Installation Engineering Handbook 281
Western Electric Company, Inc.
Denver Works

Section 10T
7-1-81
Replacing Sect. 10T
Dated 3-15-78

DIMENSION® PBX
IDENTIFICATION OF CIRCUIT PACK OPTION ARRANGEMENTS

CONTENTS

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1. GENERAL INFORMATION

1.1 Some Dimension PBX circuit packs have option arrangements in the form of DIP (Dual In-line Package) switches or moveable plugs. This section will provide information regarding the arrangement of various circuit pack switches and plug options by circuit pack code.

2. REQUIREMENTS

2.1 Operation of option switches and the positioning of option plugs must not be performed while power is applied to the associated circuit packs.

3. OPTION ARRANGEMENTS

Printed in U.S.A.

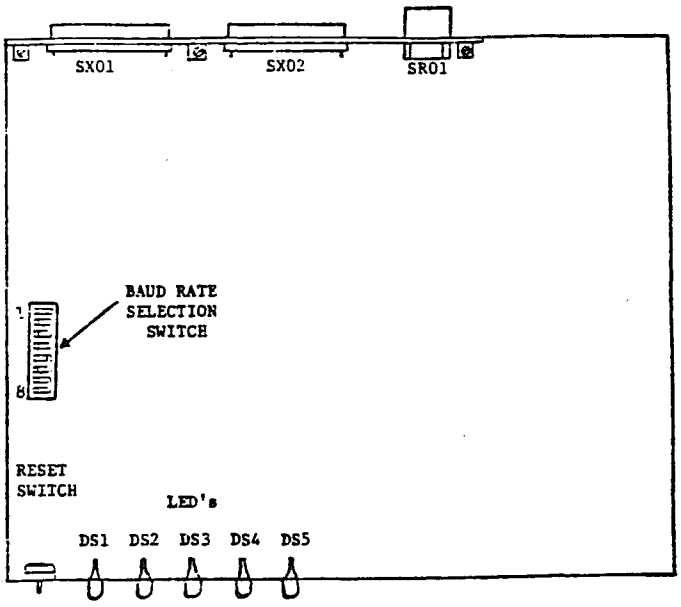
HN 9B/HN 11

HN9B/HN11 is used in 201L PBX and 201SE PBX. HN9B is used in Peripheral Interface Circuit (PIC) to provide a communication link between LC366 (or LC34B) data channel and the journal printer. There is an 8-position microswitch mounted on the HN9B circuit pack for selecting a BAUD rate (see Table A).

TABLE A

BAUD RATE SELECTION

Switch Closed	Baud Rate	Application
1	9600	
2	2400	ECS-CRT Terminal
3	1200	CIPMS
4	300	Journal Printer
5	110	
6	Not used	
7	Not used	
8	Not used	



NOTE: Only one switch should be closed at any time, or the clock generator may lock up and require a power reinitialization to restart.

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LC 7

This circuit pack provides extra gain on remote access calls (When required, e.g., trunk-to trunk connections). LC7's may be mounted in the module control and Trunk Port Carrier or in the Trunk Port Carrier. Gain is adjustable from 1-15 dB in one dB increments (See Table A). Gain is enabled in only one direction at a time under control of the strongest signal (e.g., from the subscriber or C.O. side).

TABLE A

GAIN (dB)	GAIN ADJUSTMENT SWITCH			
	1	2	4	8
0	0	0	0	0
1	C	0	0	0
2	0	C	0	0
3	C	C	0	0
4	0	0	C	0
5	C	0	C	0
6	0	C	C	0
7	C	C	C	0
8	0	0	0	C
9	C	0	0	C
10	0	C	0	C
11	C	C	0	C
12	0	0	C	C
13	C	0	C	C
14	0	C	C	C
15	C	C	C	C

