

Setting PDH Transmit Parameters

This section describes how to set the transmit rate, transmit clock, line clock offset, payload, framing, test pattern, active channel and background pattern for a PDH signal.

Steps for Setting Parameters

The sequence of steps for setting transmit parameters varies depending on the type of signal to be transmitted. Figure 3 44 shows the sequence of steps required to set the transmit parameters for a PDH signal (for example, 2 Mb/s).

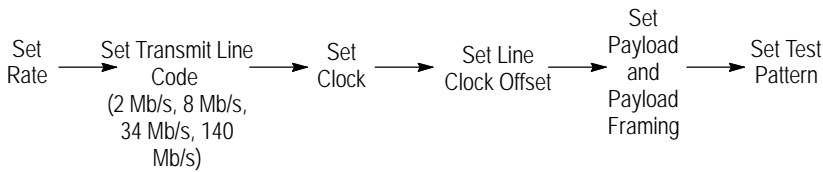


Figure 3 44: Sequence for Setting PDH Signal Parameters

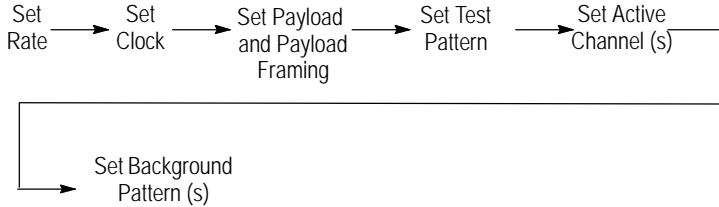


Figure 3 45: Sequence for Setting PDH Signal Parameters When Multiplexing a lower rate PDH Signal

CTS850 SDH/PDH Test Set

Selecting 64k TX Settings

If the operator selects a PDH Transmit Rate and a 64k payload on the Transmit Setting screen, the 64k Tx SETTINGS menu is enabled. This menu has all of the setup items required to configure a 64k or N x 64k payload as a base for the 2 Mb/s signal. This menu also is used for a PDH payload on a SDH signal.

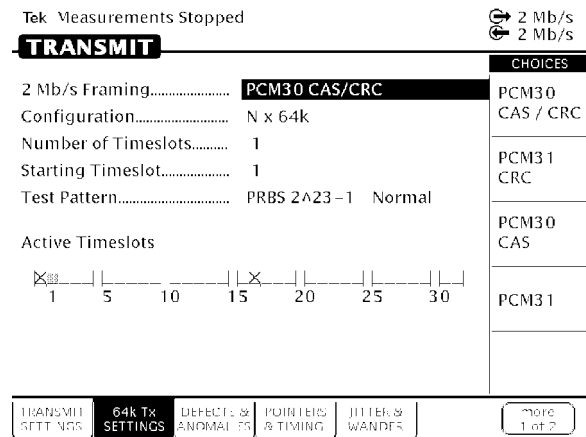


Figure 3 46: 64k Tx SETTINGS from TRANSMIT SETTING Menu

Table 3 15: 64k Tx SETTINGS Choices

64k TX Settings	Choices
Framing	Selects the framing for the signal. Choices are 2Mb/s PCM30 CAS/CRC, PCM31 CRC, PCM30CAS, and PCM31.
Configuration	Selects the 64k configuration. The menu choices are 1x64k, Nx64k Contiguous
Number of Timeslots	If the configuration is Nx64k, this selects the number of contiguous channels (N) that make up the signal. This choice will not display for a 1 x 64k configuration.

Table 3 15:64k Tx SETTINGS Choices (Cont.)

64k TX Settings	Choices
Starting Timeslot	This selects the starting (or only) timeslot.
Test Pattern	This selection is a duplicate of the Test Pattern selection choice from the TRANSMIT SETTING menu.

Setting the Transmit Rate

To set the transmit rate:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Transmit Rate (see Figure 3 47)	2 Mb/s 34Mb/s or 45 Mb/s 140Mb/s

H Select **2 Mb/s**, **8 Mb/s**, **34 Mb/s**, or **140 Mb/s** to transmit a PDH signal. If your CTS 850 test set supports the 45 Mb/s option, there is also a 45 Mb/s signal available for selection.

NOTE. Even though there are output connectors for both SDH and PDH signals on the CTS850 front panel, the CTS850 can transmit only one type of signal at a time.

Independent Transmit and Receive Settings

Generally, you can set the transmit and receive settings independently. For example, you can receive an electrical signal at the STM-1E rate while simultaneously transmitting an optical signal at the 140 Mb/s rate. PDH can also be an electrical signal.

Coupling Transmit and Receive Settings

If your application requires that the transmit settings and receive settings be identical, you can save time by coupling them together. After they are coupled, any change you make to a parameter on the TRANSMIT SETTINGS page will also be made to the corresponding setting in the RECEIVE SETTINGS page of the RECEIVE menu. The inverse is also true.

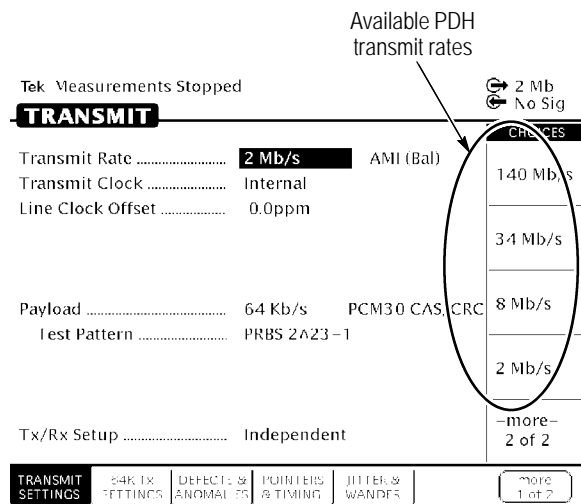


Figure 3 47:PDH Transmit Rates

To couple the transmit and receive settings together from the TRANSMIT SETTINGS page:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Tx/Rx Setup	Coupled

NOTE. When settings are coupled from the TRANSMIT SETTINGS page, the receive parameters are changed to match the transmit parameters. Conversely, when settings are coupled from the RECEIVE SETTINGS page, the transmit parameters are changed to match the receive parameters.

