FAX-G3 and Modem Decoder

Advanced Protocols

WAVECOM
NACHRICHTENTECHNIK

FAX-G3 and Modem Decoder Overview

In spite of the overwhelming use of the Internet for communications, the old-fashioned telephone line based modem and fax means of communications are still in use. Wavecom offers a versatile decoder for these modes as an integrated part of its suite of hardware and software based decoders.

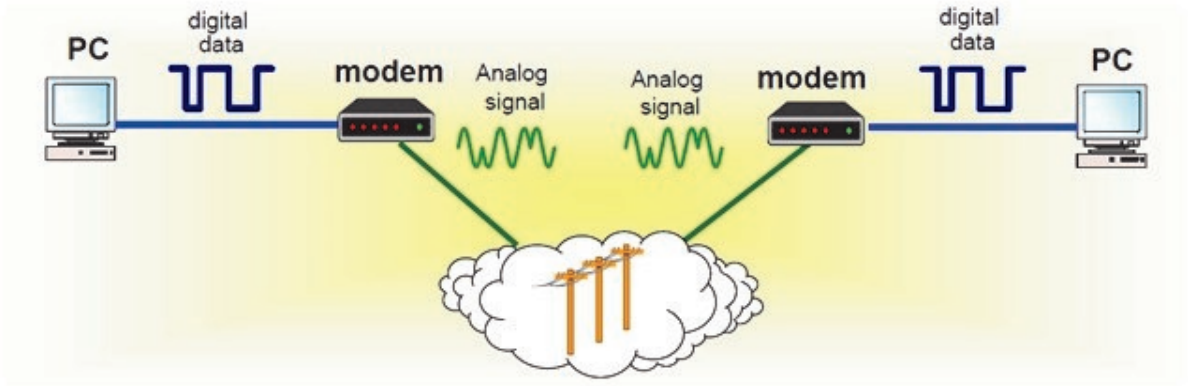


Fig. 1 Half-Duplex Modem Configuration

FAX-G3 and Modem Decoder Features

- Modem and fax decoders accessible from decoder GUI
- Full duplex and half duplex modes decoded
- ITU fax and modem V and T series recommendations supported
- Automatic or manual selection of decoding mode
- Fax images saved as bitmaps or in compressed JPEG format
- Data saved as transparent data, async characters, decoded HDLC frames or in V.42, V.42bis, MNP4 or MNP5 format

Input and Interfacing

The fax and modem decoder accepts input sampled at 8 kHz with a precision of ± 0.01% and stored into a signed 16 bit linear format. One or two sampled streams are accepted, depending on the capture method being mono-directional or bi-directional. The decoder will accept fax and modem signals using a PC sound card AF input. Full-duplex decoding requires two independent input channels - constraints apply in case of mono-directional capture.

Decoding

The fax and modem decoding features depends on three software modules which analyze one or two incoming bit streams (calling and answering modems) in G.711 format (8 kHz sampling rate, A- or mu-law) or a 16 bit linear format. The first module analyzes the initial handshakes to route the bit stream(s) to the appropriate demodulation modules – fax or data – of the next stage. The next module demodulates the signal, and echo cancellation is applied if in use. The last module processes fax ECM (Error Correction Mode) as well as performing data link layer analysis on data signals. The various fax and data modes are then decoded and output in a number of formats.