0 = OPEN, C = CLOSED

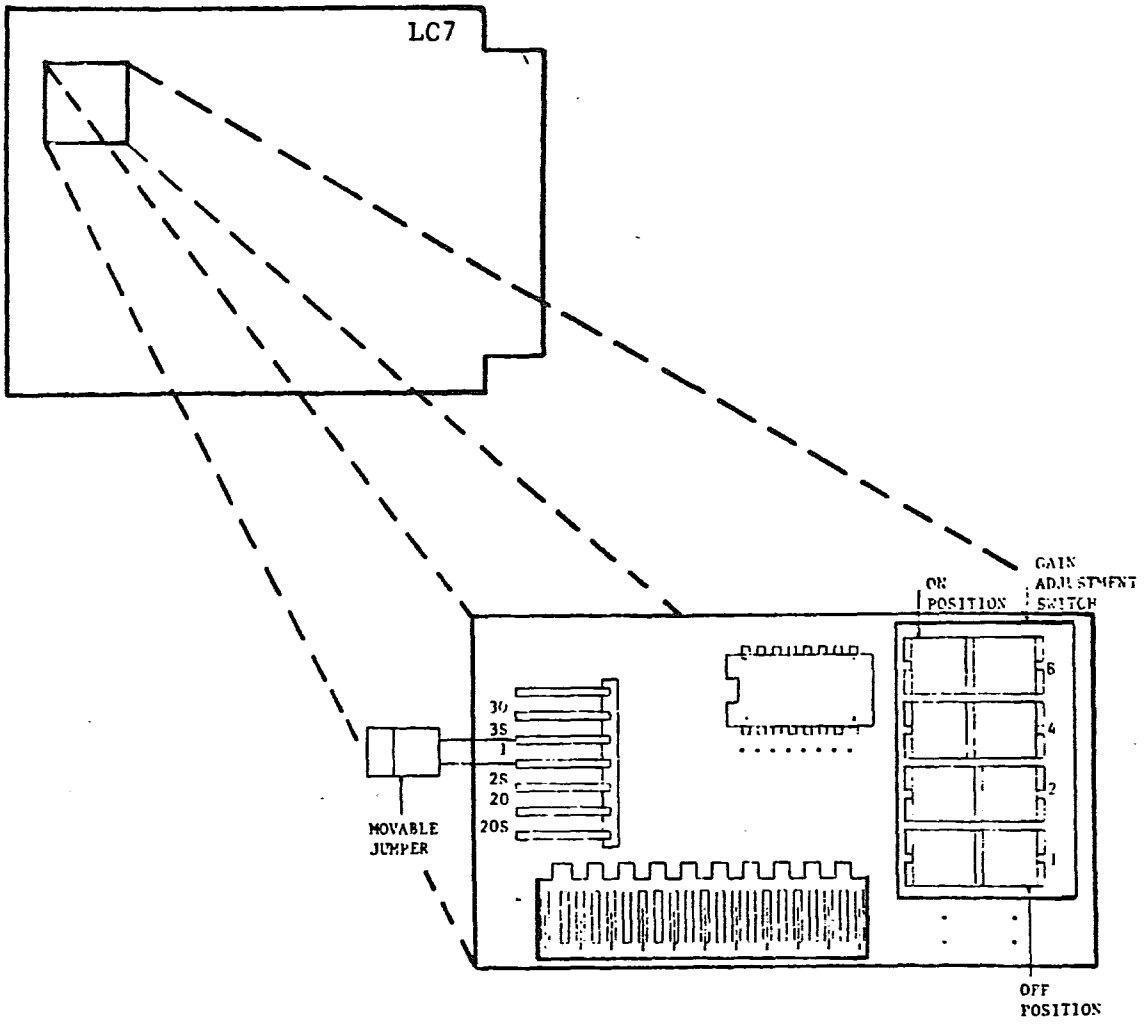
LC7 (Cont'd)

TABLE B (See notes 1 and 2)

OPTION	GAIN IN TURN-ON LEVELS (dB)		TYPCAL 1 kHz TURN - ON LEVELS (dBm)	
	OFFICE SIDE	SUBSCRIBER SIDE	OFFICE SIDE	SUBSCRIBER SIDE
1	---	---	-43	-43
2S	--2	+4	-42	-48
20	+4	-2	-48	-42
3S	--3	+7	-41	-51
30	+7	-3	-51	-41
20S	+10	+10	-54	-54

