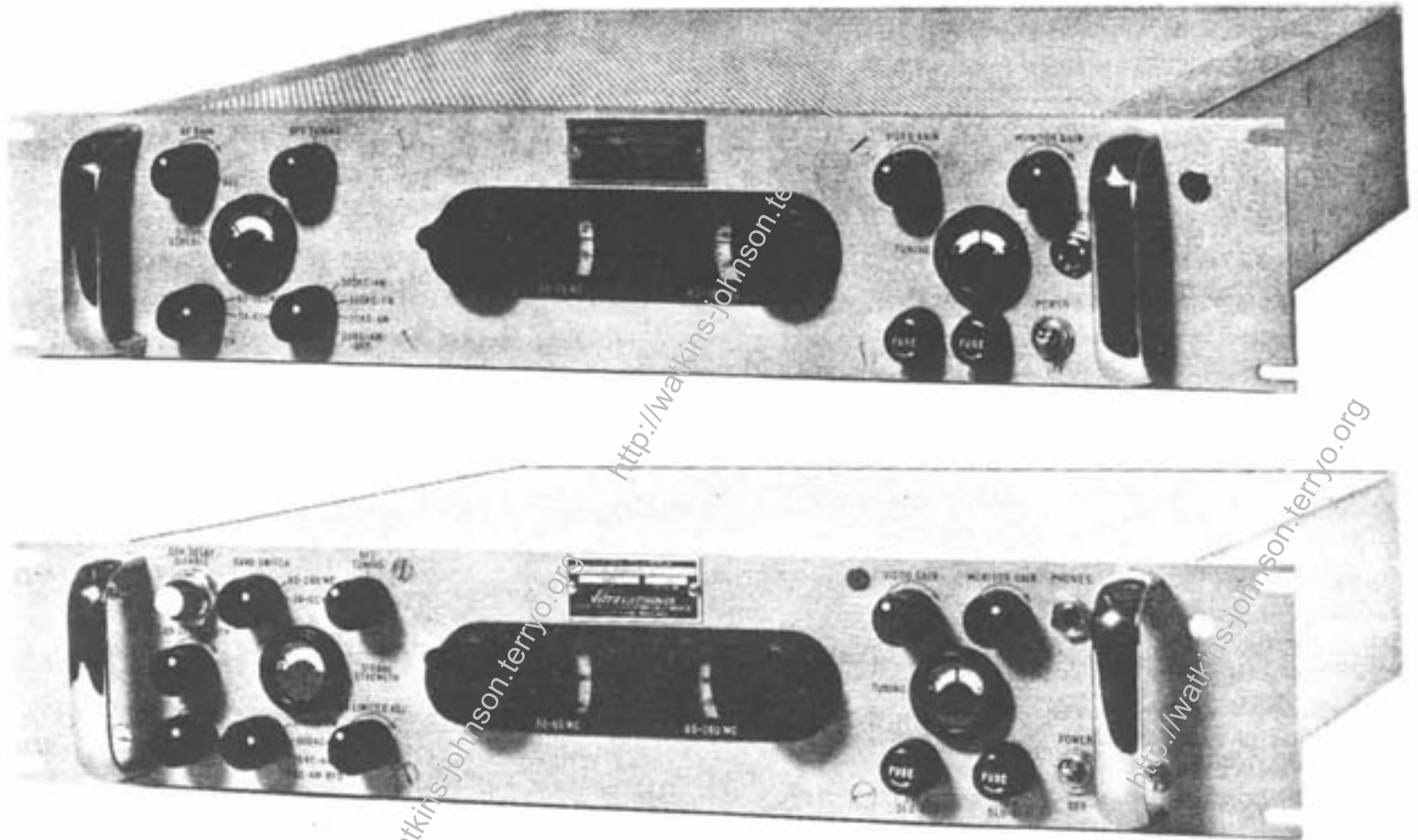


COMPACT TELEMETRY RECEIVERS NEMS-CLARKE 1906 AND 1907



DESCRIPTION

These Nems-Clarke receivers are designed for compactness and are lightweight. They are built with the highest quality components to meet the requirements of high stability and sensitivity for outstanding performance.

