



MODEL	DESCRIPTION	BULLETIN	
		<u>OLD</u>	<u>NEW</u>
AHP Series	Audio Headphones		205-5112
AHS Series	Audio Headset		205-5114
AHT Series	Audio Headset		205-5117
AKY Series	Telegraph Key		205-5111
AMK Series	Audio Microphone		205-5113
BSP Series	Bridging Speaker Panel	6005	205-5115
CDN-3	Receiving Mode Selector	6003	205-5215
CFA Series	F/S Audio Converter	4008B	205-5313
HYB-3	Hybrid Phone Patch		205-5221
HYB-4	Telephone Terminal		205-5218
LSP Series	Monitor Speaker Panel	6005	205-5116
LVT-1	Digital Lincomplex		205-5221
MID-5	Receiving Mode Indicator	106002	205-5217
MPA	Microphone Preamplifier		205-5220
SPU-2	Speech Processing Unit	2026A	205-5211
TIS-3	Frequency Shift Keyer	2025A	205-5311



BRIDGING LOUDSPEAKER PANEL

Model BSP Series

TECHNICAL BULLETIN 205-5115

200 HZ TO 7000 HZ
1 WATT OUTPUT
VOLUME CONTROLS
LOW DISTORTION
MILITARY NOMENCLATURE
FEDERAL STOCK NUMBER
OFF-THE-SHELF DELIVERY



TMC'S FAMILY OF SOLID STATE BRIDGING SPEAKER PANELS PROVIDE A MORE EFFECTIVE METHOD OF MONITORING YOUR VOICE CIRCUITS WITHOUT DISTURBING THE LINE LEVELS OR BALANCE. THEY ARE AVAILABLE WITH ONE, TWO OR THREE SPEAKERS IN EACH PANEL.

5 or 6 speaker activity indicator
BSP - 2D (AI) #1449 ^{10%}
BSP - 3D (AI) #1768 *Gov't price*

THE TECHNICAL MATERIEL CORPORATION

TECHNICAL SPECIFICATIONS BSP Series

STANDARD MODELS

BSP-1D One channel
BSP-2D Two channels
BSP-3D Three channels

AUDIO PARAMETERS

INPUT IMPEDANCE 10,000 ohms
SPEAKER IMPEDANCE 45 ohms
POWER GAIN 36 db (1 watt output with - 6 dbm input) output determined by front panel volume control
HUM LEVEL - 40 dbm at 1 watt
DISTORTION Less than 2% with 1 watt output at 400 Hz
FREQUENCY RESPONSE 200 to 7,500 Hz \pm 2 db

ENVIRONMENTAL and INSTALLATION

COOLING Convection
OPERATING CONDITIONS 0 to 50 C. Up to 90% relative humidity at MSL.
STORAGE CONDITIONS - 30 to + 75 C. Up to 90% relative humidity at MSL.
PRIMARY POWER 110/220 VAC, 50/60 Hz. Single phase.
HEAT DISSIPATION Nominal 15 watts
SIZE and WEIGHT 5.25" (13.4cm) high x 19" (48.3cm) wide x 6.5" (16.5cm) deep. 10 pounds/4.54 Kg.
SHIPPING DATA Commercial packing for U.S. shipment. Special packing available at additional cost.
1 container 20" x 18" x 8". Weight/cube - 13 lbs/1.6 cu. ft.
LOOSE ITEMS Technical manual (2) and mating audio connectors.

ORDERING INFORMATION

MODELS BSP-1D One channel
BSP-2D Two channels
BSP-3D Three channels

SPARE PARTS KITS

152-205-5115 1 year operating spare parts kit
153-205-5115 2 year maintenance spare parts kit

ACCESSORY PRODUCTS are described in sections 4-9 of the General Catalog and include RF/antenna, terminal, data, connector and power equipment. TECHNICAL SERVICES in design, engineering, training, and related areas are described in section 10. OPTIONS are listed after each TMC product in part A of the Price List.

Specifications Are Subject to Change Without Notice

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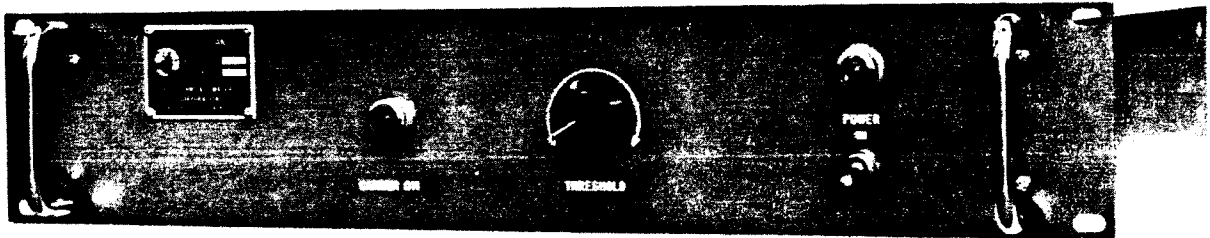
700 FENIMORE ROAD, MAMARONECK, NEW YORK 10543 U.S.A.
TEL.: 914-698-4800

TLX: 137-358



TECHNICAL BULLETIN NUMBER 4013A

Anti-noise Device, Carrier-Operated
TMC Model CDN-3



- Solid State
- Positive receiver muting
- Activates receiver only when received signal is of telephone quality
- Alerts operator in case of trouble

The Technical Materiel Corporation's Model CDN-3 is a compact, solid-state receiver-control unit that electronically determines the optimum signal-to-noise ratio of AM voice signals, and activates the receiver only when the received signal is suitable for high-quality telephone conversation.