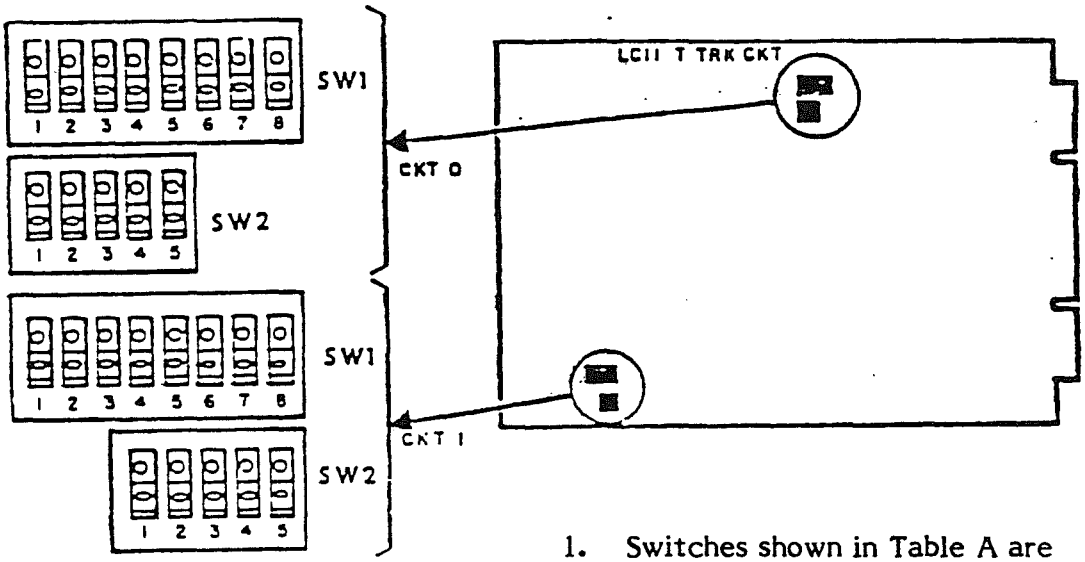
Notes: 1. Option 1 is used if the difference in signal levels between the C.O. and subscriber side is <10dB.

2. Until further notice, Option 1 should be used in all applications in FP8 a nd FP 12.



LC 11 (MD - Replacing by LC 11B)

Circuit pack LC 11 is a tie trunk circuit with option as indicated below.



OPTION SWITCHES
(ALL SECTIONS SHOWN OPEN)

CAUTION
Never operate switches while
Power is applied to the circuit.

1. Switches shown in Table A are used for matching the signaling circuitry to the loop length.
2. Switches shown in Table B are used for selecting DX or E & M signaling.
3. Switches must be set prior to inserting the circuit pack into THE CARRIER.
4. Switch sections are closed by depressing the rocker toward the section number.

LC 11 (Cont'd)

TABLE A

SWITCH/ SECTION	FUNC	LOOP LENGTH IN OHMS							
		0-350	351-950	951-1550	1551-2150	2151-2750	2751-3350	3351-3950	3951-4550
SW1/1	BAL 1	C	0	C	0	C	0	C	0
SW1/2	BAL 2	C	C	0	0	C	C	0	0
SW1/3	BAL 3	C	C	C	C	0	0	0	0

TABLE B

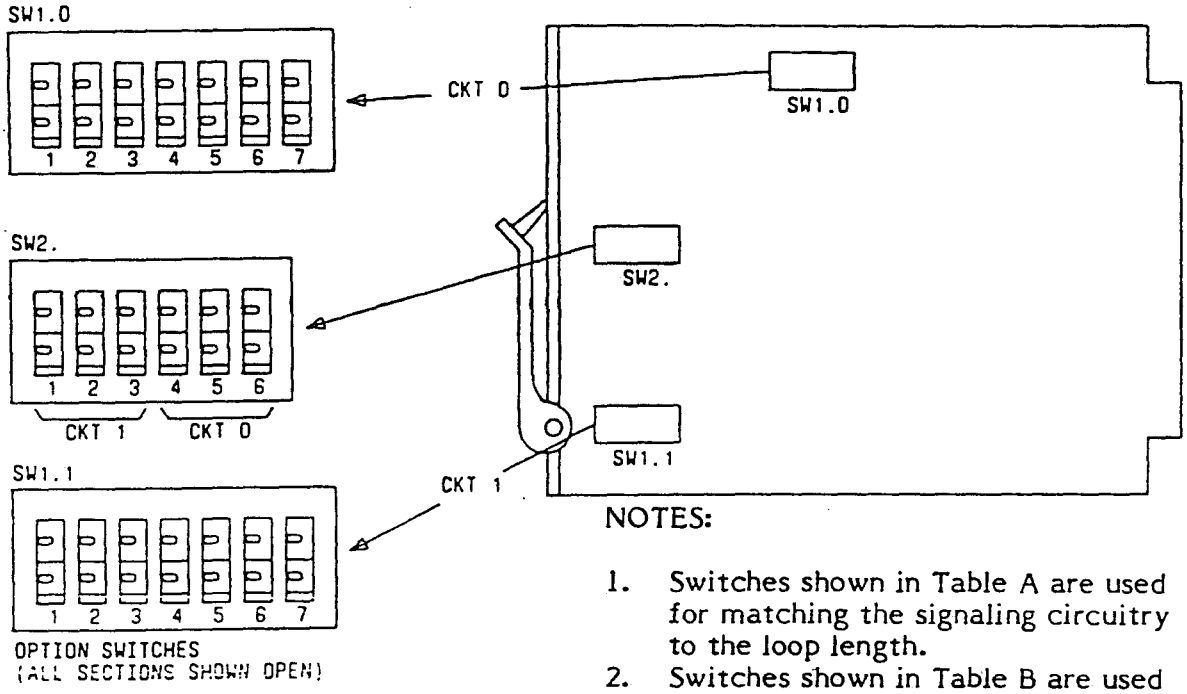
SWITCH/ SECTION	FUNC	DX NORMAL	DX REVERSAL	E & M
SW1/4	EM1	C	C	0
SW1/5	EM2	0	0	C
SW1/6	EM3	C	C	0
SW1/7	EM4	C	0	0
SW1/8	EM5	C	0	0
SW2/1	EM6	0	0	C
SW2/2	EM7	C	C	0
SW2/3	EM8	0	0	C
SW2/4	DXRV1	0	C	0
SW2/5	DXRV2	0	C	0

