THE REVOLUTIONARY NEW

BROAD-BAND

MULTIPHASE 100V

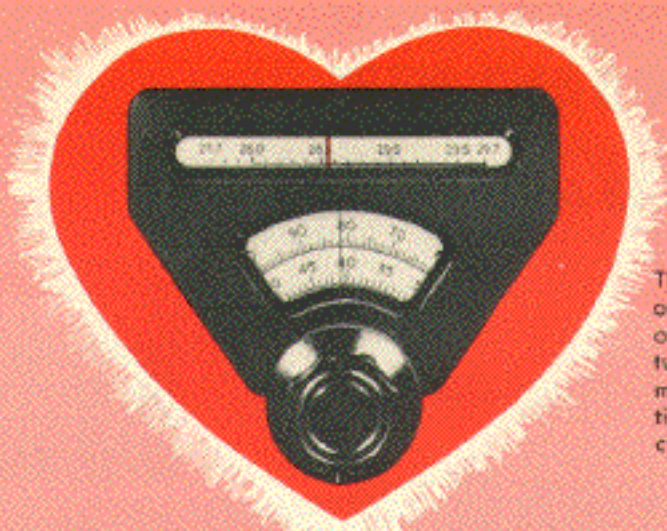
WITHOUT A DOUBT, THE FINEST, MOST VERSATILE EXCITER-TRANSMITTER IN THE AMATEUR FIELD

CENTRAL ELECTRONICS — THE PIONEER OF AMATEUR SSB AND BROADBAND LINEAR AMPLIFIERS PROUDLY PRESENTS THE 100V — THE ULTIMATE IN OPERATING EASE AND CONVENIENCE — WITH ANY DESIRED MODE OF OPERATION — SSB, DSB, AM, PM, CW OR FSK!

CHANGING BANDS OR EMISSION REQUIRES NO MORE EFFORT THAN BANDSWITCHING YOUR RECEIVER. THERE IS NO SUCH THING AS "TUNING UP" A 100V — ALL TUNING (EXCEPT THE VFO, OF COURSE) IS COMPLETELY ELIMINATED! CENTRAL ELECTRONICS' PATENTED BROADBAND CIRCUITRY IS USED THROUGHOUT.

ONLY *ONE* TUNING CONTROL — THE VFO!

No other tuning or loading required



THE HEART OF THE 100V

The 100V uses a new patented two tube permeability tuned oscillator circuit that inherently compensates for the effects of tube ageing and line voltage fluctuations. The circuit is tuned by a precision machined stainless steel lead screw mounted in preloaded ball bearings. The heavy duty construction provides extreme frequency stability. Drift is less than 25 cycles in any ten minute interval after a five minute warm up.

Megacycle Scales in the slide rule window change with the band switch and are calibrated linearly every 100 KC. ALL BAND SCALES READ IN THE SAME DIRECTION. THERE ARE NO REVERSE READING SCALES ON THE 100V! Frequency is read directly in 1 KC increments by the circular KC dial without interpolation. Effective band spread is approximately 12 feet on each band. A husky two-speed knob provides fast tuning at 100 KC per turn and slow tuning at 1250 CYCLES PER TURN. Calibration accuracy is — or — 250 CYCLES BETWEEN ANY 50 KC POINTS OF AN ENTIRE BAND. Re-calibration, should it ever be necessary, is easily performed right at your operating position!

COMPLETE BAND COVERAGE!

80 Meters — 3.5 to 4.5 MC.
40 Meters — 6.5 to 7.5 MC.
20 Meters — 13.5 to 14.5 MC.
15 Meters — 20.5 to 21.5 MC.
10 Meters — 27.7 to 29.7 MC.

YOU DON'T SETTLE FOR "PARTIAL" FREQUENCY COVERAGE WHEN YOU BUY A 100V!

