GBPPR 'Zine Issue #88 / The Monthly Journal of the American Hacker / August 2011

"The danger to America is not Barack Obama but a citizenry capable of entrusting a man like him with the Presidency. It will be far easier to limit and undo the follies of an Obama presidency than to restore the necessary common sense and good judgment to a depraved electorate willing to have such a man for their president.

The problem is much deeper and far more serious than Mr. Obama, who is a mere symptom of what ails America. Blaming the prince of the fools should not blind anyone to the vast confederacy of fools that made him their prince. The Republic can survive a Barack Obama, who is, after all, merely a fool. It is less likely to survive a multitude of fools such as those who made him their president."

--- Quote of the fucking century which was published in the *Prager Zeitung* newspaper from the Czech Republic on April 28, 2010.

Table of Contents

- ◆ Page 2 / Lawfully Authorized Electronic Surveillance / 5ESS (Part 4)
 - Procedures for the provisioning, maintenance, and troubleshooting of the 5ESS switch for CALEA applications.
- ◆ Page 38 / Nortel DMS-100 TOPS Domestic Credit Card Check Digit Table (CHKDIGIT)
 - Check digit table TOPS uses which validating a domestic credit card.
- ◆ Page 40 / Nortel DMS-100 Circuit Digit Table (CKTDIGIT)
 - ◆ Table the switch uses to generate '0ZZ/1NX' digits based on the circuit code received in the SS7 TNS parameter.
- ◆ Page 42 / GBPPR Homebrew Printed Circuit Boards
 - ◆ Tips and tricks to making low-cost printed circuit boards for electronics projects.
- ◆ Page 63 / Sony NTM-910 Baby Monitor Information
 - Frequency settings on those Sony 900 MHz baby monitors.
- ◆ Page 64 / Simple Phone Line Tap
 - Use parts from an old modem and a digital voice recorder to intercept telephone calls.
- ♦ Page 77 / Bonus
 - ◆ Sound Familiar?
- ◆ Page 78 / The End
 - Editorial and rants.

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

Circuit assignments to digital subscriber lines, such as DPKT, ODB, PPB1 and PPB2.

NOTE: CDC and PDC BRI PVCs are supported on PPB1 or PPB2 only.

(5923) DSL PACKET SWITCHING PVC LCN ASSIGNMENT	
(*) 1. PKT TN	

- A warning will be issued when FCL TYPE=INET and SEND/RCV PKTSZ=128 and SEND/RCV PKTWD=2 values are entered. The recommended values are SEND/RCV PKTSZ=256 and SEND/RCV PKTWD=7.
- When FCL TYPE=INET, LINK ID, REMOTE LCN, REMOTE TN, REMOTE DNIC, and PSN will be blank and CALL IND must be CALLING.
- There is a crosscheck between the SEND PKTSZ value on view 23.11 and the MTU SIZE value on view 33.2. MTU SIZE cannot be greater than SEND PKTSZ.

3.8.2.2 XAT INET PVC PROVISIONING

To provision an XAT, use view 23.40, X.25 (XAT) PACKET SWITCHING CHANNEL ASSIGNMENT, followed by view 23.11 to assign PVCs to DSLs.

SCREEN 1 OF 3 (5909,5909A,5909B) X.25 (XAT)	5ESS SWITCH RECENT CHANGE 23.40 PACKET SWITCHING CHANNEL ASSIGNMENT
(*)1. PKT TN (*)2. PKT MLHG (*)3. TERM NBR (*)4. OE CHANGE FIELDS	15. PKT NEW TN

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400		June 200
7. CHNG PKT TN 8. CHNG PKT MLHG 9. CHNG TERM NBR 10. CHNG OE MLHG ONLY 13. LNR HNT TN 14. HUNT DEACT		
SCREEN 2 OF 3	5ESS SWIT RECENT CHAN	GE 23.40
27. OCU LOOPBACK _ 28. CSU LOOPBACK _ 29. X25VER _ 30. ICB _ 31. OCB _ 32. H PVC LCN _ 33. L IN LCN _ 34. H IN LCN _ 35. L 2W LCN _ 36. H 2W LCN _ 37. L OUT LCN _ 38. H OUT _ 18. H OUT LCN _ 38. H OUT LCN _ 38. H OUT LCN _ 38. H OUT LCN _	39. BUSY LIMIT	51. ICP 52. PB GRP 53. REV CHARGE 54. LCP 55. FCPN 56. TPCN 57. FSA 58. IA 59. IECP DNIC
Circuit assignments to digital s to make PVC assignments for		
(5923)	RECENT CHAN DSL PACKET SWITCHING PV	GE 23.11
(*)1. PKT TN (*)2. PKT MLHG (*)3. PKT MEMB *4. LCN 5. SEND PKTSZ 6. SEND PKTWD 7. RCV PKTSZ	13. REMOTE LCN 14. REMOTE TN 15. REMOTE DNIC 16. PSN 17. INTRA GROUP	
	Copyright ©2003 Lucent Techn	ologies Page 9

Provisioning, Troubleshooting, and Maintenance

235-200-400	June 2003

200		
8.	RCV PKTWD	_
#9.	CALL IND	
10.	BILLABLE	_
#11.	FCL TYPE	
12.	LINK ID	

- A warning will be issued when FCL TYPE=INET and SEND/RCV PKTSZ=128 and SEND/RCV PKTWD=2 values are entered. The recommended values are SEND/RCV PKTSZ=256 and SEND/RCV PKTWD=7.
- When FCL TYPE=INET, LINK ID, REMOTE LCN, REMOTE TN, REMOTE DNIC, and PSN will be blank and CALL IND must be CALLING.
- There is a crosscheck between the SEND PKTSZ value on view 23.11 and the MTU SIZE value on view 33.2. MTU SIZE cannot be greater than SEND PKTSZ.

3.8.2.3 XAT INET SVC PROVISIONING

The XAT PH channel group member (PSUEN) is provisioned to support X.25 SVCs using the outgoing LCN range, as specified on RC 23.40. The TCP/IP interface name is provisioned using a specific LCN from the outgoing LCN range. When a X.25 SVC is initiated, the LCN associated with the TCP/IP interface (gateway) used to reach the destination IP address (law enforcement collection facilities) is used along with the destination X.25 address from the provisioned CALEA (RCV C.4).

To provision an PSUEN XAT, use view 23.40, X.25 (XAT) PACKET SWITCHING CHANNEL ASSIGNMENT.

NOTE: RCN 23.11 is not used for SVCs, only PVCs.

SCREEN 1 OF 3 (5909,5909A,5909B) X.25 (XA	5ESS SWITCH RECENT CHANGE 23.40 F) PACKET SWITCHING CHANNEL ASSIGNMENT
(*)1. PKT TN (*)2. PKT MLHG (*)3. TERM NBR (*)4. OE	15. PKT NEW TN 16. ISCN #17. LCC #18. RAX
CHANGE FIELDS 7. CHNG PKT TN	19. RATE 20. N2
8. CHNG PKT MLHG 9. CHNG TERM NBR	21. T1
10. CHNG OE	23. WNDSZ 24. SUST
13. LNR HNT TN	25. BILL TN 26. RMK

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

• OE type is U, for a newly supported PSUEN XAT.

SCREEN 2 OF 3 (5909,5909A,5909B)	5ESS SWITCH RECENT CHANGE 23.40 X.25 (XAT) PACKET SWITCHING CHANNEL ASSIGNMENT
27. OCU LOOPBACK _ 28. CSU LOOPBACK _ 29. X25VER _ 30. ICB _ 31. OCB _ 32. H PVC LCN _ 33. L IN LCN _ 34. H IN LCN _ 35. L 2W LCN _ 36. H 2W LCN _ 37. L OUT LCN _ 38. H OUT LCN _ 38. H OUT LCN _ 38.	39. BUSY LIMIT 51. ICP 40. HUNT NOTIF 52. PB GRP 41. PMDR GRP 53. REV CHARGE 42. PMDR ACT 54. LCP 43. SEND TPC 55. FCPN 44. SEND PKTSZ 56. TPCN 45. SEND PKTWD 57. FSA 46. SEND MCT 58. IA 47. RCV TPC 59. IECP DNIC 48. RCV PKTSZ 49. RCV PKTWD 50. RCV MCT

The following values are recommended:

- Flow control and Throughput Control Negotiation is supported on the emulated DTE. As such, FCPN and TCPN should be set to "Y".
- SEND/RCV PKTSZ=256, SEND/RCV PKTWD=7, and SEND/RCV TCP=19200.
- The BRI/XAT/X.75/X.75' outgoing facilities must also support matching PKTSZ, PKTWD, and TPC values
- The corresponding RC View 33.2 MTU Size should always be 128 (never set to 256).

NOTE: The X.25 input and output window size parameters of the terminating DTE (e.g., router) is recommended to be set to 2 so as to provide more frequent X.25 packet acknowledgements to the PSUEN XAT emulated DTE, thus improving throughput.

3.8.2.4 X.75/X.75' INET PVC PROVISIONING

It is assumed that an X.75/X.75' trunk group is already provisioned. If not, assign an X.75/X.75' trunk group using RCN view 5.1.

View 5.5, TRUNK MEMBER, is used to define each member of a trunk group.

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

				5ESS SWITCH	
SCREE	N 1 OF 6]	RECENT CHANGE	5.5
(5204)				TRUNK MEMBE	3
*1.	TGN	660	23.	HOLD BUSY	N
*2.	MEMB NBR	0	24.	SATELLITE	N
(*)9.	QTY	1	25.	TRF SAMPLE	N
#12.	OE	D 00410125	26.	CAMOPTLK TEN	9-32-31-31-31
15.	CLCI TRK ID		27.	CAMOPTLK DEN	
16.	TRANS CLASS	2	28.	CAMOPTLK NEN	
17.	SUPV	EM2	29.	ACTN	R
18.	IDLE STATE	ON	30.	OTODPN1	
19.	IN START DIAL	NONE	31.	OTODPN2	
20.	OUT START DIAL	NONE	32.	SLC OTODPN3	
21.	STOPGO	N	33.	SLC OTODPN4	
22.	CGA SPN		34.	MAXCALLS	
					District Control of the Control of t

Enter Review, Change-insert, Validate, screen#, or Print:

View 5.13, TRUNK PACKET SWITCHING PVC LCN ASSIGNMENT, is used to provision permanent virtual circuits (PVCs) for X.75/X.75' packet trunks. This view, along with view 23.11, was modified to allow an FCL

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

TYPE of INET in order to use these PVCs for a CDC or PDC connection

(5926)	5ESS SWITCH RECENT CHANGE 5.13 TRUNK PACKET SWITCHING PVC LCN ASSIGNMENT
*1. TGN *2. MEMB *3. LCN #4. CALL IND #5. FCL TYPE 6. REMOTE LCN X25 FCL TYPE	10. SEND THRUPUT CLASS 11. RCV THRUPUT CLASS 12. SEND PKT SIZE 13. RCV PKT SIZE 14. SEND PKT WINDOW SIZE 15. RCV PKT WINDOW SIZE
7. REMOTE TN	X75 TGN 16. PVC ID NUMBER 17. BILLABLE

- A warning will be issued when FCLTYPE=INET and SEND/RCV PKTSZ=128 and SEND/RCV PKTWD=2 values are entered. The recommended values are SEND/RCV PKTSZ=256 and SEDN/RCV PKTWD=7.
- When FCLTYPE=INET, LINK ID, REMOTE LCN, REMOTE TN, and PSN will be blank and CALL IND
 must be CALLING.
- There is a crosscheck between the SEND PKTSZ value on view 5.13 and the MTU SIZE value on view 33.2. MTU SIZE cannot be greater than SEND PKTSZ.

3.8.3 CDC ANALOG LINE TERMINATION PROVISIONING

In the 5E16.2 FR1 software release, the CALEA CDC with Voice Band Data Transmission feature (99-5E-8318) introduces the following provisioning issues for GR-30 CDC links (analog line interface):

- (1) The GR-30 CDC Local DN must be an analog DN with caller ID with call waiting (or any other analog display feature) active on the line. It also must have the ability to use Direct Distance Dialing (DDD) dial plan
- (2) The following features may be assigned and active on a line acting as a GR-30 CDC Destination DN for a GR-30 CDC Link:
 - CFV (includes all variants of call forwarding variable: e.g., /CFV, /CFPF, /CFV1A, etc.)
 - CFBL (includes all variants of call forwarding busy line: e.g., /CFBLAC, /CFBLFB, /CFIBL, etc.)
 - CFDA (includes all variants of call forwarding don't answer a.k.a. CF No Reply: e.g., /CFDAAC,

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

/CFDAFB, /CFIDA, etc)

- CLASS Selective Call Forwarding (SCF) or Selective Call Acceptance (SCA) when rerouted to another directory number
- · Series Completion
- . Multi-Line Hunt Group (MLHG) without queuing
- Terminal Group and Station Restriction (TGSR) that is rerouted to another directory number

A line with any of the following features assigned and active will **NOT** be able to be used as a GR-30 CDC Destination DN for a GR-30 CDC link:

- · Intraswitch MLHG queuing
- · Call pickup (all variants)
- · Call park (all variants)
- Redirections to intraswitch announcements (e.g., fixed route, TGSR, SCA, etc.)
- The LEA destination DN cannot be an operator-assisted (0+, 0-) or N11 DN
- · Call waiting (all variants)

If the CB utilizes a device that uses dial-tone detection to determine disconnect, the line may not have any feature assigned that blocks dial-tone re-application such as denied origination or Modified Calling Line Disconnect procedure. The dial-tone detector must not be falsely triggered by GR30 FSK frequencies.

3.8.4 CDC/PDC IP ADDRESS PROVISIONING

A subject has at least one associated LEA monitoring station's IP address. Each LEA monitoring station has a unique IP address. An SM housing a circuit and/or packet-switched subject requires the creation of a socket or a pair of sockets respectively, from that SM to each LEA monitoring station with which the subject is associated.

A socket is a path that is defined by a pair of addresses, for example, the local internet protocol (IP) address and port number of the transmission control protocol (TCP), and the destination IP address and port number. Each address/port combination is referred to as a "socket address," and both address/port combinations are also referred to as a "socket pair" of addresses.

The socket between a SM and a monitoring station carries CDC information for all subjects in that SM that are associated with the monitoring station. Each packet-switched subject in a PH requires the creation of a pair of sockets from that PH to each monitoring station with which the subject is associated. One member of the socket pair will carry (PDC content) data sent by the subject and the other member will carry data received by the subject.

In 5E16.2 software release, the capability to set up and establish Switched Virtual Circuits (SVCs) for the Call Data Channel (CDC) TCP/IP Sockets is added. Currently, only Permanent Virtual Circuits (PVCs) are

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

supported for CALEA CDC TCP/IP Sockets. This feature adds the capability of supporting TCP/IP Sockets on SVCs originated by a PSUEN XAT PH channel group member for the CDCI component of the CALEA application.

