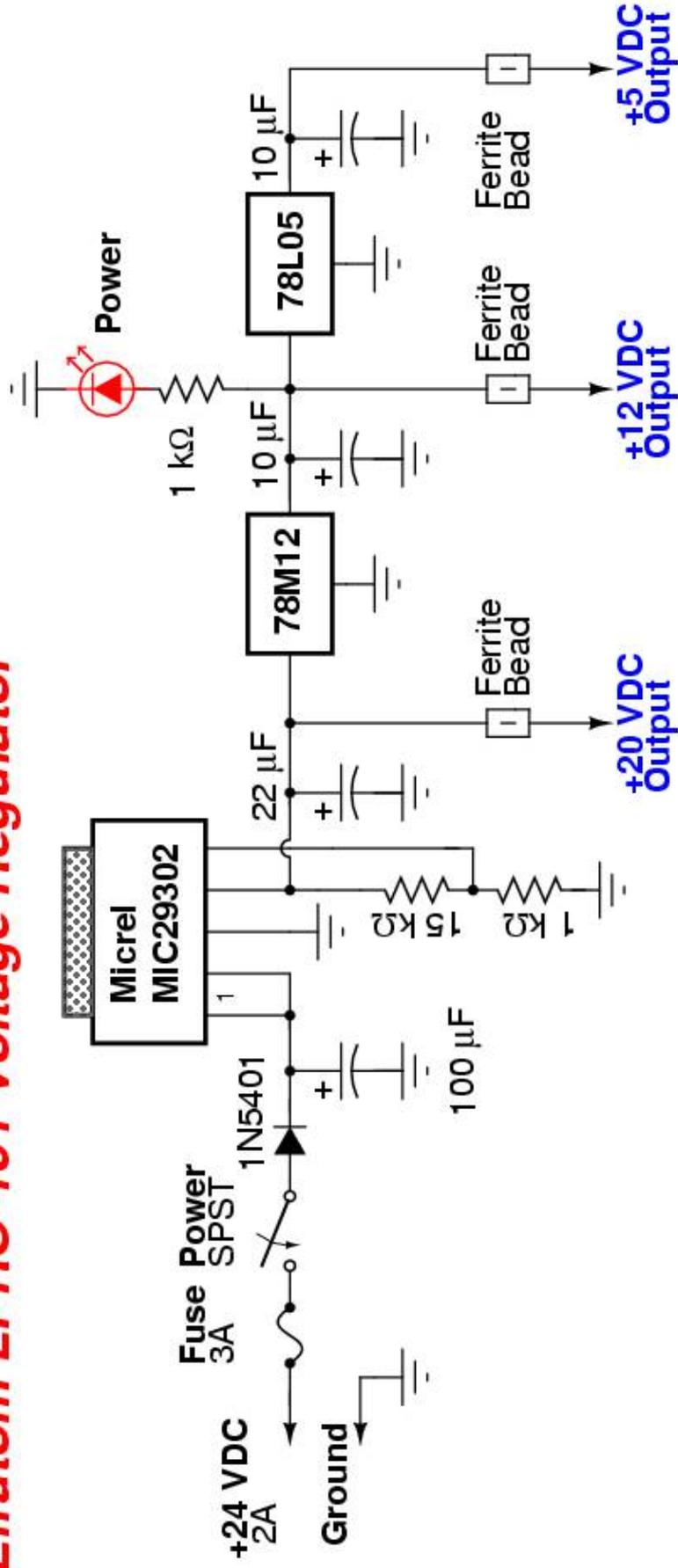


Completed Efratom 10 MHz rubidium frequency reference.