Signal-to-noise ratio at which receiver muting takes place is adjustable, for optimum receiver operation, from the front panel of the CDN-3. The operator is alerted, by visual indication, when improper conditions for signal reception exist. Complete muting of the receiver under adverse reception conditions assures quiet operation and a low level of background noise at the receiver site.

The CDN-3 requires only a sample of the receiver IF frequency for operation. This feature allows signal flow to continue through the receiver undisturbed and with no loss of quality.

The application of this unit to an existing receiver only requires standard IF outputs normally available in any communication receiver. Details on IF impedance and voltage are listed in the technical specifications below.

Anti-noise Device, Carrier-Operated

TECHNICAL SPECIFICATIONS, TMC MODEL CDN-3

IF INPUT:	1. AM or AME 2. 455 kc is standard. See OPTIONS/ACCESSORIES for other IF input frequencies.
IF INPUT LEVEL AND IMPEDANCE:	1. 5000 ohms, 100 millivolts to 1 volt. 2. 50 ohms, 1 millivolt to 1 volt.
OPERATING BANDWIDTH:	1. 3 db point; ± 2 kc. 2. 20 db point; ± 8 kc.
THRESHOLD:	This is signal-to-noise ratio at which muting takes place. Adjustable by front panel control.
INDICATORS:	
1. CARRIER ON Lamp:	When ON indicates reception of carrier. When OFF indicates absence of carrier, or noise level of such magnitude that no intelligence can be received.
2. AC Lamp:	Indicates when CDN-3 is operating on AC line voltage.
SPECIAL FEATURES:	
1. Battery Operation.	Battery supply is automatically recharged when battery supply is connected, and CDN-3 is operating on AC line voltage. If AC line voltage fails, CDN-3 remains operative on floating battery supply.
2. Remote Indicator:	Barrier strip connections allow remote CARRIER ON/OFF indication and AC power failure.
PRIMARY POWER:	1. 115/230 vac, 50/60 cycle, single phase, 4.5 watts. (400 cycle power supply available on special order). 2. ± 12 vdc, approximately 4 watts.
INSTALLATION DATA:	Weight: approximately 10 lbs. Size: 3 $\frac{1}{2}$ " h x 19" w x 15" d.
INSTRUCTION BOOKS:	IN 4013
LOOSE ITEMS:	Mating RF connectors and two instruction books.
COMPONENTS AND CONSTRUCTION:	All equipment manufactured in accordance with JAN/MIL specifications wherever practicable.
OPTIONS/ACCESSORIES:	
Optional IF frequencies:	100 kc. 200 kc. 250 kc. 500 kc. 1750 kc.

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CABLE "TEPEI"

TWX 914-835-3782

MAMARONECK, N. Y. 10544

THE WORLD-WIDE SYSTEM OF REMOTE CONTROLLED COMMUNICATIONS

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FREQUENCY SHIFT CONVERTER

CFA-2



The Model CFA-2 provides dual diversity or single channel audio to DC conversion of frequency shift keyed signals. Internal plug-in battery supplies are available on special order for current-regulated 10, 20 or 60 ma. loops.

The converter is completely solid state and is contained in a compact 3½" X 19" X 7" space. Selection of keying speeds and discriminator center frequencies is accomplished by the operator at the front panel. In addition, the CFA-2 is configured to retain active service on one channel while a new operating frequency is being checked out on the second channel. This feature makes possible continuous reception capability even during periods of frequency change.

Optional accessories include an internal loop battery supply and input filter panels. The CFA-2 is suitable for rack mounting and is equipped for 115/230 VAC, single phase operation.

Revised 15 Aug 1971
Superseries 4008A



THE TECHNICAL MATERIEL CORPORATION

AND SUBSIDIARIES

Printed in U.S.A.

TECHNICAL SPECIFICATIONS

OPERATING PARAMETERS

Input Impedance

600 ohms nominal
Balanced, Center Tapped

Input Level

-20 to +30 dbm

Input Limiting

50 db in each channel

Input Frequency Shift Limits and Keying Speeds

2000 Hz Center Frequency or
2550 Hz Center Frequency
In High Speed Position
30 to 340 baud, 200-1000 Hz shift
In Low Speed Position
120 wpm, 200-1000 Hz shift
1000 Hz Center Frequency
Up to 120 wpm, 10-200 Hz shift

Center Frequencies

1000, 2000, or 2550 Hz
Switch Selectable

Output Circuit

Neutral; either side floating or grounded.
Will key 10-75ma into 2K-ohm TTY loop.

Tuning Indicator/Multimeter

Combined zero-center tuning meter and
multimeter to monitor discriminator out-
puts, operating voltages, loop current and
voltages.

Bias Correction

Front panel control to compensate for
mark or space bias.

Frequency Drift Compensation

Automatically compensates for a drift in
the received signal.

