

CATALOGUE NO. 23
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CABLE: "GLENWOOD VANCOUVER"

Tel.: (604) 984-0404

GLENWOOD TRADING COMPANY LTD.

Electronic Specialists

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OPEN 9:00-4:30 MON.-FRI. (except holidays)

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GLENWOOD IS WHERE IT'S AT IN CANADIAN HAM RADIO.

A SUPERLATIVE NEW TRANSCEIVER FROM KENWOOD

- Dual Digital VFO's with Automatic Step Selector
- General Coverage Receiver 150Khz to 30Mhz
- Full Break-in/Semi Break-in Switch
- Variable Bandwidth Tuning
- SSB Slope Tune Control
- Low Distortion Final Power Amplifier
- Optional Automatic Antenna Tuner

- RIT Control
- Speech Processor
- VOX
- AF Tune
- Noise Blanker
- 8 Channel Memory
- IF Notch Filter

\$ 2 3 4 9

WITH AUTOMATIC ANTENNA TUNER

TS-930S



TS-930S FEATURES:

* 160-10 Meters, with 150 kHz - 30 MHz general coverage receiver.

Covers all Amateur frequencies from 160-10 meters, including new WARC, 30, 17, and 12 meter bands on SSB, CW, FSK, and AM. Features 150 kHz - 30 MHz general coverage receiver. Separate Amateur band access keys allow speedy band selection. UP/DOWN bandswitch changes in 1-MHz steps. A new, innovative, quadruple conversion, digital PLL, synthesized-circuit provides superior frequency accuracy and stability, plus greatly enhanced selectivity.

* Excellent receiver dynamic range.

Receiver two-tone dynamic range, 100 dB typical (20 meters, 500 Hz CW bandwidth, at sensitivity of 0.25 µV S/N 10 dB), provides the ultimate in rejection of IM distortion.

* All solid state, 28 volt operated final amplifier.

The final amplifier operates on 28 VDC for lowest IMD distortion. Power input rated as 250 W in SSB, CW, and FSK, and as 80 W on AM. Final amplifier protection circuit with cooling fan, SWR Power meter built-in.

* Automatic antenna tuner, built-in.

Available with AT-930 antenna tuner built-in, or as an option. Covers Amateur bands 80-10 meters, including the new WARC bands. Tuning range automatically

pre-selected with band selection to minimize tuning time. "AUTO-THRU" switch on front panel.

* CW full break-in.

CW full break-in circuit uses CMOS logic IC plus reed relay for maximum flexibility, coupled with smooth, quiet operation. Switchable to semi-break in.

* Dual digital VFO's.

10-Hz step dual digital VFO's include band information. Each VFO tunes continuously from band to band. A large, heavy, flywheel type knob is used for improved tuning ease. T.F. Set switch allows fast transmit frequency setting for split-frequency operations. A-B switch for equalizing one VFO, frequency in the other. VFO "Lock" switch provided. RIT control for ±9.9 kHz receive frequency shift.

* Eight memory channels.

Stores both frequency and band information. VFO-MEMO switch allows use of each memory as an independent VFO. The original memory frequency can be recalled at will, or as a fixed frequency. Internal battery memory back up, estimated 1 year life. (Batteries not Kenwood supplied).

* Dual mode noise blower ("pulse" or "woodpecker").

NB-1, with threshold control, for pulse-type noise. NB-2 for longer duration "woodpecker" type noise.

* SSB IF slope tuning.

Allows independent adjustment of the low and/or high frequency slopes of the IF passband, for best interference rejection.

* CW VBT and pitch controls.

CW VBT (Variable Bandwidth Tuning) control tunes out interfering signals. CW pitch controls shifts IF passband and simultaneously changes the pitch of the beat frequency. A "Narrow/Wide" filter selector switch is provided.

* IF notch filter.

100-kHz IF notch circuit gives deep, sharp, notch, better than -40 dB.

* Audio filter built-in.

Tunable, peak-type audio filter for CW. * AC power supply built-in.

120, 220, or 240 VAC, switch selected (operates on AC only).

* Fluorescent tube digital display.

Fluorescent tube digital display has analog type sub-scale with 20-kHz steps. Separate 2 digit display indicates RIT frequency shift.

* RF speech processor.

RF clipper type processor provides higher average "talk power", plus improved intelligibility. Separate "IN" and "OUT" front panel level controls.

TS-930SAT (WITH AUTOMATIC ANTENNA TUNER) \$2349

SP-930 \$119

SO-1 (HIGH STABILITY TXCO) \$229

YG455-C1 \$139

YG-455-CN1 \$159

TS-930S \$2129

AT-930 \$269

PC-1A (8 pin phone patch) \$89

YK-88C-1 \$89

YK-88CN-1 \$89

OUR BEST-SELLING HF TRANSCEIVER TS-830S



TS-830S FEATURES:

Variable bandwidth tuning (VBT)

Continuously varies the IF filter passband width to reduce interference. VBT and IF shift can be controlled independently for optimum interference rejection in any condition.

