FH (Frequency Hopping) - OFDM Modem Available For Immediate Implementation From Global IP Core

June 27, 2025 - Global IP Core Sales - The FH-OFDM (multicarrier) modem is developed for OFDM applications used in frequency hopping transmission scenarios or fixed frequency scenarios.

Functional Description

● The modem consists of two nodes (master (M) - slave (S)), each node has its transmitter and receiver. The frame structure for the down link, during the FH acquisition phase;
● No master/slave distinction in case of fixed frequency operation.
● Control signaling, during OFDM operation, is a 128 word (96 bits with CRC-32) that is encrypted using AES algorithm.
● Lowest SNR required for QEF performance, in case of no impairments (no SFO, no CFO and no phase noise) and code rate ½ for info block length 4K, 50 LDPC decoding iterations, and BPSK modulation is -0.25 dB.
● Supported throughputs in case of FH, BW 28 MHz, hopping rate 1K, FFT size 512, 256 QAM and LDPC code rate ⅘ with 10 decoding iterations is 114.65 Mbps.

Benefits

● Supported hopping rate: 1K hop/sec.
● Supported number of hopping channels up to 32.
● The maximum supported distance is 40 Km.
● Achievable throughput of up to 114.65 Mbps in frequency hopping mode, and up to 158.72 Mbps in fixed frequency mode of operation.

Features

● Supports LDPC code: AR4JA for rates (½, ⅔, and ⅘) and info block length (1024, 4096) bits.
● Supported OFDM sizes: 32, 64, 128, 256, 512.
● Supported modulation orders: BPSK up to 256 QAM.
● Supported oversampling ratios (4, 8).
● CRC-32 for all the FEC frames.
● Supported SFO up to 16 ppm.
● Supported CFO up to 80 KHz

Additional Features Include

● Supports LDPC code: AR4JA for rates (½, ⅔, and ⅘) and info block length (1024, 4096) bits.
● Supported OFDM sizes: 32, 64, 128, 256, 512.
● Supported modulation orders: BPSK up to 256 QAM.
● Supported oversampling ratios (4, 8).
● CRC-32 for all the FEC frames.
● Supported SFO up to 16 ppm.
● Supported CFO up to 80 KHz.

Applications

● OFDM applications in frequency hopping transmission scenarios, with an option of fixed frequency transmission

Please contact us for more information at info@global-ipc.com or check out our product portfolio at www.global-ipc.com

About Global IP Core Sales

Global IP Core Sales® was founded in 2021 and provides state-of-the-art IP Cores for the Semiconductor market. The majority of our products are silicon proven and can be seamlessly implemented into FPGA and ASIC technologies. Global IP Core Sales® will assist you with your IP Core and integration needs. Our mission is to grow your bottom line.