ENVIRONMENTAL AND INSTALLATION

Operating Conditions

0 to +50°C, up to 95% relative humidity

Primary Power

115/230 VAC, 50/60 Hz, Single Phase

Size and Weight

3½" high X 19" wide X 16" deep
Approximately 25 lbs.

Loose Items

RF Mating Connectors
Two Copies Operating Manual

OPTIONAL ACCESSORIES

Model A-4347 Power Supply

Solid state; plugs directly into CFA-2 and
provides up to 75 ma of current at less
than 150 VDC.

Model SFP-2 Filter Panel

Eliminates unwanted signals at the input.
Specifications:

Input/Output Impedance: 600 ohms
Insertion Loss: Less than 7db
MARK Filter Bandwidth:
Centered at 2125 Hz.
Flat within 3db to +/-100 Hz
Down minimum 45 db at 340 Hz.

SPACE Filter Bandwidth
Centered at 2975 Hz.
Flat within 3db to +/-125 Hz
Down minimum 45 db at 475 Hz.

Model SFP-3 Filter Panel

Similar to SFP-2 but centered at 2000 Hz.

Model CFA-3 Converter

Single channel audio to DC converter.



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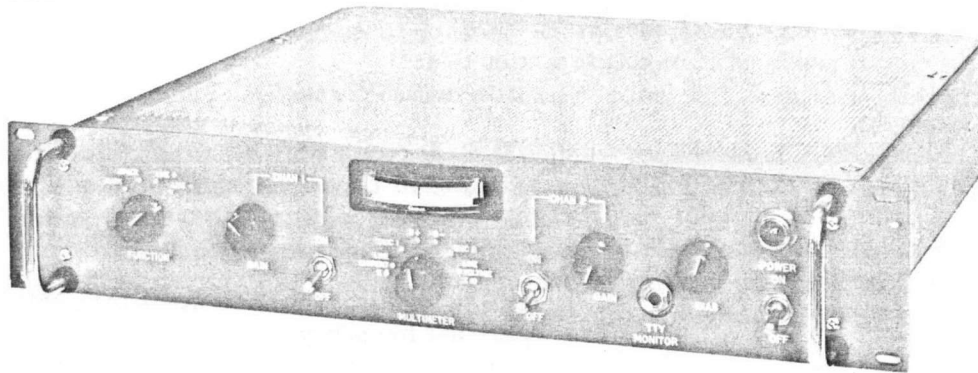
SPRINGFIELD, VIRGINIA • OTTAWA, CANADA • LUZERN, SWITZERLAND • TEMPE, ARIZONA

(914) 698-4800 • (613) 822-0244 • twx 710-566-1100 • telex 013-446



TECHNICAL BULLETIN NUMBER 4008A

TMC Model CFA-2 Solid State Frequency Shift Converter



PURPOSE

Provides diversity or single channel audio to DC conversion of frequency shift keyed signals, with transistor output keying. Optional internal plug-in battery supply offered for current regulated 60, 20 or 10 MA loops.

APPLICATION

- Shipboard (military and commercial)
- Shore Stations
- Point-to-Point Services
- Tactical Circuits
- International Circuits
- Medium Speed Data
- Press Services
- Wire Services
- Transportable Applications

FEATURES

- Solid State
- Diversity or Single Channel Reception
- No Break QSY Capability.
- Unique Tuning Meter
- Optional Regulated loop supply, 60
20, 10 MA
- Selectable Shifts and Center Frequencies
- 3½" × 19" × 16"

DISCUSSION

This new converter provides, in a compact 3½" × 19" space, a complete diversity audio to DC converter of very low power consumption. Operator selection of keying speeds and discriminator center frequencies fulfill all requirements for Radio Teletypewriter service for VLF, LF, MF, and HF Circuits and obsoletes many converters currently on the market, including TMC Models CFA-1, CFA-1L and CFA-1LB.

During periods of frequency changes, it is possible to retain active service from one channel while checking a new operating frequency using the other receiver channel. By this means continuous reception capability is maintained. This is pictorially shown on the last page.

A self-contained plug-in loop supply board to provide regulated 60, 20, or 10 milliamper loop current is offered as an option. (See Options/Accessories)