Each SMP TCP connection is supported by an X.25/X.75/X.75 PVC and/or an X.25 SVC to transport CDC messages from the 5ESS® switch to the CALEA monitoring station. Generally, a PVC is provisioned when a 5ESS® switch is likely to have (several) on-going CALEA surveillances. Conversely, if few CALEA surveillances are expected on a switch, an XAT PH Channel Group Member (PSUEN) is provisioned to support SVCs on one or more Incoming Logical Channel Number (LCNs) to reduce the time and cost of establishing nailed up connections required for PVCs. An X.25/X.75/X.75' packet network is required for SVCs; however, an SMP TCP socket connection is established only when CDC messages are sent from a specific SM for an active surveillance. The first CDC message sent via a specific TCP interface (IP gateway) will establish the SVC using the X.25 destination address specified by the surveillance case and a LCN provisioned for the TCP interface. The TCP socket for the SMP attempting to send a CDC message is established after the SVC is established and routing internet protocol (RIP) messages initialize IP routing tables in the switch SMPs and PHs. The CDC messages are buffered until the SMP TCP socket is established to the destination CALEA monitoring station. Messages will be buffered until the buffer is full. Once full, the older CDC messages will be removed from the buffer and sent to the CALEA ROP.

NOTE: There is a limit of 3 surveillances per PH. A surveillance of one subject with 3 packet services on one PH is counted as 3 surveillances. It may be necessary to move subjects from one PH to another if the capacity for the PH has been exceeded.

In other words, 3 services x 2 PDC sockets/service x 5 LEAs equates to a total of 30 PDC sockets from the subject PH distributed across the 5 LEAs.

This limit applies to PH3 and PH4 Protocol Handlers with a DSL type (channel group type) of DSLG.

NOTE: Every SMP must have an IP address residing on the inter-SMP subnet. Refer to Figure 3-7 for a graphical representation of subnets.

NOTE: For Level 1 surveillances, ISMs are not used because the SM generates the CDC messages and sends them via sockets created in the SM. For Level 2 surveillances using a PDC connection, if the subject resides on the SM that contains the delivery PH, then a pair of ISMs is not needed. However, if the subject resides on an SM that does not contain the delivery PH, then an appropriate ISM pair (PH3 or PH4) is required between the subject's SM and the SM containing the delivery PH. ISMs are required for SVC CDC connections if the emulated DTE and outgoing BRI/XAT/X.25/X.75/X.74' facilities are not on the same SM.

In both CDC and PDC sockets, the *5ESS*[®] switch(es) is the client and the LEA monitoring stations are the servers. The servers listen for an incoming socket connection via a TCP port number that is made known in the *5ESS*[®] switch(es) via provisioning. Figure 3-6 provides an overview of the CALEA network.

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

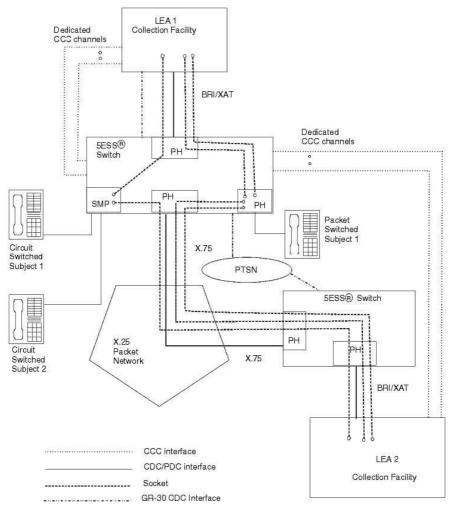


Figure 3-6 CDC/PDC Network Block Diagram

With respect to the CALEA application, there are two subnet types within the switch:

- Inter-SM subnet consisting of all the SMs on the switch.
- . Intra-SM/PH subnet consisting of all the applicable PHs in an SM and the second IP address assigned to

Copyright ©2003 Lucent Technologies

Lawfully Authorized Electronic Surveillance / 5ESS (Part 4) Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

the SMP.

Figure 3-7 provides an example of IP address assignments in a switch.

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

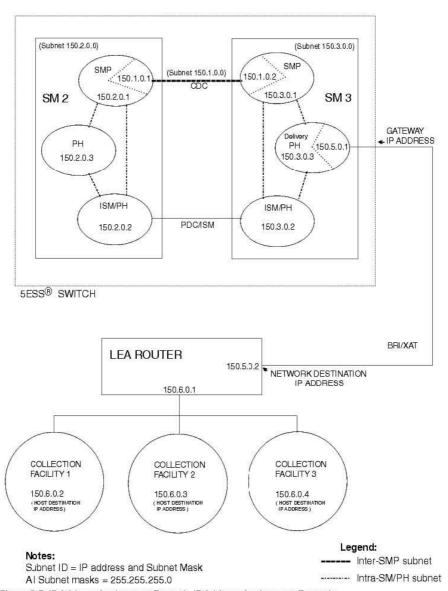


Figure 3-7 $\,$ IP Address Assignment Example IP Address Assignment Example

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

View 33.1, INTERNET PROTOCOL (IP) PROCESSOR ASSIGNMENT, is used to provision up to five IP addresses and subnet masks, and associated IP and TCP parameters to a processor (SM or PH). Each SMP can have multiple IP addresses internally so as to communicate with a subnet of SMPs as well as a subnet of PHs. Each PH has one IP address and belongs to the intra-SM/PH subnet. This subnet will include PHs as well as the second IP address assigned in the SMP.

- **NOTE:** For a PH, the value for the QUALIFIER 2 field is the PSU community address (COM ADDR) found on recent change view 22.2. For an SM, leave the QUALIFIER 2 field blank. Please refer to Chapter 6 for a complete description of the view and its fields.
- NOTE: The value for QUALIFIER 3 is three digits, representing the PSU shelf number (0-4) and the channel group number (00-15). For delivery PH, the value for the QUALIFIER 3 field is the first three digits of the "ISCN" field on the DIGITAL SUBSCRIBER LINE (PPB1) or (PPB2) screen of Recent Change view 23.2, or the first three digits of the "ISCN" field on Recent Change view 23.40, X.25 XAT PACKET SWITCHING CHANNEL ASSIGNMENT.
- NOTE: IP addresses consist of a Network ID and Host ID. The Host ID should not consist of contiguous binary zeroes or contiguous binary ones. The Host ID is determined by performing a binary AND between the IP address and the complemented Subnet Mask. The contiguous binary ones in the complemented Subnet Mask determine the bit size length of the Host ID.
- **NOTE:** When the first IP address of a particular subnet is inserted via 33.1, the route table of all previously configured SMPs and PHs will be updated stating whether connectivity to that subnet is possible from a particular SMP or PH.

Following are examples of the recent change screens showing various IP address assignments and which Recent Change views are used. The values shown correspond to the values in Figure 3-7 and are for example only.

SM 2 Processor IP Address Assignment Examples

First, SM 2's SMP IP addresses are assigned.

SCREEN 1 OF 2 RECENT CHANGE 33.1 (5987) INTERNET PROTOCOL (IP) PROCESSOR ASSIGNMENT
*1. PROCESSOR ID 2 *2. PROCESSOR TYPE SM (*)3. QUALIFIER 2 (*)4. QUALIFIER 3
5. IP ADDRESS
ROW LOCAL IP ADDR IP SUBNET MASK
1 150.001.000.001 255.255.255.000
2 150.002.000.001 255.255.255.000
3
4
5

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

SCREEN 2 OF 2
RECENT CHANGE 33.1
(5987)

INTERNET PROTOCOL (IP) PROCESSOR ASSIGNMENT

IP PARAMETER ASSIGNMENT

UDP PARAMETER ASSIGNMENT

16. REASSEM TIMER 60
23. UDP CHKSUM EN Y
17. ICMP ERR CNT 64
24. UDP START PORT 49152
18. MTU ENABLE N
25. UDP DEF TTL 255

TCP PARAMETER ASSIGNMENT
20. TCP MS
256
21. TCP START PORT 49152
22. TCP DEF TTL 255

Second, SM 2's delivery PH IP address is assigned.

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

SCREEN 2 OF 2

(5987)

INTERNET PROTOCOL (IP) PROCESSOR ASSIGNMENT

IP PARAMETER ASSIGNMENT

16. REASSEM TIMER 60

23. UDP CHKSUM EN Y

17. ICMP ERR CNT 64

24. UDP START PORT 49152

18. MTU ENABLE N

25. UDP DEF TTL 255

19. MTU DISC

30

TCP PARAMETER ASSIGNMENT

20. TCP MSS

256

21. TCP START PORT 49152

22. TCP DEF TTL 255

Third, SM 2's ISM/PH IP address is assigned.

SCREEN 2 OF 2 RECENT CHANGE 33.1
(5987) INTERNET PROTOCOL (IP) PROCESSOR ASSIGNMENT

IP PARAMETER ASSIGNMENT UDP PARAMETER ASSIGNMENT

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

```
16. REASSEM TIMER 60 23. UDP CHKSUM EN Y
17. ICMP ERR CNT 64 24. UDP START PORT 49152
18. MTU ENABLE N 25. UDP DEF TTL 255
19. MTU DISC 30

TCP PARAMETER ASSIGNMENT
20. TCP MSS 256
21. TCP START PORT 49152
22. TCP DEF TTL 255
```

SM 3 Processor IP Address Assignment Examples

First, SM 3's SMP IP address(es) are assigned.

SCREEN 2 OF 2
(5987)

INTERNET PROTOCOL (IP) PROCESSOR ASSIGNMENT

IP PARAMETER ASSIGNMENT

16. REASSEM TIMER 60
23. UDP CHKSUM EN Y

17. ICMP ERR CNT 64
24. UDP START PORT 49152

18. MTU ENABLE N
25. UDP DEF TTL 255

19. MTU DISC
30

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

TOP PARAMETER ASSIGNMENT
20. TCP MSS 256
21. TCP START PORT 49152
22. TCP DEF TTL 255

Second, SM 3's delivery PH IP address is assigned.

SCREEN 2 OF 2
(5987)

INTERNET PROTOCOL (IP) PROCESSOR ASSIGNMENT

IP PARAMETER ASSIGNMENT
16. REASSEM TIMER 60
23. UDP CHKSUM EN Y
17. ICMP ERR CNT 64
24. UDP START PORT 49152
18. MTU ENABLE N
25. UDP DEF TTL 255

19. MTU DISC
30

TCP PARAMETER ASSIGNMENT
20. TCP MSS
256
21. TCP START PORT 49152
22. TCP DEF TTL 255

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

Third, SM 3's ISM/PH IP address is assigned.

5ESS SWITCH RECENT CHANGE 33.1 SCREEN 2 OF 2 INTERNET PROTOCOL (IP) PROCESSOR ASSIGNMENT IP PARAMETER ASSIGNMENT UDP PARAMETER ASSIGNMENT 16. REASSEM TIMER 60 23. UDP CHKSUM EN Y
17. ICMP ERR CNT 64 24. UDP START PORT 4 17. ICMP ERR CNT 64 24. UDP START PORT 49152 18. MTU ENABLE N 25. UDP DEF TTL 255 19. MTU DISC 30 TCP PARAMETER ASSIGNMENT 20. TCP MSS 256 21. TCP START PORT 49152 22. TCP DEF TTL

View 33.2, INTERNET PROTOCOL (IP) INTERFACE ASSIGNMENT, is used to provision up to five IP addresses and subnet masks, and associated IP parameters to an internet (CALEA DSL) interface. For

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

CALEA, this view is used to link an IP address to a DSL interface. Normally each Delivery PH will have only one IP address and corresponding subnet tied to an interface name. Even though five IP addresses and subnets can be entered, only one will be used.

In 5E16.2 software release, the IP interface is assigned on RC/V 33.2. An update of a PSUEN XAT PH channel group member's X.25 Outgoing LCN range that conflicts with the LCN assigned to the IP interface associated with the PSUEN XAT PH channel group member results in a deletion of the corresponding IP interface assignments on RC/V 33.2.

NOTE: Do not delete or change the OE (PSUEN) of an XAT PH channel group member whenever one or more of the TCP/IP X.25 SVCs (LCNs) are marked with the (RC 33.2) CALEA USE set to YES unless the CALEA parameter, ALLOW CHNG, is set to YES.

NOTE: Do not set MTU SIZE for TCP/IP X.25 SVC LCNs to a value greater than 128.

The values shown correspond to the values in Figure 3-7 and are for example only.

Switch to LEA Interface IP Address Assignment Example

(5988)		5ESS SWITCH RECENT CHANGE 33.2 OL (IP) INTERFACE ASSIGNMENT
(*) 1. PKT TN (*) 2. PKT MLHG (*) 3. PKT MEMB (*) 4. TGN (*) 5. TGN MEMB (*) 6. OE (*) 9. ISCN *10. LCN	3132227759	12. IP ADDRESS ROW GATEWAY IP ADDR IP SUBNET MASK 1 150.005.000.001 255.255.255.000 2
#11. INTERFACE NAME	CALEA_BRI-1	23. MCAST ADDR 28. MTU SIZE 256 29. CALEA IN USE N

View 33.3, INTERNET PROTOCOL (IP) ROUTING TO INTERFACE, is used to provision an IP gateway between an external IP destination on a LEA collection box and a local IP interface. For CALEA, this view is used to link LEA destination IP addresses with a gateway PH interface.

Information on view 33.3 is used to route IP datagrams off switch. The DEST IP ADDR and IP SUBNET MASK can either point to an individual host or can refer to an network of nodes in an IP subnet. Once an SM has a gateway IP address assigned to it using this view, all the SMPs and PHs configured via RC/V 33.1 will automatically be updated with the destination IP and Subnet Mask and corresponding gateway IP address.

In 5E16.2 software relase, the IP routing to interface is assigned on RC/V 33.3. An update of a PSUEN XAT PH channel group member's X.25 Outgoing LCN range that conflicts with the LCN assigned to the IP

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

interface associated with the PSUEN XAT PH channel group member results in a deletion of the corresponding IP routing to interface assignments on RC/V 33.3.

The values shown correspond to the values in Figure 3-7 and are for example only.

"NET" Destination Interface IP Address Assignments

```
5ESS SWITCH
RECENT CHANGE 33.3
(5989)

INTERNET PROTOCOL (IP) ROUTING TO INTERFACE

*1. DEST IP ADDR 150.006.000.000

*6. INTERFACE NAME CALEA_BRI-1
7. NET OR HOST NET
#8. IP SUBNET MASK 255.255.255.000
#13. GATEWAY IP ADDR 150.005.000.001
18. ROUTE METRIC 1
```

NOTE: Setting the DEST IP ADDR field to **150.006.000.000** sends messages to all collection facilities in that network (see Figure 3-7).

"HOST" Destination Interface IP Address Assignments

```
5ESS SWITCH
RECENT CHANGE 33.3
(5989)
INTERNET PROTOCOL (IP) ROUTING TO INTERFACE

*1. DEST IP ADDR
150.005.000.002

*6. INTERFACE NAME CALEA BRI-1
7. NET OR HOST HOST
#8. IP SUBNET MASK
#13. GATEWAY IP ADDR
150.005.000.001
18. ROUTE METRIC
1
```

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

NOTE: Setting the DEST IP ADDR field to **150.005.000.002** and the NET OR HOST field to **HOST** sends the messages to the "host" only (see Figure 3-7). The host then assumes responsibility for routing the messages to the LEAs networked to it; unless, however, the host is itself the LEA collection facility.

