

# QUICK START GUIDE FOR DEMONSTRATION CIRCUIT 497

## SOFTWARE-SELECTABLE MULTI-PROTOCOL TRANSCEIVER

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### LTC2846CG/LTC2844CG

## DESCRIPTION

Demonstration circuit 497 is a complete DCE or DTE serial port. The protocols supported are V.28 (RS232), V.35, V.36, RS449, EIA530, EIA530A and X.21. Four jumpers select the proper protocol and other port-configuration settings. One jumper switches on/off the internal switching regulator of the LTC<sup>®</sup>2846. The board provides a vehicle for observing the line drivers and receivers on the LTC2846 and LTC2844. Logic-level signals enter and exit the board on the left side and line-level signals enter and exit on the right. The internally generated supplies are observable on the pins at the top of the board.

DC497 is intended for network equipment that interfaces to other equipment using standard serial connections. These applications include routers and wide area networks. The interface design work is as simple as placing this chipset on a board with a handful of small, inexpensive components.

**Design files for this circuit board are available. Call the LTC factory.**

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**Table 1. Performance Summary ( $T_A = 25^\circ\text{C}$ )**

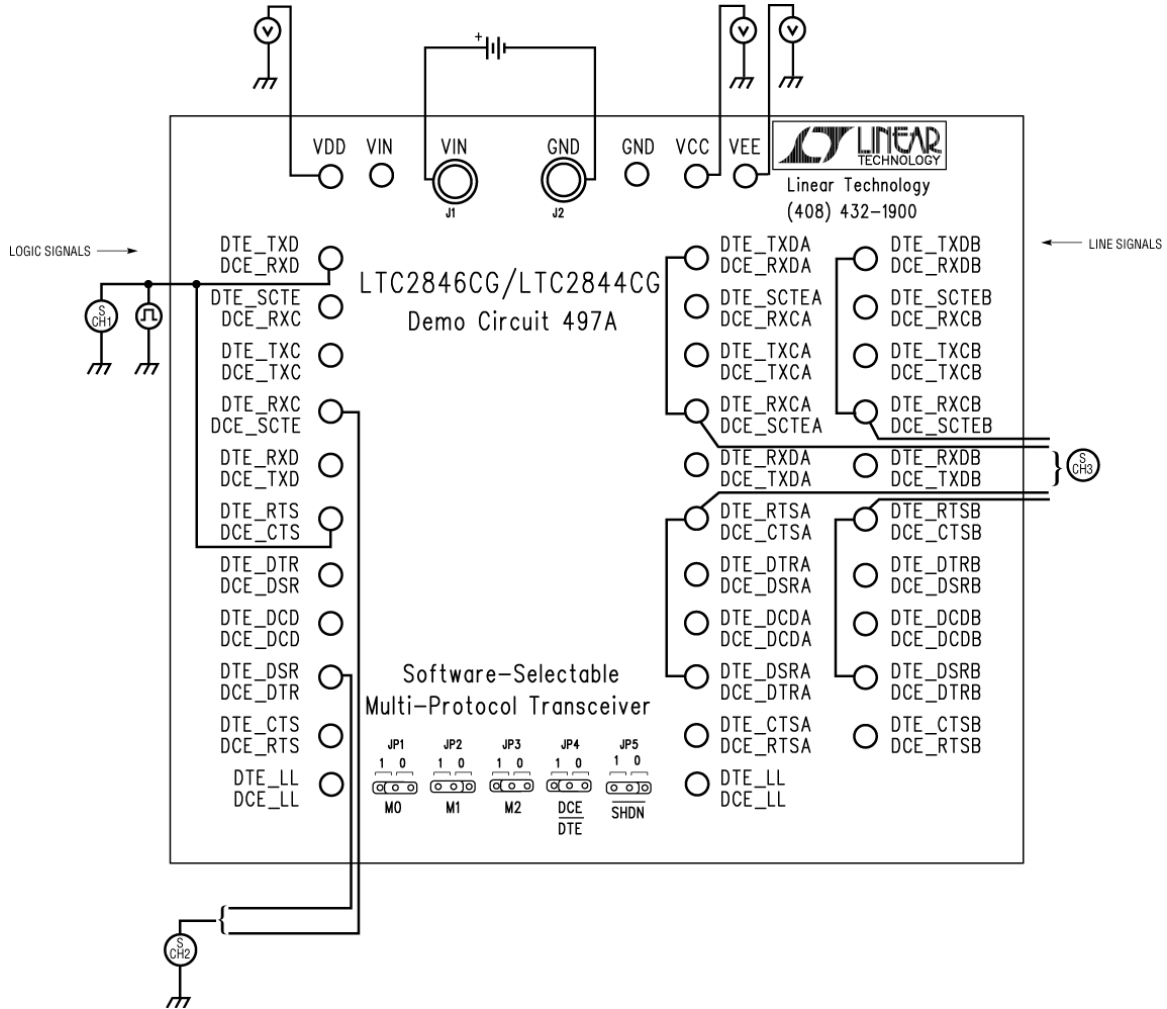
PARAMETER	CONDITION	VALUE
Input Voltage	With Onboard Boost Regulator	3.3V
	Without Boost Regulator	5.0V
$I_{CC}$	No Cable Mode	300 $\mu$ A
$I_{shutdown}$	Boost Regulator Quiescent Current	10nA
$V_{quiescent}$	Boost Regulator Not Switching	4.2mA
Logic Level Hi	D1,D2,D3,M0,M1,M2,DCE/DTE	2.0V
	SHDN	2.4V
Logic Level Low	D1,D2,D3,M0,M1,M2,DCE/DTE	0.8V
	SHDN	0.5V
Receiver Differential Input Impedance	V.11	103 $\Omega$
	V.35	90-110 $\Omega$
	V.28	3-7K $\Omega$
Receiver Common Mode Input Impedance	V.35	135-165 $\Omega$
Transmitter Differential Mode Impedance	V.35	50-150 $\Omega$
Transmitter Common Mode Impedance	V.35	135-165 $\Omega$
Driver $T_r$ , $T_f$	V.11	15ns
	V.35	5ns
Driver Slew Rate	V.28	4-30V/ $\mu$ s
Receiver Input Hysteresis	V.11	15mV
	V.35	15mV
	V.28	50mV

## QUICK START PROCEDURE

1. Connect the input voltage power supply, meters, pulse generator and oscilloscope as shown in Figure 1.
2. The pulse generator should be set to a 0V to 3.3V swing.
3. The mode pins M0, M1 and M2, plus the configuration pin DCE/DTE should be configured for the desired protocol and port setting. (M0 = 0, M1 = 1, M2 = 0 and DCE/DTE = 0 selects the RS530 DTE mode)
4. Observe the waveforms on the logic signal side and the line signal side of the board. The line driver (TXDA, TXDB) is connected to the line receiver (RXCA, RXCB) to demonstrate the line signals. RTS is also connected to DSR.
5. Observe the internally generated supplies ( $V_{CC}$ ,  $V_{EE}$  and  $V_{DD}$ )

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**Figure 1. Proper Measurement Equipment Setup**

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