IF notch filter

Tunable high-Q active circuit in 455-kHz second IF for sharp, deep notch characteristics.

IF shift

Shifts IF passband toward higher or lower frequencies (away from interfering signals) while tuned receiver frequency remains unchanged.

Various IF filter options

Either a 500-Hz (YK-88C) or 270-Hz (YK-88CN) CW filter may be installed in the 8.83-MHz first IF, and a very sharp 500-Hz (YK-455C) or 250-Hz (YK-455CN) CW filter is available for the 455-kHz second IF.

SSB monitor circuit

Monitors IF stage while transmitting, to determine audio quality and effect of speech processor.

6146B final with RF NFB

Two 6146B's in the final amplifier provide 220 W PEP (SSB/180 W DC CW) input on all bands. RF negative feedback provides optimum IMD characteristics for high-quality transmission.

More flexibility with optional digital VFO

VFO-230 operates in 20-Hz steps and includes five memories. Also allows split-frequency operation.

Built-in digital display

Covers all Amateur bands from 1.8 to 29.7 MHz (LSB, USB, and CW), including the new 10, 15, and 24-MHz bands. Receives WWV on 10 MHz.

Built-in RF speech processor

For added audio punch and increased talk power in DX pickups.

RIT/XIT

Receiver incremental tuning (RIT) shifts only the receiver frequency to tune in stations slightly off and low noise figure. In the balanced mixer, a junction FETs with optimum IMD characteristics.

Transmitter incremental tuning (XIT) shifts only the transmitter frequency.

Adjustable noise-blanker level

Built-in noise blanker eliminates pulse-type noise.

Front-panel threshold level control.

Built-in digital display

Six-digit large fluorescent tube display, backed up by an analog dial. Reads actual receive and transmit frequency on all modes and all bands. Display Hold (DHL) switch.

160-10 meters, including three new bands

Covers all Amateur bands from 1.8 to 29.7 MHz (LSB, USB, and CW), including the new 10, 15, and 24-MHz bands. Receives WWV on 10 MHz.

Wide receiver dynamic range

Junction FETs with optimum IMD characteristics. MOSFET RF amplifier operating at low level for improved dynamic range (high amplification level not needed because of low noise in mixer). Dual oscillator for each band, and advanced overall receiver design result in excellent dynamic range.

\$1249

A COMPLETE LINE OF MATCHING ACCESSORIES



SPECIFICATIONS

[ANTENNA COUPLER] • Frequency Range: 5 amateur bands from 1.8 to 30.0 MHz • Input Impedance: 50 Ω • Output Impedance: 10 to 500 Ω, unbalanced • Through Power: 200 W max. (WATTMETER) • Tuner: Through, Antenna, wattmeter • Frequency Range: 1.8 to 30 MHz • Measurable RF power: Up to 20/200 W switched • Kinds of RF Power: Forward and reflected power, switched • Impedance: 50 Ω • Accuracy: Better than ± 10% of full scale (SWR METER) • SWR detection: Tunable core directional coupler • Measurable Range: 1.8 to 30 • Min. Power Required: 4 W [GENERAL] • Connectors: INPUT: UHF type, 50 Ω • Connectors: ANT-1: UHF type; ANT-2: UHF type; ANT-3: Wire antenna only, GND • Dimensions: 189 (7.39") x 133 (5.21") x 287 (11.50") mm (inch) • Weight: 3.4 kg (7.5 lbs)

AT-230

Antenna Tuner

\$289

VFO-230 Digital Remote VFO

\$419

The VFO-230 digital VFO provides maximum efficiency and flexibility for all operating conditions, including split frequency operation, by combining a 20-Hz step digital VFO with five memories.

FEATURES

• 20-Hz step digital VFO. Provides excellent stability and smooth tuning on CW and SSB. • Five Memories: Frequency can be transferred from VFO (transceiver or VFO-230) to memory or from memory to digital VFO. (VFO-230) • 851-Hz digital display. Shows digital VFO or memory frequencies. The display range is selected automatically to cover 300.0–999.9 or 400.0–999.9, according to the band. Backed up by analog subdial with 1-kHz division. • Cross-operation flexibility. Easy-to-operate function switch provides RECEIVE/TRANSMIT, Main, RMT, Memo (Main), Transceiver VFO or FIX, RMT, VFO-230 digital VFO, MEM, Memory, T/F SET switch. Allows operator to set transmit frequency quickly. Reverses transmit and receiver frequency momentarily, to prevent transmitting on wrong frequency during split-frequency operation. • Expanded frequency coverage: About 100 kHz above and below each 500-kHz band, for MARSH and other applications. • Lock switch: To prevent accidental frequency change. • MAIN, RMT, and MEMORY indicators: LEDs show functions in operation. • Capability with TS-830S, TS-830S, TS-120, and TS-120 Series.

