

The TMC Speech Processing Unit, Model SPU-1, is a completely transistorized volume compressed, peak clipped and filtered audio amplifier for use with a voice modulated AM or SSB transmitter to provide additional over-all system efficiency. Clinical articulation tests have indicated 50% to 65% improvement of intelligibility under adverse signal to noise conditions.

The SPU-1 combines compression and clipping with a special pre-emphasis circuit. Pre-emphasis commences at 200 cycles and has been peaked at approximately 2500 cycles with a 6 db per octave slope through the audio passband to provide uniform power density in the transmitted intelligence.

Provision is made in the SPU to disable the clipper circuits when the unit is used as a constant level amplifier with a receiver.

TECHNICAL SPECIFICATIONS, Model SPU-1

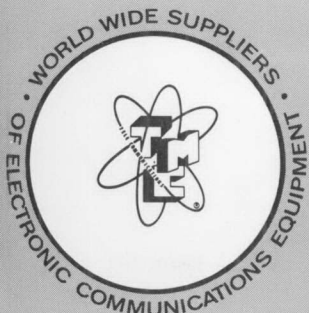
INPUT:

1. High and low impedance mike at -55 dbm.
2. Carbon mike at -25 dbm.
3. 0 dbm 600 ohm balanced.
4. Squelch, (anti-trip input)

Speech Processing Unit

OUTPUT:	<ol style="list-style-type: none">1. Audio output 0 dbm adjustable 600 ohm balanced and center tapped. Front panel switch to place unit in upper or lower sideband exciter input.2. Key from voice operated relay.
CONTROLS:	<ol style="list-style-type: none">1. High-Low impedance carbon mike or line input selector.2. Gain control.3. VOX gain and squelch.4. LSB, DSB, USB output selector switch.5. Limiter (in or out)
DYNAMIC RANGE:	<ol style="list-style-type: none">1. With a 50 db input variation and clipper "in", the output will be 0 dbm.2. With a 50 db input variation and the clipper "out", the output will be held to 0 dbm ± 2.5 db.
FREQUENCY RESPONSE:	200 - 3000 cycles.
PRE-EMPHASIS:	Commencing at 200 cycles and rising at 6 db ± 1 db per octave throughout the passband.
METERING:	Output voltage on 600 ohm line.
POWER REQUIREMENTS:	115/230 V AC 50/60 cps 1 phase 7 watts.
MOUNTING:	Standard 19" relay rack.
SIZE:	3 1/2" H x 19" W x 5" D.
WEIGHT:	6 lbs.
COMPONENTS AND CONSTRUCTION:	All equipment manufactured in accordance with JAN/MIL specifications wherever practicable.

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