PLUS! A spare position to permit installing broadband coils for 160 meters (1.75 to 2.5 MC) or any 1 MC. portion of the spectrum between 2.5 and 25.5 MC. not already covered by amateur bands. For example: 2.5 to 3.5 MC; 4.5 to 5.5 MC; 5.5 to 6.5 MC etc. (NOTE THAT THESE PORTIONS MUST BEGIN AND END AT .5 MC. POINTS ONLY.) OR: the 2 MC. portion 25.6 to 27.6 MC. not covered by the 10 meter band position.

Note the generous overlap beyond the ham bands, for MARS, CAP or COMMERCIAL APPLICATIONS. Even beyond that, the VFO has 50 KC of overtravel (100 KC above 25.6 MC) at each end of the scales. Accuracy and linearity of the overtravel is not guaranteed — but it's there in case you need it!

WITH EXCLUSIVE CENTRAL ELECTRONICS BROADBAND CIRCUITRY THERE IS LITTLE CHANGE IN POWER OUTPUT ACROSS EACH BAND. OUTPUT IMPEDANCE 52-72 OHMS FOR COAXIAL CABLE.

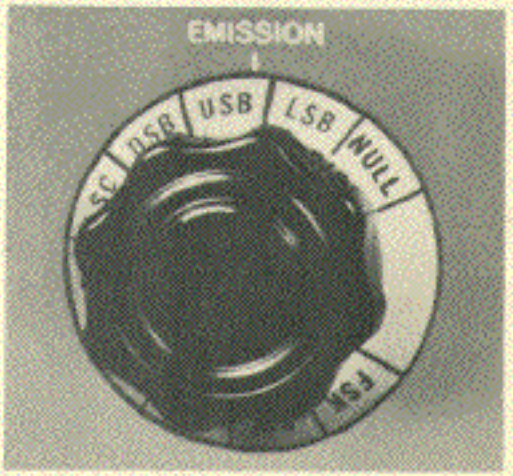
NINE CHOICES OF EMISSION — AT THE FLIP OF A SWITCH

1 — LSB Lower sideband suppressed carrier — 100 W. PEP output
2 — USB Upper sideband suppressed carrier — 100 W. PEP output
3 — DSB Double sideband suppressed carrier — 100 W. PEP output
4 — LS-C Lower sideband with preset carrier — 25-35 W. output
5 — US-C Upper sideband with preset carrier — 25-35 W. output
6 — AM Double sideband with preset carrier — 25-35 W. output
7 — PM Phase modulation with preset carrier — 100 W. output
8 — CW Three types of keying preset carrier — 100 W. output
9 — FSK Frequency-shift teletype with preset carrier and adjustable deviation — 100 W. output

NULL — Check carrier suppression in db directly on the meter.

TELEVISION INTERFERENCE

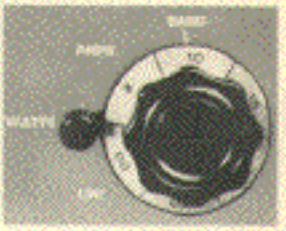
Conventional AM equipment utilizes class C amplifiers that distort the RF output waveform, causing severe harmonic TVI. Since the output stage in the 100V operates in class AB1 excellent linearity and extremely low harmonic output is obtained.

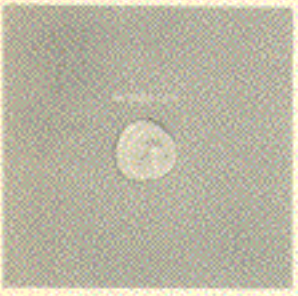


OTHER OPERATING CONTROLS

CALIBRATE LEVEL: Adjusts strength of calibrate signal to suit band conditions or individual installations. A lever switch under the knob allows you to "talk yourself" on frequency or to "zero in" with unmodulated carrier.

BAND SWITCH: Single knob selects 80, 40, 20, 15, 10 meters or X position for special frequencies. A lever switch under the band change knob allows you to select the desired meter range.





AUTOMATIC LOAD
MIS-MATCH PROTECTION

In the event that the antenna or load is inadvertently shorted or disconnected, an overcurrent relay applies protective bias and flashes the front panel MISMATCH neon indicator.

