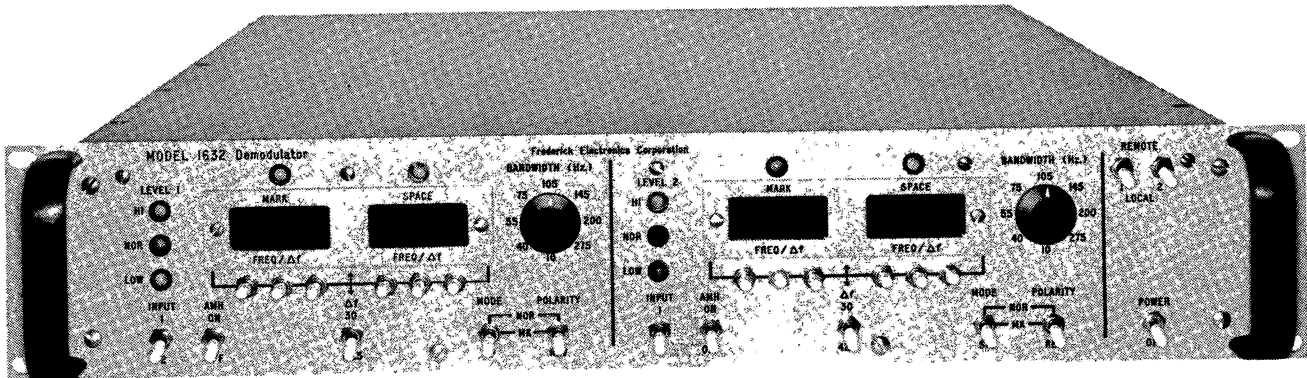


PLANTRONICS
Frederick Electronics

MODEL 1632 DEMODULATOR/
MODEL 1256 DISPLAY UNIT



MODEL 1632 DEMODULATOR

FEATURES

- Copies many CCITT compatible signals
- Copies with only one FSK tone
- Digitally controlled filters
- Fast setup with companion Model 1256

GENERAL

The Model 1632 is an extremely versatile Tone Demodulator which can be readily adjusted to receive signals from most of the FSK or on/off keyed, single or multichannel VFDM schemes presently in use. This versatility makes the device particularly well suited for surveillance, monitoring, and testing activities.

The Model 1632 chassis contains two complete demodulators, each with its own separate operating controls. Each demodulator has two bandpass filters whose center frequencies and bandpass widths are selectable. This latter feature permits independent detection of the mark and space tones which further increases the flexibility of the device, in that, as soon as one tone has been tuned, copying of data may begin. In the case of FSK, a search is then made for the cooperating tone. When located, the

GENERAL (cont.)

second tone enhances the performance of the unit.

The demodulators may be automatically and rapidly set up, to predetermined values, using the Model 1256 display unit. The Model 1256 is discussed on the following pages.

DESIGN

The Model 1632 is an all solid-state device housed in an aluminum cabinet, suitable for mounting in a standard 19-inch EIA rack. A vertical rack space of 3½ inches is required.

The unit without options contains 16 printed circuit boards. Access is provided by a removable top cover. All operating controls and indicators are conveniently located on the front panel.

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APPLICATIONS

SIGNALING SCHEME

Some of the commonly encountered multi-channel VFDM systems with which the Model 1632 is compatible are those which operate in accordance with CCITT Recommendations R31, R36, R37, R38-A, B and R39. The unit is also capable of demodulating on/off keying such as that covered by Recommendation R35.

Individual filters for center frequencies may be chosen in increments of either 30 Hz or 42.5 Hz, beginning at 300 Hz for the 30 Hz steps and 255 Hz for the 42.5 Hz spacing. Both of these modes have upper limits, which are detailed below. The bandpass filter widths which may be chosen are 10 Hz (for tuning only), 40 Hz, 55 Hz, 75 Hz, 105 Hz, 145 Hz, 200 Hz, and 275 Hz.

In addition to the exact center frequencies mentioned, many more "effective center frequencies" can be copied by selecting the closest exact center frequency and a wide bandpass. Single channel FSK is copied in this manner. IF signals are supplied from the output of a receiver, and the receiver has an adjustable BFO, then the exact center frequency is unimportant.

SPECIFICATIONS

DATA INPUTS

Using Front Panel Controls

$\Delta F = 30 \text{ Hz}$ 300 Hz to 5970 Hz
 $\Delta F = 42.5 \text{ Hz}$ 255 Hz to 8457.5 Hz

Controlled from Model 1256

$\Delta F = 30 \text{ Hz}$ 300 Hz to 4770 Hz
 $\Delta F = 42.5 \text{ Hz}$ 255 Hz to 6757.5 Hz

Maximum Baud Rate

300 baud or less depending upon bandpass used.

Input Level

+10 dbm to -40 dbm for 600 ohm circuit
1v rms for 10k ohm circuit

Number of Inputs

Two inputs. Either or both demodulators may be switched to either input.

SPECIFICATIONS (cont.)

DATA OUTPUTS

Number of Outputs

Two outputs. One per demodulator or the demodulators may be connected together for a single, diversity output.

Output Circuit Configuration

Standard - Polar voltage (nominally $\pm 6\text{v}$) compatible with MIL-STD-188C or internally strappable for EIA-RS-232-C.

Optional - Plug-in neutral or polar dry contacts (up to 100 ma at 130 vdc) of solid-state optically isolated high level keyers.