SPECIFICATIONS

• Oscillating Frequency: 0.4–6.1 MHz • Frequency Stability: $\pm 1 \times 10^{-6}$ 20 Hz (at normal temperature), $\pm 3 \times 10^{-6}$ 20 Hz (0–50°C) • Output Voltage: 0.2V ± 3 dB, -1 dB • Power Requirement: 120V AC (modifiable to 220V AC), 60/600 Hz, 13W • Dimensions: 180 (7.24") x 133 (5.21") x 287 (11.50") mm • Weight: 2.1 kg (4.6 lbs)

SP-230

TS-830S

VFO-230

AT-230

\$89

\$1249

\$419

\$289

CW FILTERS

YG-455C

500 Hz CW filter **\$139**

YG-455CN

250 Hz CW filter **\$159**

YK-8BC

500 Hz CW filter **\$89**

YK-8BCN

270 Hz CW filter **\$89**



TS-130SE/130V HF TRANSCEIVER

FEATURES

- 80~10 Meters, including three new bands
- Built-in speech processor
- CW narrow/wide selection
- SSB narrow selection
- Sideband mode selected automatically
- Optional DFC-230 digital frequency controller
- Optimum performance in a compact package
- All solid-state
- Easy to operate
- Built-in digital display
- IF Shift eliminates QRM
- Innovative single conversion PLL system
- Built-in RF attenuator
- Built-in cooling fan (TS-130S only)
- Protection circuit for final transistor
- Expanded frequency coverage
- Built-in VOX circuit
- Built-in noise blanker
- Enhanced selectivity with innovative MCF
- Built-in 25-kHz marker
- Fixed channels
- Rugged construction and handsome styling



\$939

[RECEIVER]

Sensitivity: 0.25 μ V at 10 dB S/N • Selectivity: SSB/CW WIDE = 2.4 kHz (-6 dB), 4.2 kHz (-60 dB), SSB NARROW = 1.8 kHz (-60 dB), 3.3 kHz (-60 dB), with optional YK-88SN filter; CW NARROW = 500 Hz (-6 dB), 1.5 kHz (-60 dB) with optional YK-88C filter or 270 Hz (-6 dB), 1.1 kHz (-60 dB), with optional YK-88CN filter

• Image ratio: better than 50 dB • IF rejection: better than 70 dB • AF output power: 1.5 W

• Audio output impedance: 4 ~ 16 Ω

[TRANSMITTER]

• Final power input: TS-130SE/130S=80~15 mW PEP for SSB operation, 180W DC for CW operation, 12~10 mW PEP for SSB operation, 140W DC for CW operation, TS-130V=130V = All band = 25 W PEP for SSB operation, 20 W DC for CW operation • Carrier suppression: better than 40 dB

• Unwanted sideband suppression: better than 50 dB • Spurious radiation: better than 40 dB • Audio input impedance: 500 Ω ~ 50k Ω

DIFFERENCES BETWEEN TS-130SE and TS-130S

• Cooling fan TS-130SE; option TS-130S/130V built-in • Fix channel: TS-130SE 1th TS-130S/130V : 4ch

OPTIONAL ACCESSORIES

- VFO-120: remote VFO
- VFO-230: digital remote VFO
- DFC-230: digital frequency controller
- AT-130: antenna tuner
- SP-120: external speaker
- PS-30: DC power supply (for TS-130SE/130S and TL-120)
- PS-20: DC power supply (for TS-130V)
- YK-88SN: 1.8 kHz SSB narrow filter
- YK-88C: 270Hz CW narrow filter
- FA-4: fan unit (for TS-130SE) • TL-120: HF linear amplifier (for TS-130V) • MC-50(N4): deluxe desk top microphone • MB-100: mobile mount

SP-120

EXTERNAL SPEAKER



The SP-120 is a good looking compact speaker matching the TS-130SE/130S/130V, TS-120 series, TR-9000 and TR-9500 styling and is designed for home station use. A low distortion speaker unit provides clear audio reproduction.

SPECIFICATIONS

\$59

- Speaker diameter: 75 mm (3 inch)
- Max. input power: 1 W
- Input impedance: 8 Ω
- Frequency response: 300 Hz ~ 5 kHz
- Dimensions: 123 (4.9)W x 96 (3.8)H x 235 (9.4)D mm (inch)
- Weight: 1.3 kg (2.9 lbs.) approx.