3.8.5 PROCEDURE FOR VERIFYING IP ADDRESS CONNECTIONS

3.8.5.1 PURPOSE

Execute the PING command to verify the connection established between the LEA and the switch. The PING command is also used to check all PH and SMP IP addresses assigned within the 5ESS® switch from either the SMP subnet or the PH subnet.

3.8.5.2 PLANNING

The PING command can be executed any time a switch-to-LEA connection needs to be checked (for example, a new IP address has been assigned to a law enforcement agency collection facility). Refer to the command and report manual pages in Chapter 6 for complete details on command line options.

3.8.5.3 LIMITATIONS

The following two limitations apply to this procedure:

- (1) Ping cannot be executed between IP addresses on the same SM.
- (2) A Gateway IP address (found on RC/V view 33.2) cannot be pinged.

3.8.5.4 REQUIRED CONDITIONS AND TOOLS

The IP address of the destination to be "pinged" must be known. The PING command may be executed from any terminal allowing input commands.

3.8.5.5 PROCEDURE

NOTE: The equipment numbers and IP addresses used in this procedure are for example only. Refer to the command and report manual pages in Chapter 6 for complete details on command line options.

(1) Type exc:ping,chng=20-0-0-10,ipdest=172-17-100-32;

```
Response: PF (printout follows)
A successful ping will result in a report such as:

M EXC PING REPLY FROM CHNG=20-0-0-10
PH IMAGE TYPE = PH3 ISDN IMAGE
SOURCE IP = 172.16.2.1
DESTINATION IP = 172.17.100.32
BYTES SENT = 126
TIMEOUT = 5
PING TIME STATUS
1 140 PING SUCCESS
```

Copyright ©2003 Lucent Technologies

PING SUCCESS

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

3 91 PING SUCCESS

A timed-out ping will result in a report such as:

```
M EXC PING REPLY FROM CHNG=20-0-0-10
PH IMAGE TYPE = PH3 ISDN IMAGE
SOURCE IP = 172.16.2.1
DESTINATION IP = 172.17.100.32
BYTES SENT = 126
TIMEOUT = 5
PING TIME STATUS
1 5002 PING TIMEOUT
2 5099 PING TIMEOUT
3 5098 PING TIMEOUT
```

(2) If the PING was unsuccessful, then check the IP address and retry the ping command. If the destination IP address is correct, then there may be a network problem with the destination machine. Also, try "pinging" portions of the network. For example, try pinging from an SMP to a delivery PH, from a delivery PH to a router, and from a router to a LEA collection box.

If the PING was successful, then this procedure is complete.

STOP. YOU HAVE COMPLETED THIS PROCEDURE.

3.8.6 PROCEDURE FOR VERIFYING IP ROUTE TABLE ENTRIES

3.8.6.1 PURPOSE

This procedure is used to verify the routes in the PNiproute table on a given switching module (SM) or channel group (CHNG).

3.8.6.2 PLANNING

The OP:TCPIP:RTDMP command can be executed any time an IP route entry needs to be checked (for example, after a recent change addition, change, or delete). Refer to the command and report manual pages in Chapter 6 for complete details on command line options.

3.8.6.3 REQUIRED CONDITIONS AND TOOLS

The OP:TCPIP:RTDMP command may be executed from any terminal allowing input commands.

3.8.6.4 PROCEDURE

- **NOTE:** The equipment numbers and IP addresses used in this procedure are for example only. Refer to the command and report manual pages in Chapter 6 for complete details on command line options.
- **NOTE:** Route Metrics of 1 to 15 are reachable whereas a route metric of 16 is considered unreachable
- **NOTE:** The basic usage of OP:TCPIP:RTDMP is to determine if the SMP or PH is capable of reaching the destination IP address or Subnet. One would do this by verifying that the destination is found as a route entry with a reachable Route Metric for every SMP and PH along the socket path through the

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

switch.

(1) Type op:tcpip:rtdmp,sm=2;

Response: PF (printout follows)

A successful route dump will result in a report such as:

M OP TCPIP RTDMP ROUTE TABLE DUMP FOR SM=2 PAGE 1 OF 1 PH IMAGE TYPE = NULL IMAGE

ROUTE	DESTINATION	N DESTINATION	GATEWAY
NUMBE:	R IP ADDR	IP MASK	IP ADDR
0	172.16.32.0	255.255.255.0	172.16.32.
1	172.16.1.0	255.255.255.0	172.16.1.1
2	172.16.3.0	255.255.255.0	172.16.32.3
6	172,16.2.0	255.255.255.0	172.16.32.2
ROUTE	INTERFACE	NEXT ROUTE	PREVIOUS
METRI	C NUMBER	PTR	ROUTE PTR
1	0	H'ffffffff	H'ffffffff
1	1	H'fffffff	H'fffffff
2	0	H'fffffff	H'fffffff
2	0	H'fffffff	H'ffffffff

(2) Unsuccessful system responses include NG and NO.

NG means "No good." The message was not accepted because the SM is isolated or the equipment does not exist. Check the equipment number in the input command and retry the input command.

NO is output when the feature not available. The requested action failed because the feature required to process the request is not present in the module.

If the route dump was successful, inspect the output. Based on the output, if more changes are required to the route table, then add, delete, or change routes via recent change. Re-execute this procedure to verify any additional changes made to the routing table. If the information is as expected, then this procedure is complete.

STOP. YOU HAVE COMPLETED THIS PROCEDURE.

3.8.7 LOCKING DOWN CALEA

Once an IP interface has been configured correctly on views 33.2 and 33.3, the CALEA IN USE field on view 33.2 can be set to "Y". This blocks certain recent change actions which could cause a surveillance to fail, such as deleting the PVC, or moving the OE to another SM. Surveillance-impacting recent change attempts result in a warning message alerting the switch personnel of the impact.

For surveillance-impacting recent changes to be done, the *5ESS*[®] switch Administrator must contact the Surveillance Administrator, who then unblocks Recent Change activity. The switch administrator then sets the CALEA IN USE field to "N", makes the necessary changes, then sets the CALEA IN USE field back to "Y". Once the switch administrator has completed the necessary changes, the Surveillance Administrator again changes a Recent Change field to block further surveillance-impacting recent changes.

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

3.8.8 PROCEDURE FOR TURNING OFF THE TPKT HEADER

3.8.8.1 PURPOSE

This procedure is used to exclude the TPKT header when transmitting CDC messages. Transmission of PDC message remains unchanged.

The TPKT header is required for PDC messages because it is the only indicator of the size of the X.25 packet to follow, but is redundant for CDC messages because the ASN.1 encoded also provides a length indication. Some LEA collection facilities cannot interpret the CDC message's TPKT information and require that the TPKT information be removed for CDC messages. Option feature ID 985 provides that capability.

3.8.8.2 PLANNING

By default, the TPKT header is included in all CDC messages. Prior to activating this feature, verify that all LEA collection facilities interfacing with the office are operating correctly. Contact your office's Surveillance Administrator, requesting that the OP:CDCTEST command be executed for each LEA collection facility linked to the office before executing this procedure.

Once the Option ID is activated, contact your office's Surveillance Administrator, requesting that the OP:CDCTEST command be executed again for each LEA collection facility linked to ensure that the interface is still working properly and that there are no CDC message errors.

3.8.8.3 REQUIRED CONDITIONS

The switch must be running a 5E14 or 5E15 software release with the CALEA-Core feature software.

3.8.8.4 REQUIRED TOOLS

A non-CALEA Recent Change terminal is required for accessing the general Recent Change database.

3.8.8.5 PROCEDURE

- (1) Via the RC/V terminal, access view 8.31, OPTIONED FEATURES.
- (2) Enter 'u' for update mode.
- (3) Populate the following fields:

FIELD	VALUES
FEATURE ID	985
MODULE	OFC
ACTIVE	Υ

Leave all remaining fields blank.

- (4) Enter 'u' to update the form.
- (5) Notify the Surveillance Administrator that this procedure has been completed and that the OP:CDCTEST command needs to be executed again for each LEA collection facility connected to the office.

If any of the Surveillance Administrator's OP:CDCTEST commands return with CDC message errors,

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

then Option ID 985 must be turned off by changing the "ACTIVE" field back to "N".

3.8.9 PROCEDURE FOR ACTIVATING AND DEACTIVATING CALEA SECURITY ENHANCEMENT

3.8.9.1 PURPOSE

This procedure is used to activate/de-activate the CALEA Security Enhancement which provides an extra layer of security which will prevent intentional or unintentional excessive TCP/IP datagrams/messages from adversely affecting the 5ESS[®] switch performance.

If the LEA managed TCP/IP network elements are breached because of a flood of messages to the 5ESS® switch via the Call Data Channel (CDC)/Packet Data Channel (PDC) Permanent Packet B-channel (PPB) can disrupt the operation of the 5ESS® switch. Each message received over the CDC/PDC channel requires switch resources on the SM and PH to be used. If these messages arrive at an excessive or unexpected rate, a larger than normal amount of resources will be used to process these messages thus leaving fewer resources for other switch activities.

3.8.9.2 RESOLUTION and ENHANCEMENTS

With SFID 628 and OFID 708 active, the switch will operate as follows:

When an IP datagram is received from an external interface used by CALEA feature, the IP datagram shall be ignored unless it meets the following criteria:

- The source IP address of the received datagram must have a defined external return route (such as, be defined on RCV 33.3 [IP Routing to Interface]).
- The IP datagram is not a datagram fragment.
- The external interface PVC is used for CALEA (RCV 33.2 [IP Interface Assignment] field CALEA IN USE is Yes).

If the arrival rate of the IP datagram is more than 5 datagrams per 10 second period, the received IP datagram is ignored unless one of the following criteria is meet:

- The IP datagram TCP segment has no data and the CODE BITS in the TCP header are set as one of the following:
 - * ACK
 - * FIN
 - * RST
 - * SYN + ACK
- * FIN + ACK
- The IP datagram contains an ICMP message that is neither an ECHO REQUEST nor ECHO REPLY.

When an IP datagram is determined to be ignored, the following actions will be taken:

- The "ignored" IP datagram is dropped at the IP interface PH where it was received.
- On the CALEA SAS ROP, a CALEA SAS ERROR is logged with ERROR

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

TYPE of one of the following:

- * Invalid IP route
- * IP datagram fragment received
- * Too many IP datagrams received
- The IP interface's X.25 PVC within an HDLC channel will be reported as "overrun". The "overrun" threshold is 3 within 5 minutes. Upon exceeding the threshold, the channel is automatically removed from service and automatically restored to service within 5 minutes. While the PVC is OOS, any CDC or PDC message will be dropped due to the socket being OOS.

3.8.9.3 REQUIRED CONDITIONS

- SFID 509 (CALEA) is active in the office (RCV 8.22)
- IP interface is assigned and active (RCV 33.2 IP Interface Assignment field CALEA IN USE is Y)
- IP interface resides on a PH (Protocol Handler) with image PH3C, PH4A, or PH4G.
- SFID 628 has been purchased and activated.

3.8.9.4 PROCEDURE

To activate the CALEA Security Enhancement:

- (1) Via the RC/V terminal, access view 8.31, OPTIONED FEATURES.
- (2) Enter u for update mode.
- (3) Populate the following fields:

FIELD	VALUES
FEATURE ID	708
MODULE	OFC
ACTIVE	Y

Leave all remaining fields blank.

(4) Enter u to update the form.

To deactivate the CALEA Security Enhancement:

- (1) Via the RC/V terminal, access view 8.31, OPTIONED FEATURES.
- (2) Enter u for update mode.
- (3) Populate the following fields:

FIELD	VALUES
FEATURE ID	708
MODULE	OFC

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

ACTIVE N

Leave all remaining fields blank.

(4) Enter u to update the form.

STOP. YOU HAVE COMPLETED THIS PROCEDURE.

3.9 CCC PROVISIONING

3.9.1 OVERVIEW

The CCC trunks (supported with a DFI-XT, DFI-2XT, DNU-S, or OIU) are outgoing digital trunks using no signaling. All CCCs must be provisioned on a single SM (the "delivery" SM). Local trunk hunting will be used for all CCCs so that the route request does not have to go to the CMP for processing. Call Content Channels (CCCs) are used to deliver call content from the subject's switch or Intercept Access Point (IAP) to up to 5 Law Enforcement Agencies (LEA). A CCC dedicated trunk circuit pair has only one intercept subject assigned to it. All trunk circuits within a CCC trunk group must terminate to the same LEA collection facility. The transmission characteristics and encoding for each CCC circuit conform to the applicable requirements in TR-NWT-000507, LSSGR Section 7 Transmission. CCC trunks always apply OdB loss to maintain data integrity for circuit-switched data calls. This is acceptable for circuit-switched voice calls because there is no echo path.

For a given surveillance, call content will be delivered over dedicated CCC pairs. Dedicated channels are connections that are permanently connected and do not pass through any type of switching matrix. These are sometimes called nailed-up circuits. When the IAP switch needs to deliver circuit-switched call content, it replicates the content from the switching matrix and places a copy onto the appropriate dedicated channel. The 5ESS® switch supports only the separated CCC option where separate channels are used for transmit and receive circuit-switched call content.

Each time that a call content channel is assigned to deliver call content, a message indicating channel identities for the transmit and receive call content is be sent to law enforcement. C-Tone (implemented as a single frequency tone of 480 Hz) may be is applied to a CCC channel when assigned to a surveillance but not connected to an active call. C-Tone is provisioned as either HIGHTONE or NULL (silence) by the Surveillance Administrator in the office, therefore the C-Tone provisioning procedure is outside the scope of this information product. HIGHTONE is not necessary for a surveillance to function.

The trunk class code used for CCCs is PF (Private Facility trunks) with a UCD hunt type. Trunks used to carry call content are the standard DNU/DFI/OIU digital trunks with time multiplexed signals complying with the digital formats given in ANSI T1.107-1988 and the electrical interface shall comply with ANSI T1.102-1987.

NOTE: It is recommended that CCC trunks be clear channel 64kb if ISDN subscriber services are provided by the office.

NOTE: The addition or removal of CCC trunks from a surveillance is not the same as adding or removing trunks from a 5ESS[®] switch. Any assignment or unassingment does not change the physical connection to the LEA.

In 5E16 software release, for DialOut CCC, the connection will be established to a local LEA with POTS or ISDN BRI/PRI termination. The CCC connection can also be established to a remote LEA over an SS7 or MF trunk over the public switched telephone network. In both cases, the CCC connection will not be established

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

until the subject call is intercepted by answering the Destination LEA DN(s). The following CCC delivery modes are supported:

- Separated Mode: Two dial out call content channels are set up: one for the transmit and one for the receive path. Both transmit and receive CCC will be routed with the same DN and then forwarded to the LEA destination
- Combined Mode: Only one call content channel is allocated to carry both transmit and receive call
 content for all call types.
- Mixed Mode: If the Bearer Capability (BC) of the monitored call is "speech" or "3.1 audio", the combined
 mode is used. For any other BC types, separate mode is used.

Instead of provisioning a CALEA TG on RC/V 5.1, an anlog line is provisioning (local LEA DN) with Remote Call Forwarding (RFC) active to an INVALID DN, such as 0, so direct calls to the line are not forwarded.