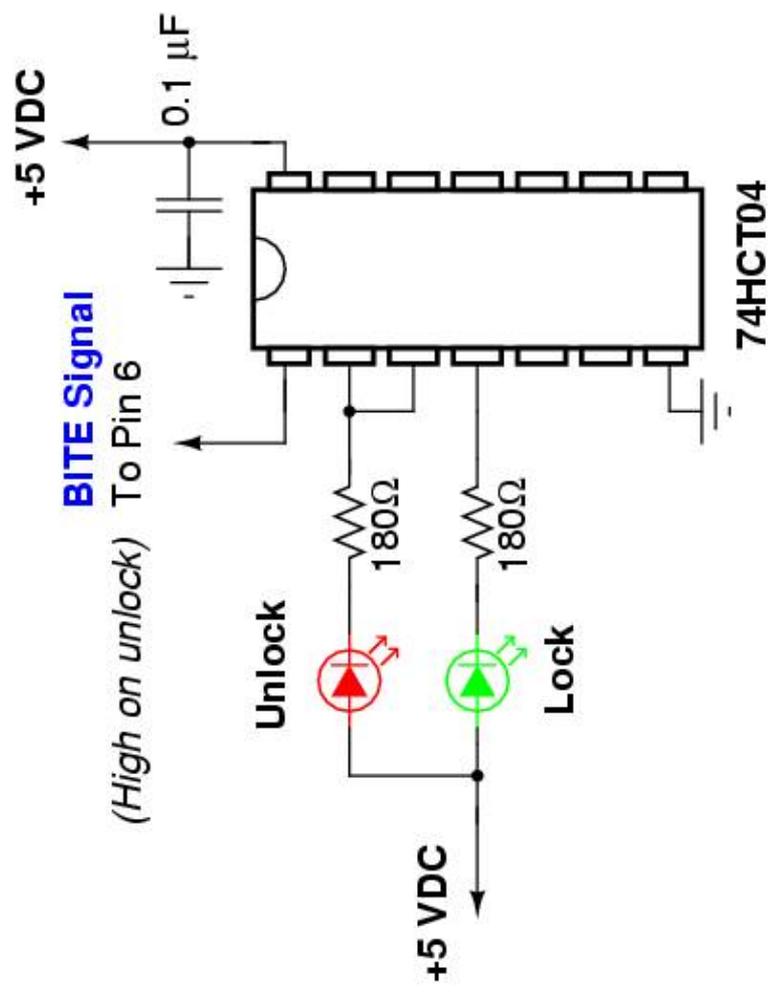
Use a Mini-Circuits ZFSC-2-1 (or similar) two-way splitter if you need to drive multiple loads.

This helps to maintain the proper 50 ohm impedance and isolation between all the ports.