VFO-120

REMOTE VFO



Allows split-frequency operation with TS-130 (or TS-120) series when DX chasing, net monitoring, and finding an unused frequency while retaining the original frequency. The VFO-120 incorporates a T, F, SET switch which prevents transmitting on the wrong frequency during split-frequency operation and also allows quick setting of transmit frequency. LED indicators show VFO functions at a glance.

SPECIFICATIONS

\$219

- Oscillator frequency: 5.5 ~ 8.0 MHz
- Oscillator circuit: Clean
- Output voltage: 0.2V
- Gain: +11 dB
- Power source: from TS-130 (TS-120) Series
- Dimensions: 123 (4.9)W x 96 (3.8)H x 235 (9.4)D mm (inch)
- Weight: 2.5 kg (5.6 lbs.)

DFC-230

DIGITAL FREQUENCY CONTROLLER



The very compact DFC-230 digital frequency controller provides maximum efficiency and flexibility for mobile and fixed operation, by combining a 20 Hz step digital VFO with four memories.

SPECIFICATIONS

\$379

- Oscillating frequency: 5.4 ~ 8.1 MHz
- Power requirement: 9V DC, 30 mA, 13.8V DC, 380 mA (obtained from TS-130SE/130S/130V, TS-830S, or TS-120S/120V)
- Dimensions: 147 (5.8)W x 51 (2.0)H x 166 (6.7)D mm (inch)
- Weight: 1.3 kg (2.9 lbs.) approx.

ANTENNA TUNER



The AT-130 is a compact and lightweight antenna tuner designed for base or mobile use (includes the three new bands).

AT-130

SPECIFICATIONS

\$199

- Input connector: UHF type 150S1
- ANT connector: UHF type 150S3
- GND: wing nut and stud
- Dimensions: 152 (6.1)W x 60 (2.4)H x 155 (4.9)D mm (inch)
- Weight: 1.6 kg (3.5 lbs.) approx.

T ANTENNA COUPLER

- Frequency range: 8 amateur bands from 3.5 ~ 29.7 MHz
- Input Impedance: 50 Ω
- Output Impedance: 20 ~ 300 Ω , unbalanced
- Through power: 150 W max. (13.5 MHz band, 120 W)
- Insertion loss: less than 0.5 dB at optimum match

[SWR METER]

- Frequency range: 3.5 ~ 29.7 MHz
- Max. power: 150 W
- Measurable range: 1:1 ~ 10:1
- Min. power required: 2 W

• FA-4

Fan Unit (for TS-130SE)

\$29

PS-30

SP-120

TS-130SE

VFO-120



TOP QUALITY AT A ROCK-BOTTOM PRICE

TS-530S



\$989

TS-530S FEATURES:

Narrow/wide filter combinations

Any one or two of three optional filters YK-8RSN (1.8 kHz) SS45, YK-88C (500 Hz) CW, YK-88CN (270 Hz) CW... may be installed for selecting between "N-W" switchable wide and narrow bandwidths on CW and/or SSB.

Wide receiver dynamic range

Greater immunity to strong-signal overload, with MOSFET RF amplifier operating at low level for improved IMD characteristics, junction-PET's in balanced mixer with low noise figure, and dual resonators for each band.

Built-in speech processor

Combines an audio compression amplifier with change of ALC time constant for extra audio punch and increased average SSB output power, with suppressed sideband splatter.

160-10 meter coverage, including three new bands

Transmits and receives (LSB, USB, and CW) on all Amateur frequencies between 1.8 and 29.7 MHz, including the new 10, 18, and 24 MHz bands. Receives WWV on 10 MHz.

Built-in digital display

Large, six-digit, fluorescent-tube display shows actual receive and transmit frequencies on all modes. Backed up by analog subdial.

IF shift

Moves IF passband around received signal and away from interfering signals and sideband splatter.

Advanced single-conversion PLL system

Improved overall stability and improved transmit and receive spurious characteristics.

RIT/XIT

Front-panel RIT (receiver incremental tuning) shifts only the receiver frequency, for tuning in stations slightly off frequency. XIT (transmitter incremental tuning) shifts only the transmitter frequency, for calling a DX station listening off frequency.

Adjustable noise-blanker level

Pulse-type noise such as ignition noise is eliminated by built-in noise blinder, with front-panel threshold level control.

RF attenuator

The 20-dB RF attenuator may be switched in for rejecting IMD from extremely strong signals.

Two 6146B's in final

Run 220 W PEP/180 W DC input on all bands.

A COMPLETE LINE OF MATCHING ACCESSORIES

VFO-240



The VFO-240 remote analog VFO is a valuable, yet affordable station addition for split-frequency operation, temporary QSY and fast return to a net frequency, searching for a clear frequency, and other applications.

FEATURES

- T-F SET switch allows operator to set transmit frequency quickly; reverses transmit and receive frequency momentarily, to prevent transmitting on wrong frequency during split-frequency operation.
- Cross-operation function switch.
- RIT control.
- MAIN and RIT indicators.