TMC Model CFA-2

TECHNICAL SPECIFICATIONS

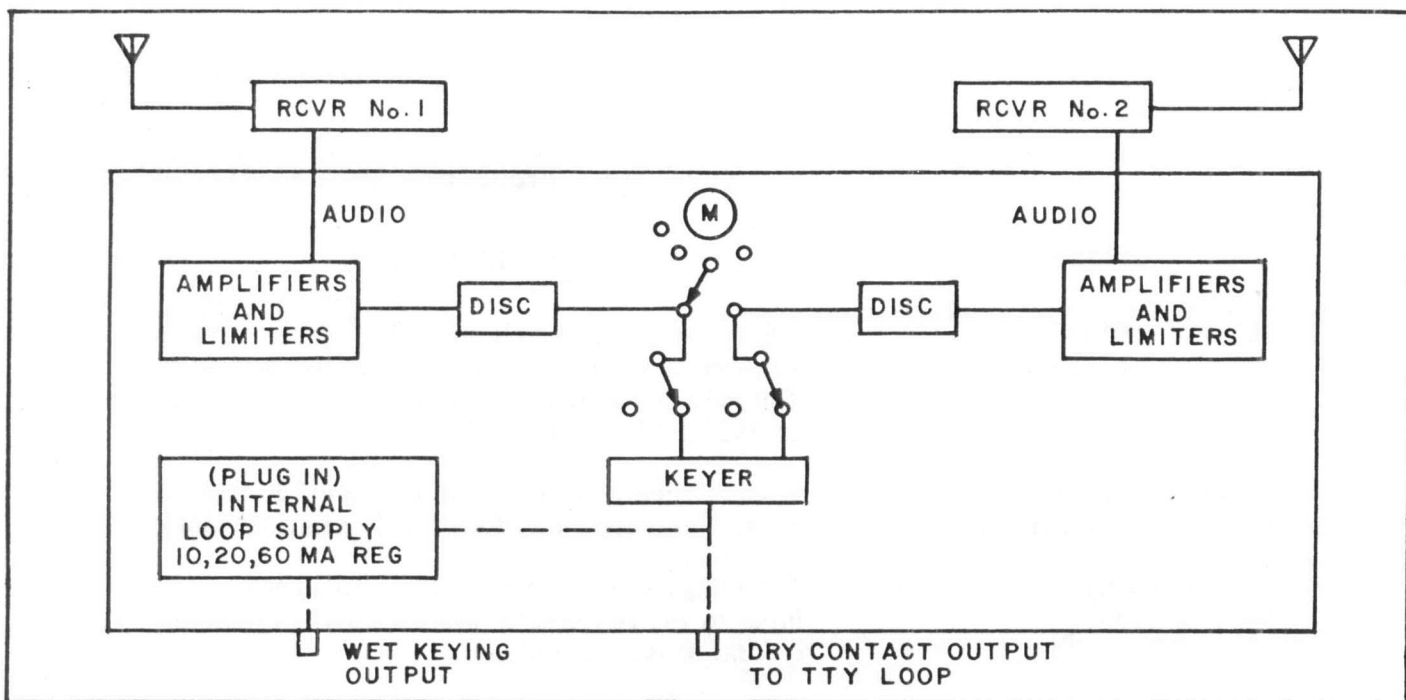
TMC MODEL CFA

INPUT IMPEDANCE:	600 ohms nominal balanced and centertapped.
INPUT LEVEL:	-20 to +30 dbm.
INPUT LIMITING:	50 db in each channel.
INPUT FREQUENCY SHIFT LIMITS AND KEYING SPEEDS:	200-1000 cycles shift, 40 to 450 words per minute (30 to 340 bauds) in high speed position. Up to 120 words per minute in low-speed position at either 2000 or 2550 cps center frequency. 10-200 cps shift, up to 120 words per minute at 1000 cps center frequency.
CENTER FREQUENCIES:	Center frequency operation of 1000, 2000, or 2550 cycles on a switch basis is available as standard equipment.
OUTPUT CIRCUIT:	Neutral, either side grounded or floating. Output transistor will key 10 to 75 ma into 2000 ohm TTY loop. (For external or internal battery, see OPTIONS/ACCESSORIES).
TUNING INDICATOR/ MULTIMETER:	2½" × ½" combined zero-center tuning meter and multimeter to monitor discriminator outputs, operating voltages, and loop voltage and current.
BIAS CORRECTION:	A front panel control allows the operator to compensate for mark or space bias.
FREQUENCY DRIFT COMPENSATION:	The unit automatically corrects for a drift in the received signal.
OPERATING POWER:	115/230 v, ±10%, 47 to 400 cps single phase approximately 12 watts.
INSTALLATION DATA:	Size: 3½" h × 19" w × 16" d. Weight: 25 pounds.
ENVIRONMENTAL CONDITIONS:	Designed to operate in any ambient temperature between 0 and 50°C, and any value of humidity up to 95%.
COMPONENTS AND CONSTRUCTION:	All equipment manufactured in accordance with JAN/MIL specifications wherever practicable.
OPTIONS/ACCESSORIES:	(Priced separately).
1. INTERNAL SINGLE LOOP BATTERY SUPPLY:	TMC Model A4347 solid state power supply plugs directly into the CFA-2 unit and provides up to 75 ma of current at no more than 150 volts DC.