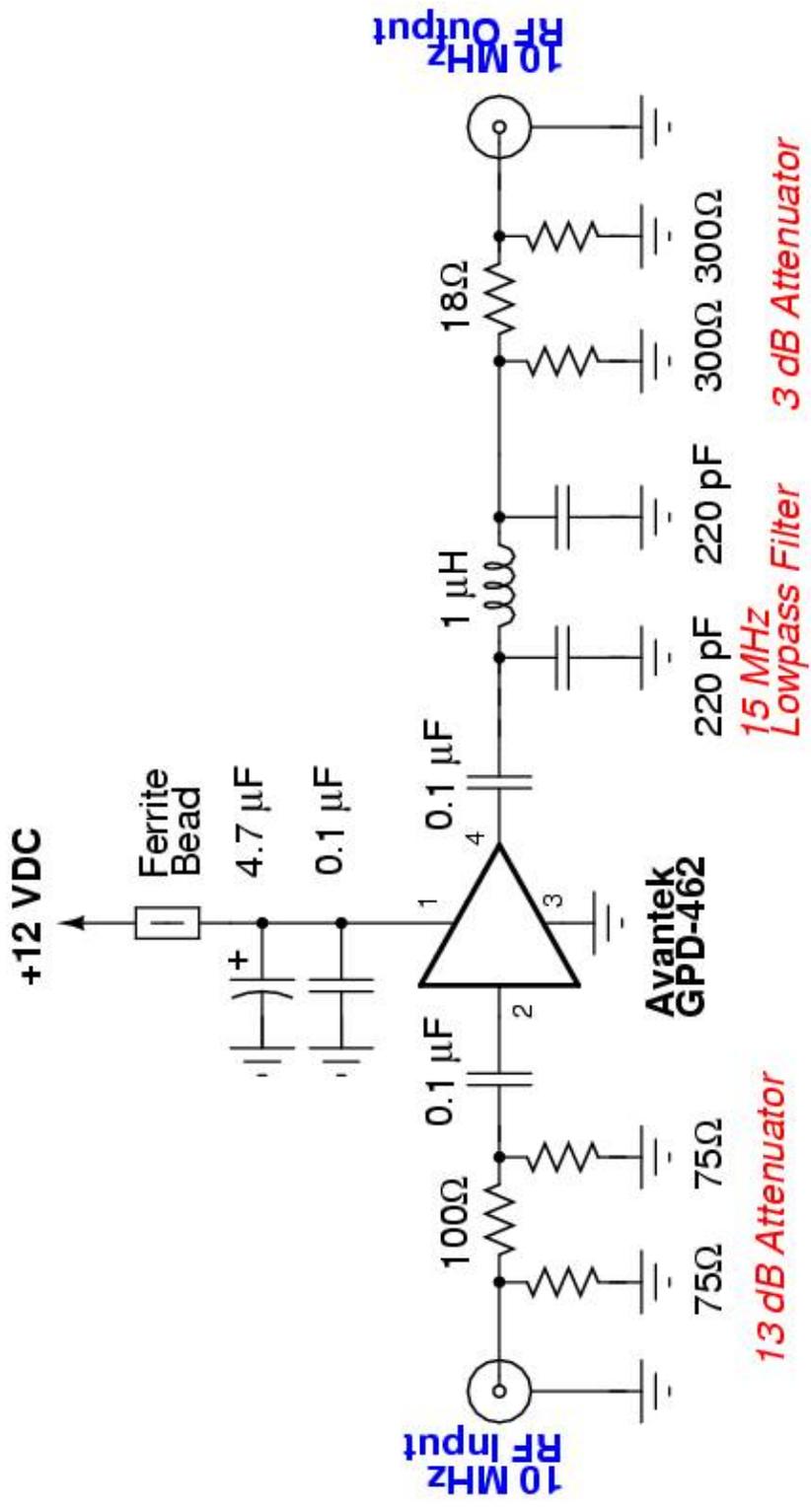
Efratom LPRO-101 Voltage Regulator



Efratom LPRO-101 Lock Status Indicator



Efratom LPRO-101 Buffer Amplifier



Building a Centrex Service in a DMS-100 Switch

Overview

This document covers the procedures for building a Centrex with the "Assume 9" option in the Nortel DMS switch. The Assume 9 option is built within customer group tables to enable a customer to access an outside line without manually dialing a "9."

A customer group is a collection of subscribers belonging to the same organization. A customer group table defines a customer group within the switch and also determines what features and resources are available to that group.

Business Rules

1. Assume 9 Centrex service will require the customer to dial an "#" (octothorpe) before the station to be called. The switch provisioning agent will communicate this requirement to the customer or customer vendor at the time of change.
2. Assume 9 Centrex Service will affect call forwarding options. All call forwarding options must have the prefix 9 removed from the forwarding DN for proper call forwarding.

Step One

Associates certain parameters to the customer group. You must find the next available Administrative Number (ADNUM) before you enter translations. It is important to add tuples sequentially. Do not jump around.

In this example, the next Administrative Number (ADNUM) is 22.

```
CI:
>TABLE CUSTENG      # Customer Group Engineering
TABLE CUSTENG:
>BOT;FORMAT PACK;UP 10;LIS 11
CUSTNAME ADNUM NONCOS NOIBNTMT CONSOLES DOMAIN  GROUPID  OPTIONS
-----
RESKMSV  19    32    32      N      PUBLIC  1      $
POTSDATA 4092   1      1      Y      PUBLIC  0      $
IBN001   21     6     25     Y      PRIVATE 21     $
VMAIL    2     256   0      N      PUBLIC  0      $
RESGNBO  10    256   32     N      PUBLIC  10     $
RESBURL  11    256   32     N      PUBLIC  11     $
RESMONT  12    256   32     N      PUBLIC  12     $
RESSMFL  13    256   32     N      PUBLIC  13     $
RESWNSL  14    256   32     N      PUBLIC  14     $
LNSGNBO  20    25    63     N      PRIVATE 20     $
RESKMSV  19    32    32     N      PUBLIC  1      $
>ADD
CUSTNAME:          # Customer Name. Up to 16 alphanumeric characters can be entered.
>NATIONWIDE_UTAH  # The customer name should be abbreviated or easily recognizable.
ADNUM:             # Administration Number
>22                # Enter a number from 0 to 4,095. Use next sequential ascending number.
NONCOS:            # Number of Network Class of Service. Default is 10.
>10
NOIBNTMT:          # Number of Integrated Business Network Treatments. Default is 5.
>5
CONSOLES:
>N
```

```

CUSTTYPE:          # Customer Type
>PRIVATE
GROUPID:           # Group Identification.  Enter the same number as ADNUM field.
>22
OPTION:
>$
TUPLE TO BE ADDED:
ADD NATIONWIDE_UTAH 22 10 5 N PRIVATE 22 $
ENTER Y TO ACCEPT, N TO REJECT OR E TO EDIT.
>Y
>QUIT

```

Step Two

Contains call control information for the customer group.

Before completing this step, the switch agent must identify the rate center for the Centrex customer as well as a LINEATTR, XLAPLAN, and RATEAREA value.

```

CI:
>TABLE XLANAME # Translator Name
TABLE XLANAME:
>ADD
XLANAME:        # Translator Name.  Enter 8 alphanumeric characters.
>NWUCX00        # The XLANAME is some form of abbreviation of the customer name followed by CX00.
TRSEL:          # Trunk Selector
>NET
ACR:            # Account Code Record
>N
SMDR:          # Simplified Message Desk Record
>N
NO_ACCODE DIGITS:
>0
SECOND_DIAL_TONE:
>N
DGCOLNM:       # Digit Collection Name
>POTS
CRL:
>N
INTRAGROUP:    # Default is N.
>N             # If customer requests feature distinctive ring, this will be set to Y.
NET_TYPE:      # Network Type
>GEN
OPTION:        # Option for Line Attribute
>LATTR
LINEATTR:      # Line Attribute.  Enter a number from 0 to 31,999
>1234
XLAPLAN:       # Translation Plan.  Enter value from table LINEATTR.
>NPA_NC0003_1234
RATEAREA:      # Rate Area.  Enter value from table LINEATTR.
>RATE_LATA_LTG
OPTION:        # Option for Equal Access (Long Distance)
>EA
PIC:           # Primary Inter-LATA Carrier.  Enter the carrier code.
>0288
CHOICE:        # "N" restricts customer from casual dialing - 1010XXX.
>Y
INVEAFLX:      # Invalid Flexible Intercept Number
>0
OPTION:        # If order requests an Intra-LATA PIC (LPIC), enter here.
>$

