Navigator

Timewave

Sound Card Modem

The Navigator is a complete USB sound card modem featuring a proven USB audio sound card chip, six FTDI USB serial COM ports, a K1EL Winkeyer CW keyer, True FSK and rig control connections for every radio. It has a built-in USB sound card with isolated audio I/O to your radio to prevent ground loops. A second audio input lets you use both receivers in a dual receiver radio. The logic level and RS-232 rig control ports support your Icom CI-V, Yaesu CAT, Kenwood and other radios. Front panel controls set both RX audio levels, TX audio ouput level, audio monitor level and the CW speed. There are no internal configuration jumpers - just conveniently set the software-controlled configuration settings from your PC.

Installation
Easy installation - Connect one USB cable, one Master Radio Cable, and your CW Paddle. Run the installaion CD, answer a few questions on the screen, set levels with the front panel controls and you're on the air!

Software
The Navigator is optimized for the Ham Radio Deluxe logging, award, operating and control suite as well as other control programs.

All the Sound Card Modes
The Navigator supports all the new sound card modes including WINMOR, MARS programs that operate with MIL-STD 188-110C and MARS-ALE programs and JT65 programs.

Master Radio Cable
The Navigator Master Radio Cable is an accessory to match the Navigator to your radio. Just insert one master plug into the Navigator and the radio plugs into the matching jacks on the back of your radio.

Support
The Navigator comes with Timewave's on-line and telephone support and user forums.

Features

- **Works with all sound card modes**
- **Single USB computer connection**
- **USB Sound Card built-in**
- **USB Powered**
- **Universal Rig Control built-in - logic level +/-, CI-V, CAT, & RS-232!**
- **Software Configuration - No jumpers!**
- **FSK Microcontroller for Precise RTTY**
- **Winkeyer for Precise CW with Paddle & Keyboard**
- **Separate COM ports for PTT, FSK, CW, CI-V & RS-232 - *no port splitters!***

Specifications for the Navigator

USB Audio Sound Card	Texas Instruments PCM2904 USB Audio codec
Modulator output level	5-200 mV RMS
Configuration Processor	PIC
Keyer IC	K1EL Winkeyer 2 ver. 23
Audio Monitor Speaker	Internal Speaker
FSK Processor	PIC
Power requirements	USB power @ 180 mA.

Input/Output Connections

Radio interface Ch 1 In	Transformer Balanced, 25 pin D-Subminature
Radio interface Ch 2 In	Transformer Balanced, 25 pin D-Subminature
Radio interface Tx Out	Transformer Balanced, 25 pin D-Subminature
Direct FSK output	Open Collector + Pull-up, 25 pin D-Subminature
PTT output	Open Collector and ttl, 25 pin D-Subminature
Rig Control interface	Yaesu CAT, Icom CI-V, Kenwood TX/RX/RTS/CTS logic level, RS-232. Compatible with all radios. 25 pin D-Subminature
CW keying output	Open Collector, 25 pin D-Subminature
CW PTT output	Open Collector, 25 pin D-Subminature
CW Paddle input	6.3 mm (1/4") phone jack, 3 cond.
Aux Serial Port	RS-232, 9 pin D-Subminature
Aux CI-V	3.5 mm jack, mono
PC interface	USB 2.0 compatible, USB B connector

Physical Certifications

Dimensions	6.5" (165mm)W x 6.3" (160mm)D x 2.2" (56mm)H
Weight	2 lbs (925 g)
Housing	Aluminum Extrusion, black anodized

Certifications

Europe	CE, lead free ROHS
USA	FCC Class B for USB device
Canada	Industry Canada Standard

TIMEWAVE
TECHNOLOGY INC.

Navigator Sound Card Modem

Back Panel

Made in USA
www.timewave.com

US INTERFACE *Navigator*
Tested to comply with FCC
Standards for a Class B USB
Digital Device Pursuant to
Part 15 of the FCC rules
FOR HOME OR OFFICE USE

FCC   CE

RS-232   TRANSCEIVER   CI-V AUX   PADDLE   USB

Navigator Block Diagram

Diagram elements:
- USB Conn
- VBUS PWR CTL
- 4 Channel USB Hub Controller
- USB Audio Stereo Codec
- Dual USB UART Port A Port B
- Dual USB UART Port A Port B
- Dual USB UART Port B Port A
- SPKR
- Audio Monitor
- Audio Filters & AMPS
- CAT Control
- PTT CW DCD Control
- WinKey Control
- FSK & Config Controller
- Aux RS232 Port
- LVL, LVL, LVL, LVL, WPM
- Transformers
- Rig Interface Connector DB25S
- Aux C-IV Conn
- Paddle Conn
- DCE DB9P