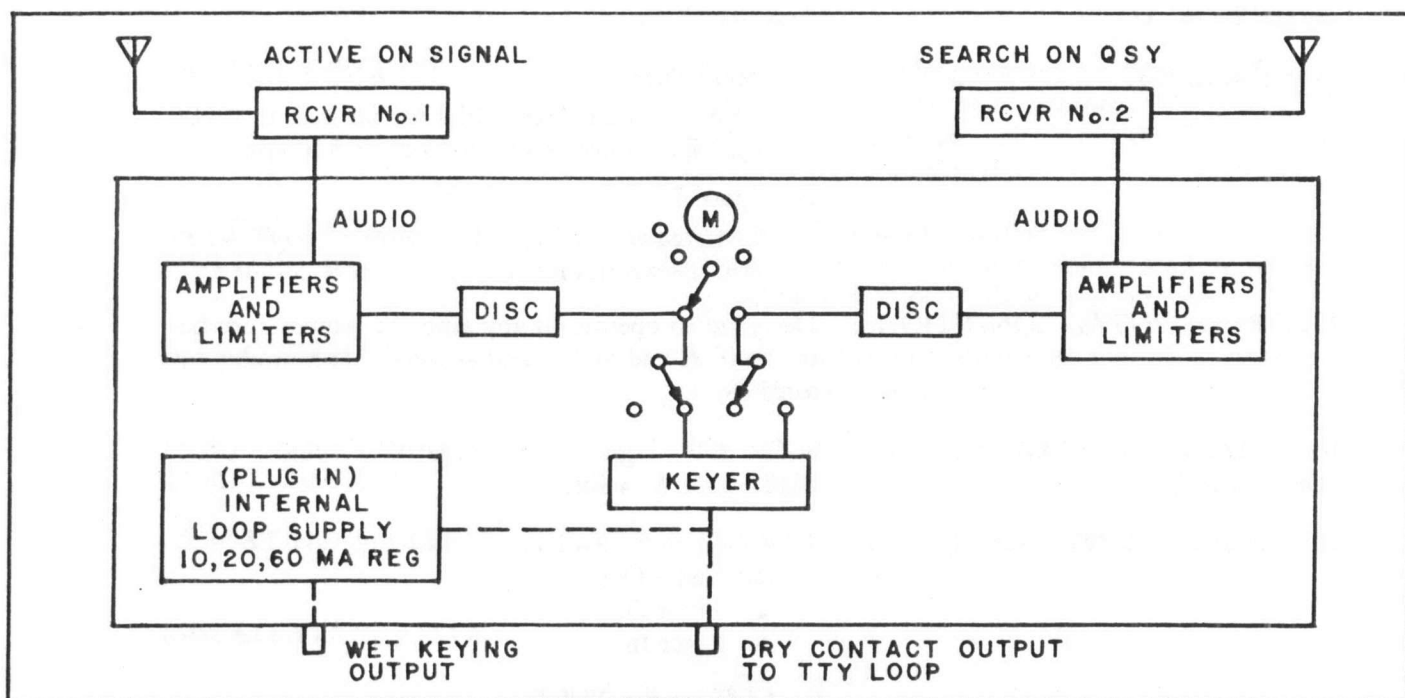
Solid State Frequency Shift Converter

TMC MODEL CFA

2. MODEL PSPA-1:
(Single Loop TTY Battery)
3. MODEL PSPB-1:
(Dual Loop TTY Battery)
4. FILTER PANEL:
MODEL SFP-2
- INPUT AND OUTPUT IMPEDANCE:
- INSERTION LOSS:
- BANDWIDTH:
- ENVIRONMENTAL CONDITIONS:
- INSTALLATION DATA:
(size and weight)
- OPERATING CONTROLS:
- POWER:
- MONITORING:
5. FILTER PANEL MODEL SFP-3:
- Solid state power supply providing up to 75 milliamperes of current at a DC voltage not exceeding 150 volts is available. The power supply is mounted on 3½" x 19" panel, 12" deep.
- A dual supply each section the same as PSPA-1 above. Mounted on a 3½" x 19" panel, 12" deep.
- A filter panel to eliminate unwanted signals at the input to the converter is available and its technical specifications are as follows:
- 600 ohms.
- Less than 7 db.
- A. Mark Filters:
Centered at 2125 cps. Flat within 3 db to ±100 cps. Down not less than 45 db at 340 cps.
- B. Space Filters:
Centered at 2975 cps. Flat within 3 db to ±125 cps. Down not less than 45 db at 475 cps.
- Designed to operate in any ambient temperature between 0° C and 50° C, and any value of humidity up to 95%.
- SIZE: 3½" high x 19" wide x 7" deep.
WEIGHT: 9¾ lbs.
- A. Channel #1 Switch.
1. Panel Out.
2. Filter Out.
3. Filter In.
- B. Channel #2 Switch.
1. Panel Out.
2. Filter Out.
3. Filter In.
- None Required.
- Front panel phone jacks in each channel.
- Similar to SFP-2, but centered at 2000 cps.



NORMAL OPERATION



OPERATION DURING FREQUENCY CHANGES

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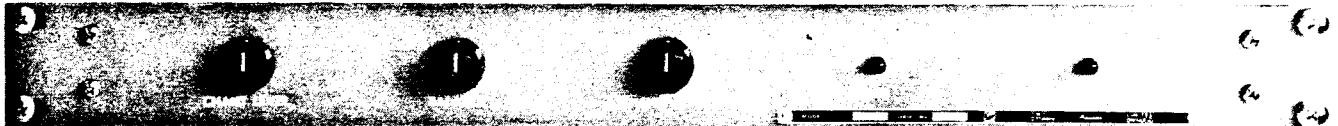
TWX 710-566-1100

MAMARONECK, N.Y. 10543

THE WORLD-WIDE SYSTEM OF REMOTE CONTROLLED COMMUNICATIONS

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Features

The MID-5 is a solid state d.c. level switching device, capable of recognizing a rise in the A.G.C. level of the receiver to which it is connected, due to the incoming signal.

The unit consists basically of a differential switching stage and two identical, level-conscious switching channels.

It is a useful tool for identifying the LSB, USB and AM modes of reception to remote operators, when the source of the signal is unknown and may be of mixed modes. This is especially useful during the transitional period of AM to SSB and will differentiate LSB vs USB after full SSB is in use.