C = CLOSED, 0 = OPEN

LC 11B

CAUTION:

Never operate switches while power is applied to the circuit.



NOTES:

1. Switches shown in Table A are used for matching the signaling circuitry to the loop length.
2. Switches shown in Table B are used for selecting DX or E & M signaling.
3. Switches must be set prior to inserting the circuit pack into the carrier.
4. Switch sections are closed by depressing the rocker toward the section number.

TABLE A

SWITCH/ SECTION	FUNC	LOOP LENGTH IN OHMS							
		0-350	351-950	951-1550	1551-2150	2151-2750	2751-3350	3351-3950	3951-4550
SW2/1	Bal 1.1	C	O	C	O	C	O	C	O
SW2/2	Bal 2.1	C	C	O	O	C	C	O	O
SW2/3	Bal 3.1	C	C	C	C	O	O	O	O
SW2/4	Bal 3.0	C	C	C	C	O	O	O	O
SW2/5	Bal 2.0	C	C	O	O	C	C	O	O
SW2/6	Bal 1.0	C	O	C	O	C	O	C	O

LC 11B (Cont'd)

TABLE B

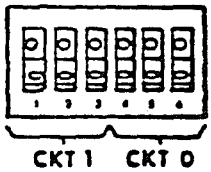
SWITCH/SECTION		FUNC	DX NORMAL	DX REVERSAL	E & M
SW1.0/1	SW1.1/1	EL	O	O	C
SW1.0/2	SW1.1/2	EM2	C	C	O
SW1.0/3	SW1.1/3	EM1	C	C	O
SW1.0/4	SW1.1/4	DXRV2	O	C	O
SW1.0/5	SW1.1/5	EM4	C	O	O
SW1.0/6	SW1.1/6	DXRV1	O	C	O
SW1.0/7	SW1.1/7	EM5	C	O	O

C = CLOSED
O = OPEN

LC 13

Options on LC13 are implemented by means of a six section DIP switch mounted at the upper right center of the board. The sections are identified by number 1 through 6; sections 4, 5 and 6 are assigned to circuit 0; and 1, 2, and 3 to circuit 1. Switch circuits are closed by depressing the rocker toward the the section number.

CAUTION: Never operate switches while power is applied to the circuit.



OPTION SWITCH
(ALL SECTIONS SHOWN OPEN)

Switch circuits are closed by depressing the rocker toward the section number.

OPTION SWITCH SETTINGS

Cir.	Sec. Switch	Functional Desig.	Transmission		
			1-Way in	1-Way out	2-Way
0	6	SOOA	O	C	O
	5	SIOA	C	O	O
	4+	SSLA	-	-	-
1	3+	SSLB	-	-	-
	2	SIOB	C	O	O
	1	SOOB	O	C	O

+ : These switches shall be open when connected to paging or announcement circuits. The switches shall be closed when connected to other peripheral circuits.

OPTIONS SWITCH SETTINGS BY APPLICATION (see Notes 1 and 2).

