

MX-COM, INC. MiXed Signal ICs

APPLICATION NOTE

Recommendations for V.23 1200/75bps Full-Duplex Call Set-Up

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V.23 recommendations do not describe how a connection is established. The following information and figure describes how the connection should be established.

Note: One should not rely on other modems to follow this particular flow and the 1200/1200bps half-duplex connections are not covered by this application note.

1. The calling (originating) modem should connect to the line by operating the off-hook relay.
2. Having seized the line the dial tone should be detected. The dial tone will typically appear approximately 1/3 seconds after going off-hook. If the dial tone does not appear after 5 seconds return to the on-hook state. If dial tone monitoring is not to be performed (blind dialing) a pause of several seconds is necessary after line seizure and before dialing begins, typically 2 seconds.
3. Send DTMF digit sequence, tones should have ON and OFF periods of typically 100ms.

Reference Point A.

4. Calling modem remains silent after dialing until it receives a response from the answering modem. The first response may be the V.25 answering procedure, this should be ignored until the signal returns after $75\text{ms} \pm 20\text{ms}$ energy drop, Reference Point B. Without V.25 answering procedure reference, point B will be the end of the 2 seconds answering modem's billing delay.
5. When binary '1's (high band marks) have been detected from the answering modem for $155\text{ms} \pm 50\text{ms}$ the calling modem can be configured ready to receive data, Reference Point C. Start timers for $456\text{ms} \pm 10\text{ms}$ and $765\text{ms} \pm 10\text{ms}$.
6. When the $456\text{ms} \pm 10\text{ms}$ timer expires start transmitting binary '1's (low band marks) to the answering modem, Reference Point D.
7. When the $765\text{ms} \pm 10\text{ms}$ timer expires the calling modem can change to data transmission mode and assert the CTS handshaking line. The binary '1's (low band marks) at the transmitter should now be replaced by data, Reference Point E.

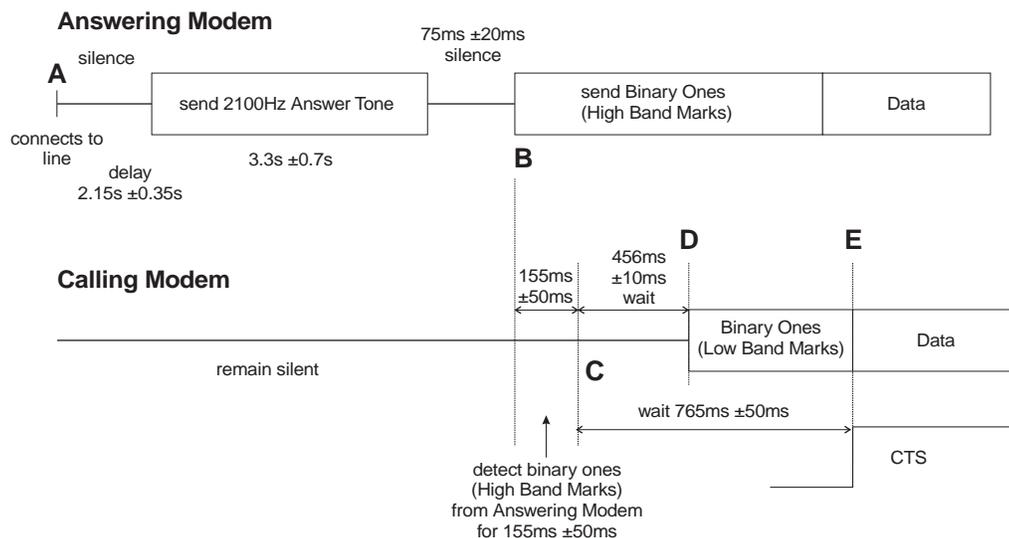


Figure 1: Timing Diagram