SPECIFICATIONS

- Oscillating Frequency: 5.3-8.0 MHz
- Oscillator Circuit: Modified class A
- Output Voltage: 0.2 V ± 1 dB
- Frequency Stability: Within 100 Hz per 30 minutes after 3 minutes warm-up
- Solid-state Components: FET, 2 Transistor, 2 Diode
- Power Source: From TS-530S
- Dimensions: 180 (7.21") x 133 (5.3") x 287 (11.51") mm (inch)
- Weight: 2.4 kg

YK-88SN SSB NARROW FILTER 1.8 kHz

YK-88CN CW NARROW FILTER 270 Hz

YK-88C CW FILTER 500 Hz

\$89 EACH

SP-230 External Speaker



\$89

The SP-230 external speaker matches the TS-530S HF transceiver.

It is a low-distortion speaker with selectable frequency response for high intelligibility in any mode. The frequency response is determined by the built-in audio filters, which are effective in improving signal-to-noise ratio under certain interference conditions, or when receiving weak signals.

On the front panel is a headphones connector, for listening to audio output passed through the filters.

Also on the front panel is a switch for selecting either of two audio inputs to the SP-230.

SPECIFICATIONS

- Maximum Input (nominal): 2W
- Impedance: 8 ohms
- Frequency Response: 300 Hz to 5 kHz
- Filter Cut-off Frequency: Low = 400 Hz/-3 dB, High 1 = 3 kHz/-3 dB, High 2 = 1.5 kHz/-3 dB, High 1 and High 2 = 1.0 kHz/-3 dB
- Filter Attenuation Characteristic: -6 dB/Oct
- Dimensions: 180 (7.21") x 133 (5.3") x 287 (11.51") mm (inch)
- Weight: 1.8 kg (4.0 lbs)

SP-230

TS-530S

VFO-240

AT-230



TS-660

15M~6M

ALL MODE TRANSCEIVER

"Quad Bander"
...dual VFOs,
FM, SSB,
CW, AM
IF shift,
memory,
scan.


TS-660 FEATURES:

- FM, SSB (USB), CW and AM operation.
- 10 Hz step digital VFO. The frequency step is determined by mode of operation.
- F. STEP switch allows alternative step size in each mode.
- Dual VFOs built-in.
- 5 channel memory stores frequency and band information.
- Memory scan scans all bands, skips channels not in use.
- UP/DOWN push-button frequency control on microphone.
- RIT control
- UP/DOWN bandswitch.
- Frequency lock function switch.
- IF SHIFT circuit built-in.
- Fluorescent digital display shows Tx/Rx frequencies.
- Squelch circuit for FM, SSB, CW and AM.
- CW semi break-in circuit, with CW side tone.
- 10 W RF output on SSB, CW, FM, 4 W on AM.
- Two antenna terminals provided.
- Noise blanker.
- RIT control

VOX-4
VOX/SPEECH
PROCESSOR
 

The VOX-4 allows voice operated transmit/receive control. Features built-in speech processor, with VOX GAIN, ANTI-VOX, DELAY TIME, and output level controls. Makes possible increased talk power, with VOX control convenience.

\$949
OPTIONAL ACCESSORIES:

- PS-20 power supply. \$129
- SP-120 external speaker. \$59
- MB-100 mobile mounting bracket. \$49
- YK-8BC normal CW, (500 Hz) filter or YK-8BCN narrow band CW, (270 Hz) filter. \$89
- YK-8BA AM (6 kHz) filter. \$89
- VOX-4 speech processor/VOX unit. \$89

TEST AND MEASURING EQUIPMENT
SM-220
MONITOR SCOPE


Based on a wide-frequency-range oscillator (up to 10 MHz), the SM-220 station monitor features, in combination with a built-in two-tone generator, a wide variety of waveform-measuring capabilities. An optional feature is a unique pan-display capability. The SM-220 provides efficient visual operation in monitoring transmitted waveforms, and it also serves as a high-sensitivity, wide-frequency-range oscilloscope for various adjustments and experiments.

SPECIFICATIONS

- Frequency range: 1.8 ~ 150 MHz • Maximum power: 2kW (1.8 ~ 54 MHz), 100W (150 MHz)
- Deflection sensitivity: more than 1 div. at 2W input
- Attenuator: 8 steps • Power supply: 120/220/240V AC, 50/60 Hz, 20W • Dimensions: 215 (8.51") x 183 (6.11") x 365 (13.41") mm (inch) • Weight: 5 kg (11 lbs.)