Circuit	Switch Section	Loudspeaker Paging	Recorded Telephone Dictation	Recorded Announcement	Music on Hold	Audichron
0	6	C	O	O	O	O
	5	O	O	C	C	C
	4	O	C	O	C	-
1	3	O	C	O	C	-
	2	O	O	C	C	C
	1	C	O	O	O	O

O = OPEN, C = CLOSED

LC 13 (Cont'd)

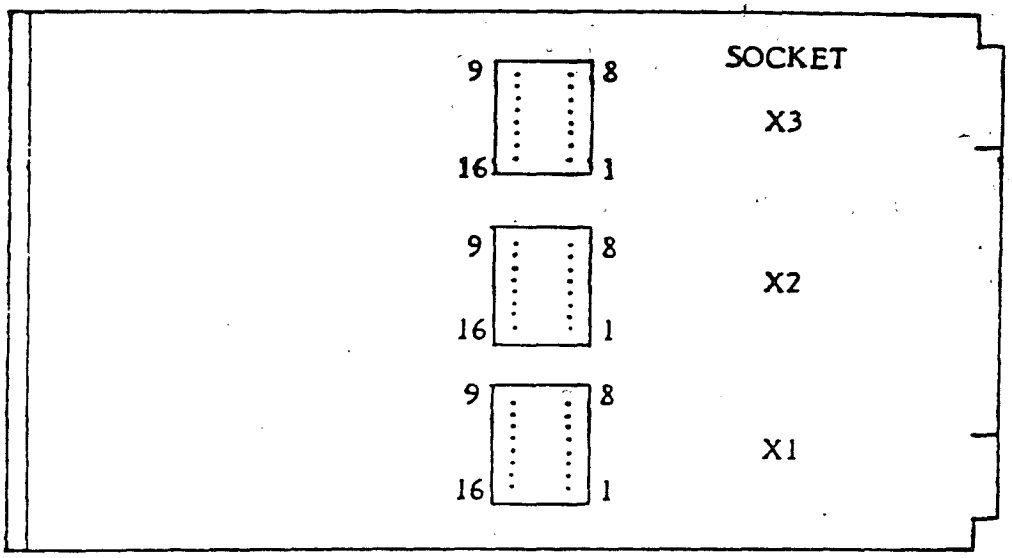
NOTES:

1. For use with announcement circuits only, set all switches to the open position.

2. Unless local instructions specify otherwise, all other applications of this circuit require 2-way transmission.

LC 16 B

Circuit pack LC 16B is a message register and energy control power monitor interface circuit. LC 16B contains three 16 pin dual-in-line sockets. Each socket is divided into two halves. The lower half (pins 1-4 and 13-16) of each socket is associated with circuits 0-3. The upper half (pins 5-8 and 9-12) is associated with circuits 4-7. Each shorting block control four circuits. Circuit options are shown below:



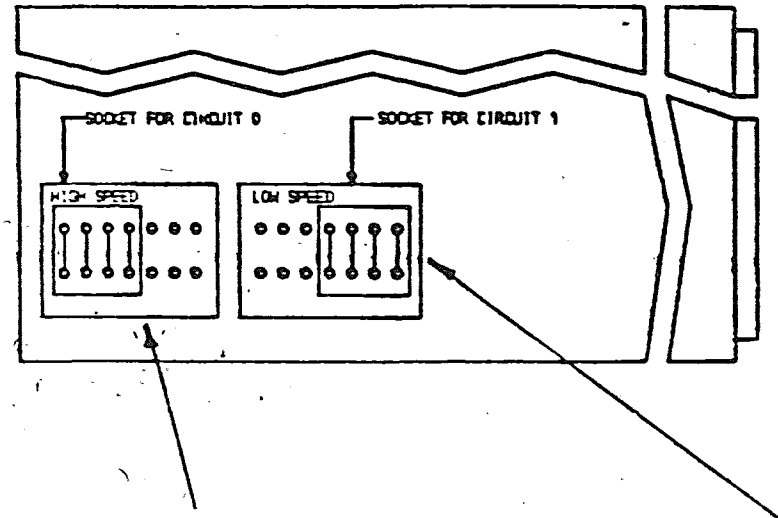
Feature	Socket	Ckt.	Short term.	Ckt.	Short Term.
For ground return operation with battery provided remotely (same as LC16)	X2**	0 1 2 3	1-16 2-15 3-14 4-13	4 5 6 7	5-12 6-11 7-10 8-9
For balance transmission line operation with Battery provided remotely	---	0-3	None	4-7	None
Power monitor or peripheral alarm*	X1 & X3	0 1 2 3	1-16 2-15 3-14 4-13	4 5 6 7	5-12 6-11 7-10 8-9

*FACTORY EQUIPPED OPTION
**SOCKET X2 IS USED ONLY FOR 201S PBX.

LC 34B (MD - Replacing by LC 366)

Circuit pack LC 34B contains two data channel circuits which can be optioned for high-speed or low-speed data by plugging JUMPER BLOCKS into their associated DIP sockets as shown below.