CALEA CCC trunks are provisioned as follows:

- (1) Select the Delivery SM (view 8.1).
- (2) Assign new CALEA trunk group with a trunk class of "PF" and a hunt type of UCD. (view 5.1)
- (3) Define CALEA trunk members (view 5.5).

NOTE: For Digital Line Trunk Unit (DLTU), Digital Facilities Interface (DFI), Optical Interface Unit (OIU), and Digital Network Unit, the standard procedures shall be followed.

3.9.2 PREREQUISITE CONDITIONS

The prerequisites should have been performed in this order:

- (1) The CALEA SFID (509) must be activated via Recent Change view 8.22 (NAR non-U.S./U.S. territories only).
- (2) The Surveillance Administrator must have set the FEATURE ACTIVE field to 'Y' and the CTONE field to either 'HIGHTONE' or 'NULL' on Recent Change view C.1.

NOTE: Only the Surveillance Administrator has access to the "C" class of views.

3.9.3 SELECT DELIVERY SM

One SM needs to be specified as a "delivery" SM. Using view 8.1, OFFICE PARAMETERS (MISCELLANEOUS), define the SM number to be used as the delivery SM.

5ESS SWITCH
SCREEN 13 OF 15
RECENT CHANGE 8.1
(5509)
OFFICE PARAMETERS (MISCELLANEOUS)

227. ACCT PROMPT
235. CALEA SM 4

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

228. CARRIER TONE 229. NSC WC ID 230. ORIG NSC 231. TERM NSC 232. TEST CALL TNSC		 ADMIN ACCESS TD LIMIT	N 50
INCREASED TGN 233. MAX TGN 234. MAX RTIDX	a.		

3.9.4 PROVISION CALEA TRUNK GROUP

The following fields on view 5.1 must be populated as:

TRK DIR must be OUTGO

HUNT TYPE must be **UCD** or **LGUCD**

OUTPLS must be **NOSIGNAL**

INPLS must be NOSIGNAL

DCS TRK must be N

ATTTN must be 0

TRKCLASS must be PF

MODULE must be equal to CALEA SM on view 8.1.

NOTE: The SM specified on view 8.1 will be cross-checked with the MODULE field on view 5.1.

CALEA must be Y

NOTE: A CALEA trunk group cannot have both CALEA and non-CALEA members. If yes ("Y"), then all trunk members in that trunk group are for CALEA use. If no ("N"), then the trunk and its members are not for CALEA use.

NOTE: A trunk group defined as a CALEA trunk group ("Y") can not be changed to a non-CALEA trunk group. In other words, the CALEA field can not be updated from "Y" to "N"). The insert and delete operations must be used to create and remove CALEA trunk groups. A CALEA trunk group can not be deleted while trunk members are assigned to that group.

5ESS SWITCH
SCREEN 1 OF 13 RECENT CHANGE 5.1
(5200,5202,5213) TRUNK GROUP

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

(*)1.	TGN	660	13.	CARRIER ID		25.	BRCS	N
(*)2.	TRUNK CHAR		14.	FEAT GRP	_	26.	FREE ANS	N
(*)3.	FEND CLLI		15.	INC TND WNK	N	27.	PRIVACY	N
4.	TRK CHAR		16.	ATTTN	0	28.	INSEP	0
5.	FAR CLLI		17.	TERA RCVY	RPT	29.	MODULE	4
6.	RMK	CALEA	18.	IAPT	Y			
#7.	TRK DIR	OUTGO	19.	CALLMON INH	Y		VERIFY ON	ΙLΥ
#8.	HUNT TYPE	UCD	20.	INPLS	NOSIGNAL		GRP SIZ	8
9.	SCR	0	21.	OUTPLS	NOSIGNAL		ACT SIZ	8
10.	GLARE ACTION		22.	FAR END NPA	816		SATELLITE	N
11.	DAS	0	23.	GL ANN TGN	0		TERM SFG	N
#12	TRK CLASS	DF	21	DRY/CDF ID	O.			

Enter Insert, Change, Validate, screen#, or Print:

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

(5200,5202,5213)				TRUNK GI	ROUP
241. API CODE			El	ND OFFICE NO	DDAL
MISCELLANEOUS	3	248.	EON	BILLING DN	
242. EON MC RI		249.	EON	NBR PLAN	
243. RERTE Q INH	N	250.	EON	PRIVACY	N
244. CALEA	Y	251.	EON	PREFIX NPA	N
245. REL LINK INIT	N	252.	CNA	MOD 164	N
246. SS7 ISUP OPER	N				
247. SEND LD CIC	N				

Enter Insert, Change, Validate, screen#, or Print:

NOTE: CALEA trunks must be restored to service, by executing the RST:TRK command, prior to any surveillances being assigned. RST:TRK can be used to restore individual trunks, a range of trunk members in a group, or a complete trunk group.

3.9.5 PROVISION CALEA TRUNK MEMBERS

After assigning trunk groups on view 5.1, TRUNK GROUP, use view 5.5, TRUNK MEMBER, to define each member of a trunk group.

CONDITIONS:

 ${f TGN}$ must specify a trunk group which has ${f CALEA}$ set to ${f Y}$.

OUT START DIAL must be blank or NULL.

OE for all CCCs (must be assigned to DFI, DNU-S, or OIU equipment) should be on the Delivery SM.

An even number of trunk members must be maintained.

CCCs for a specific case must be allocated in one contiguous block, therefore space between blocks of CCCs should be maintained to allow for future growth.

When a trunk is created in a CALEA trunk group, the **CALEA STATE** field will be set to **CRES**. Once the trunk member is assigned to a case by the Surveillance Administrator, the **CALEA STATE** field is set to **CTONE**. A trunk member that has CALEA status of CTONE (C-Tone applied) cannot be deleted. CTONE indicates that there is an active surveillance on this trunk member.

5ESS SWITCH

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

SCREEN (5204)	N 1 OF 6		İ	RECENT CHANGE TRUNK MEMBEI	
*1.	TGN	660	23.	HOLD BUSY	N
*2.	MEMB NBR	0	24.	SATELLITE	N
(*)9.	QTY	1	25.	TRF SAMPLE	N
#12.	OE	D 00410125	26.	CAMOPTLK TEN	V-2-2-2
15.	CLCI TRK ID		27.	CAMOPTLK DEN	
16.	TRANS CLASS	2	28.	CAMOPTLK NEN	
17.	SUPV	EM2	29.	ACTN	R
18.	IDLE STATE	ON	30.	OTODPN1	
19.	IN START DIAL	NONE	31.	OTODPN2	
20.	OUT START DIAL	NONE	32.	SLC OTODPN3	
21.	STOPGO	N	33.	SLC OTODPN4	<u> </u>
22.	CGA SPN		34.	MAXCALLS	

Enter Review, Change-insert, Validate, screen#, or Print:

```
SCREEN 5 OF 6

(5204)

PACKET SWITCHING X75 ONLY UTILITY INDICATORS

121. TDI BEFORE

122. TDI AFTER

128. IN RPOA AFTER

129. OUT RPOA BEFORE

124. TDS AFTER

130. OUT RPOA AFTER

125. TARIFF BEFORE

131. RPOA DEL SEND

126. TARIFF AFTER

CALEA

EEC OPTION

EEC ACTIVE

CALEA

CALE
```

NOTE: CALEA trunks must be restored to service, by executing the RST:TRK command, prior to any surveillances being assigned. RST:TRK can be used to restore individual trunks, a range of trunk members in a group, or a complete trunk group.

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

3.9.6 FLOW DIAGRAMS - ADDING/DELETING A TRUNK GROUP AND MEMBERS

3.9.6.1 ADDING A TRUNK GROUP AND MEMBERS

This flowchart illustrates the assignment of a trunk group and its associated members. When a new group is defined, assign at least one member even if it is a "dummy." Trunk members may be changed individually or on a group basis.

NOTE: Caution must be exercised when changing members as a whole group, because certain field values may result in default values being assigned that are undesired.

• Use view 5.3 to define and insert transmission class data, if required.

NOTE: Switch software will automatically apply 0dB loss on CCC trunks, regardless of the selected transmission class.

- . Use view 5.1 to assign a trunk group to the database.
- Use view 5.5 to add member number(s) to the group.
- Execute RST:TRK command to restore CALEA trunks to service. RST:TRK can be used to restore
 individual trunks, a range of trunk members in a group, or a complete trunk group.

Refer to Figures 3-8 and 3-9.

Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003 START TYPE I FOR INSERT TYPE IN TRANSCLASS VIEW 5.3 INSERTED INTO DATABASE AND TRANSMISSION CLASS IS DEFINED TRUNK MENUS IS DEFINED DISPLAYED V NO 10 TYPE IN 5.5 i TY PE IN 5.3 i TYPE IN VIEW 5.5 DISPLAYED VIEW 5.3 DISPLAYED WITH CURSOR AT FIRST WITH CURSOR AT FIRST KEY FIELD KEY - TRANS CLASS TRUNK MENUS IS KEY ATTRIBUTE. KEYS = TGN & MEMB NBR & QTY DISPLAYED TYPE IN 5.1 i 3 COMPLETE COMPLETE REMAINDER VIEW 5.1 DISPLAYED VIEW 5.3 FROM OFFICE RECORDS WITH CURSOR AT FIRST OFFICE RECORDS BRCS - N. BAUTO - N KEY ATTRIBUTE. KEY - TGN INSERT PROMPT DISPLAYED INSERT PROMPT DISPLAYED. COMPLETE REMAINDER 12 TYPE IN AN I FOR OF VIEW 5.1 FROM OFFICE RECORDS. NOTE THAT SCREEN 8 IS FOR VIEW 5.5 INSERTED UPDATING ONLY. INTO DATABASE AND INSERT PROMPT NEW VIEW 5.5 DISPLAYED. DISPLAYED. B TYPE IN AN I FOR TO DISPLAY 2 VIEW 5.1 INSERTED INTO DATABASE AND NEW VIEW 5.1 DISPLAYED

Figure 3-8 Example of Adding a New Trunk Group and Members (Display 1 of 2)

Copyright ©2003 Lucent Technologies

Provisioning, Troubleshooting, and Maintenance

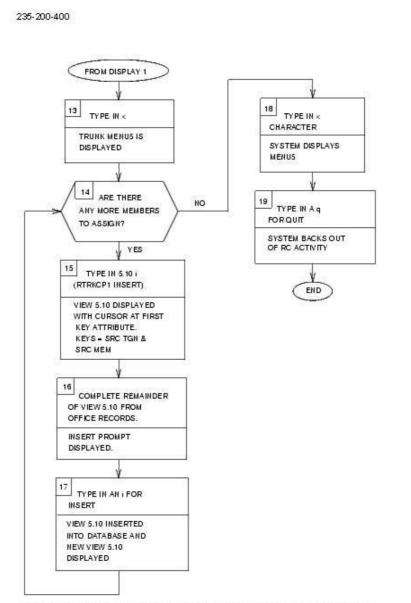


Figure 3-9 Example of Adding a New Trunk Group and Members (Display 2 of 2)

3.9.6.2 DELETING A TRUNK GROUP AND MEMBERS

Copyright @2003 Lucent Technologies

Page 125

June 2003

Lawfully Authorized Electronic Surveillance / 5ESS (Part 4) Provisioning, Troubleshooting, and Maintenance

235-200-400 June 2003

This flowchart demonstrates the deletion of all members of a trunk group, followed by deletion of the trunk group. View 5.5 is used to delete the members and view 5.1 is used to delete the group.

NOTE: The example assumes the use of "1" for the QTY field on view 5.5. In certain circumstances, this field can be used to delete multiple members with one Recent Change operation.

Refer to Figure 3-10

Lawfully Authorized Electronic Surveillance / 5ESS (Part 4)

Provisioning, Troubleshooting, and Maintenance

190.790.790.790.790.790.

235-200-400

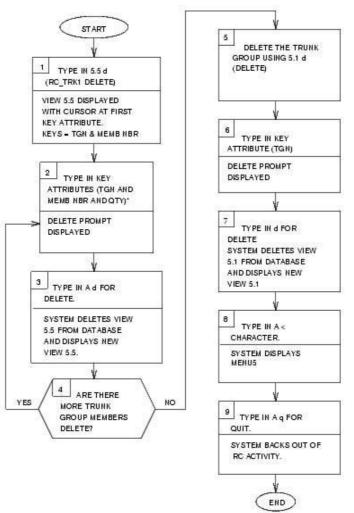


Figure 3-10 Example of Deleting a Member From a Trunk Group Example of Deleting a Member From a Trunk Group

3.10 INTERACTION BETWEEN RECENT CHANGE VIEWS

Figure 3-11 shows the interactions between the new 33.2 and 33.3 Recent Change views and the existing $\frac{1}{2}$

Copyright @2003 Lucent Technologies

Page 127

June 2003

Table Name

Traffic Operator Position System Domestic Credit Card Check Digit Table

Functional Description of Table CHKDIGIT

Table CHKDIGIT performs a special digit check that compares one of the last four digits of the 14–digit domestic credit card or portable special billing number against a designated check digit in the number. The last four digits are of the format XXXX, representing a Personal Identification Number (PIN) with any one of the four digits designated a check digit (specified in field CHKDGPOS).

Each year, the seventh, eighth, ninth, or tenth digit is designated as the check digit and a number (0 to 9) is assigned to each of the numerics 0 to 9 to which the check digit may be equal. A valid credit card or special billing number is one that has the correct value in XXXX to match the value of the check digit. When the match is found during the special digit check the DMS Traffic Operator Position System (TOPS) proceeds to the next check.

Conversely, a mismatch indicates an invalid domestic credit card or special billing number. If this occurs, the credit card number shown on the TOPS flashes off and on to notify the TOPS operator of the mismatch.

As of BCS9, two other tables (RAOCHECK and NPACHECK) are used to define RAOs and Numbering Plan Areas (NPA) to be checked using table CHKDIGIT. For related information, refer to table HOTLIST (TOPS Domestic Hot List).

Datafill Sequence & Size

There is no requirement to datafill other tables prior to table CHKDIGIT. Table size is 0 to 2 tuples.

Datafill

The following table describes datafill for table CHKDIGIT:

Table CHKDIGIT Field Descriptions						
Field	Subfield	Entry	Explanation and Action			
PERIOD		PRESENT OR PREVIOUS	Period Enter PRESENT or PREVIOUS to specify the year to which the special digit check applies. At the end of each year, transfer the			
			information in the PRESENT record to the PREVIOUS record, then enter the information that applies to the new year in the PRESENT record.			
VERDGPOS		7 to 10	Verification Digit Position Enter the position of the verification digit.			

CHKDGPOS	11 to 14	Check Digit Position Enter the position of the check digit.
VALO to VAL9	0 to 9	Value Enter in fields VALO to VALO the value that the Nth digit of the credit card or special billing number must be when the value of the check digit is equal to 0 to 9, where 'n' is the entry in field CHKDGPOS.

-End-

Datafill Example

The following example MAP display shows sample datafill for table CHKDIGIT.

The 14th digit of the present year credit card or special billing number must be equal to 2, 1, 5, 6, 0, 9, 7, 4, 3, or 8 when the 7th digit of the present year credit card number is equal to 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9 respectively.