OPTIONAL ACCESSORIES

- Pan Display Unit
- BS-5 adaptor (for TS-620), BS-8 adaptor (for TS-630S, TS-830 and TS-180) • Input center frequency: 3.395 MHz (BS-5), 8.830 MHz (BS-8)

SM-220

\$529

BS-5

\$109

BS-8

\$109

\$5 EACH

CRYSTALS

\$10 PER CHANNEL

Transmit	Receive	Transmit	Receive	Transmit	Receive
146.01	146.61	146.37	146.97	147.63	147.03
146.04	146.64	146.40	147.00	147.72	147.12
146.07	146.67	146.45	147.06	147.78	147.18
146.13	146.73			147.81 *	147.21 *
146.16 *	146.76 *	146.52	146.52	147.84	147.24
146.19	146.79	146.56	146.58		
146.22 *	146.82 *	146.70	146.70	147.33	147.33
146.25	146.85	146.76	146.76	147.60	147.60
146.28	146.88	146.84	146.84		
146.31 *	146.91 *				
146.34	146.94				

We have the following simplex channels on sale at \$2 per channel.
TR-2200: 144.48, 144.72, TR-7200: 144.48, 144.60, 145.32

**OFFER GOOD
WHILE STOCKS LAST**

SPECIAL CLEARANCE * BECAUSE WE HAVE A LARGE STOCK OF THOSE FREQUENCIES MARKED WITH A * WE ARE OFFERING THESE CRYSTALS ONLY FOR LIMITED TIME AT \$2.00 EACH. MINIMUM ORDER — \$14. THIS APPLIES ONLY TO XTALS FOR THE MULTI-7, MULTI-II, TR 2200, TR 7200.

**MINIMUM
ORDER
\$14**

NYE 'VIKING' PHONE PATCH

Used to connect a telephone circuit into any communication installation the NYE VIKING Phone Patch is a compact, automatic, hybrid-transformer type unit which provides push-to-talk, or voice (VOX) control operation. Has adjustable line "null" control, and separate gain controls for transmitter and receiver inputs.

In "PATCH" position, the speaker is de-energized and audio is switched to the telephone handset for undistorted, hum-free audio response. It is effectively shielded — RF filtering and bypassing prevents RF feedback from telephone line. The Phone Patch is easy to install and operate. It comes wired and tested.

Model 250-46-1, recommended when your receiver speaker is separate from the receiver or transceiver, utilizes your existing speaker.



\$85

PHONE PATCH CONTROLLER**KENWOOD**

Model PC-1 phone patch has been carefully engineered and manufactured under rigid quality standards, and should give satisfactory and dependable operation for many years.

FEATURES

- * Provides connection between a transceiver and a telephone line
- * High isolation between receive input and transmit output
- * Compact design easy installation in a limited space

SPECIFICATIONS**Impedance levels**

- * Line: 600Ω nominal • RX in: 8Ω nominal
- * SP. out: 8Ω nominal • Mic: 50kΩ nominal (available only where phone patch operation is legal)

\$89

KENWOOD**DUMMY LOAD****RD-300**

SPECIFICATIONS	
IMPEDANCE	50Ω
FREQUENCY RANGE AND VSWR	DC - 50MHz 1.1:1 DC - 150MHz 1.4:1
INPUT POWER	50W continuous 1kW intermittent 3 seconds off maximum 30 minutes on
OPERATING TEMPERATURE	-20°C (32°F)
MAXIMUM TEMPERATURE	200°C (392°F)
Cooling	Water-cooled
DIMENSIONS	90 x 400mm (3.5 x 15.7")
WEIGHT	1.9kg (4.2 lbs)



\$115

RD-300
Dummy Load
(300W)



\$27

RD-20 50Ω RF dummy load,
(DC-500 MHz) 50 W intermittent,
20 W continuous.



\$65

NEW MFJ VERSALOAD

New MFJ-250 VERSALOAD kilowatt dummy load lets you tune up fast. Extends life of transmitter finals. Reduces on-the-air QRM.

Run 1 kW CW or 2 kW PEP for 10 minutes,
1/2 kW CW or 1 kW PEP for 20 minutes. Continuous duty with 200 watts CW or 400 watts PEP. Complete with detuning curve.

Quality 50 ohm non-inductive resistor
Oil cooled. Includes high quality, industrial grade transformer oil (contains NO PCB).

Low VSWR to 400 MHz: Under 1.2:1, 0-30 MHz; 1.5:1, 30-300 MHz; 2:1, 300-400 MHz.

LINEAR AMPLIFIERS

 KENWOOD

TL-120



FEATURES

- Compact, yet key HF linear amplifier with maximum power capability designed to match the TS-120X. PS-30 can be used as an external power source.
- High efficiency, total heatsink with a cooling fan built into chassis.
- A complete protection system:
 - (1) SWR detection type protection
 - (1) Relays over temperature switch protection
 - (1) Output transformer over temperature protection
 - (1) Protection against heat sink misconnection
- Front panel LED indicators for POWER, STBY and PROTECTION.
- STBY switch to turn on/off the TS-120 Selection of HIGH or LOW power is available with the switch selected.
- Provides switch terminals to prevent transmitter damage if CI of the local page.
- TS-120X uses power terminals for remote control and power ON/OFF for the TS-120X.
- Application software.