LC34B



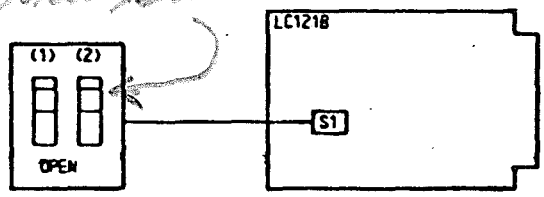
DIP socket block for CIRCUIT Ø shown arranged for HIGH SPEED data (833 KHZ) option Z.

DIP socket block for CIRCUIT 1 shown arranged for LOW-SPEED data (185 KHZ) options Y (option W for Dimension® 2000 only).

LC 121B

LC 121 B is used in 201L and 201SE PBX. CSS 201SE uses LC121B only. LC121 B, all vintages, contains a dual in line switch package. Below is the diagram of the S1 (A) switch showing the locations and the setting for application in the CSS 201SE PBX.

LC 121C push both switches down on this side



this tell the dip there are 2 here

SWITCH SECTION	MODULE CONTROL CARRIER	
	CABINET 0 ONLY (201SE) (Option ZB)	CABINET 0 and 1 (201SE, 201L) (Option ZC)
1	See Note	SeeNote
2	OPEN	CLOSED

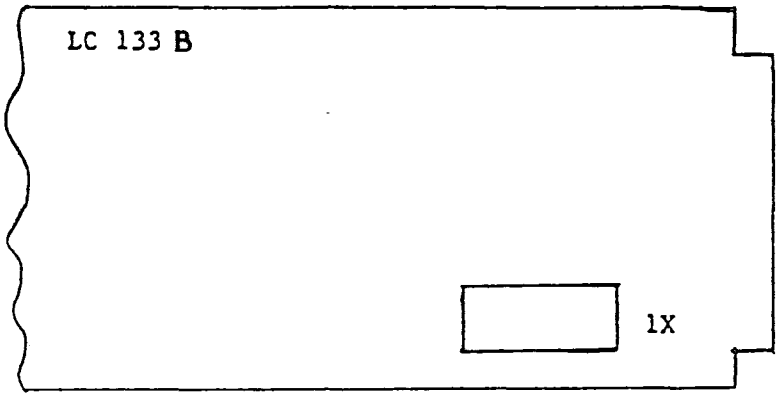
cabinet 0+1
LC 121C
→ OPEN (not used)
→ CLOSED

NOTE: Switch 1 is spare and can remain set in any position.

LC 133 B

Circuit pack LC 133 contains memory read/write, I/0 read/write and memory write protect circuits. In addition it is equipped with a moveable shorting block, in a DIP socket (1X) that provides options to permit decoded read/write functions to agree with the processor word size per memory board.

Position of the shorting block in the DIP socket, for each possible option, is identified as indicated below.

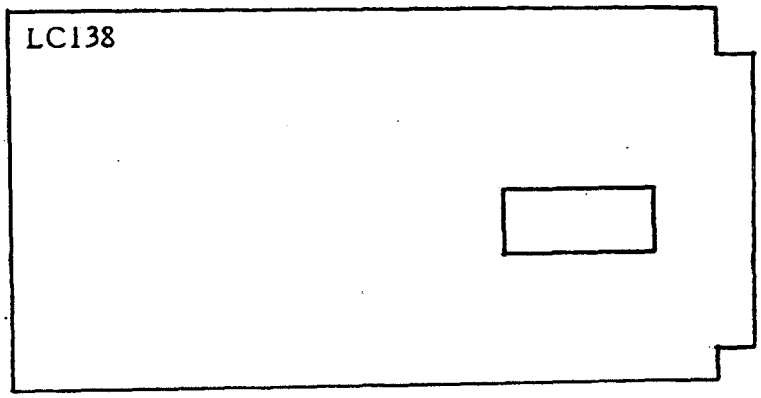


OPTION	MEMORY	STRAPPING ARRANGEMENT
R	(4096) 4K	7 to 10 8 to 9
S	(8192). 8K	5 to 12 6 to 11
T	(16384) 16K	3 to 14 4 to 13
V	65536 64K	1 to 16 2 to 15