The 11th of the 14-digit previous year credit card or special billing number must be equal to 5, 9, 2, 7, 1, 4, 0, 6, 8, or 3 when the 9th digit of the previous year credit card number is equal to 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9 respectively.

Note: 41444453333338 is an invalid present year credit card number because its 7th digit is equal to 5, and in PRESENT period, the entry in field CHKDGPOS is 14, indicating that the last digit of the credit card number is the check digit and its value (8) should match the value of VAL5, which is 9.

PERIOD	VERDGPOS	CHKDGPOS	VAL0	VAL1	VAL2	VAL3	VAL4	VAL5	VAL6	VAL7	VAL8	VAL9
PRESENT	7	14	2	1	5	6	0	9	7	4	3	8
PREVIOUS	9	11	5	9	2	7	1	4	0	6	8	3

Nortel DMS-100 Circuit Digit Table (CKTDIGIT)

Table Name

Circuit Digit Table

Functional Description of Table CKTDIGIT

Table CKTDIGIT allows the end–office to map a particular $0 \ ZZ$ (Domestic – $0 \ ZZ - XXX$ number format), $1 \ NX$ (International – $1 \ NX - XXX - CCC$ number format) code (in field CKTDIGS) into a Transit Network Selector (TNS) (in field CKT_CODE) when originating an Equal Access (EA) call to an Access Tandem (AT) over Signaling System #7 (SS7) trunking. This table is also used to allow the AT to map the received TNS into a particular $0 \ ZZ$ or $1 \ NX$ code. The AT extracts field CARRIER_NAMES from table OCCINFO (Equal Access Other Common Carrier Information) using the XXX digits received in the TNS.

Calls arriving at an AT on SS7 trunks are identified as EA calls by the presence of the TNS parameter. The TNS parameter contains the equivalent of the Multifrequency (MF) EA 0ZZ-XXX or 1N/NZ-XXX digits.

In the AT switch, the combination of the resultant 0ZZ or 1NX with the XXX digits (and CCC or 01R for international carrier calls) from the TNS is provided to pretranslations. The pretranslation either results in an Interexchange Carrier (IEC) route selection or the activation of a Service Switching Point (SSP) function such as an Enhanced 800 Service (E800) database query.

Datafill Sequence & Size

The following tables must be datafilled before table CKTDIGIT:

- OCCNAME (Equal Access List of Other Common Carrier Names)
- OCCINFO (Equal Access Other Common Carrier Information)

An entry can be deleted from table CKTDIGIT at any time without special requirements. If the carrier is deleted from table OCCINFO without deleting it from table CKTDIGITS first, the entry in table CKTDIGIT is automatically deleted. Table size is 0 to 1,780 tuples.

Datafill

The following table describes datafill for table CKTDIGIT:

Table CKTDIGIT Field Descriptions

Field	Subfield	Entry	Explanation and Action
KEY		See Subfields	<pre>Key This field consists of subfields CARRIER_NAMES and CKT_CODE.</pre>
	CARRIER_NAMES	Alphanumeric (1 to 16 characters)	Carrier Names Enter the name of the carrier for equal

	CKT_CODE	1, 2, 8 to 15	Circuit Code At the end-office, enter the circuit code to be included in the TNS optional parameter in an Initial Address Message (IAM). At the AT, enter the circuit code expected in the TNS optional parameter in an IAM received at the switching unit for an EA call from an EA end-office.
CKTDIGS		000 to 999	Circuit Digits Enter the first three digits in the EA signaling digit sequences OZZ-XXX, 1N/NX-XXX-CCC, or 1N/NX-XXX-O1R transmitted on MF trunks. In the AT, these digits are used to single out one of the outgoing circuits in the carrier group identified by the XXX digits.
			Note: The first digit must be 0 or 1. The remaining two digits can be any value from 00 to 99.

-End-

Datafill Example

The following example MAP display shows sample datafill for table CKTDIGIT.

KEY	CKTDIGS
GTE 1	179
GTE 11	099
ITT 1	179
ITT 11	099
SSP 8	088

GBPPR Homebrew Printed Circuit Boards

Overview

This is an article on how to make Printed Circuit Boards (PCB) for electronics project without the need for spending alot of money on expensive transparencies, toner, or by having the board make commercially.

This process may seem complicated at first, and you'll want to study and practice on scrap board material before hand, but it has turned out to work quite well.

No fancy equipment (or software) is required as the PC board pattern will be laid out by hand using hobby store markers and a straight edge. With a little practice, you can make a small PC board in under an hour.

You'll sometimes find scraps of high-quality PC board material at ham radio swapfests for very low cost, but they may be tarnished or dirty from being outside.

Don't let this stop you from purchasing the PC board material, as it's easily cleaned up using common household chemicals and a little elbow grease.

Pictures & Construction Notes



Use a Midwest M1200 3.5-inch snips to cut the PC board to the size you require. These are very nice snips which cost only around \$30. Harbor Freight Tools makes a knock-off for \$10, but the final cut will not be as precise.

Then use Copper Glo and a non-metallic 3M scrub pad to remove any copper oxidation or dirt. Scrub the PC board in a circular pattern after dipping the 3M pad in water. Repeat this process four or five times to each side of the board.

Let the PC board dry under an incandescent lamp or on a hot plate.



Shown above are some of the markers used for the laying out the etch resist pattern. The main layout is done using a Sakura IDenti-Pen which has a dual tip for fine and extra fine lines. These Sakura pens are available at Michaels hobby stores.

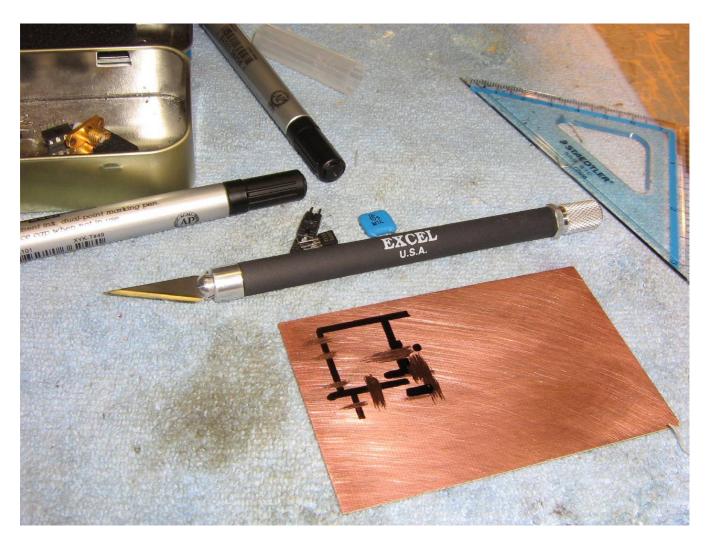
For filling in the larger areas, regular Sharpie markers with the wider tips are used.

Keep multiple IDenti-Pens around and rotate through them as you do the layout. This will keep the tips from drying out.

Straight edges are Staedtler rulers from the hobby store.

Frequently clean the straight edge with denatured alcohol and a paper towel to prevent marker residue from building up and "smearing" onto the PC board pattern.

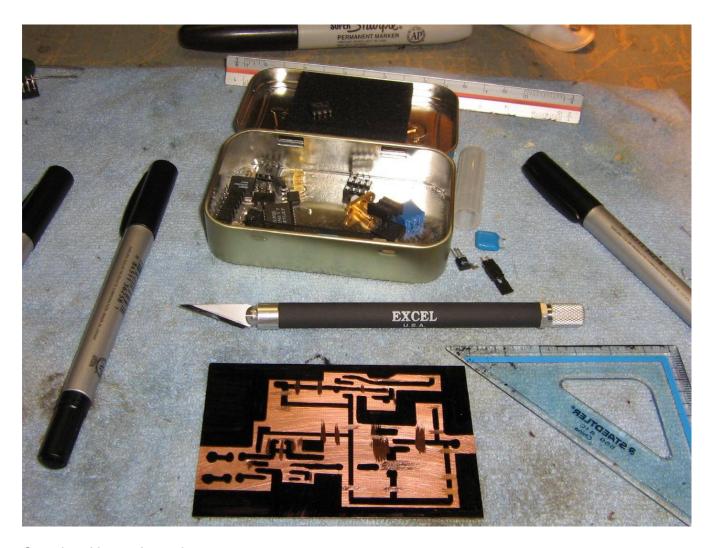
You can also use drafting tape or plastic model pin stripping material from the hobby store to make much more "professional" looking traces.



You may wish to do the circuit layout on paper first to get a general idea of where everything should go.

Then using an IDenti–Pen and straight edge, layout the circuit traces as required. Remember that you are laying down an etch resist and anything covered in marker will *NOT* be etched away.

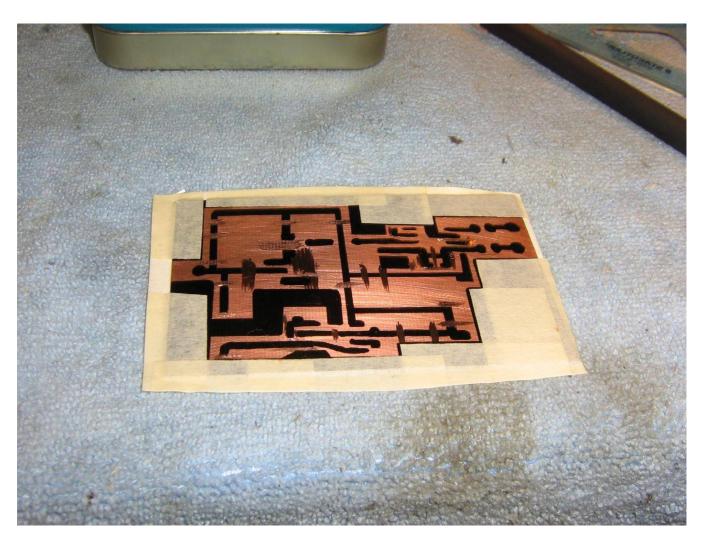
Use an X-acto knife or razor blade to scrap away the marker trace when you need open areas or to correct any mistakes.



Completed layout in marker.

Anything covered in black marker will not be etched away.

To check the spacing of the traces, keep some spare components around and set them on top of the traces.



Mask off some of the larger areas not to be etched and the bottom of the board, if required, using masking tape.

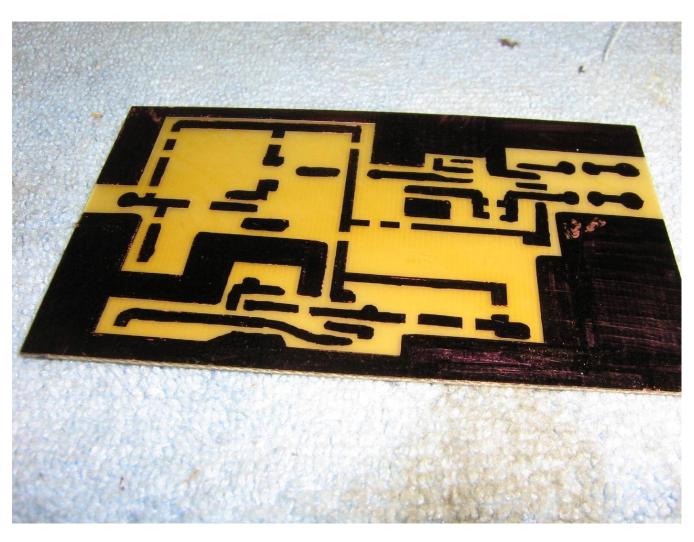
You now want to let the marker ink dry under an incandescent lamp or on a hot plate.



Next is the etching process.

Etch the board in a solution of heated ferric chloride, which is still available at Radio Shack.

The etching tank shown above is/was available from Circuit Specialists.

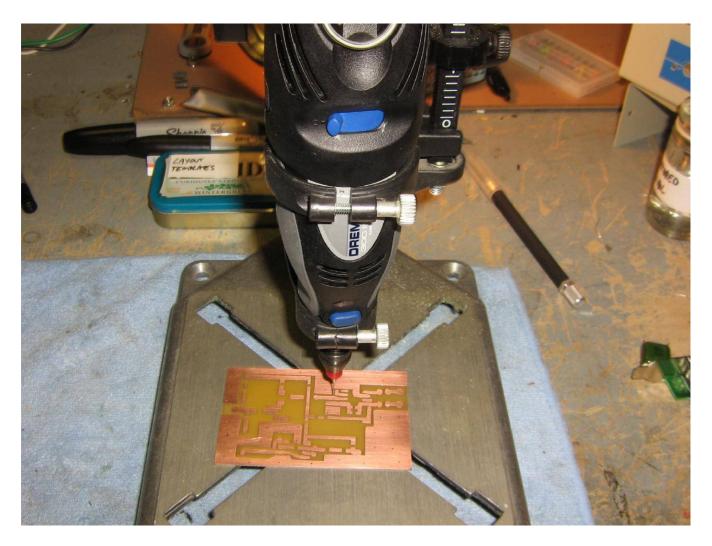


Finished etched PC board.



Clean the remaining etch resist off using denatured alcohol and a non-metallic 3M scrub pad.

Scrub again with Copper Glo and let the board dry under an incandescent lamp or on a hot plate.



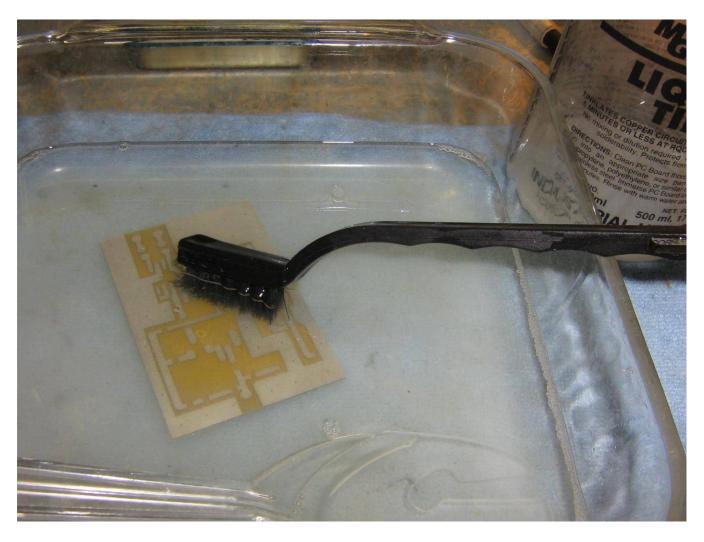
Now it's time to drill the holes for the ground vias. These connect the top and bottom ground planes of the PC board using low–inductance pieces of wires.

Any circuit operating at frequencies higher than audio will require closer spaced ground vias. These vias are also handy for heat dissipation.

To drill the ground via holes, use a 0.22-inch drill bit in a Dremel tool with a drill bit chuck. I keep a Dremel set aside specifically for this drilling purpose to avoid any unwanted "side" wear on the Dremel's bearings.

You'll also want to drill (and file) any other larger holes which may be required.

Scrub the drilled PC board again with Copper Glo and let the board dry under an incandescent lamp or on a hot plate.



