

Overview

NatureDSP IT2400 is a software modem ideally suited for digital voice transmission over HF channels using inexpensive commercial radios. It supports 1200/2400 bps data rates in reduced audio bandwidth (600...2400 Hz).

Features

- supports **1200/2400 bps** data rates
- provides **frame synchronization** for all standard vocoders (MELP, etc.)
- **optimizes total delay** for better perceptual quality
- provides **soft decision** output for optimum vocoder performance
- **reach** command-line interface (>50 commands) and report generator
- **adaptive turboequalization scheme** for HF channels with big multipath spread, fading and the noise
- **reduced bandwidth** requirements allow to use commercial radios
- **not sensitive** to ALC/AGC and non-linearity
- **flexible** test pattern generator and BER tester
- ITU-R.F1487 compatible **channel simulator** for test purposes (real-time version available as an option)
- **demo available** for EVM6424 and for PC

Applications

- HF radios
- HF modems
- Voice over HF
- Software Defined Radio

Specifications

Parameter	Value			Units	Notes
	Min	Max	Typ		
General					
Modes					duplex, half-duplex
Bandwidth	600	2400		Hz	
Air modulation					8PSK
Coding					Convolution, (133, 171), $\frac{3}{4}$ or $\frac{2}{3}$
Interleaving					360 msec
Vocoder synchronization					automatic for frames 10, 12, 15, 20, 22.5 и 30 msec
Acquisition					on-data and on preamble
De-acquisition					automatic, by EOM or by specified number of bits received
Clock rate adjustment	-100	100		ppm	
Frequency offset compensation	-75	75		Hz	
Frequency drift compensation		3.5		Hz/sec	
Total RX+TX delay	850	900		msec	@ 2400 bps
Multipath spread suppression		6.5		msec	
Fading rate		7		Hz	
AWGN channel performance	2400 bps		8.5	dB	@BER=10 ⁻³
	1200 bps		3.5		
2msec, 5 Hz fading rate channel performance	2400 bps		17	dB	@BER=10 ⁻³
	1200 bps		11		

Availability

This software package is available in binaries and in source code written on fully portable C-language for:

- Texas Instruments TMS320C64xx, DaVinci
- MS Windows

Evaluation version for EVM6424 and PC is available upon request.

Contacts

support@integrit.ru
 Tel: +7 962 991 04 22

www.integrit.ru