use this option for LC133C packs

LC 138

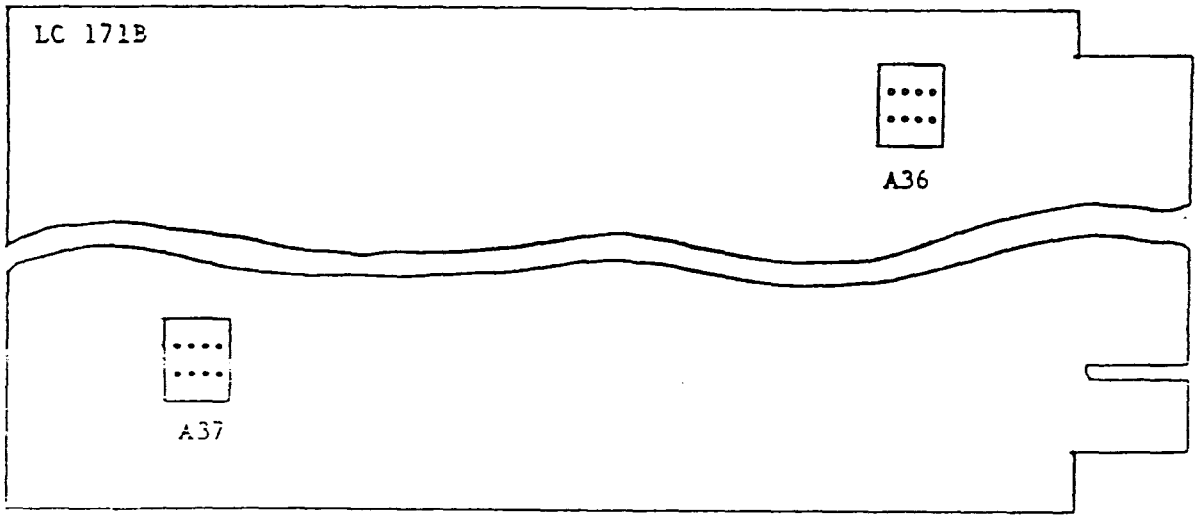
LC 138 is used in 201L and 201SE PBX. LC 138 is strapped for 16K memory size.



MEMORY	CONNECT PINS
16K	9 and 6 10 and 5 11 and 4 12 and 3 13 and 2

LC 171B

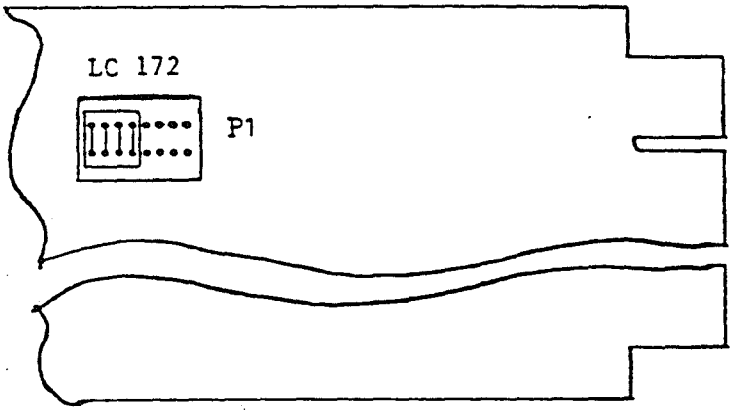
Circuit Pack LC 171 B contains a single data circuit for local (within the system) data transfer pace and a Universal Asynchronous Receiver/Transmitter (UART) channel for remote (out of the system) data transfer. Both channels can be optioned independently for HIGH-SPEED or LOW-SPEED data. Options are selected by plugging JUMPER BLOCKS into DIP sockets as shown below.

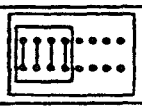


FEATURE		OPTION BLOCK	TERMINAL'S	STRAPPING ARRANGEMENT
Data Channel	Low Speed	A36	3 to 6	
	High Speed	A36	2 to 7 1 to 8	
Uart Channel	300 Baud	A37	1 to 8	
	1200 Baud	A37	2 to 7	
	2400 Baud	A37	3 to 6	