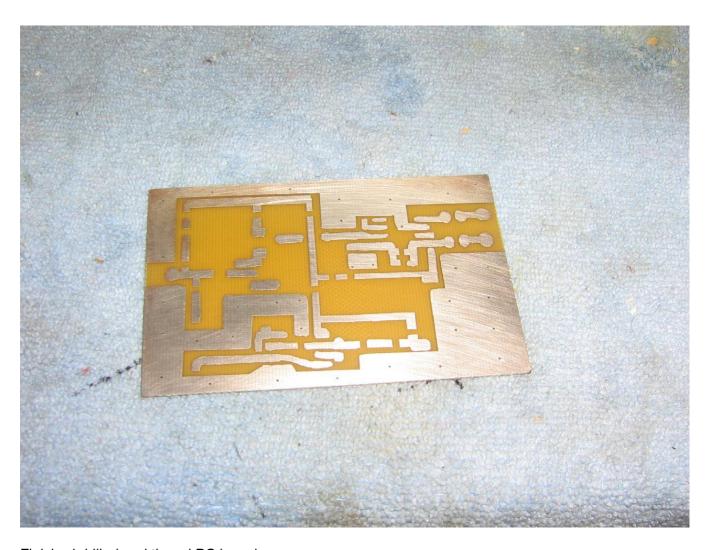
Next is tin plating the PC board, which is optional. This will prevent any exposed copper from oxidizing.

Be sure not to touch the PC board with your bare hands at this point and double check that the board is clean of any dust or debris.

Tin the board using MG Chemicals Liquid Tin placed in a glass pan. Let the PC board soak in the tinning solution for at least five minutes.

Lightly scrub the PC board with a non-metallic brush to coat any places on the tinning solution has trouble on or missed.

Be sure to keep any utensils used for tinning and etching separate!



Finished drilled and tinned PC board.

Rinse the PC board with clean water to remove any remaining tinning solution and then let the board dry under an incandescent lamp or on a hot plate.

Don't scrub the PC board with an abrasive pad from this point on or you'll rub the tin plating off.

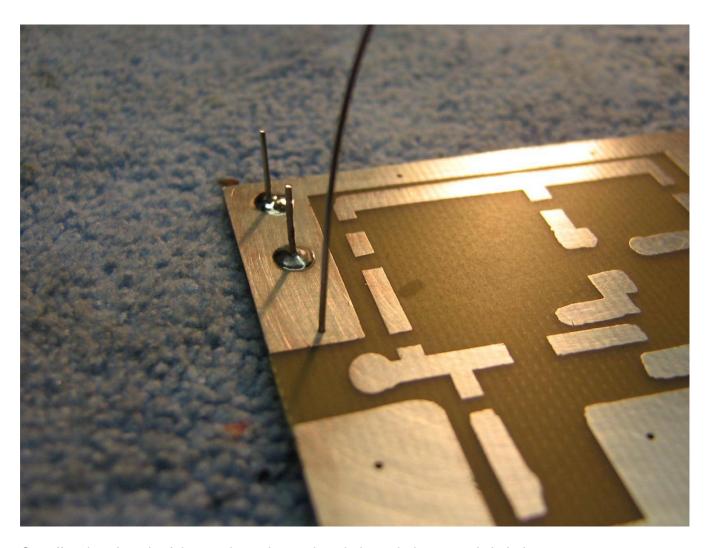
You may wish to "buff" the PC board with a paper towel and a bit of denatured alcohol to prepare it for soldering.



Now it's time to install the ground vias.

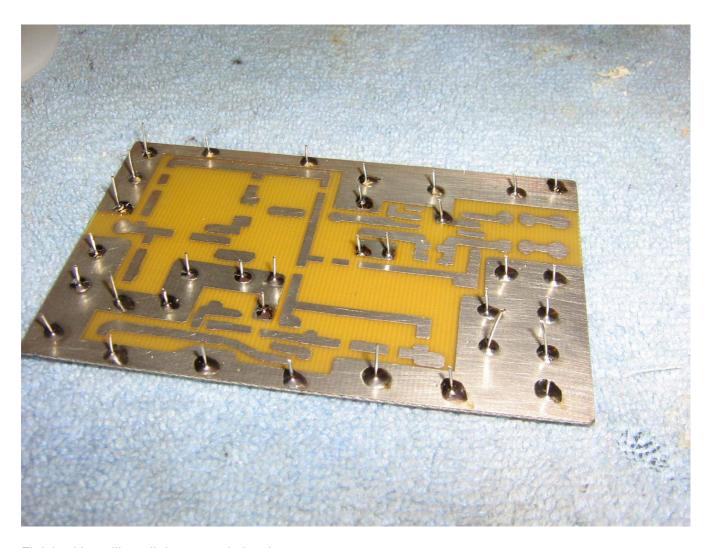
The vias will be made using #24 gauge solid tinned-copper bus wire which is available from Radio Shack (278–1341).

You'll want to use high–quality wire cutters to trim the bus wire. The Xuron Xuro–Shear 2175 is shown above and is available at most hobby stores. The Xuron cutters have a little heavier–duty blade than the Xcelite brand cutters.



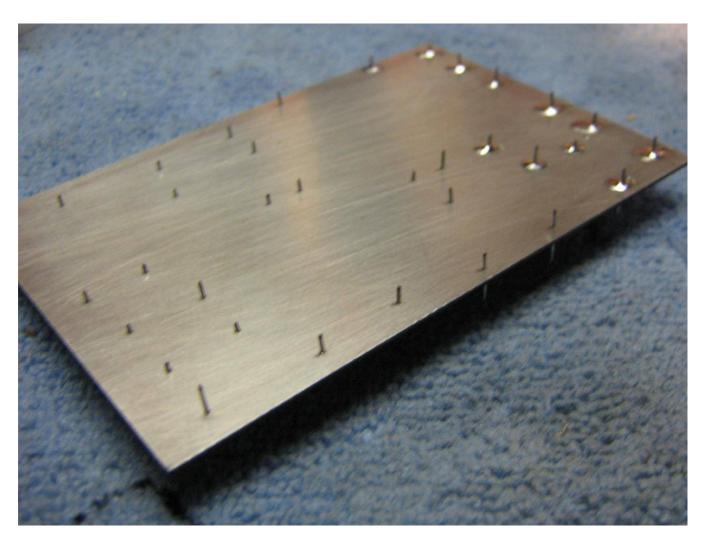
Cut off a short length of the #24 bus wire at place it through the ground via holes.

Solder the wire *only* on the top side of the board at this time. Leave at least a 1/4-inch of the wire sticking up.

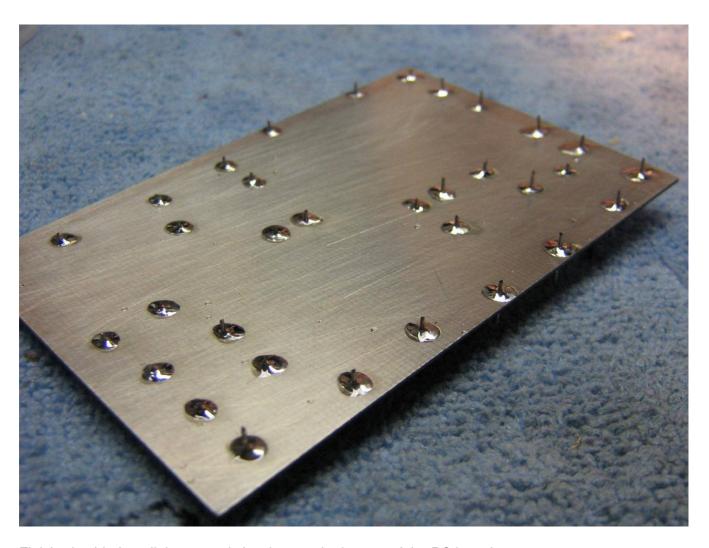


Finished installing all the ground via wires.

Solder is only on top side at this point.



Now flip the PC board over and start soldering the via wires on the bottom of the board.



Finished soldering all the ground via wires on the bottom of the PC board.



Using the wire cutters, trim the ground via wires down at much as possible *only* on the bottom of the PC board.



Next is an optional step, but is highly recommended.

Using the side of the soldering iron's tip, push down the remaining "nub" of the ground via wires so they are flush to the bottom of the PC board.

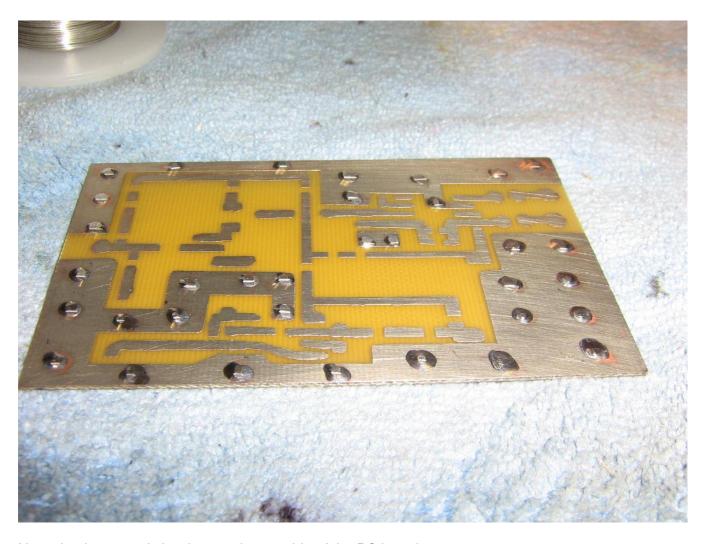
You'll also want to "pool" the solder so the area around the ground via is fairly flat.

This will all take a lot of practice, but the finished boards look really nice.



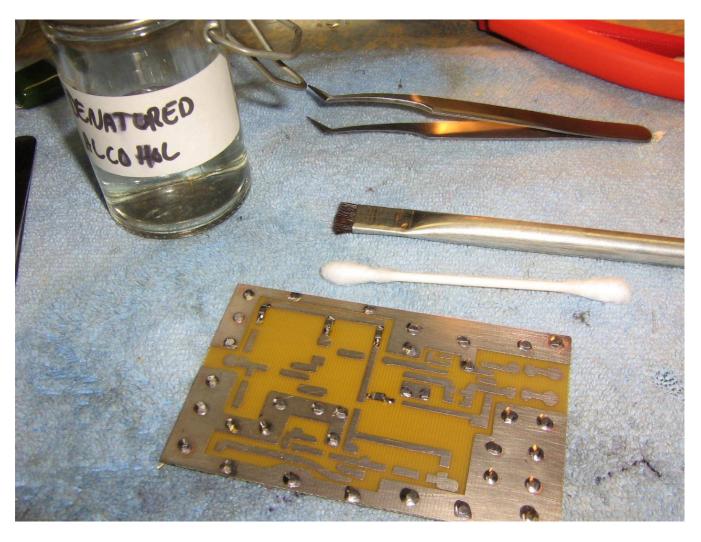
Finished bottom of the PC board.

Clean off any excess solder rosin with denatured alcohol and a non-lint cloth.



Now trim the ground via wires on the top side of the PC board.

Clean off any excess solder rosin with denatured alcohol and a non-lint cloth.



To keep the PC board clean while you are installing components, use a cotton swab or trimmed–down flux brush dipped in denatured alcohol to clean around each component as you solder them onto the PC board.

Sony NTM-910 Baby Monitor Information

Overview

This is the front–panel "color code wheel" to frequency mapping for a Sony NTM–910 900 MHz baby monitor. These fairly advanced 900 MHz baby monitors are starting to show up thrift stores for a low price. They are ideal for use as a simple (wideband) FM receiver in the lower portion of the 902–927 MHz amateur/Part 15 band (execpt 903.6 MHz). It should be possible to replace the receiver's 10.7 MHz IF filters with something a little narrower to help increase the receiver's poor –80 dBm sensitivity. These baby monitors do include an annoying "out–of–range" alarm when they are not receiving a signal, this may require a component–level modification to disable. The receiver includes a handy rechargeable battery pack (Sony BP–TR10). The FCC ID is AK8NTM910.

Frequency (MHz)	Channel	Selector A	Selector B	Selector C
902.2	1	Yellow	Yellow	Yellow
902.3	2	Yellow	Red	Green
902.4	3	Yellow	Green	Red
902.5	4	Green	Red	Yellow
902.6	5	Green	Green	Green
902.7	6	Green	Yellow	Red
902.8	7	Red	Red	Red
902.9	8	Red	Green	Green
903.0	9	Red	Yellow	Yellow
903.1	10	Yellow	Yellow	Red
903.2	11	Yellow	Green	Green
903.3	12	Red	Green	Red
903.4	13	Red	Red	Green
903.5	14	Green	Red	Red
903.7	15	Green	Yellow	Green
903.8	16	Red	Green	Yellow
903.9	17	Yellow	Red	Green
904.0	18	Green	Yellow	Yellow
904.1	19	Yellow	Green	Yellow
904.2	20	Red	Yellow	Red
904.3	21	Red	Red	Yellow
904.4	22	Green	Green	Yellow
904.5	23	Green	Red	Green
904.6	24	Yellow	Yellow	Green
904.7	25	Green	Green	Red
904.8	26	Yellow	Red	Yellow
904.9	27	Red	Yellow	Green

Simple Phone Line Tap

Overview

This is a simple audio interface circuit which will allow an Olympus digital voice recorder (with the "voice activation" option) to automatically record any audio on a standard analog telephone line.

The audio interface circuit can be made from the parts found in old modems and cordless phones. The main component in the interface circuit is a 600 ohm to 600 ohm isolation transformer. An isolation transformer needs to be used because telephone lines are balanced (they have no reference ground) and in order to properly attach to them, you need an isolation transformer to provide a reference ground on your equipment side.

If you've ever heard a loud "hum" on a telephone call, it's because somewhere along the path the telephone line became unbalanced, and this reduced the ability of the line to reject any electrical interference.

The audio is coupled into the interface circuit via two series, non–polarized $0.1~\mu F$ capacitors (with at least a 100 volt rating) and two series 4.7 kohm resistors. The capacitors block the -48~VDC on the phone line and prevent the target phone from going "off hook." The resistors help to bump up the input impedance of the circuit a bit, and also provide high–pass filtering for any signals below 300 Hz.

The audio interface needs to provide a high impedance in order to prevent the phone line from being loaded down to a point in which the audio quality is reduced. A *proper* high–impedance (10 megaohm or higher) interface using FETs is needed only if you're tapping a data line or trying to avoid a TSCM sweep.

On the secondary side of the isolation transformer, two back-to-back 1N4728 3.3 volt Zener diodes clamp the 90 volt ring signal (or any other high voltage spikes) to something the digital voice recorder can handle.

The final audio output is taken via the wiper on a 10 kohm potentiometer which goes to the "microphone" input on an Olympus digital voice recorder.

You may need to bypass the audio input to the recorder with a 1,000 pF capacitor if you receive any interference from AM radio stations.

Note that tapping an analog voice signal provide via a DSL line requires the use of a low-pass filter ahead of this interface circuit. These DSL filters are commercially available.

It's also possible to inject audio into a phone line by just operating the circuit in reverse, injecting your audio in via the volume potentiometer.