When used in conjunction with TMC Model CDN-3, Carrier Operated (AM mode) Anti-Noise Device, the MID-5 effectively distinguishes between the three modes of operation, AM, USB and LSB. Due to its versatility it can be wired to visual indicating devices or other functional devices.

Specifications

Operating voltage (for positive going AGC)	+12 v.d.c.
Quiescent current	50 m/a
Operating current	150 m/a
AGC voltage range (For positive supply voltage) (Reverse polarity available on special order)	+1 to +8 volts
Differential Sensitivity (A balance adjustment is included to offset initial d.c. unbalance of the two AGC voltages).	200mV (max.)

Other Features

Transient immunity
Noise immunity for certain applications.

Electrical/Mechanical

Size	19" x 1-3/4" x 14"
Weight	12 lbs.
Power	115/220 volts a.c. 50/60 cycles

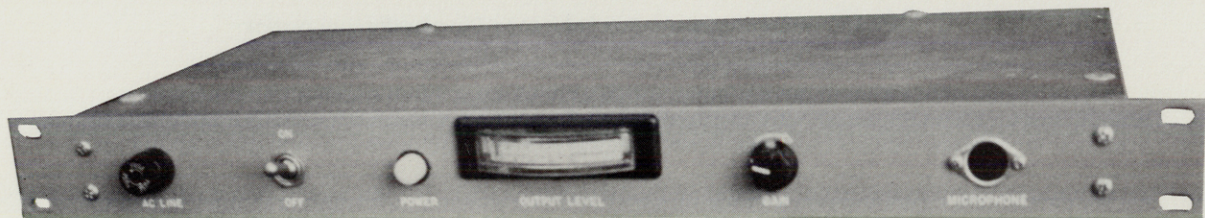




MICROPHONE PREAMPLIFIER Model MPA-1

TECHNICAL BULLETIN 205-5220

- *Solid State*
- *Flat Response*
- *Output Level Metering*
- *Minimum Noise*
- *Wide Dynamic Range*



The Model MPA-1 microphone preamplifier is a solid state amplifier unit, providing low distortion microphone preamplification with front panel manual gain control and output level monitoring.

A six-pin microphone input connector, located on the front panel, with rear panel jumper-wire patching adapts the input to operate with carbon, low impedance or high impedance microphones.

Push-to-talk and 600 ohm output terminals are provided on the rear panel.

The Model MPA-1 is particularly useful in those installations where the radio transmitter is located at a considerable distance from the operating position.

THE TECHNICAL MATERIEL CORPORATION

TECHNICAL SPECIFICATIONS MPA-1

OPERATING PARAMETERS

MICROPHONE INPUTS Carbon, crystal, high impedance dynamic or low impedance dynamic
OUTPUT LEVEL Adjustable to 0 dbm
OUTPUT IMPEDANCE 600 ohms, balanced

AUDIO PARAMETERS

FREQUENCY RESPONSE 300 to 3000 Hz \pm 3db
DISTORTION Minimum of 40 db below 0 dbm
HUM AND NOISE Minimum of 50 db below 0 dbm

SPECIAL FEATURES

METERING Front panel meter provides continuous monitoring of the audio output level.

ENVIRONMENTAL AND INSTALLATION

COOLING Convection
OPERATING CONDITIONS 0° to 50°C. Up to 90% relative humidity at MSL.
STORAGE CONDITIONS -30° to + 75°C. Up to 90% relative humidity at MSL.
PRIMARY POWER 115 or 230 volts AC \pm 10%, 47 to 400 Hz, single-phase, 10 watts
SIZE AND WEIGHT 1.75" (4.4cm) high x 19" (48.3cm) wide x 8.75" (22.2cm) deep
6 pounds, 2.7 kg installed
SHIPPING DATA Commercial packing for U.S. shipment. Special packing available at additional cost.
One (1) container — 22" x 19" x 8". Weight/cube — 10 lbs./2 cu. ft.
LOOSE ITEMS Technical manual (2) and mating signal connectors.

ACCESSORY PRODUCTS are described in sections 4-9 of the General Catalog and include RF/antenna, terminal, data, connector and power equipment. **TECHNICAL SERVICES** in design, engineering, training, and related areas are described in section 10. **OPTIONS** are listed after each TMC product in part A of the Price List.

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TMC (CANADA) LIMITED

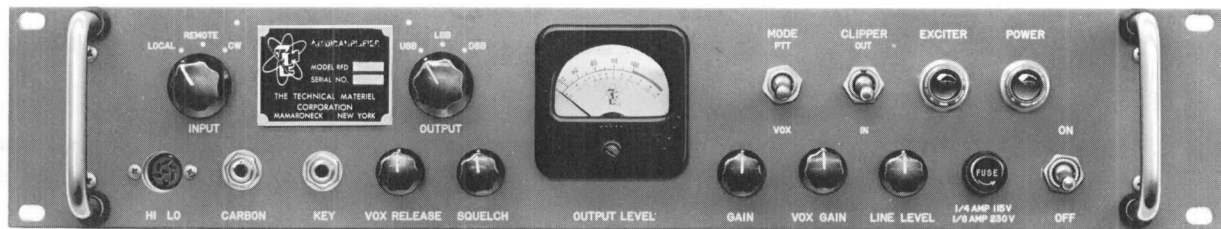
TMC INTERNATIONAL

RR NO. 5, OTTAWA, K1G 3N3, ONTARIO, CANADA
TEL.: 613-521-2050 TLX: 053-4146



TECHNICAL BULLETIN NUMBER 2026A

Speech Processing Unit
TMC Model SPU-2



TMC's Speech Processing Unit, Model SPU-2, is a particularly useful device that will improve voice quality of radio circuits proportionately as radio transmission circuits degrade. Speech clipping and pre-emphasis may be switched in to provide uniform power density in the transmitted intelligence, thereby improving articulation as much as 60% under adverse signal to noise conditions.