```

```

NETRTOPT:      # Network Routing Options
>$
MAXDIG:        # Maximum Digits
>9
TUPLE TO BE ADDED:
ADD NWUCX00 NET N N 0 N POTS N N GEN LATTR 1234 NPA_NC0003_1234 RATE_LATA_LTG EA 0288 Y 0 $ $ 9
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
>QUIT

```

Step Three

Create an octothorpe translator in table XLANAME in customer group translations to allow station-to-station dialing.

Customer must prefix station number with "#" to invoke an internal call. To complete 3- or 4-digit station to station dialing in an Assume 9 Centrex, an octothorpe translator must be established in XLANAME.

```

CI:
>TABLE XLANAME # Translator Name
TABLE XLANAME:
>ADD
XLANAME:      # Create the new octothorpe name - XXXOX00.
>NWUOX00
TRSEL:
>$
MAXDIG:
>9
TUPLE TO BE ADDED:
NWUOX00 $ 9
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
>QUIT

```

Step Four

Defines specific group dialing options or system features.

```

CI:
>TABLE CUSTHEAD # Customer Group Head
TABLE CUSTHEAD:
>ADD
CUSTNAME:     # Customer Name
>NATIONWIDE_UTAH # Enter up to 16 alphanumeric characters as created in table CUSTENG.
CUSTXLA:      # Customer Translator
>NWUCX00      # Enter a 8 character alphanumeric as defined in table XLANAME.
DGCOLNM:      # Digit Collection Name
>ASSUME9
IDIGCOL:      # Interdigit Collection
>NIL
OPTION:       # Option for Vacant Treatment
>VACTRMT
VACTRMT:
>0
OPTION:
>EXTNCOS
EXTNCOS:
>0

```

```

OPTION:                # Option for Feature Translator
>FETXLA
XLANAME:              # Name of translator.
>RESFX00
OPTION:
>OCTXLA
XLANAME:              # Name of octothorpe translator created for station-to-station dialing.
>NWUOX00
OPTION:
>$
TUPLE TO BE ADDED:
ADD NATIONWIDE_UTAH NWUCX00 POTS NIL VACTRMT 0 EXTNCOS 0 FETXLA RESFX00 OCTXLA NWUOX00 $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
>QUIT

```

Step Five

Datafill defines the dialing plan or dialing restrictions on a whole group, part of, or individual stations in a customer group.

If all stations within the customer group access the same dialing options, then only one Network Class of Service (NCOS) is needed. A separate NCOS is needed for each different dialing option plan.

```

CI:
>TABLE NCOS          # Network Class of Service
NCOS:
>ADD
CUSTGRP:              # Customer Group. Enter up to 16 alphanumeric characters as defined
>NATIONWIDE_UTAH    # Enter up to 16 alphanumeric characters as defined in table CUSTENG.
NCOS:                 # Network Class of Service. Enter a number from 0 to 511.
>0
NCOSNAM:              # Network Class of Service Name
>NC0003             # Create a 1 to 6 alphanumeric character name for identification only.
LSC:                  # Line Screening Code
>0
TRAFSNO:              # Traffic Separation Number
>0
NCOSOPTN:             # Network Class of Service Options
>$                  # This used to set up a variety of available network options. The most used is t
TUPLE TO BE ADDED:
ADD NATIONWIDE_UTAH 0 NC0003 0 0 $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
>QUIT

```

Step Six

This defines a treatment for misdialed calls.

```

CI:
>TABLE IBNTREAT    # Integrated Business Network Treatment
IBNTREAT:
>ADD
CUSTGROUP:           # Customer Group
>NATIONWIDE_UTAH    # Enter 16 alphanumeric characters as defined in table CUSTENG.
IBNTREATMT:          # IBN Treatment. Enter value from 0 to 63.
>0

```

```

LOG:                # Do you want a log created?
>N
RTESEL:            # Route Selector
>S
CLLI:              # Common Language Location Identifier
>T120
TUPLE TO BE ADDED:
ADD NATIONWIDE_UTAH 0 N S T120
ENTER Y TO CONFIRM, N TO REJECT AND E TO EDIT.
>Y
>QUIT