POWER REQUIREMENTS

AC Power

115/230 vac $\pm 10\%$, 47 to 400 Hz,
55 watts (without optional loop power supply).

OPTIONS

Power Supply

A plug-in power supply is available for use with high level keyers.

Remote Control Input

Consists of a 5-wire, low voltage cable from Model 1256.

PHYSICAL DESCRIPTION

Chassis Dimensions

19 inches (48.3 cm) wide
3½ inches (8.89 cm) high
20 inches (50.8 cm) deep

Weight

Approximately 20 pounds (9.07 kg)

Finish

Clear irridited aluminum chassis, front panel light gray with black filled engraved markings.

Operating Temperature

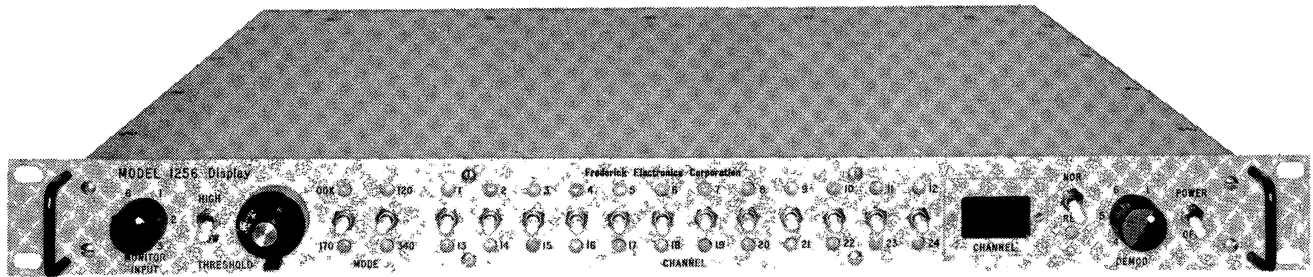
0° to +50°C ambient

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MODEL 1256 DISPLAY UNIT

FEATURES

- Programmable for various signaling schemes
- Displays status of up to 24 channels
- Provides rapid setup of Model 1632

GENERAL

The Model 1256 scans through a programmed set of frequencies, detects the presence or either a steady state tone or keyed signals at the chosen frequencies, and displays this information on its front panel.

The scanned frequencies are normally a set of tones which form a "Voice Frequency Division Multiplex" system such as those recommended by CCITT. An operator watching this display can readily determine which channels contain traffic. A remotely connected Model 1632 demodulator may be easily and quickly set up on an active channel using the controls of the Model 1256.

Mode switches permit selection of any of four preprogrammed, on/off keying (OOK) or frequency shift keying (FSK) tone frequency sets. Six individual inputs are provided and selection is made via a rotary switch. Up to six remote demodulators may be controlled. The addresses of these units are automatically inserted into the control signal format and are dependent upon the

GENERAL (cont.)

position of a front panel switch. Control instructions are sent to the demodulator whenever one of the channel switches is activated. In addition to the address data, the control instruction contains such information as center frequency and bandwidth of the tone filters and detection mode (i.e., OOK or FSK).

When an instruction has been sent, the channel number which the demodulator is to copy within a given frequency scheme, is displayed on the front panel. Selecting a new demodulator address causes the number of the channel, which that demodulator was last instructed to copy, to be displayed.

DESIGN

The Model 1256 is an all solid-state device housed in an aluminum cabinet for mounting in a standard EIA rack. The unit contains nine printed circuit boards. Access is provided by a removable top cover. All operating controls and indicators are conveniently located on the front panel.

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APPLICATIONS

SIGNALING SCHEME AND PROGRAMMING

The Model 1256 is normally programmed for the following frequency schemes:

MODE 1 - 24 channels, on-off keyed beginning at 420 Hz and spaced at 120 Hz intervals (per CCITT R-35);

MODE 2 - 24 channels, ± 30 Hz FSK beginning at 420 Hz and spaced at 120 Hz intervals (per CCITT R-31);

MODE 3 - 18 channels, ± 42.5 Hz FSK beginning at 425 Hz and spaced at 170 Hz intervals (per CCITT R-39);

MODE 4 - 9 channels, ± 85 Hz FSK beginning at 850 Hz and spaced at intervals of 340 Hz.

Programming for other frequency schemes is possible within some limitations (available by special order and quotation only).

SPECIFICATIONS

DATA INPUTS

Input Signals

MODE 1 00K 300-4110 Hz	} Depending on program
MODE 2 FSK 300-4110 Hz	
MODE 3 FSK 255-5652.5 Hz	
MODE 4 FSK 255-5652.5 Hz	

Input Level

-40 dbm to +10 dbm

Number of Inputs

6 (switch selectable)

Input Impedance

10,000 ohms (balanced and isolated)

SPECIFICATIONS (cont.)

DATA INPUTS (cont.)

Frequency Increments

00K - 30 Hz
FSK - 30 Hz and 42.5 Hz } Or multiple
thereof

Tone Channels

96 channels programmable in groups of 24

Interface To Demodulators

5-wire low voltage cable

POWER REQUIREMENTS

AC Power

115/230 vac $\pm 10\%$, 47/400 Hz,
35 watts

PHYSICAL DESCRIPTION

Chassis Dimensions

19 inches (48.3 cm) wide
1-3/4 inches (4.4 cm) high
20 inches (50.8 cm) deep

Weight

Approximately 13 pounds
(5.9 kg)

Finish

Clear irridited aluminum chassis,
front panel light gray with black
filled engraved markings

Operating Temperature

0° to 50°C ambient

ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTIFICATION

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