

T-BERD 224 Application

Monitoring A/B Signaling Bits

The following procedure outlines how to use the T-BERD 224 to monitor the status of the A and B signaling bits. Please read the entire procedure **BEFORE** starting.

Part 1 – Configuring the T-BERD 224

Step	Switch	Action
1		Configure the T-BERD 224 according to the T-BERD 224 T1 Monitor Setup card.
2	CHANNEL FORMAT	Select SIGNLNG , VF , or FULL T1 .
3	RESULTS I	Select SIGNAL category using the blank switch. Select 55 TRAFFIC using the arrowed switch. The screen displays all 24 channels for LINE 1 & LINE 2 in four groups of six channels each. Active channels (on-hook/off-hook states) can be determined by knowing defined A and B states related to specific trunk type (e.g., Loop Start, Ground Start, or E&M – see Part 2).
4	LINE 1 & LINE 2 CHANNELS	Select the T1 channel (DS0) in the LINE 1 or LINE 2 channel windows to be listed to.

55	L1A/B	00000010	11110001	10011011	11111111
TRAFFIC	L2A/B	01001111	11110001	10101011	11111111

Part 2 – Analyzing the Results

Typical A/B Signaling Bit States at the DSX-1

The **ON HOOK**, **OFF HOOK**, and **RINGING** states of each channel are represented by the A and B signaling bits. Use the A and B signaling bits to identify whether the channel is active, idle, or stuck.

Loop Start	Foreign Exchange						Digital Loop Carrier					
	CO Transmits		Station Transmits		CO Transmits		Station Transmits		CO Transmits		Station Transmits	
Central Office (CO) calling Station (oORHo)	Indicator	A	B	Indicator	A	B	Indicator	A	B	Indicator	A	B
Idle (on hook)	O	0	1	o	0	1	O	1	1	o	0	0
Seizure: ringing from CO (see NOTE)	R	0	0		0	1	R	1	1/0		0	0
Station answers (off hook)/conversation		0	1	h	1	1		1	1	h	1	0
Station hangs up (on hook)		0	1	o	0	1		1	1	o	0	0

NOTE: The state of the ringing bit represents its state during the 2 second “ringing on” interval of the ringing cycle. During the 4 second silent interval of the cycle, the ringing bit returns to its idle state.



(continued on back)



20400 Observation Drive, Germantown, Maryland 20876-4023 USA
 USA 1-800-638-2049 • +1-301-353-1550 • FAX +1-301-353-0234
 Canada 1-888-689-2165 • +1-905-507-4117 • FAX +1-905-507-4126
 www.ttc.com

TTC Technical Support
1-800-638-2049

Part 2 – Analyzing the Results (cont.)

Typical A/B Signaling Bit States at the DSX-1

	Foreign Exchange						Digital Loop Carrier					
	CO Transmits			Station Transmits			CO Transmits			Station Transmits		
Loop Start (cont.)	Indicator	A	B	Indicator	A	B	Indicator	A	B	Indicator	A	B
<i>Station calling CO (oOht#o)</i>												
Idle (on hook)	o	0	1	O	0	1	o	1	1	O	0	0
Seizure: loop closure from station (off hook)		0	1	H	1	1		1	1	H	1	0
Dial tone from CO (bits don't change)	t	0	1		1	1	t	1	1		1	0
Station sends digits/call established*		0	1	#	1	1		1	1	#	1	0
Conversation*		0	1		1	1		1	1		1	0
Station hangs up (on hook)		0	1	O	0	1		1	1	O	0	0
Ground Start												
<i>CO calling Station (oOHRHbo)</i>												
Idle/open tip from CO (on hook)	O	1	1	o	0	1	O	0	0	o	0	0
Seizure: ground on tip from CO (off hook)	H	0	1		0	1	H	0	1/0		0	0
Ringing from CO (see NOTE)	R	0	0		0	1	R	1	1/0		0	0
Station answers (off hook)/conversation		0	1	h	1	1	H	0	1/0	h	1	0
Station hangs up (on hook)		0	1	o	0	1		0	1/0	o	0	0
CO hangs up/open tip from CO (on hook)	O	1	1		0	1	O	0	0		0	0
<i>Station calling CO (oOGhHt#Oo)</i>												
Idle/open tip from CO (on hook)	o	1	1	O	0	1	o	0	0	O	0	0
Seizure: ground on ring from station		1	1	G	0	0		0	0	G	0	1
Ground on tip from CO (on hook)	h	0	1		0	0	h	0	1/0		0	1
Station removes ring ground, closes loop (off hook)		0	1	H	1	1		0	1/0	H	1	0
Dial tone from CO*	t	0	1		1	1	t	0	1/0		1	0
Station sends digits/call established*		0	1	#	1	1		0	1/0	#	1	0
Conversation*		0	1		1	1		0	1/0		1	0
Station hangs up (on hook)		0	1	O	0	1		0	1/0	O	0	0
CO hangs up/open tip from CO (on hook)	o	1	1		0	1	o	0	0		0	0
Wink Start												
<i>PBX calling CO (oOHw#bOo)**</i>												
Idle (on hook)	o	0	0	O	0	0						
Seizure (off hook)		0	0	H	1	1						
Wink from CO	w	1	1		1	1						
PBX transmits digits*		0	0	#	1	1						
CO answers/call established	h	1	1		1	1						
Conversation*		1	1		1	1						
PBX hangs up (on hook)		1	1	O	0	0						
CO hangs up (on hook)	o	0	0		0	0						

Key *Originate Supervision*
 G Ground on Ring
 H Off Hook
 O On Hook
 R Ring

Terminate Supervision
 h off hook (ground on tip)
 o on hook
 w wink
 t dial tone

digits
 1/0 toggling bits
 * bits don't change
 ** "CO calling PBX" works the same way

NOTE: The state of the ringing bit represents its state during the 2 second "ringing on" interval of the ringing cycle. During the 4 second silent interval of the cycle, the ringing bit returns to its idle state.

The "Indicator" section represents indication on T-BERD 224.