HF LINEAR AMPLIFIER 80-10 METER/200W PEP INPUT

SPECIFICATIONS

Frequency Range	3.5 MHz - 30 MHz
Drive Power	10 Watts
RF Input Power	SSB: 300W PEP CW: 160W DC
Output Power	20 MHz: 200W PEP CW: 140W DC
Input Impedance	50 ohms
Power Consumption	DC12V - 16W
Front Panel Voltage	13.8VDC
Semiconductors	Diodes: 20 Transistors: 32
Dimensions	123.4 (W) x 97.0 (D) mm (inch) 225.9 (W) x 14.0 (D) mm (inch)
Weight	2.3 kg (5.1 lbs.)

\$329

What makes one linear amplifier different than all the rest? Check out these features:

Full amateur band coverage — Includes 160 meters.

Instant heating filaments — The 3-500Z tubes require no warm up period. Just turn it on and go!

Time delay fan circuit — Even after you turn the TL-922 off, the super quiet fan continues to work for approximately 2 minutes to greatly extend tube life.

Adjustable ALC output voltage — Lets you tailor the ALC voltage to your exciter.

Standby position — Provides amplifier bypassing without having to turn the AC power off.

Two independent safety interlocks — One disconnects AC line voltage and the second shorts B+ to ground when tripped.

Vernier plate control — For smooth, easy tune-up.

Diecast side panels — Includes functional carrying handles for easy transportation.

Thermal protection of power transformer — Amplifier automatically switches to standby if power transformer temperature exceeds 145°F.

Tuned input circuit — Means improved spurious characteristics.

Line voltage selector — Easily switched between 120 and 240 VAC.

Plate Current Meter — Separate meter allows continuous monitoring of plate current.

TL-922

3-500Z TUBES (USES TWO)



\$1399
without tubes

SHIPPED FREIGHT COLLECT

SPECIFICATIONS

• Frequency Range: 160 meter band—1.8 to 2.0 MHz; 80 Meter band—3.5 to 4.0 MHz; 40 meter band—7.0 to 7.3 MHz; 20 meter band—14.0 to 14.35 MHz; 15 meter band—21.0 to 21.46 MHz; 10 meter band—28.0 to 29.7 MHz • Mode: SSB, CW, RTTY • Drive power: 80 Watts or more for full output • RF Input Power: SSB: 2,000 Watts PEP, CW, RTTY: 1,000 Watts DC • Circuitry: AB2 Class Grounded-grid Linear Amplifier • Input Impedance: 50 ohms • Output Impedance: 50 to 75 ohms • Tubes: EIMAC 2 x 3-500Z • Dimension: 390 (15-3/8") W x 190 (7-1/2") H x 407 (16-1/2") mm (inch) • Weight: 31 kg (68 lbs.)
--

A NEW 25 WATT AMPLIFIER FOR THE TR-2500

2M FM POWER AMPLIFIER VB-2530



\$129

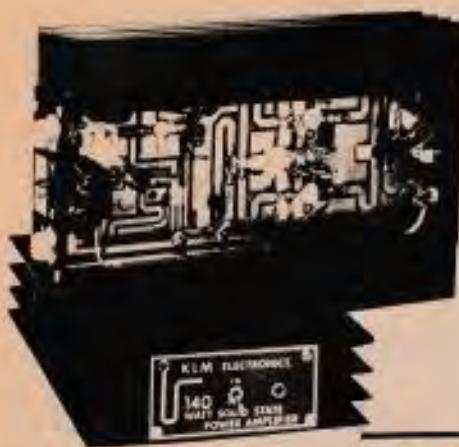
BUILT-IN SWR PROTECTION CIRCUIT LARGE HEAT SINK 25W OUTPUT

VB-2530 SPECIFICATIONS

Transmit Frequency Range:	144.000 - 147.995MHz
Mode:	F3
RF Output Power:	25W (at 13.8V DC and 50 ohms antenna impedance)
Drive Input:	2.5W
Input Impedance:	50 ohms
Antenna Impedance:	50 ohms
Spurious Radiation:	Less than -60dB
DC Current (with TR-2500):	Less than 5A (13.8V DC, switch ON position)
Power Supply:	13.8V DC ± 15%
Grounding:	Negative
Dimensions:	75 (3.0) W x 48 (1.9) H x 170 (6.8) D mm (inch)
Weight:	600g (1.3 lbs.) approx.