Notice that the signal status icons, in the upper-right corner of the display, changed to reflect the coupling of the settings.

To change transmit and receive settings so that they are no longer coupled:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Tx/Rx Setup	Independent

Notice that the signal status icons, in the upper-right corner of the display, changed to indicate that the settings are no longer coupled.

Viewing the Transmit Line Code

To view the transmit line code for the PDH signal:

The line code for each PDH rate is listed in Table 3 16.

Table 3 16:PDH Rate Line Codes

Transmit Rate	Line Codes Available
8, 34 Mb/s	HDB3, AMI
45 Mb/s	HDB3, B3ZS
2 Mb/s	HDB3(Unbalanced), HDB3 (Unbalanced), AMI (Unbalanced) AMI (Balanced)

H CMI (Coded Mark Inversion) is the only line code available for the 140 Mb/s rate.

Setting the Transmit Clock

To specify the transmit clock:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Transmit Clock	Internal
			Recovered
			External 2 Mb/s/ 2 MHz
			External 1.5 Mb/s BITS

H Select **Internal** to set the transmit clock to the internal clock.

- H Select **Recovered** to use the clock recovered from an incoming signal.
- H Select **External 2 Mb/s** to use an external 2 Mb/s clock.
- H Select **External 2 MHz** to use the clock signal from an external 2 MHz clock.
- H Select **External 1.5 Mb/s BITS** to use an external 1.5 Mb/s.

Setting the Line Clock Offset

To specify the line clock offset:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	Transmit Settings	Line Clock Offset	Max +100ppm
			Stress +50ppm
			Stress 50ppm
			Default 0 ppm
			USER DEFINED

The different PDH rates have different stress ratios:
 140 Mb/s +/- 15 ppm; 34 Mb/s +/- 20 ppm; 8 Mb/s +/- 30 ppm; 2 Mb/s +/- 50 ppm.

Specifying Payload and Payload Framing

The framing choices available depend on the selected transmit rate.

To set the framing for a 2 Mb/s signal:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Payload 2 Mb/s	Unframed
			External Add Balanced:
			External Add Unbalanced
			PCM 30 CAS/CRC, PCM31 CRC, PCM 30 CAS, PCM31

To set the framing for a 8 Mb/s, 34 Mb/s, or 140 Mb/s signal:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Payload 8 Mb/s, 34 Mb/s or 140 Mb/s	Unframed
			Framed
			External Add

To set the framing for a 45 Mb/s signal:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Payload 45 Mb/s	C Bit
			M13
			Unframed

To set the framing for a 64k signal:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Payload 64k	PCM30 CAS/CRC
			PCM31 CRC
			PCM30 CAS
			PCM31

Specifying the Test Pattern

You can select a test pattern to transmit in the PDH signal.

To specify the test pattern to transmit:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
TRANSMIT	TRANSMIT SETTINGS	Test Pattern	PRBS 2 ²³ 1 PRBS 2 ²⁰ 1 PRBS 2 ¹⁵ 1 PRBS 2 ¹¹ 1 PRBS 2 ⁹ 1 1 in 8 All Ones All Zeros TS Idle 1020 Hz 0 dBm User Word 8 bit User Word 16 bit User Word 24 bit

H Select **1 in 8** to set the test pattern to 10000000.

H Select **User Word 8 bit**, **User Word 16 bit**, or **User Word 24 bit** to set a test pattern different from the preset choices. If you choose one of the User Word choices, the test pattern description changes to User Defined Byte.

If you select User Word 8 bit/16 bit/24 bit for the test pattern, set the value of the User Word as follows:

1. Set the contents of the User Word as follows:

Press Menu Button	Select Menu Page	Highlight Parameter	Select Choice
		Test Pattern	Set to 00000000
			Set to 11111111
			Default 10101010
			EDIT BYTE/ Edit XX bits

2. Select **EDIT BYTE/Edit XX bits** to specify a value different from the preset choices (see Figure 3 48).
3. Select **Predefined Patterns** if you decide to use the standard patterns.
4. Select **DONE** when you are finished editing the byte.

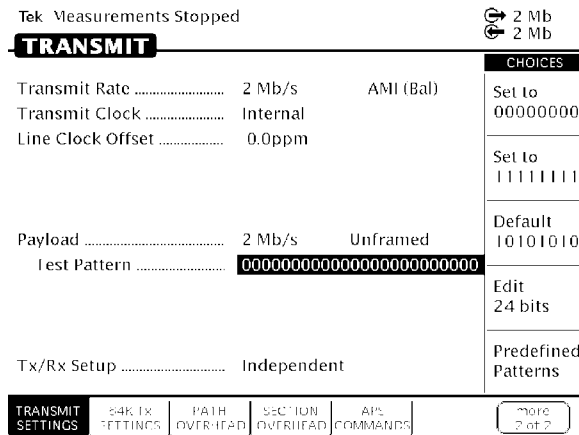


Figure 3 48: Editing the User Word

Setting Jitter or Wander Generation

To test the response of a network to jitter, you may need to generate PDH signals that contain jitter. You can use the CTS850 to generate these signals with a controlled amount of jitter. Refer to *Setting Jitter and Wander Generation* in the separate section of this chapter on **Setting Jitter/Wander Parameters** for information about this topic.