The modern superheterodyne circuitry used is designed to tune over the range of the receivers in two bands, 30 to 60mc and 60 to 260mc. Each band has a separate RF unit, local oscillator, and mixer. A panel-mounted band selector controls a coaxial relay which automatically switches the antenna input to the selected band during single antenna operation. In two-antenna operation, each antenna may be directly connected to its respected RF band. A mode selector switch on the panel determines the IF bandwidth and mode: 300kc AM, 300kc FM, 20kc AM, or 20kc AM BFO.

The rugged and compact construction of these units make them ideal modules for modern mobile telemetry installations using standard 19-inch racks, since the panels have a vertical height of only 3½ inches. The chassis is 16½ inches deep, and the entire unit weighs only 25 pounds.

The 1907 Receiver is identical in every respect to the 1906 Receiver, but has the additional features of automatic auxiliary equipment actuation facilities, and an AM noise limiter. A carrier-operated relay, with two contacts, is actuated by a carrier to provide carrier-on, carrier-off control of auxiliary equipment. The action is indicated by a panel light. Time-delay of the carrier-off action is adjustable from 3 to 13 seconds following carrier-on operations. The AM noise limiter provides clipping action of the detector signal voltages. The extent of limiting, which depends on the carrier level and per cent modulation, is adjustable by means of a panel-mounted control.

SPECIFICATIONS

Type Reception — AM-FM-CW

Tuning Ranges, switchable — Band A — 30-60mc,
Band B, 60-260mc

Input Impedance — 50 ohms, nominal, unbalanced
to ground

Noise Figure — Band A, 6db max., Band B, 6.5db
max.

IF Rejection — Band A, 50db max., Band B, 70db
min.

Image Rejection — 55db min., Band B, 58db min.

Oscillation Radiation — Band A, $40\mu\text{v}$ max., Band
B, $5\mu\text{v}$ max.

IF — 21.4mc

IF Bandwidths, switchable from front panel — 300
& 20kc

Wide Band—300kc bandwidth at 3db points,
Attenuation $\pm 800\text{kc}$ from center frequency
greater than 60db.

Narrow Band—20kc bandwidth at 3db points.

AGC Range — 40db for 7db change in output

Discriminator Peak Separation — 0.75mc

Harmonic Distortion—

Wide Band: 300kc FM— $500\mu\text{v}$ input, 100kc
deviation, 1kc modulation frequency — less
1%

300kc AM— $10\mu\text{v}$ input, 50% modulation, 1kc
modulation frequency—less than 3%

Narrow Band: 20kc AM— $100\mu\text{v}$ input, 50%
modulation, 1kc modulation frequency—less
than 7.0%

Video Response — 50cps to better than 100kc at
3db points in the 300kc bandwidth position only.

Video Output — To drive 600 ohms at 0.774v RMS
with 50% AM, or 100kc deviation FM, with
a modulation frequency of 1kc at $5\mu\text{v}$ and $4\mu\text{v}$
inputs for AM and FM respectively.

Sensitivity — 0.021v peak-to-peak per kc of deviation

AM Output Stability — 7db change in output for
40db change in input from $5\mu\text{v}$

FM Output Stability — Varies less than 2db for
voltages above $1.5\mu\text{v}$ input

AM Sensitivity — measured with 100kc low pass
video filter:

300kc IF Bandwidth — $2\mu\text{v}$ produces at least
9db S/N with 50% modulation and 1kc mod-
ulation frequency

20kc IF Bandwidth — $2\mu\text{v}$ produces at least
16db S/N with 50% modulation and 1kc
modulation frequency

FM Sensitivity — measured with 100kc low pass
video filter:

300kc IF Bandwidth only — $4\mu\text{v}$ produces at
least 21db S/N with 100kc deviation and 1kc
modulation frequency

Monitor Output

Voltage — 0.774v (nominal) across 2000 ohms
into standard phone jack on front panel