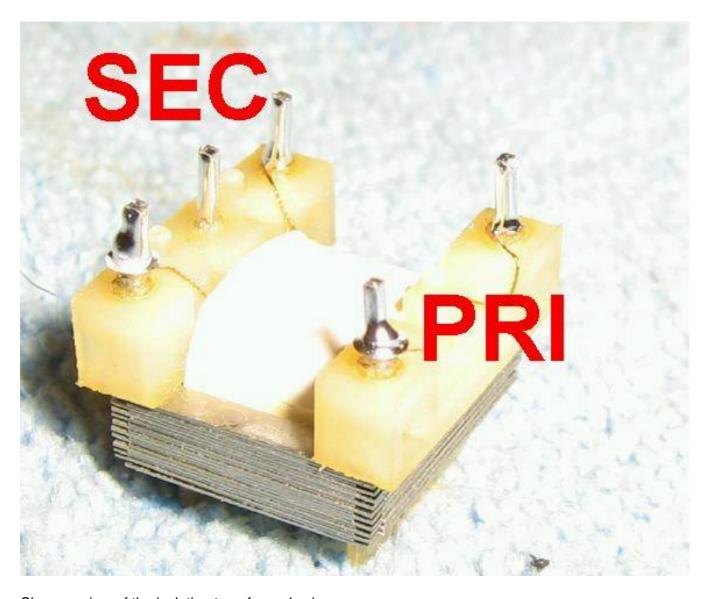
Pictures & Construction Notes



Overview of the circuit board from an old U.S. Robotics modem.

The circled component is the 600 ohm to 600 ohm isolation transformer. These transformers will all be physically different, but will have similar operating characteristics.

Remove the transformer by using a heat gun on the bottom side of the circuit board.



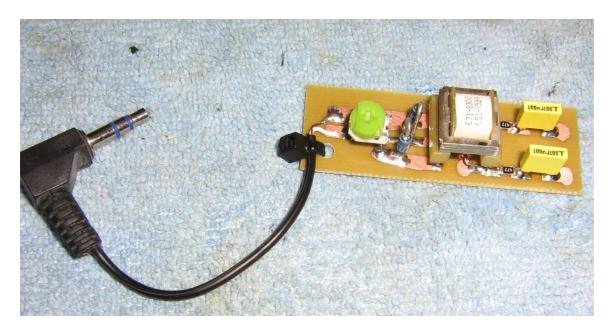
Close up view of the isolation transformer's pins.

Only four of the pins are used, two for the primary side and two for the secondary side.



For additional circuit protection, an optional spark gap can be added across the primary of the transformer. The spark gap provides "front line" defense against any high voltage spikes being coupled into the transformer.

The circuit board in the above picture is from an old cordless phone. This board has an enclosed spark gap (circled) installed across the incoming phone line.



Completed telephone audio interface board.

The 1/8-inch output plug is from an old pair of headphones. Only the tip and ring of the microphone input plug are used.



Close up view of the telephone audio interface board.

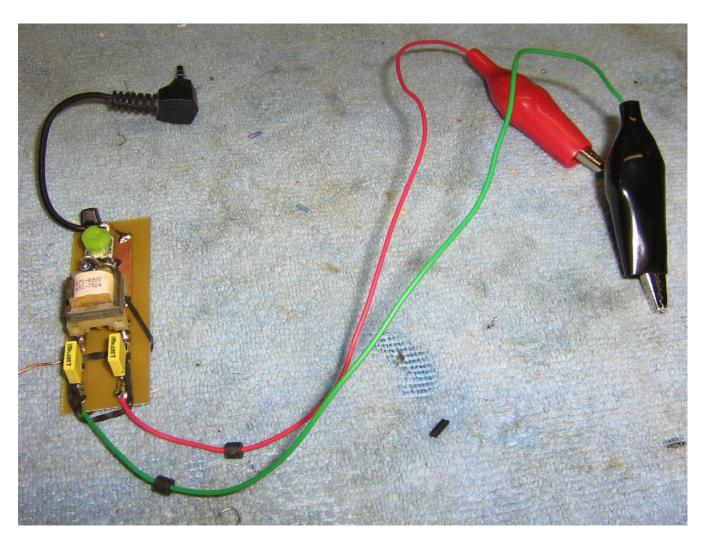
The phone line connects on the right-side. Polarity is not important.

The audio output to the digital voice recorder is on the left–side.

The two blue things are the 1N4728 Zener diodes.

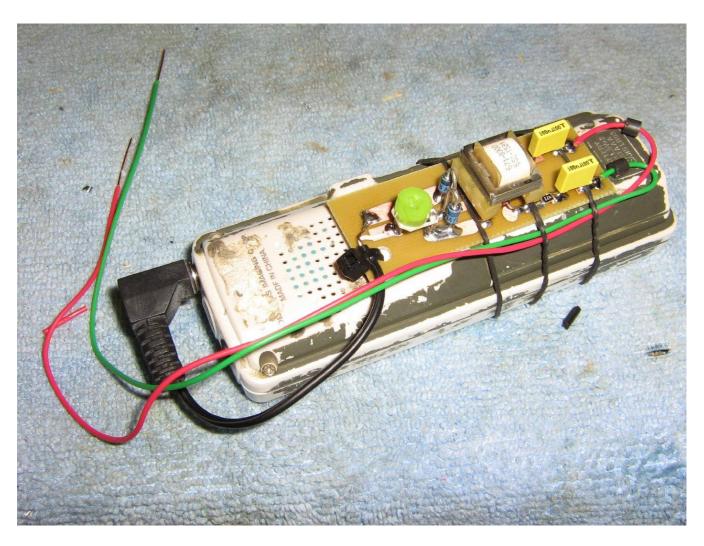
The green thing is the 10 kohm volume potentiometer.

The spark gap is mounted underneath the isolation transformer.

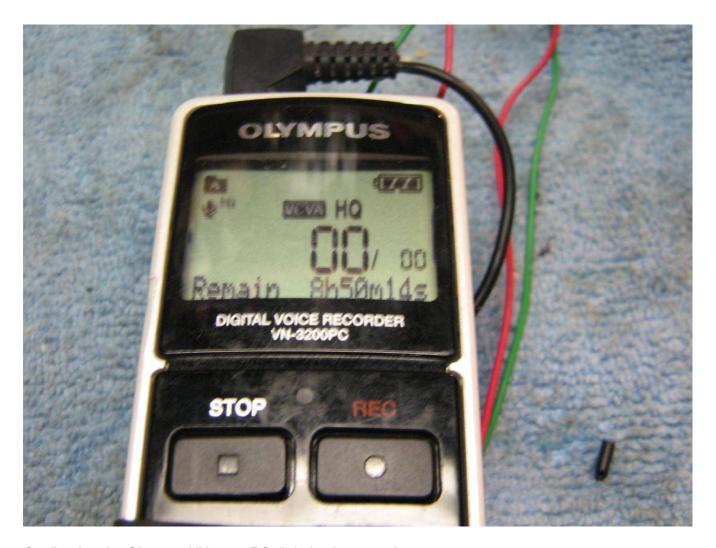


Installing the tip and ring phone line connection leads. Alligator clips are used here, but JS Popper clips are the best.

Note the two (optional) ferrite beads on the connecting leads to knock down any RF interference.



The telephone audio interface board is attached to the back of an Olympus VN-3200PC digital voice recorder using a couple of rubber bands.

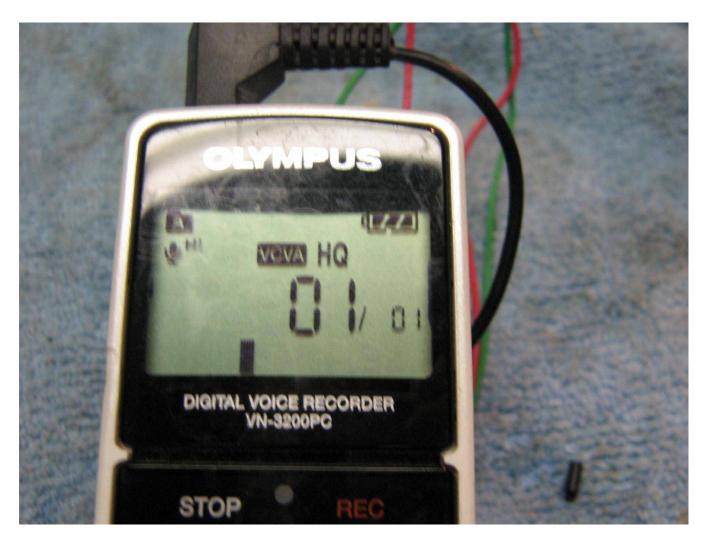


Configuring the Olympus VN-3200PC digital voice recorder.

The highest quality ("HQ") audio settings should be used. This will give you only eight hours of record time per folder.

The microphone sensitivity should be set to conference ("Hi"). If you get any audio clipping the volume potentiometer can't handle, switch to the dictation ("Lo") microphone sensitivity setting. Shorter telephone local loops tend to have "hotter" audio.

Enable the voice activation ("VCVA") feature in the menu and you may wish to also disable the recording LED and system beep via the submenu.



After starting recording (pressing the "REC" button), you can adjust the level necessary for triggering the voice activation by using the left and right arrow buttons. This is shown via the "block" along the bottom of the LCD screen. A setting of "10" seems to work quite well. Avoid too low of a setting, or all you'll record is line noise.

The recorder will run for about three days on a fresh set of high-quality alkaline "AAA" batteries.



Example Keptel SNI-4600 telephone network interface box used in Ameritech/SBC/AT&T serviced areas.



If you only have a Phillips screwdriver, you can only install the tap in the "Customer Access" side of the network interface box.

You can slide those little interface modules the phone line screws into up and down, but they are a pain to put back in place.



If you have access to the proper "tamper–proof hex" security bit, you can install the tap in the "Tel. Co. Access Only" side of the network interface box.

This will also be the quickest way as you can just hook the alligator clips to the lightning protection block screw terminals.

Tq 000 t (IsnoitqO) Ring Clipper 2x 1N4728 SEC M m Phone Line Audio Interface РВІ Spark Gap (Optional) 4.7 KΩ 0.1 UF 100V Target Phone Line Ferrite Beads

To Recorder Microphone Input

0.1 µF

1/8" Plug Mono

Isolate Ground!

600Ω-to-600Ω Isolation Transformer

4.7 KΩ

0.1 µF 100V

qiT

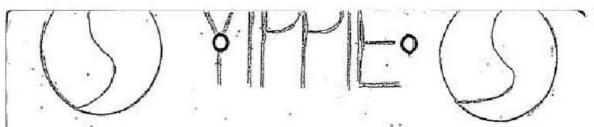
Bui**A**

1

76



From the FBI files on the "Youth International Party" or "Yippies" (of *YIPL/TAP* fame) during the late 1960s and early 1970s. *Hmm...* Does any of this sound familiar?



A WORKSHOP: COMMUNITY ORGANIZATION OR ... THE REVOLUTION IS EVERYWHERE

Community organization is one of the most effective tools of a productive revolution. Strong and complete unity with all of our brothers and sisters in every community in amerika not only makes for positive force on issues centering within the community, but it also lends toward a more forceful and massive gathering on nationally coordinated demonstrations and actions. Specifically, we must concern ourselves with the republican convention in Miami Beach - August 21-24. Our ability to create an awareness in the minds of all people through the use of amerikas electronic mass-media jungle separates revolutionaries from outlaws.

One brother or sister with the right combination of community actions can, within a short period of time have a growing and conscious revolutionary movement alive in his or her community.

This booklet and its related workshop is condensed and far from a "how to do it in three easy steps" text for the amateur revolutionary. It can help: build from scratch an organization capable or-reaching many people before the Republican convention in . August. It can also open lines of communication between established movement groups, and newly formed

End of Issue #88



Any Questions?

Editorial and Rants

Ever wonder why Jews are universally hated? Now you know!

Remember, this whole mess was caused by supporting Israel in the first place!

Cancer-Stricken WTC Worker Gets \$0 Settlement Check

August 1, 2011 – From: nypost.com

by Susan Edelman and Cynthia R. Fagen

Cancer–stricken Ground Zero worker Edgar Galvis has finally received a compensation check — for zero dollars.

The 51-year-old Queens man, who suffered sinus problems and then throat cancer after months of removing toxic debris from the World Financial Center, was relieved to get a check in the mail for his court settlement with Merrill Lynch, whose offices he had cleaned.

But he was stunned when he saw the amount: \$0.00.

His award had been \$10,005, but his lawyers at the firm Worby, Groner, Edelman & Napoli Bern lopped off \$2,579 for unitemized legal expenses.

Then they took a 33.3 percent fee of \$2,124.

They also subtracted \$352, a fee to the lawyer who referred him.

The remaining \$4,950 was withheld for unspecified "liens," the letter says. Galvis thinks this was repayment of workers' compensation for aid.

"I have hit rock bottom," said Galvis, who is jobless and \$30,000 in debt. "I was expecting a check, and you can imagine how I felt when I opened it. I couldn't believe it. I thought it was a joke."

The father of two, who lives in Glendale with his fiancée and her two kids, said he had to sell his car and relies on relatives for rent. "I get collection agencies whenever I open the mail. What little credit I had I don't have anymore," he said.

Galvis said he arrived in New York from Bogota, Colombia, in February 2001. Hired by contractors clearing dust and rubble from Merrill Lynch offices next to Ground Zero, Galvis said he toiled 16 hours a day for six months in a jumpsuit and paper mask that would tear when he sweated. At \$8 an hour, he made close to \$800 a week.

In May 2005, a friend gave him a business card passed out by the law firm. A representative came to his home.

"The man told me that more than likely I will get sick and I would get 60 percent of whatever he won," Galvis said. "He even mentioned the words 'millions of dollars.'"

In April 2010, he got a \$10,000 offer. A letter from the law firm said he could expect about \$5,000 after expenses and fees. It warned that if his case went to trial and he lost, he could owe the firm up to \$100,000 in costs. He took the settlement.

His claim cited chronic rhinosinusitis and sleep disorders. He was diagnosed with throat cancer last August and began chemotherapy and radiation. But it was "too late" to adjust his claim.

"It was our pleasure to represent you in this matter," the law firm says in a note that arrived with the zero-dollar check.

It was no pleasure for Galvis.

"I think they are taking advantage of the ignorance of people such as myself," he said.

The total Merrill settlement came to \$18 million for about 400 clients, documents show.

Galvis is one of nearly 10,000 Ground Zero workers represented by Napoli Bern, which led talks for a separate settlement with the city for \$712 million.

Anger is also stirring among those clients, who have started getting checks for 40 percent of their total awards. Several told The Post the payouts were less than those estimated by Napoli Bern. Some said they felt duped.

Attorney Paul Napoli wrote in an e-mail that Edgar Galvis had already received "tens of thousands of dollars" in other claims involving his work at the Merrill Lynch offices in the World Financial Center.

Galvis "is also eligible for settlements from other buildings [near the trade center] that he worked in that have not even begun to roll in," Napoli added.

But Galvis said that "never in my life, ever, have I gotten any money from Napoli" — other than a check that started at \$10,005 but that was made out for \$0.00 after various deductions.