```

Step Seven

Defines the caller name and number information.

```

CI:
>TABLE CUSTNTWK    # Customer Network
CUSTNTWK:
>ADD
CUSTNAME:          # Customer Name
>NATIONWIDE_UTAH  # Enter 16 character alphanumeric as defined in table CUSTENG.
NETNAME:           # Network Name
>PUBLIC
NETCGID:           # Enter a number from 0 to 4,096.  Enter the ADNUM from CUSTENG.
>XXXX
DNREVLXA:         # Directory Number Reverse Translations
>$
OPTION:            # Option CLID (Caller ID)
>CLID
CLIDOPT:           # Caller Identification Options (For Outbound Calls)
>OFFNET
OPTION:            # RNID option to OFFNET.
>RNID
RNIDOPT:
>OFFNET
OPTION:            # Option TCAPNM.  Only if contract states.
>TCAPNM            # Line options CND and CNAME must be on actual lines for feature to work.
TCAPNM_OPT:       # TCAP Option
>NONLOCAL
OPTION:            # Option NTKEMW (Network Executive Message Waiting)
>NTWKEMW          # Supports the proper message waiting indicators for voice mail applications.
OPTION:
>$
TUPLE TO BE ADDED:
ADD NATIONWIDE_UTAH PUBLIC XXXX $ CLID OFFNET RNID OFFNET TCAPNM NONLOCAL NTKEMW $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
>QUIT

```

Step Eight

The customer's station-to-station dialing entries in table IBNXLA (IBN Translation) must be added to the octothorpe translator.

Add the entries in table IBNXLA for every station number using the octothorpe translator name created in *Step 3* (i.e. NWUOX00)

Repeat these steps for every station-to-station entry for the customer group.

```

CI:
>TABLE IBNXLA      # IBN Translation
IBNXLA:
>ADD
KEY:              # Two part entry - octothorpe name and four digit station code.
>NWUOX00 4522
TRSEL:           # Translation Selector
>EXTN
SMDR:           # Station Message Detail Recording
>N              # Enter "Y" if customer is recording station-to-station calls.
INTRAGRP:
>N
SNPA:           # Serving Numbering Plan Area
>404
OFCCODE:        # Central Office Code
>555
DIGINEXT:       # Digits in Extension
>4              # Enter the number of digits in the extension number.
FILLDIGS:       # Entry up to 3 digits.  If DIGINEXT is less than 4,
>$              # then enter the digit to be filled.  If no fill necessary, enter "$".
EXTNOPT:        # None at this time, enter "$".
>$
TUPLE TO BE ADDED:
NWUOX00 4522 EXTN N N 404 555 4 $ $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>Y
>QUIT

```

Step Nine

Defines the station option parameters for the entire group.

There are 8 minimum standard entries in this table for every Centrex. (i.e., There will be 8 separate times in which the ADD command will be used.

```

CI:
>TABLE CUSTSTN    # Customer Group Station
CUSTSTN:
>ADD
CUSTNAME:
>NATIONWIDE_UTAH
OPTION:
>CFCW           # Call Forwarding of Call Waiting

or

OPTION:
>CFDATIM       # Call Forward Don't Answer Timeout
CFDATO:        # Call Forward Don't Answer Time in seconds.  (1 ring = 6 seconds)
>24            # Default 4 rings.

or

OPTION:
>CFWVAL        # Call Forward Validation
TERMOPTN:      # Terminating Option
>Y

```

```

or

OPTION:
>CFXFEAT           # Call Forwarding for Intragroup
RINGCFI:
>Y

or

OPTION:
>CFXOPT           # Call Forwarding Option
PCSCFA:
>N/Y             # Default "N"
PCSCFB:
>N/Y             # Default "N"
PCSCFD:
>N/Y             # Default "N"
MULTICFA:
>N/Y             # Default "N"
MULTICFB:
>N/Y             # Default "Y"
MULTICFD:
>N/Y             # Default "Y"
CFXTRK:
>N/Y             # Default "Y"
BUSYTRMT:
>N/Y             # Default "N"

or

OPTION:
>CXFER           # Call Transfer - Customer Group
XFERRCL:
>N
METHOD:
>STD

or

OPTION:
>CXFERSUP        # Call Transfer Enhanced
IBNTKSEL:
>ALLIBN
ALLTRKS:
>ALLOW
POTSTKSEL:
>ALLPOTS
ALLTRK:
>ALLOW
CXFERTON:
>Y

or

OPTION:
>DISPDIGS       # Display Digits
NUMODIGS:
>10

```

Step Ten

Complete a `FINDREF` for the tables `CUSTENG` and `XLANAME`.

Dump translations onto hardcopy and keep with the order.

Verify your translations changes by completing another `FINDREF` for the `CUSTENG` and the `XLANAME`.

```
CI:  
>FINDREF CUSTENG NATIONWIDE_UTAH  
>FINDREF XLANAME NWUCX00
```

Bonus

Delete Reply Forward Spam Print

URGENT - C290487788 - 1&1 Internet Compliance zioncrimefactory.com; 911missinglinks.com; jewishproblem.com Hide Details

FROM: legal@1and1.com +
TO: prothink@yahoo.com
CC: legal@1and1.com +

Tuesday, July 24, 2012 2:34 PM

Dear Michael Delaney, (Customer ID: 182981057)

1&1 Internet Inc. ("1&1") has recently received reports of content on your websites which represents a clear breach of 1&1's General Terms and Conditions of Service ("GT&C"). Upon further investigation, 1&1 has confirmed those reports.

