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DUTY CYCLE FACTOR OF TRANSMITTED SIGNAL

For the purpose of meeting the radiated emissions we assumed a maximum transmit duty cycle of 50%.

In operation the transmitter (UUT) operates as one of many remotes units that all communicate with a common central unit. Only one remote unit may communicate with a central unit at a time. The remote and central units communicate by sending packetized messages between one other. A message is sent to the central unit by the remote. Then the central unit replies with the same length message to the remote. There is additional dead time when neither transceiver is transmitting to account for receiver to transmit switching and other associated delays. This further reduces the effective transmit duty cycle. The transmit duty cycle for the UUT can never exceed 50%. Figure 1.0 shows typical transmit baseband modulation for the UUT. The UUT is in transmit only during the times showing data activity. During the time that the waveform is in the high idle state, the UUT is in the receive mode and not emitting RF.

For the waveform in Figure 1.0, the overall transmit period for a complete transmit/receive sequence is approximates 10.4 milliseconds. The time that the UUT is in the transmit mode is approximately 2.0 milliseconds. This results in a transmit duty cycle for the UUT of:

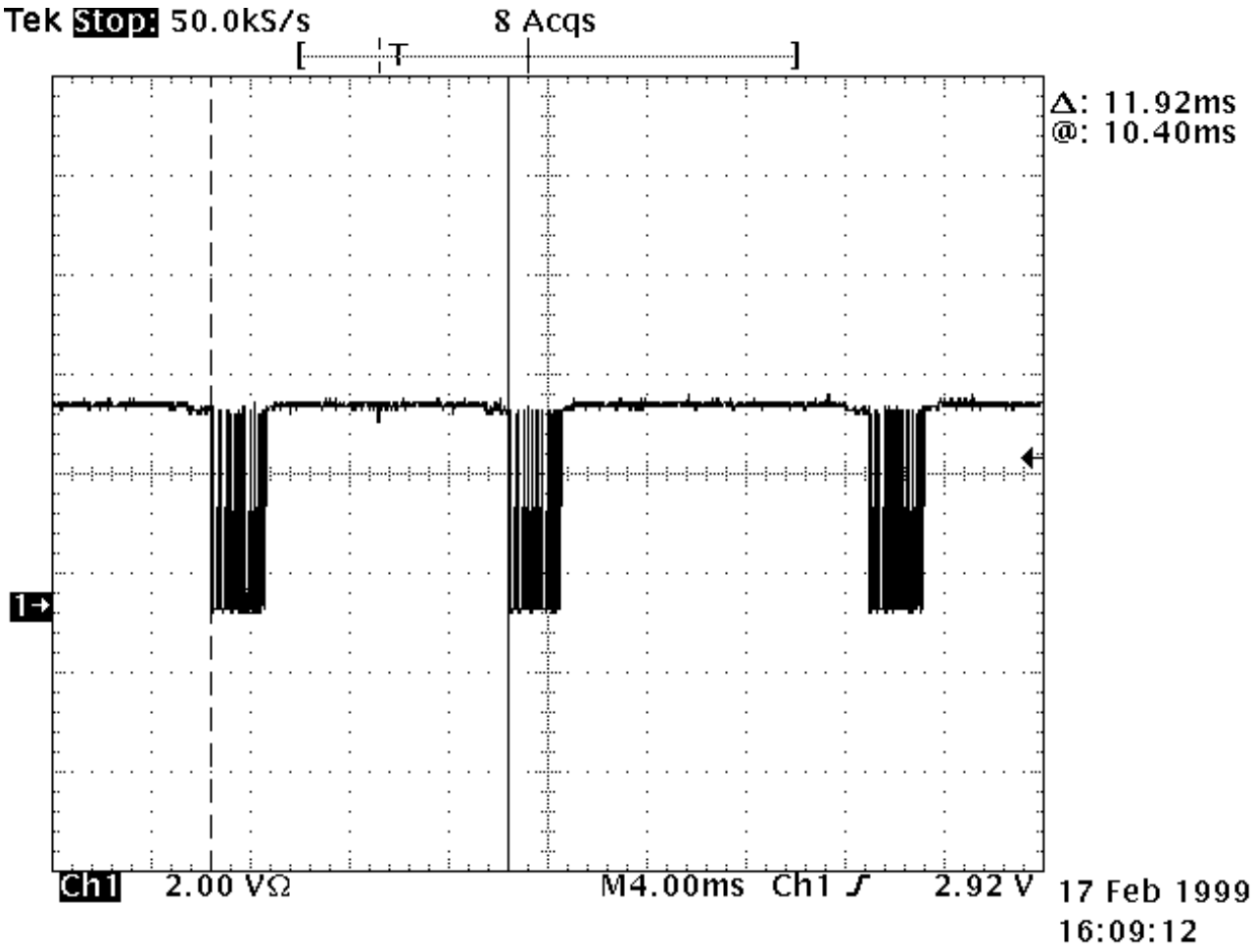
DUTY CYCLE = Ton(max)/**TR**(period)

Ton = 2.0 milliseconds

TR(period) = 10.4 milliseconds

Duty Cycle = [Ton/TR(period)] = 2 ms/10.4 ms = 0.192 or 19.2 percent

Different length messages will result in different duty transmit duty cycles for the UUT, but at no time will the duty cycle exceed 50 percent.


Tek Stop: 50.0kS/s
8 Acqs
Δ: 11.92ms
@: 10.40ms
Ch1 2.00 VΩ
M4.00ms Ch1 ƒ 2.92 V
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16:09:12

Figure 1.0