

Line Echo Canceller Software (G.165 Software)

Floreat's Line Echo Canceller Software implements the ITU-T G.165 recommendation. Line Echo cancellers are voice-operated devices placed in the four-wire portion of the circuit which reduce the echo by subtracting the echo estimate from the circuit echo. In this usage, the echo cancellers are assumed to be half echo cancellers; i.e., those in which cancellation takes place only in the circuits send path, due to signals present in the receive path.

Electrical echo cancellers are widely used in full duplex modems, in which the transmit signal and the receive signal are sent over the same pair of telephone wires. A hybrid unit is required to convert four-wire communication into two-wire communications and vice-versa. These hybrid units are located in the telephone sets, as well as at various telephone exchanges. Because of the non-stationary nature of various communication links, the hybrids cannot be perfectly tuned using hardware adjustments. Thus, a part of the received signal is reflected as echo, known as the electrical echo. Electrical echo cancellers are designed to remove this echo from the transmitted signal and are categorized into near-end echo cancellers and far-end echo cancellers.

The Floreat G.165 Line Echo Canceller software (LEC Software) is modular, re-locatable and re-entrant to support multi-channel capability and can operate within a multi-tasking environment or as a single task.

It supports user callable functions and can be integrated with Floreat's other fax, telephony, speech compression, VoIP, FoIP, DSVD, imaging and video software for various applications. Floreat G.165 LEC software is supported on various DSPs and processors as well as offered in ANSI C.

Features:

- Conforms to ITU-T G.165 requirements
- Supports tail length up to 64 ms
- Supports user callable functions
- Utilizes Normalized LMS (NLMS)
- Fast convergence
- Low echo return level during single talk
- Double talk detector avoids divergence during double talk
- Tone detector and hold release logic
- Non linear processor
- CNG modules can be optionally added for enhanced performance
- Easily portable, re-entrant and re-locatable code
- C callable APIs

Floreat supports its software on the following DSPs, Controllers and Processors

- TI C5000 and C6000
- Intel Pentium fixed and floating point and XScale
- ADI Blackfin (BF53x), SHARC 21xxx
- ARM 7/9/9E, MIPS
- PowerPC, STM, SuperH cores, Philips Nexperia
- CEVA (formerly DSPG's licensing division)
- Ported by customers to their processors:
 - NEC
 - STM
 - Zilog

- ▶ For further information on the standard, please click [ITU Standards](#).
- ▶ For our brief profile, please click [Company Profile](#).
- ▶ For further inquiry, please send us an [Inquiry Form](#) or send an email to info@floreatinc.com.