Accordingly, we hereby provide you with notice of termination under the GT&C effective ten days from today's date. Please ensure that all files and other data are removed from 1&1's servers and domain names transferred by that date, as your data and files will be irrevocably deleted after termination. Please note, 1&1 is entitled to and reserves the right to terminate your account without further notice should it be necessary to protect 1&1 Internet or its personnel, or to prevent additional breaches of the GT&C.

Sincerely,

1&1 Legal

Nancy McNelis
Legal Department
1&1 Internet Inc.

Reply to legal@1and1.com Send

Dear Louis Beam, (Customer ID: 7413451)

1&1 Internet Inc. ("1&1") has recently received reports of content on your websites which represents a clear breach of 1&1's General Terms and Conditions of Service ("GT&C"). Upon further investigation, 1&1 has confirmed those reports.

Accordingly, we hereby provide you with notice of termination under the GT&C effective ten days from today's date. Please ensure that all files and other data are removed from 1&1's servers and domain names transferred by that date, as your data and files will be irrevocably deleted after termination. Please note, 1&1 is entitled to and reserves the right to terminate your account without further notice should it be necessary to protect 1&1 Internet or its personnel, or to prevent additional breaches of the GT&C.

Sincerely,

1&1 Legal

Nancy McNelis
Legal Department
1&1 Internet Inc.

prothink.org, zioncrimefactory.com, 911missinglinks.com, jewishproblem.com, and louisbeam.com have just recently been censored from the Internet, most likely by pressure from the racist Jew Abe Foxman and his Mossad-front, anti-White hate group – the Anti-Defamation League of B'nai B'rith (ADL).

Fight back! Mirror and support these websites as much as you can!

www.digitaljournal.com/article/329530

End of Issue #100



Any Questions?

Editorial and Rants



Greek goddess Voula Papachristou was expelled from the 2012 Olympics for making a "racist" Twitter post.



John Carlos and Tommie Smith give the "Black Power" salute during the 1968 Olympics in Mexico. They were paraded around like heroes by the liberal/Jewish media.

Marxist "thought crimes." Coming to a country near you...



Krone, 28.7.2012



Agentur EPA 26.7.2012

(gizmodo.com/5929952/newspaper-uses-photoshop-to-make-syria-even-worse-somehow)

The *Kronen Zeitung* is Austria's largest newspaper, with a daily readership of around three million people. On July 28, 2012, those readers were treated to the top image of war-torn Aleppo, Syria – bombed out and desperate.

Except, as one sharp-eyed Redditor points out, that wasn't the scene at all. It was just another Photoshop job.

Just to be clear, the family in the photograph is, in fact, in Syria; the original photo (on the bottom) came from the European Pressphoto Agency. But merely fleeing a city ravaged by guns and mortars apparently isn't quite dramatic enough on its own. The editors of the *Krone* – as it's commonly called needed this baby to sing.

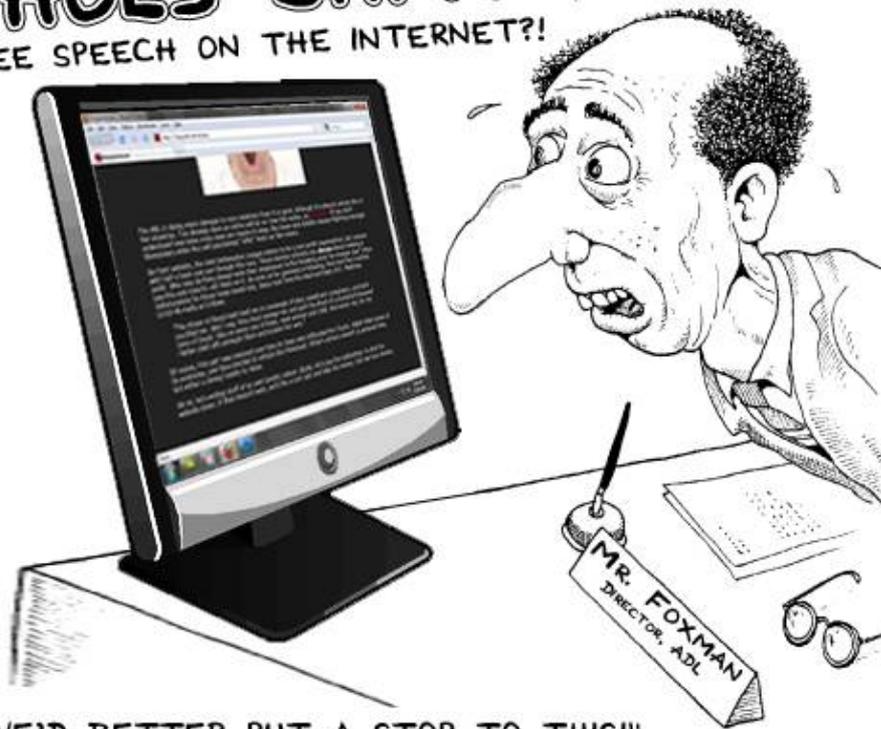
"Who cares?" she said impatiently. 'It's always one bloody war after another, and one knows the news is all lies anyway.'"