In addition, Model SPU-2 may be used as a constant level audio amplifier for transmission or reception, with a 40 db dynamic range, to prevent overloading transmitters or "singing" through voice hybrids.

Front panel facilities allow complete flexibility for voice operated relay control, push-to-talk control and CW control of transmitters. The unit accepts a wide variety of audio inputs, including carbon microphone.

Speech Processing Unit

TECHNICAL SPECIFICATIONS

INPUTS:	Audio line — 0 db, 600 ohm balanced and center tapped. Carbon microphone at —25 db. Carbon mike input to either Western Electric type 309 Ring-Tip sleeve plug (or equivalent) or 6 connector microphone jack. The unit provides the excitation voltage. (Rear apron connections also provided.) High and low impedance microphones at —55 db. 6 connector input jack. (Rear apron connections also provided.) Anti-Vox input. Push-to-talk keying input. (Rear apron connections also provided.) CW key input. Western Electric, No. 309, or equivalent, jack with normally closed contacts. (Rear apron output connections provided.)
PRE-EMPHASIS:	Provides a 6 db per octave slope peaked at 2500 cps.
AUDIO OUTPUT:	Upper sideband — 0 db, 600 ohm balanced and center tapped. Lower sideband — 0 db, 600 ohm balanced and center tapped (same intelligence as above selectable by front panel switch).
DISTORTION:	Nominal 5%.
KEYING CONTROL: (DRY CONTACT)	From voice-operated relay. From Push-to-Talk input. From CW key inputs.
KEYING RELAY: (ACCESSORY CONTACTS)	The keying relay provides either normally-open or normally-closed contacts that may be used to mute a receiver when the transmitter is keyed.
DYNAMIC RANGE:	The unit incorporates automatic audio level control circuitry to maintain the output within ± 2 db with input variations of 40 db. The speed of response for increasing audio levels is at a syllabic rate (approx. 7 cps). The speed of decay is adjustable.

TMC Model SPU-2

FRONT PANEL CONTROLS:	Power ON-OFF switch with indicator light. Input gain. Clipper and pre-emphasis "in-out" switch. Output line level. Local-remote-CW switch. VOX gain. VOX release. Squelch. Output selector switch – Upper Sideband, Lower Sideband, Double Sideband. Transmission Mode (selects Push-to-Talk or VOX operation).
FREQUENCY RESPONSE:	± 1.5 db 200-3000 cycles, roll-off 30 db per octave above 3000 cps.
METERING:	Output level on 600 ohm line.
POWER REQUIREMENTS:	115/230 volts AC, 50/60 cps, 1 phase, 7 watts.
MOUNTING:	Standard 19" relay rack.
SIZE:	3½ H x 19" W x 15" D.
WEIGHT:	8 lbs.
FINISH:	Light grey enamel, TMC grey.
LOOSE ITEMS:	Mating plugs for all signal connections and instruction books provided.
COMPONENTS AND CONSTRUCTION:	All equipment manufactured in accordance with JAN/MIL specifications wherever practicable.

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CABLE "TEPEI"

TWX 710-566 1100

MAMARONECK, N.Y. 10543

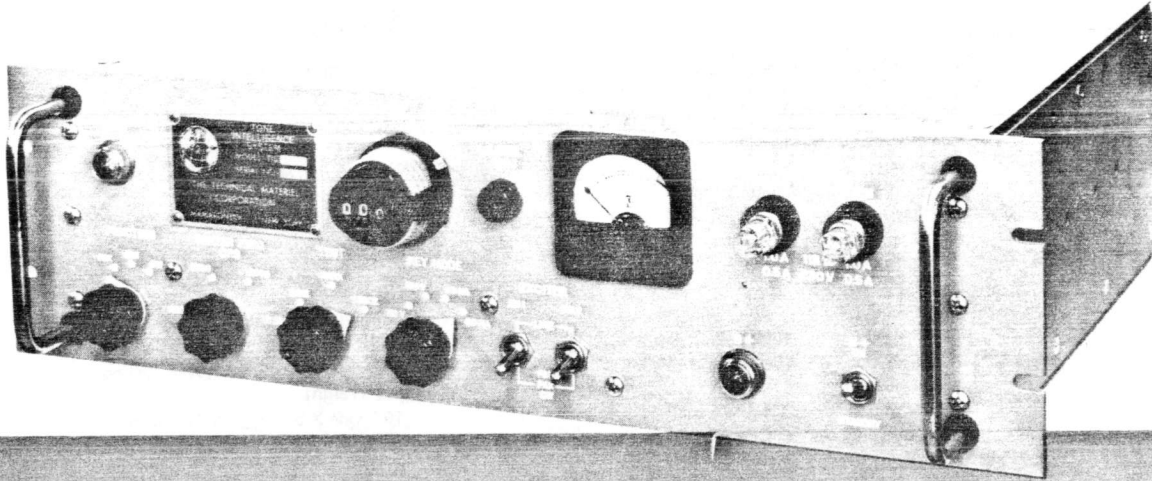
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AUDIO TONE KEYER