FUNCTION SWITCH: Power off, Standby, VOX (voice controlled break-in) PTT (push to talk) and Manual.

ILLUMINATED METER

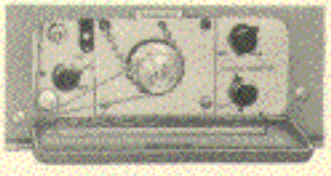
The meter will indicate POWER INPUT (0-200 Watts) RF AMPS OUTPUT, AC LINE VOLTAGE and CARRIER SUPPRESSION down to —50 db below maximum output.

2" MONITORING SCOPE

Gives an instantaneous visual trapezoid check on non-linearity or flat-topping resulting from improper loading. Also indicates correct setting of preset carrier level control for 100% AM modulation.

SET AND FORGET CONTROLS

All the seldom used controls which are normally adjusted when first putting the 100V into operation are located behind the two magnetic doors on the front panel. They include: Speech Level, VOX trip level, Anti-trip (QT) Level, VOX release time, FSK deviation, Carrier Null, Preset AM carrier, Preset CW carrier, CW Monitor Level, VFO-XTAL switch and Power Output Control.



POWER OUTPUT CONTROL

Power output may be adjusted to any level between 10 and 100 watts. This new circuit eliminates the need for dissipative power dividing networks when driving linear amplifiers that require less than 100 watts. The power output control does not affect the output load impedance of 50-72 ohms. A matching network will be required for grounded grid amplifiers when the input impedance exceeds 100 ohms.

NEW INVERSE AUDIO LIMITER

Audio clipping increases the level of the weaker speech passages and will give your signal that extra "punch" required for increased readability under adverse conditions. It maintains maximum speech level and prevents overloading of the balanced modulator, mixers and RF amplifier stages. In the past most clipping systems have contributed objectionable distortion to the output signal. Our new circuit utilizes the clipped waves as inverse feedback to cancel an appreciable amount of distortion. We have called this improved clipper the "Inverse Limiter." In combination with the new 100V Audio Filter, this revolutionary system allows 10 db of limiting with minimum effect on the speech quality. When limiting starts, the front panel Limiter indicator begins to flash. The amount of limiting may be determined by the 6 db calibrations of the Speech Level control. No matter how loud you talk into the microphone or how far you turn up the control, the peaks will not increase beyond approximately 1 db.

NEW MULTIPHASE 100V

NEW PERFECTED AUDIO FILTER

This filter is composed entirely of RC elements, yet has the steep side response and rejection characteristics of a toroid filter. Since it is a degenerative RC bandpass (200-3800 cycles) type it overcomes all the harsh, ringing characteristics of conventional filters. It precedes the phase shift network and will maintain 50 db unwanted sideband suppression even beyond the limits of the new PS-2 phase-shift network.