Monitor Output Response — 50cps to better than
100kc at 3db points in 300kc bandwidth posi-
tion only

Beat Frequency Oscillator — Adjustable from front
panel and interlocked with 20kc IF bandwidth
position only

Outputs: Video — 600 ohms unbalanced, for ex-
ternal use

Monitor—Phone-jack — 2000 ohms

Spectrum Display — (SDU-200-7) — 21.4mc

Meters: Tuning — Zero-Center indicator

Signal Strength — Approximate indicator

Gain Controls — RF Gain, Video Gain, Monitor
Gain

1907 only:

Shunt AM Noise Limiter — Adjustable for 50%
to 100% modulation

Carrier Operated Relay — Adjustable Sensitivity
Adjustable Delay: 3 to 13 sec.

Power Input:

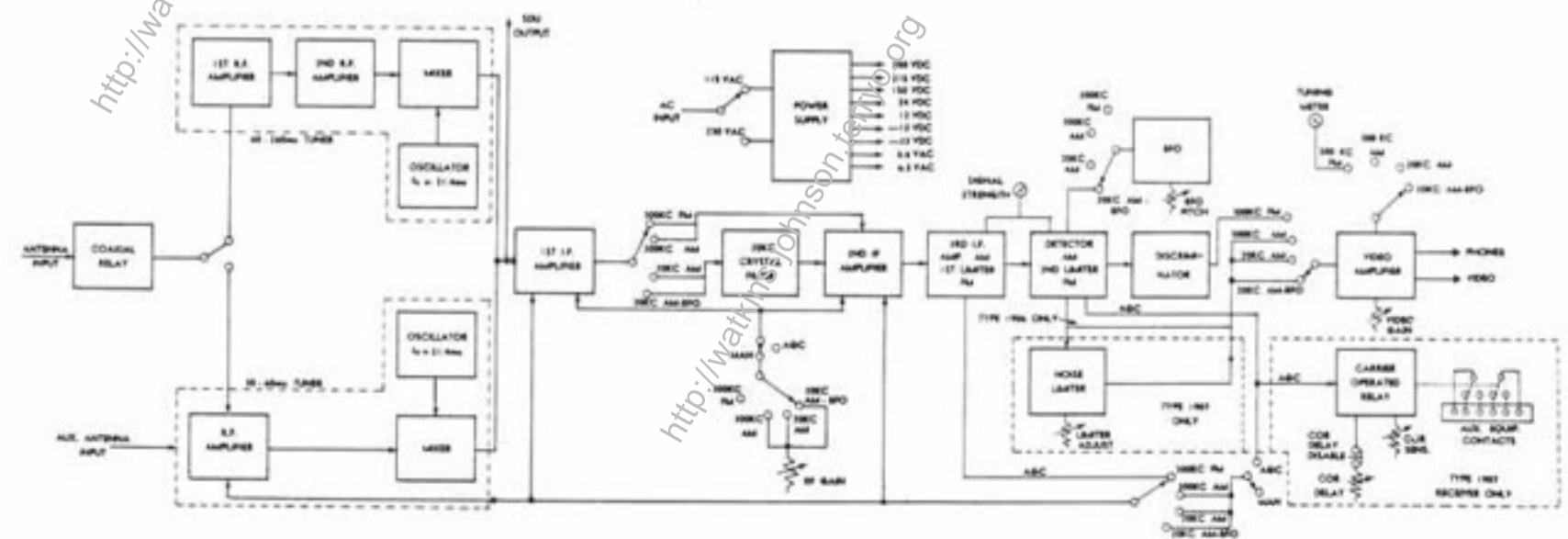
1906: 115/230v AC, 50/60cps, 60 watts ap-
proximate

1907: 115/230v AC, 50/400cps, 67 watts ap-
proximate

Size — $19 \times 31\frac{1}{2} \times 16\frac{1}{2}$ inches

Weight — Approx. 25 pounds

Finish — Gray enamel, MIL-E-15090; Color #26329
Federal Standard 595.



Price: 1906, \$2,250.0

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