TIS-3D



The TIS-3D Audio Tone Keyer operates in conjunction with a sideband exciter such as the Model MMX. Its purpose is to generate a keyed or frequency-shifted audio tone so that the carrier will not have to be keyed or shifted directly. The frequency stability of the carrier is thereby maintained using this technique. Clean, transient-free keying is obtained by utilizing reactance control of a 200 KHz oscillator. A precisely calibrated, direct-reading counter-type dial provides simple and accurate adjustment of the desired frequency shift from 12 to 1000 Hz. In the FAX mode, frequency shifted tones are a direct function of the input DC control voltage. This makes available a linear shift of up to 1200 Hz for photographic or cartographic transmission.

A front panel switch allows the selection of four discrete center frequencies to provide compatibility with the following types of operation:

- | | |
|---------|---|
| 1900 Hz | International standard for FAX transmission |
| 2000 Hz | When using equipment limited to 1 KHz increments |
| 2550 Hz | Standard center frequency for a 850 Hz shift |
| 1000 Hz | Fixed audio CW channel frequency |
| SPARE | Additional audio tone center frequency to any designated audio frequency value. |

Additional features include front panel selection of MARK and SPACE test tones; output level adjustment; and metered monitoring. Voltage or current keying loops can be accommodated by the four position KEY MODE switch. Standard values of 50 volts, 100 volts, 20 ma, and 60 ma are provided. In the 20 ma position, the TIS-3D will respond to a +/- 6 volt low-level keying signal. In addition, the temperature controlled crystal oscillators offer exceptionally high stability with a minimum of warm-up time.

Revised 1 August 1971



THE TECHNICAL MATERIEL CORPORATION

AND SUBSIDIARIES

KEYING INFORMATION

Speeds

Up to 400 baud FSK and FAX
Up to 140 baud CW

Inputs

50 volts; 100 volts; 20 ma; 60 ma
Neutral, floating, or either side grounded
0 to +12 volts for a linear shift of
1200 Hz for FAX operation.

Shift

12 to 1000 Hz continuous adjust

OPERATING PARAMETERS

Output Level

Continuously adjustable to 0dbm

Oven Temperature

+70°C

Output Impedance

600 ohms balanced

Input Impedance

60 ma position	150 ohms
20 ma position	150 ohms
50 volt position	47K-ohms
100 volt position	100K-ohms
FAX position	47K-ohms

Front Panel Controls

B+ ON/STANDBY
TEST
CENTER FREQUENCY
FUNCTION
SHIFT CPS
LEVEL ADJUST
KEY MODE
EXCITER

AUDIO/FREQUENCY INFORMATION

Audio Center Frequencies

2550 Hz; 2000 Hz; 1900 Hz; SPARE

Spare $f_o = [0.2 - (C.F.)]$ in MHz

f_o is spare crystal frequency

C.F. is desired audio center frequency

CW Tone Frequency

1000 Hz

Frequency Stability

Better than 1% for 0 to 50°C change;

0 to 90% R.H.; 10% voltage change.

ENVIRONMENTAL AND INSTALLATION

Operating Conditions

0 to +50°C ambient temperature range

Up to 95% relative humidity

Primary Power

115/230 VAC, 50/60 Hz, single phase

100 watts continuous

170 watts intermittent (oven cycling)

Size and Weight

19" wide X 5 1/2" high X 14" deep

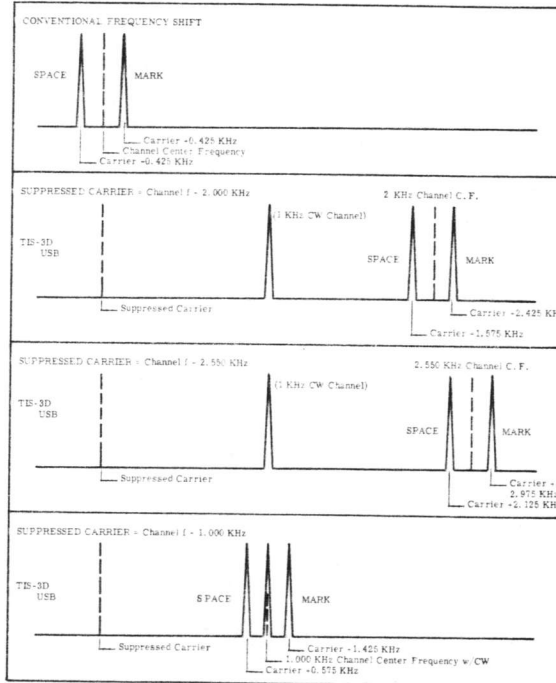
Suitable for rack mounting

Approximately 38 lbs.

Loose Items

RF mating connectors

Two copies of Instruction Manual



We reserve the right to make engineering changes.



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