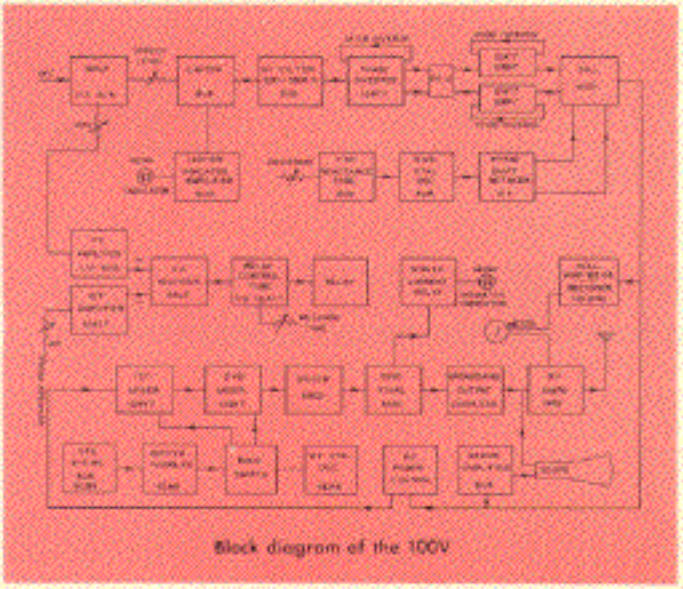
POWER OUTPUT TUBES

The Broadband output circuit of the 100V uses a pair of 6550s that are rated for continuous commercial service in ultra-linear hi-fi applicatiions. Our tests have proven that the linearity of the 6550s is definitely superior to 6146s at 100 watts output. Plate dissipation is 35 watts per tube and a pair will deliver 100 WATTS OF SINGLE TONE POWER, EVEN ON TEN METERS, without grid current flow! Two tone third order distortion products are down in excess of 40 db.

PHYSICAL DATA

Built-in power supply for 115V 60 cycle operation. Spare SPDT contacts on the VOX relay are available on a rear socket to furnish 115V AC for an antenna relay or to control keying circuits in other equipment. Cabinet, grey wrinkle, 9" x 19¼" x 15" deep. Panel size, 8¾" x 19" suitable for rack mounting. Standard finish is Central Electronics smooth grey enamel; also available with grey or black wrinkle finish on special order. Shipping weight: approx. 90 lbs.

MODEL 100V Standard Table Top unit, wired.....$795.00



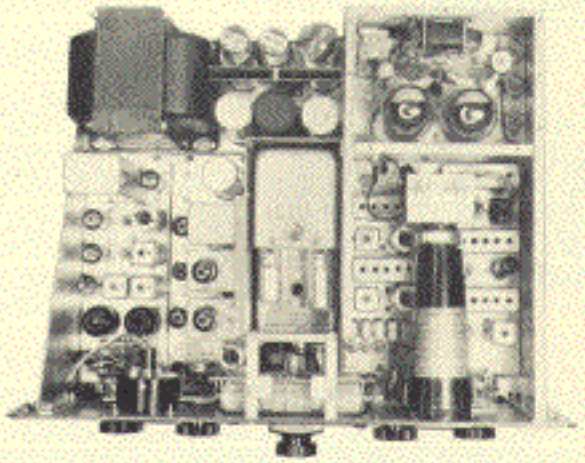
Block diagram of the 100V

NEW PS-2 PHASE SHIFT NETWORK

No expense has been spared in developing the most stable and accurate unit on the market. The new PS-2 is a twelve crossover type unit constructed of heat-cycled components matched to .1% accuracy. In combination with its associated circuitry, and the fact that 35 db of inverse feedback is applied around the modulator, it will maintain not less than 50 db unwanted sideband suppression. This novel approach means that even the modulator tubes may be changed WITHOUT AFFECTING SIDEBAND SUPPRESSION! The RF phase shift network is a new non-critical, low impedance, wide band type having extreme stability.

NEW DOUBLE HETERODYNE SYSTEM

Years ago, CENTRAL ELECTRONICS developed the first commercially available amateur multiband transmitter in which the sideband signal is generated at a fixed crystal controlled frequency and thereafter heterodyned to different bands. This feature eliminates the necessity of rebalancing the sideband generator when changing from band to band. In the 100V a NEW DOUBLE HETERODYNE system insures extreme stability and freedom from spurious products. The VFO tunes from 5 to 6 MC. Sideband generation is crystal controlled at 8 MC. All heterodyne oscillators run continuously and are crystal controlled. Blocked grid keying of mixers and linear amplifier results in perfected, clickless, chirp free break-in operation.



Top view of the 100V

IN THE DESIGN STAGE NOW

A companion receiver with identical VFO, which will transceive with the 100V. The 2500L, big brother to the famous 600L. BROADBAND OF COURSE. A heterodyne converter for 6 and 2 meters. SORRY — Literature and delivery dates on these new items NOT YET AVAILABLE.

SPECIFICATIONS AND PRICE SUBJECT TO CHANGE WITHOUT NOTICE

WRITE FOR LITERATURE ON THE COMPLETE MULTIPHASE LINE

June 1, 1960

MULTIPHASE EQUIPMENT

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