"This is the only check I've gotten from them," he said. "I never got a single dollar."

President Barack Obama is an anagram for:

"An Arab backed Imposter" and "Kept as a barbaric demon"

Ever wonder why Jews are universally hated? Now you know!

Note these assholes claim to be Atheists (which is also religious ideology), but are really Jews. You can bet that if these filthy kikes wanted to put up an ugly Jew star or Menorah, there would be no outrage in the media.

Atheist Group Sues Over Proposed Cross at 9/11 Memorial

July 28, 2011 - From: news.yahoo.com

by Liz Goodwin

The group American Atheists and four New Yorkers are suing the states of New York and New Jersey for planning to place a cross—a piece of debris from the World Trade Center—at the 9–11 memorial for the attacks' victims.

The planned memorial—which will at long last be unveiled this September—has received millions in federal money. The Courthouse News Service says the cross—"a T–joint steel girder found in the rubble of the World Trade Center"—was just last week moved from a Catholic church to Ground Zero. The suit says the cross is an insult to the many 9/11 victims who were not Christian and a violation of the separation of church and state; it proposes either removing the cross or setting aside an equal amount of space at the memorial to honor the sacrifices on non–Christian or non–religious victims of the attack.

Two Jewish plaintiffs said they find the cross "offensive and repugnant to their beliefs." The brother of a first responder who died of lung problems after volunteering at Ground Zero for two weeks is also a plaintiff.

"As a survivor of the 9/11 attack and family member of one of the brave responders to the 9/11 attack, Mark Panzarino is appalled that the state has permitted a symbol of Christianity to represent a tragedy that affected all Americans. The Panzarinos unequivocally do not wish for a cross to represent Frank Joseph Panzarino's sacrifice unless it is a Lutheran Cross," he said in the complaint. (A Lutheran cross features a rose–shaped inlay that, in turn, showcases another crucifix; the plaintiffs evidently singled it out to make the point that any such choice of a Christian symbol excludes someone else's belief.)

Secular-minded advocacy has echoed the gist of the Panzarinos' complaint. "The WTC cross has become a Christian icon. It has been blessed by so-called holy men and presented as a reminder that their god, who couldn't be bothered to stop the Muslim terrorists or prevent 3,000 people from being killed in his name, cared only enough to bestow upon us some rubble that resembles a cross," American Atheists President David Silverman said in a statement. "It's a truly ridiculous assertion."

"We are happy to donate a suitable and respectful display and pay all associated costs, and we won't stand idly by while atheists and their families are discounted. We seek only fairness," Silverman wrote on his blog.

The American Center for Law and Justice, a conservative Christian legal advocacy group, said that it intends to file an amicus brief backing the placement of the cross at the memorial. "This lawsuit is deeply flawed and without merit. This is just the latest chapter of an anti–God strategy employed by atheist organizations across the country—a strategy offensive to millions of Americans, a strategy that we're confident ultimately will fail in court," chief counsel Jay Sekulow said.

Ever wonder why Jews are universally hated? Now you know!

Note these vile, parasitic Jew politicians called the Tea Party "extremist," while they are falling over themselves to support Israel – a foreign country!

Now you know where their loyalty lies, and who the extremists REALLY are...

Weiner's Exit Sets Off a Race to Be Israel's Better Friend

July 26, 2011 - From: www.nytimes.com

by Ashley Parker

Assemblyman David I. Weprin, the Democratic candidate to replace former Representative Anthony D. Weiner in a special election on Sept. 13, is a Modern Orthodox Jew who keeps kosher, observes the Sabbath and has been to Israel at least eight times. So it comes as a surprise that, at this early stage of the short campaign, New York's Ninth Congressional District finds itself talking about an unlikely subject — whether Mr. Weprin, who is unabashedly pro–Israel, is the best pro–Israel advocate.

Just as a May special election in a conservative district of western New York turned into an unexpected referendum on the Republican Party's proposals about Medicare, the coming special election in a heavily Jewish district of Brooklyn and Queens is, at least for that district, emerging as a potential referendum on President Obama's proposals about the Middle East.

"It will be a one-upsmanship on who is more pro-Israel," said Chris Malone, an associate professor of political science at Pace University.

On Monday, former Mayor Edward I. Koch, a Democrat, endorsed the Republican candidate in the race, Bob Turner, a retired cable television executive, at a press conference at which he stood next to an Israeli flag. Mr. Koch has acknowledged that Mr. Weprin is a strong supporter of Israel, but argued that the election of Mr. Turner would serve as a rebuke to Mr. Obama for saying that Israel's pre–1967 border should be the basis for a peace agreement.

Both Mr. Weprin, 55, and Mr. Turner, 70, have criticized the president's position on Israel, and both promote their support for Israel on their campaign Web sites.

But Mr. Koch said that although he and Mr. Weprin had similar political ideals, he had concluded that Mr. Weprin could not be "an effective messenger" to Mr. Obama.

"I said to him that it's not a personal matter, but I want you to understand that it's an issue that's bigger than you and that's bigger than me," Mr. Koch said. "The president is not likely to be offended or feel threatened by David Weprin, Democrat from Queens, saying something critical of him."

What did Mr. Weprin think of the former mayor's concern? "My first thought is to quote one of Mayor Koch's famous lines: `That's ridiculous!' It's just absurd."

Mr. Weprin and Mr. Turner are vying to represent a New York City district that includes Forest Hills and Kew Gardens in Queens, as well as parts of Flatbush and Sheepshead Bay in Brooklyn. The district is about one–quarter Jewish.

And Jewish voters are expected to be particularly important in the special election, which is likely to have low turnout, said Jerry Skurnik, a partner at Prime New York, a political consulting firm. Mr. Skurnik said that Jewish voters tended to vote in higher percentages than the general population, and he estimated that Jewish voters made up 30 percent to 35 percent of active voters in the district.

"You definitely can't get wiped out in the Jewish vote and expect to win a district like this," Mr. Skurnik said.

The district is solidly Democratic, but conservative by New York standards, and Mr. Turner won 40 percent of the vote when he ran against Mr. Weiner in 2010. Mr. Weiner, who was staunchly pro–Israel, resigned after acknowledging having exchanged sexually explicit online communications with women.

Assemblyman Weprin's relationship with elements of the district's diverse Jewish community is also complicated by his vote in Albany in favor of the legalization of same–sex marriage, which is opposed by Orthodox Jewish leaders.

Dovid Z. Schwartz, an Orthodox Jewish activist from Kew Gardens, said of Mr. Weprin's same–sex marriage vote, "To the mind of many people, the vote itself was the point of no return." And Mr. Schwartz also argued that because Mr. Weprin is a "career political insider" and of the same party as Mr. Obama, he could not be a "fierce advocate" pushing back against the president's Middle East policy.

"A vote against David Weprin would send a clear message to the administration that they cannot take the Jewish vote for granted," Mr. Schwartz said.

But the Weprin campaign argued that Mr. Obama would be more likely to listen to criticism of his Israel position from a fellow Democrat. "If voters want to send a message to the president, they won't do it by sending another rank-and-file Tea Party extremist Republican to Congress," Mr. Weprin's campaign manager, Jake Dilemani, said.

Mr. Weprin is supported by the Assembly speaker, Sheldon Silver, also an Orthodox Jew, who said Israel was "the No. 1 concern among Jewish voters." But Mr. Silver, a Manhattan Democrat, dismissed the strategy of voting for Mr. Turner to send a message to Mr. Obama as "a political game."

"The record of David Weprin is such that there's no choice," he said.

Cynthia Zalisky, the executive director of the Queens Jewish Community Council, called the candidates "admirable," but said that "how these candidates feel about Israel and the president's concept of pre–1967 borders is going to resonate in this district."

Both Mr. Turner and Mr. Weprin's camps are trying to play down the importance of Israel as a campaign issue, while simultaneously burnishing their credentials on Israel.

In an e-mail, Mr. Turner's campaign said its candidate was focused on "getting our economy moving again and creating jobs," but it criticized Mr. Obama as being "no friend to Israel."

Asked whether there was any difference between Mr. Turner and Mr. Weprin on Israel, Mr. Turner's spokesman said: "David Weprin walks the party line. Israel is our strongest ally in the Middle East, and it is morally and historically wrong — and strategically unwise — to blame Israel for the lack of peace with the Palestinians. That is what President Obama has done, and David Weprin hasn't said a peep about it."

In a phone interview, Mr. Weprin said, "It is very important that the United States maintains that very special relationship they have with Israel, and I would be a strong advocate for that."

When Mr. Weprin spoke to a senior center in Queens last week, he addressed his position on Israel, but fielded more questions on financial matters.

"Everybody's mind is on the budget, the deficit, the debt ceiling, which we're backing up against, and the potential cutting of Medicare and Social Security," he said. "I would say Medicare and Social Security cross all boundaries, all ethnic boundaries, and even all age groups."

Dr. Malone, the Pace political scientist, predicted that other issues would indeed emerge in the campaign, but said the importance of the Jewish vote would remain.

"There's bigger fish to fry," he said, "as long as they're fried kosher."



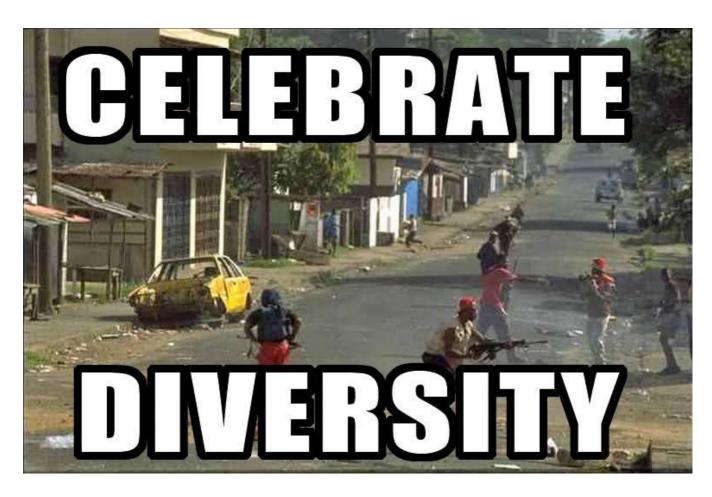
Meanwhile, at Valley Park Middle School in Toronto, Canada...

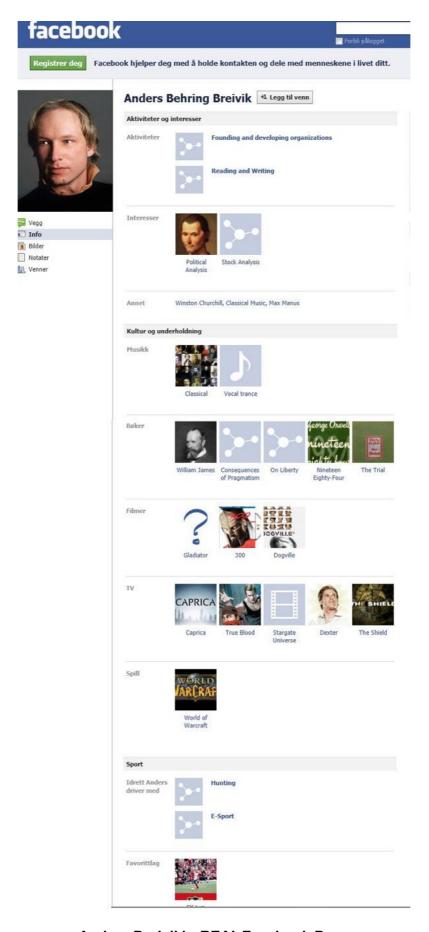
From: jihadwatch.org/2011/07/meanwhile-at-valley-park-middle-school.html

The girls in the back of the room? They're set apart and excluded because they're menstruating, in accordance with Islamic ritual practices. (And you thought your teen years at school were awkward.)

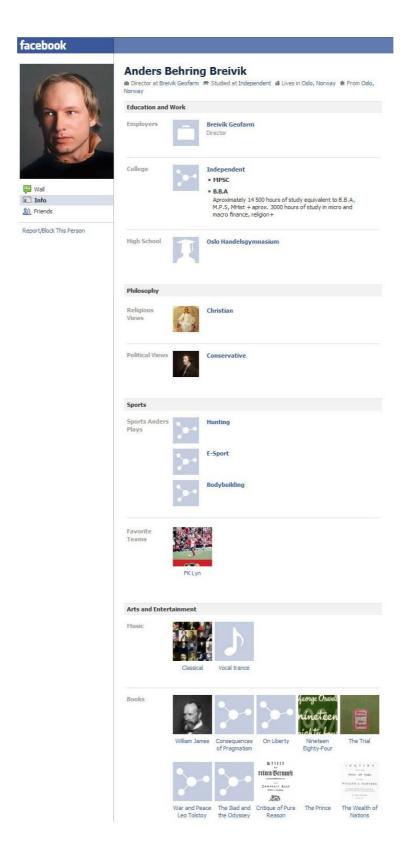
This is happening in a public, taxpayer–funded school outside of Toronto.







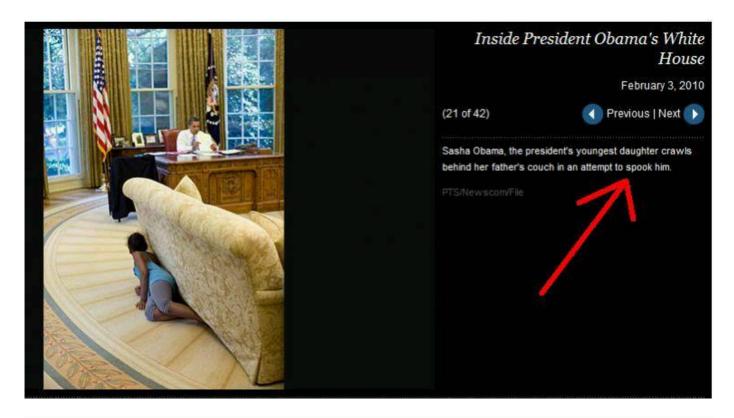
Anders Breivik's REAL Facebook Page

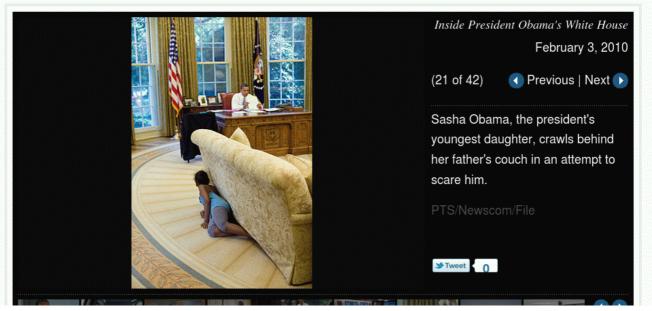


Anders Breivik's FAKE Facebook Page

On this profile, someone added "Christian" and "Conservative." Anders was pro–Zionist and a Freemason. Guess which one the liberal media used? *See the Jew...*

(cofcc.org/2011/07/norwegian-killer-facebook-hoax/)





From: www.csmonitor.com/CSM-Photo-Galleries/In-Pictures/Inside-President-Obama-s-White-House/ (photo)/250680

"Change" comes to the Christian Science Monitor. LOL!