Transmit Key Line
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Feature Description

The iDirect Transmit Key Line feature enables an Evolution e850mp powered solution to conserve power by turning off BUC's Power Amplifier (PA) on a burst by burst basis.

The iDirect Evolution e850mp is an extremely compact and lightweight board designed to be easily integrated into portable VSAT terminals. Its reduced size and weight allow the e850mp to be incorporated into units that can be easily transported by a single person or mobile vehicle, making it ideal for Communications-on-the-Move (COTM), emergency response, and for command and control applications in the field.

Maintaining satellite communications is often a critical requirement of e850mp terminals in which the only available power comes from batteries or from a small generator with limited fuel. This makes power conservation crucial to the success of the mission. Since the biggest power requirement of a satellite terminal comes from the BUC, the Transmit Key Line feature is designed to allow the terminal to conserve power by turning off the BUC's Power Amplifier (PA) when the e850mp is not transmitting. This significantly increases the amount of time the terminal is on line.

How It Works

The Transmit Key Line feature uses a differential RS-422 compatible signal provided to the BUC through the A2J2 connector on the e850mp remote modem. This signal can be used to turn on the Solid State Power Amplifier (SSPA) prior to transmitting and to turn off the power amplifier once the transmission is complete. The e850mp has to be integrated with a BUC that supports the key line signal for this feature to work.

By default, the Transmit Key Line feature is disabled for e850mp remotes. This state keeps the Key Line signal set to indicate the BUC should always be enabled. When Service Providers enable Transmit Key Line, they must also enter a BUC PA warm up time between 0 and 1700 microseconds (µs). This represents the minimum amount of time prior to transmitting that the modem will raise the key line signal.

The iDirect Network management System converts the warm up time entered on the Remote VSAT tab to a number of slots before sending the configuration to the modem in the remote-side options file.

For example, if the BUC warm up time is 500 µs and the slot time is 300 µs, then the BUC warm up sent to the remote will be 2 slots. The remote will raise the key line signal two slot times (600 µs) before the scheduled burst time.