--- Quote from the book *1984* by George Orwell.



As you can see, the liberal boycott against Chick-fil-A for their anti-faggotry stance has been a rousing success! LOL!

"HOLY SHIT!
FREE SPEECH ON THE INTERNET?!



WE'D BETTER PUT A STOP TO THIS!"

© ANGRYJERK.NET 2009



White students in public schools now have to suffer thanks to the failure of Blacks. I'll bet liberals have no problems with taking the White man's tax dollars to continue funding these "failing" schools, though! Change! Believe it or not, I found this story on the Huffington Post... However, like good little Commies, are censoring any comments which point out it's the Black students who are causing public schools to "fail" in the first place!

Failing Louisiana School Will Not Transfer White Students Out Because of 1960s Court Ruling

August 1, 2012 – From: huffingtonpost.com

Rayville Elementary School in Louisiana received a failing grade this year, based on the state's School Performance Scores. Under the state's Public School Choice policy, eligible students in schools flagged as failing and in need of certain levels of improvement can transfer to an "academically acceptable school."

But an interesting and controversial issue has arisen that may actually challenge equal opportunity intended by the law. In a letter to parents dated July 25, Rayville Elementary school officials inform families of the school's "F" grade and list two other institutions -- with letter grades C- and B -- that the parents can choose to transfer their children to. But there's a disclaimer:

Please note that white students at Rayville Elementary School will not be allowed to transfer to the listed schools due to the present provisions issued in the federal Richland Parish School desegregation case.

The case in question refers to a 1968 court decision that, in an effort to maintain desegregated schools, prohibits white students from leaving schools if their departure could cause the school to be considered "all-Negro."

But the court's effort to cultivate and protect fairness may now be yielding the opposite effect, some say, as a number have called the issue "reverse-racism" and discrimination.

"We agree that it is, but unfortunately we're bound by federal law and we have to [here] to those standards," Richland Parish School Board President Kevin Epinette told WNYC. He adds that the decision affects between 45 and 55 students at the school.

One Redditor notes that the situation doesn't appear to be hateful or malicious in intent, but merely "the application of conflicting laws," adding that "this shouldn't be too difficult to sort out."

Epinette told WNYC that the Justice Department visited the district in the spring and will send an official report with suggestions on how to "be able to get out from under these de-seg orders," but the process could take months.

This isn't the first time Richland Parish families have seen a letter like this. A 2008 letter sent to families of Delhi Elementary School, estimated at the time to yield a failing SPS, were also offered a transfer option, but with a similar disclaimer:

Due to the court order, students may be offered a choice in the school in which their race would be in the minority. White students may be offered Rayville Elementary School. Black students may be offered Holly Ridge Elementary School or Start Elementary School.

At the time, Rayville, where the white students were permitted to go, was estimated to have an SPS at least 20 points below those for Holly Ridge and Start.

The letter out of Rayville elementary comes amid the inception of a new voucher program in Louisiana. Under the new initiative, the most sweeping voucher program in the country, tens of millions of taxpayer dollars will be shifted from public schools to pay private schools, private businesses and private tutors to educate students across Louisiana.

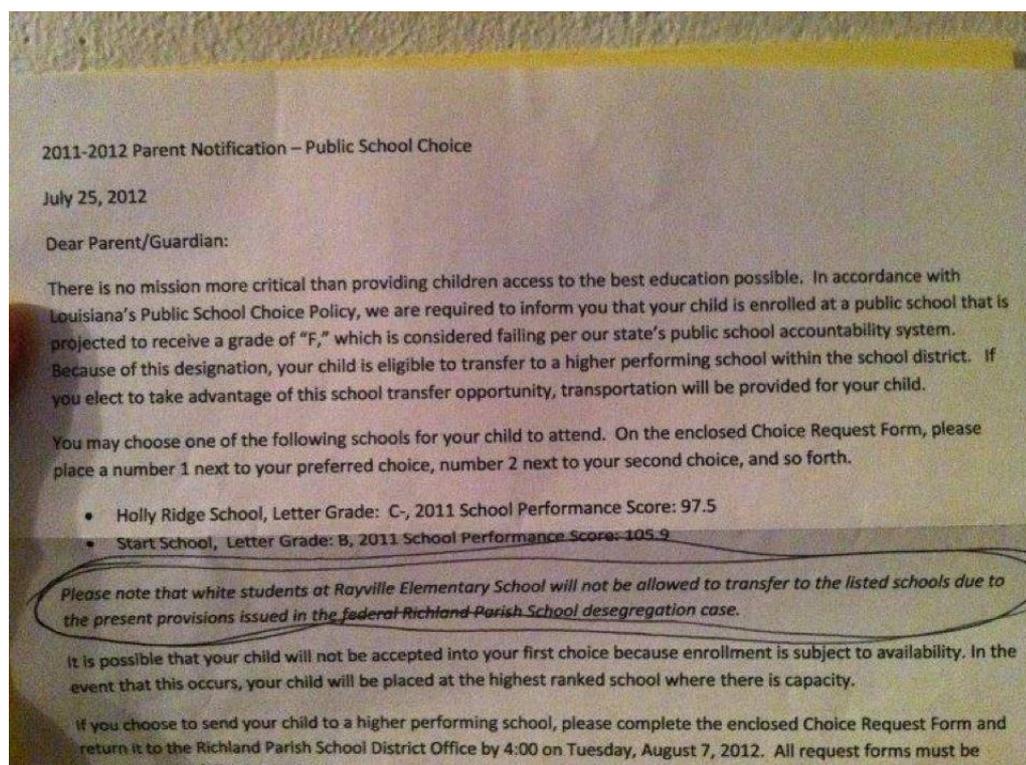
The program is the cornerstone of Republican Gov. Bobby Jindal's bold effort to reform public education in the state. Critics are concerned about funding and fairness -- vouchers would cover the full cost of tuition at more than 120 private schools, including small, Bible-based church schools. Jindal says the program will spur school competition and expand parental choice.

