

## Model 4539

- *Multi-Mode PSK or FSK*
- *Full / Half Duplex*
- *Synchronous or Asynchronous*
- *Front Panel or Remote Control*
- *Built-in Test*
- *Excision Filtering*
- *Transmit Clock Recovery*
- *Flash Memory*

### HF High Speed Data Modem

NSGDatacom's Model 4539 HF Data Modem is an advanced high-speed, multi-mode, HF data modem that provides the versatility and flexibility to operate in the most advanced high speed HF communications systems. The Model 4539 Modem is capable of transmitting and receiving single tone (PSK/QAM) data rates from 75 to 9,600 bps over a single 3 kHz single-sideband radio channel.

A powerful adaptive equalizer eliminates the detrimental effects of multipath associated with HF transmissions, and convolutional coding with soft decision Viterbi decoding provides error detection and correction. Cancellation of narrowband co-channel interference is accomplished by an adaptive tone excision filtering, capable of automatically removing up to four unwanted interfering signals.

The Model 4539 is designed to meet the performance requirements of MIL-STD-188-110B, STANAG 4539, MIL-STD-188-110A, STANAG 4285, STANAG 4529, STANAG 4415, STANAG 4481 and STANAG 5031 and FSK. The Model 4539 provides auto-detection between these waveforms, thus providing fully adaptive operation at rates from 75 to 9,600 bps. The modem also includes a built-in Ethernet interface for IP based networking applications.

Operational parameters are selectable from the front panel display, or via the remote control interface. The Model 4539 HF Data Modem's powerful digital signal processing (DSP) design, and standard FLASH memory provides the ability to perform software upgrades in the field.



# Model 4539 Specifications

## Model 4539

### Dimensions

**Size:** 1.72" H x 8.37" W x 12" D

**Weight:** 4 lbs

**Desktop or Rack mountable chassis**

### Waveforms

#### STANAG 4539:

**Coded PSK/QAM:** 3200, 4800, 8000, 9600 bps

#### MIL-STD-188-110B: App C.

**Uncoded QAM:** 12,800 bps

#### MIL-STD-188-110A:

**Coded PSK:** 75, 150, 300, 600, 1200, 2400 bps

**Uncoded PSK:** 4800 bps

#### STANAG 4285:

**Coded PSK:** 75, 150, 300, 600, 1200, 2400 bps

**Uncoded PSK:** 1200, 2400, 3600 bps

#### STANAG 4529:

**Coded PSK:** 75, 150, 300, 600, 1200 bps

**Uncoded PSK:** 600, 1200, 1800 bps

#### STANAG 4415:

**Coded PSK:** NATO robust 75 bps

#### STANAG 4481:

**Coded PSK:** 300 bps

#### STANAG 5031:

**Uncoded FSK:** Single channel 75bps

50, 75, 100, 150, 300, and 600 bps

Frequency shift 42.5 Hz, 425 Hz

### FSK

#### Uncoded FSK

50, 75, 100, 150, 300, and 600 bps

Variable Shift

Mark & Space Frequency shift 50 Hz to 3000 Hz

### Interfaces

#### DTE Port:

EIA-RS422 balanced, EIA RS-232D unbal.

Synchronous:

- Int/Ext clk 75 to 12,800bps, select. polarity

- Full Duplex, selectable data polarity.

Asynchronous:

- 50 to 115,200bps, select. polarity

- 1 or 2 stop bits, 5/6/7/8 bit chars

- Full Duplex

- Flow control CTS/RTS or XON/XOFF

#### Input Audio:

600 ohm balanced, -25 to +10 dBm

without adjustment

#### Output Audio:

Balanced, -30 to +5 dBm adjustable into

600 ohm load

#### Radio Keyline:

Open collector to ground (45 volts, 50mA),

and non polarized contact closure (45 volts,

200mA).

#### Remote Control:

EIA RS 232, selectable polarity, 50 to 19.2Kbps

#### Power:

- Source: 85 to 265 Vac, 11-48 VDC

- Dissipation: 35 Watts maximum



- **STANAG 4539**  
**MIL-STD-188-110B**  
**App.C**

- **MIL-STD-188-110A**

- **STANAG 4285**

- **STANAG 4529**

- **STANAG 4415**

- **STANAG 4481**