



## SALES SERVICE INFORMATION

The Technical Mat r i l Corporation  
Mamaroneck New York

### SALES SERVICE BULLETIN NUMBER 130

#### Model TKM Dual Channel High Speed Tone System

The Model TKM equipment is a high speed two channel tone system specifically designed for use with the AN/FCC-5 Multiplex and high speed morse transmissions over land lines or VHF links.

The system consists of two basic assemblies; a transmitter terminal group which consists of two tone keyers and a monitor and combining unit; a receiver terminal group which consists of a monitor and terminal unit, two demodulators and a dual teletype power supply.

At the transmitting terminal, the two high speed intelligence channels, carrying DC pulses, are fed into the keying terminals of each tone keyer (high speed tone keyer type TAK-1). At the output of each tone keyer, the intelligence exists as amplitude modulated tone keyed on-off in accordance with the original DC pulses. Bias distortion is reduced to a minimum.

The two tone frequencies have been chosen to provide minimum adjacent channel interference. These tones are combined in the combining unit and then impressed on a 600 ohm land line or VHF radio circuit.

When the tone system operates into a telephone line, provision is made for a telegraph "phantom" circuit for signaling. Monitoring circuits in the combining unit permit calibration of the generated tone frequency against a self-contained Wein Bridge circuit. The individual and combined tone output levels are monitored on a level meter.

At the receiver terminal the telephone or VHF circuit is properly terminated. In the case of telephone lines, equalization is provided by means of the EQ-1 Semi-fixed Equalizer, which is contained in the Monitor and Terminal unit. The composite audio tone signal is impressed on a dual channel tone filter which separates the two basic keyed tones. Each of the two tones are then amplified and rectified separately in the tone demodulators (TAD-1). The rectified pulses actuate the demodulator output circuits in accordance with the original intelligence pulses. Local battery is provided for two channels by the PSP teletype power supply.

#### Technical Specifications:

##### TRANSMITTER TERMINAL:

##### Keying Inputs:

Two inputs, each channel, 30 to 60 ma  
neutral positive or negative into 1000 ohms.

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Keying Speed: 300 wpm teletype for each channel.

Tone Carrier Frequencies: 2125 and 2805 cycles per second.  
These tone frequencies chosen to provide minimum adjacent channel interference at the lowest carrier frequency.

Tone Output level: Plus 8 DBM Maximum  
(Tone pulses are shaped by band pass filters to provide minimum band width and intermodulation characteristics).

Output Impedance: 600 ohms balanced.

Telegraph Signal Circuit: 60 ma. maximum, neutral, one side grounded, usable with land lines.

Telegraph Signal Keying Speed: 60 wpm maximum.

Controls:

1. Primary power switch (2)
2. Tone Output level control (2)
3. Tone Frequency adjustment control (2)
4. Test Key (2)
5. Monitor Selector Switch.

Metering:

1. Level meter for tone level checks.
2. Null indicator for frequency monitoring.

Primary Power: 110/220 volts 50/60 cycles.

Dimensions: Total panel space 19" wide x 10 $\frac{1}{2}$ " x 14" deep.

Mounting: Standard WE relay rack.

Tubes: All tubes JAN approved miniature or octal types.

Components & Construction: Equipment is manufactured in accordance with JAN specifications wherever practicable.

We reserve the right to make engineering changes in these specifications when required.

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Model TKM Dual Channel High Speed  
Tone System.

RECEIVER TERMINAL:

Input Level: Minus 20 to plus 8 DBM.

Input Frequencies: 2125 and 2805 cycles per second.  
Note: Semi-fixed Equalizer EQ-1 provided to correct telephone line frequency response.

Input Impedance: 600 ohms balanced.

Outputs: Two outputs of plus 60 ma Neutral DC pulses.

Keying Speed: 300 wpm tele type maximum for each channel.

Telegraph Signal Circuit: 60 ma maximum, neutral one side grounded, usable with land line.

Telegraph Signal Keying Speed: 60 wpm maximum.

Controls:

1. Primary power switch (2)
2. Tone Input Level Control (2)
3. Test Key (2)
4. Output Circuit Controls (2)
5. Monitor Selector switch
6. Bias Correction Control (2)

Metering:

1. Level meter for tone level checks
2. Output loop current meters (2)

Primary Power:

110/220 volts 50/60 cycles.

Dimensions:

Total panel space, 19" wide x 14" high  
x 14" deep.

Mounting:

Standard WE relay rack.

Tubes:

All tubes JAN approved miniature or octal tubes types.

Components & Construction  
Transmitter and Receiver  
Terminals:

Equipment is manufactured in accordance with JAN specifications wherever practicable.

We reserve the right to make engineering changes in these specifications when required.