Several of those religious schools that will be receiving public funds to take in new students from public schools also teach curricula that question the age of the universe, defying scientific evidence and theory and promote religious doctrine that "challenges the lessons central to public school science classrooms," according to the Associated Press.

Louisiana's School Performance Scores are based on varying combinations of testing results, attendance, dropout and graduation rates as well as growth and performance data.

Based on the SPS, each school receives a "growth target," which represents how much progress each school must make annually to reach state goals. The SPS also serves as a determinant of whether a school meets federal Adequate Yearly Progress requirements under the No Child Left Behind law. A poor SPS and failure to meet AYP could mean state intervention that range from giving students the option to transfer out to school closures and staff turnover or transfer to the state's Recovery School District.

Louisiana, however, is one of 32 states and Washington, D.C. that have been granted waivers from NCLB under the Obama administration.



Why Goldman Sachs, Jon Corzine, and the Rest of Wall Street Will Never Face Prosecution From Democrats

From: zerohedge.com/news/confused-why-goldman-will-face-no-criminal-charges-heres-why

We learned courtesy of Goldman's 10-Q, that the U.S. Justice Department will not press criminal charges against Goldman Sachs. This, despite Senator Carl "Shitty Deal" Levin (Jew), in one of the most bombastic kangaroo court spectacles on live TV ever, asking for a criminal investigation after the subcommittee he led spent years looking into Goldman, and in which he said Goldman misled Congress and investors (and according to which billions in fraudulent RMBS misrepresentations are all still only Fabrice Tourre's fault, at that time under 30 years old).

And so we pose the same answer, and provide the same answer, as yesterday, only flipped around: "Confused Why Goldman Will Face No Criminal Charges? Here's Why":



Charles Schumer (Jew) – Member of the:

- Senate Finance Committee
- Banking, Housing and Urban Affairs Committee
- Subcommittee on Housing, Transportation and Community Development
- Subcommittee on Financial Institutions and Consumer Protection
- Subcommittee on Securities, Insurance and Investment

Top Contributors

Senator Charles E. Schumer

Contributor	Total	Indivs	PACs
Goldman Sachs	\$509,540	\$476,540	\$33,000
Citigroup Inc	\$440,416	\$406,100	\$34,316
Morgan Stanley	\$328,146	\$290,700	\$37,446
JPMorgan Chase & Co	\$313,000	\$249,000	\$64,000
Paul, Weiss et al	\$295,850	\$295,850	\$0
Credit Suisse Group	\$268,994	\$234,325	\$34,669
UBS AG	\$256,650	\$224,650	\$32,000
Bear Stearns	\$236,850	\$219,850	\$17,000
Lehman Brothers	\$226,450	\$200,950	\$25,500
Merrill Lynch	\$226,400	\$203,900	\$22,500
Ernst & Young	\$222,250	\$195,250	\$27,000
Deloitte LLP	\$201,799	\$173,800	\$27,999
Schulte, Roth & Zabel	\$200,100	\$200,100	\$0
Time Warner	\$188,800	\$161,300	\$27,500
Sullivan & Cromwell	\$172,400	\$172,400	\$0
Kasowitz, Benson et al	\$165,900	\$165,900	\$0
Newmark Knight Frank	\$162,150	\$162,150	\$0
MetLife Inc	\$158,499	\$117,000	\$41,499
New York Life Insurance	\$150,550	\$123,550	\$27,000
Cantor Fitzgerald	\$145,250	\$145,250	\$0

See the Jew...