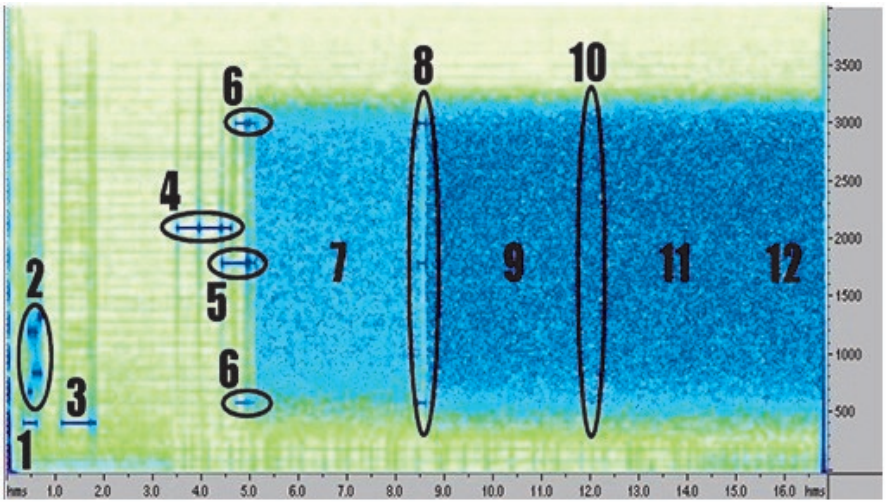
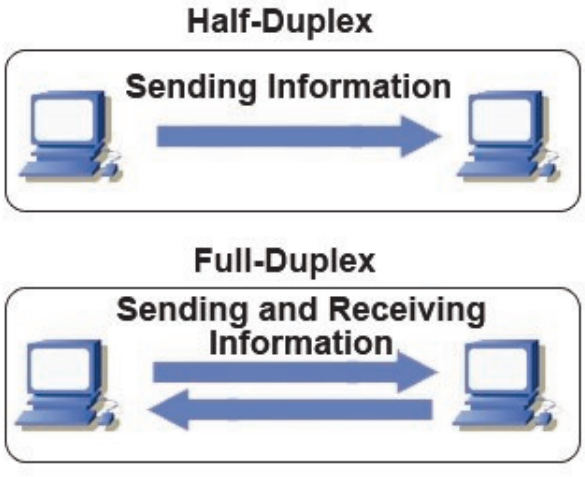


Fig. 2 Time/frequency spectrum of a V.32 modem call



In telecommunication, three basic modes of communication exist. Full-duplex communication implies the simultaneous sending and receiving of information. Half-duplex communication implies that signals can only flow in one direction at a time. Simplex communication is unidirectional and can only flow in one direction.

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Modem and Fax Standards Supported

FAX standards
V.17
V.21 channel 2
V.27ter
V.29
V.34hdx

Modem standards	Modem standards
V.21	V.27
V.22	V.32
V.22bis	V.32bis
V.23	V.90
Bell 103	V.92
V.26	

Data and Fax Protocols Supported

FAX	DATA
T.30	Asynchronous
T.4 mono-dimensional, bi-dimensional	Unframed HDLC
T.6	V.42
T.6 ECM	V.42bis
JPEG	MNP-4
JBIG	MNP-5

Decoder Parameters Supported

Frequency range	200 – 3800 Hz
Symbol rate	2,400 -14,400 Bd
Modulation types	FSK, DPSK, QAM, TCM
Input	♦ Real-time via appropriate line adapter ♦ A- or mu-law (normal, inverted, 16-bit signed linear, 8-bit signed and unsigned linear)
Output (FAX)	♦ Bitmap, compressed JPEG ♦ Handshake information as text file
Output (DATA)	♦ Transparent data, async characters (no LAP protocol or data compression) ♦ Decoded HDLC frames (LAP protocol not recognized) ♦ Decoded V.42,V.42bis, MNP-4 or MNP-5

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Since more than thirty years Wavecom Elektronik AG has developed, manufactured and distributed high quality devices and software for the decoding and retrieval of information from wireless data communication in all frequency bands. The nature of the data communication may be arbitrary, but commonly contains text, images and voice. The company is internationally established within this industry and maintains a longstanding, world-wide network of distributors and business partners.

Product Information

Products	http://www.wavecom.ch/product-summary.php
Datasheets	http://www.wavecom.ch/brochures.php
Specifications	http://www.wavecom.ch/product-specifications.php
Documentation	http://www.wavecom.ch/manuals.php
Online help	http://www.wavecom.ch/content/ext/DecoderOnlineHelp/default.htm
Software warranty	One year free releases and bug fixes, update by DVD
Hardware warranty	Two years hardware warranty
Prices	http://www.wavecom.ch/contact-us.php

System Requirements

	Minimum	*Recommended*
CPU	Core i5 or Core i7 2.8 GHz	Core i7-6700 3.4 GHz
Memory	4 - 8 GB RAM	16 - 32 GB RAM
OS	Windows 7	Windows 10 32-bit or 64-bit

Distributors and Regional Contacts

You will find a list of distributors and regional contacts at http://www.wavecom.ch/distributors.php

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WAVECOM ELEKTRONIK AG
8090 Zurich, Switzerland
E-Mail: sales@wavecom.ch
Internet: www.wavecom.ch