LC 172 B

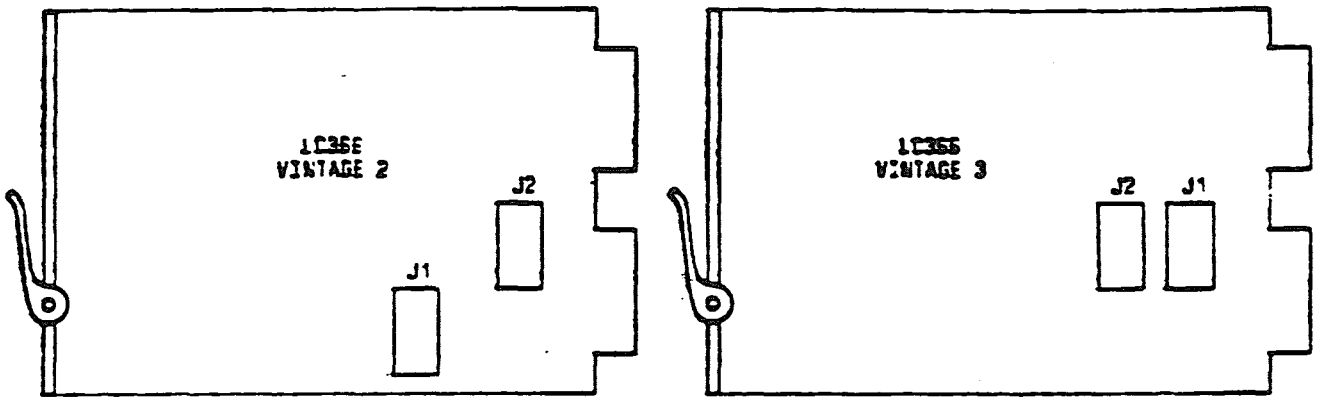
Circuit pack LC 172B controls the transfer of data to and from the MAAP by determining and scheduling data transmission tasks between both common controls in the Dimension® 2000 duplicate common control system. In additions it is equipped with a moveable shorting block, in a DIP socket, that will identify to the on-line processor which common control is associated with which LC 172B.



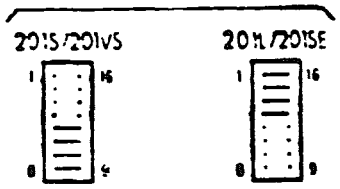
OPTION	COMMON CONTROL IN WHICH LC 172B APPEARS	STRAPPING ARRANGEMENT
A	Processor 0	
AZ	Processor 1	

LC 366

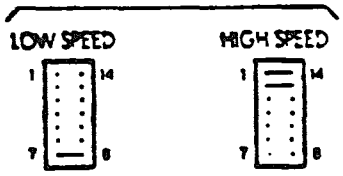
This Circuit Pack is equivalent to two LC34B's. The CSS 201L or 201SE PBX option is standard (J1). Also, the Low Speed option (J2) is standard.



J1 SETTINGS



J2 SETTINGS



High Speed data is 833 KHZ
Low Speed data is 185 KHZ.

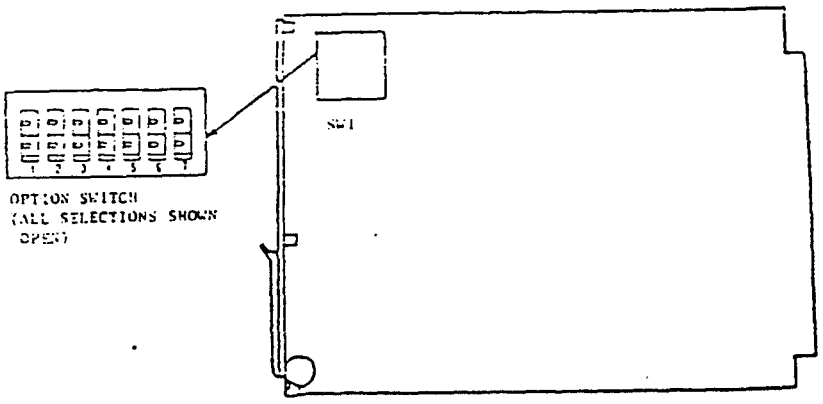
The J2 option block is used to select low or high speed for Serial data channel 0. Each LC 366 has one dual speed serial channel (0) and three low speed serial data channels (1, 2, and 3).

LC 374

LC 374 is replacing LC 63 in the Direct Output version application of SMDR. LC 374 provides BAUD rates of 300, 600, 1200, 2400, and 4800 for outputting call record data to a terminal device (Direct-Output). The Baud rate is implemented by selecting the proper sections on the DIP option switch. Option switch combinations for BAUD rates are as follows:

BAUD RATE	SW1 SWITCH COMBINATION
300	1, 4, 7
600	2, 4, 7
1200	3, 4, 7
2400	3, 5, 7
4800	3, 5, 6

CAUTION: Never operate switches while power is applied to the circuit.



NOTES:
1. The LC 374 is shipped with the option switch set for 300 BAUD.
2. The LC374 circuit pack option switch must be set to match the BAUD rate of the terminal device.
3. Switches must be set prior to inserting the circuit pack into the carrier.
4. Switch sections are closed by depressing the rocker toward the section number.

No arrows shown due to
extensive changes.

Reason for reissue:
Major revision.

Manager, Denver PBX PECC