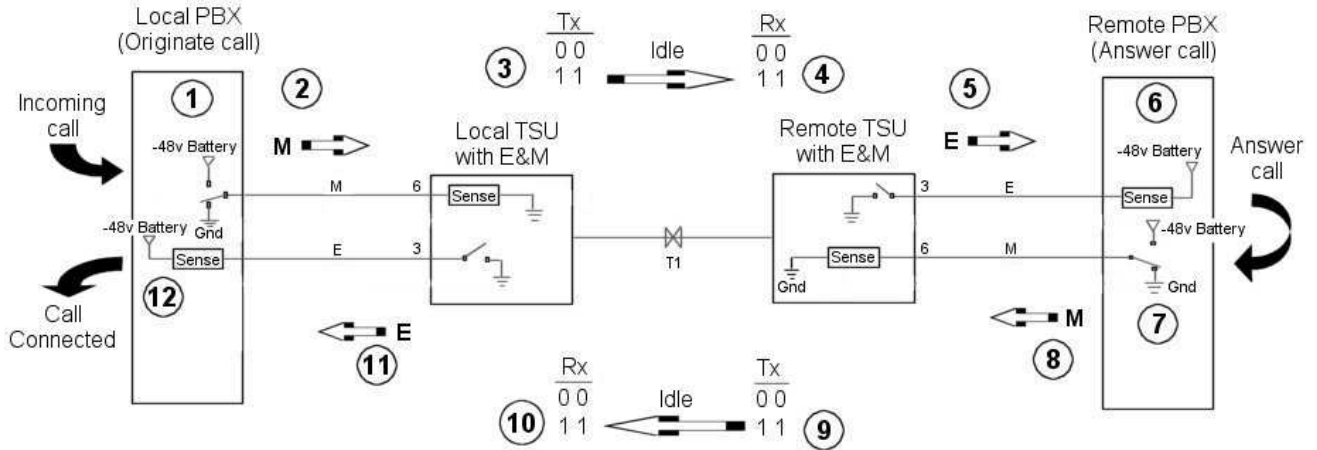




E & M Type I Signal Flow



Note: Voice leads (2 or 4 wire) are not shown in this diagram

1. Phone at local PBX goes off-hook to place a call (switch to -48v).
2. PBX activates M lead.
3. Local E&M card senses M lead active and transmits 11 across T1. (On-hook Idle state was 00).
4. Remote E&M card receives 11 (Idle state was 00).
5. Remote E&M card activates E lead toward remote PBX.
6. Remote PBX senses active E lead, and then accepts digits.
7. Remote PBX rings phone. Phone answered (switch to -48v).
8. Remote PBX activates M lead back to remote E&M card.
9. Remote E&M sees M active and transmits 11 across T1. (Idle state was 00).
10. Local E&M receives 11 (Idle state was 00).
11. Local E&M activates E lead to local PBX.
12. Local PBX senses active E lead; connection is established.

Troubleshooting

- Check unit configuration.
- Monitor E & M Lead status and sig bits.

Failure near:	Perform these actions:
step 2 or 8	With phone off hook, disconnect RJ45 cable from the E&M card. <ul style="list-style-type: none"> • Check for -48vdc on pin 6 of cable. If it is the wrong voltage, then check the PBX and cable. • Check for short between pin 6 and ground on the E&M card. If not shorted, check the card.
step 5 or 11	While receiving the correct sig bits (11), disconnect the RJ45 cable from the E&M card. <ul style="list-style-type: none"> • Check for short between pin 3 and ground of the card. If not shorted, check the card. • Verify -48vdc on pin 3 of the cable. If it is the wrong voltage, check the PBX and cable.

Originating a call from E&M, immediate start						
	System Status	Rx A	Rx B	Tx A	Tx B	Comments
1	Idle	0	0	0	0	
2	Trunk seized	0	0	1	1	Outgoing call
3	Passing digits	0	0	0/1	0/1	Passing digits
4	Call	1	1	1	1	Connection complete
5	Far end disconnect	0	0	1	1	Far end hangs up
6	Near end disconnect	0	0	0	0	Idle now

Receiving a call into E&M, immediate start						
	System Status	Rx A	Rx B	Tx A	Tx B	Comments
1	Idle	0	0	0	0	
2	Trunk seized	1	1	0	0	Incoming call
3	Passing digits	0/1	0/1	0	0	Passing digits
4	Call	1	1	1	1	Connection complete
5	Far end disconnect	0	0	1	1	Far end hangs up
6	Near end disconnect	0	0	0	0	Idle now

E&M Card Pinout

Pin	Name	Description
2	Tip	Cust Tx Tip (2/4 wire)
1	Ring	Cust Tx Ring (2/4 wire)
7	Tip1	Cust Rx Tip (4 wire only)
8	Ring1	Cust Rx Ring (4 wire only)
3	E-Lead	Cust originate E-Lead
6	M-Lead	Netwk originate M-Lead
4	Sig Gnd	E-Lead Gnd return
5	Sig Batt	M-Lead Battery source