DOC REGULATIONS NOW REQUIRE THAT PURCHASERS OF LINEAR AMPLIFIERS COMPLETE SCHEDULE IV. PROSPECTIVE PURCHASERS SHOULD ENCLOSE A COMPLETED COPY OF THIS FORM WITH THEIR ORDER. THESE FORMS ARE AVAILABLE FROM YOUR LOCAL DOC OFFICE OR ON REQUEST FROM GLENWOOD.

LINEAR AMPLIFIERS



KLM electronics

FREQ.	MODEL NUMBER	PWR INPUT (WATTS)	NOM. PWR OUTPUT (WATTS)	NOM.* CURRENT (AMPS)	PRICE
144-148	PA 15-40BL	5-15	40	5	\$209.00
144-148	PA 15-80BL	5-15	80	10	\$329.00
144-148	PA 15-160L	5-15	140	15	\$449.00

*AT 13.5 VDC. L DENOTES LINEAR

MA-35BL for 2 meters

Linear Bias

- all-mode operations, AM, FM, SSB, CW
- third order IMD better than 30 dB below 35W PEP output

(EIA Standard)

RF keyed T/R relay

- KLM bias circuit reduces SSB switching distortion
- adjustable drop-out delay for SSB
- keys with less than 100mW drive

Compact: 3" x 6 1/4" x 2 1/4"

Up to 40 Watts OUT

- more than 11dB gain
- Broadband response ... 143-149 MHz
 - less than 1.5:1 Input VSWR
- Receive Preamp
 - more than 9 dB gain, 144-148 MHz
 - better than 2.5 dB N.F.
- Built-in Battery Charger
 - overcharge protection (auto-cycling)
 - adjustable up to 12VDC



\$189

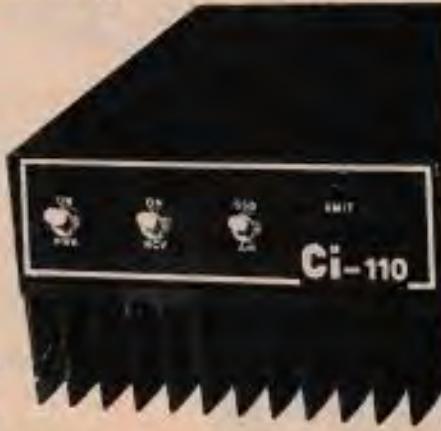
High Frequency Amplifier

Clairemont Industries, Inc.

CI-110 \$239

Frequency Range	3-32 mhz
Power Input	215 Watts
Average Power Output	130 Watts @ 60% efficiency
D.C. Supply Voltage	13.8 volts @ 20 amps negative ground
A.C. Exciter Signal Drive	410 Watts
Input Impedance	50 ohms unbalanced
Output Impedance	50 ohms unbalanced into loads not exceeding 3:1 SWR
Harmonic Levels	-45 db or better
Operating Modes	AM, FM, CW, SSB, RTTY and slow scan TV
Receive Pre-Amp	Nominal gain of 10 db at less than 2 db noise
Physical Dimension	5" x 7" x 3" (12.7 x 17.8 x 7.6 cm)
Weight	25 lbs (11.36 kgs)

ci



ALSO AVAILABLE IN
6 METER VERSION

FREQUENCY
RANGE 30-56 MHZ

PRICE AND OTHER
SPECS THE SAME

The MLA-2500

SAVE
\$100



CLEARANCE PRICED
\$1399.00

- ALC circuit to prevent overloading
- 160 thru 10 meters
- 1000 watts DC input on CW, RTTY or SSTV Continuous Duty
- Variable forced air cooling system
- Self-contained continuous duty power supply
- Two EIMAC 8875 external anode ceramic-metal triodes operating in grounded grid
- Covers MARIS frequencies without modifications
- 50 ohm input and output impedance
- Built-in RF attenuator
- 117V or 234V AC 50-60 Hz
- Third order distortion down at least 30 dB
- Frequencies (MHz): 1.8-2.5, 3.5MHz (3.4-4.6), 7MHz (6.5-8.0), 14MHz (11.0-16.0), 21MHz (16.0-22.0), 28MHz (28.0-30.0)
- 40 watts drive for 1 KW DC input
- Rack mounting kit available (1.9" rack)
- Size: 5 1/4" H x 14" W x 14" D. Wt. 47 lbs.

MFJ

ANTENNA TUNERS

MFJ 941C Versa Tuner II



Fastest selling MFJ tuner... because it has the most wanted features at the best price.

SWR + dual range wattmeter (300 & 30 watts full scale, forward and reflected power). Sensitive meter measures SWR down to 5 watts output.

More flexible antenna switch selects 2 coax lines, direct or through tuner, random wire/balanced line, or tuner bypass for dummy load.

12 position efficient airwound inductor for lower losses, more watts-out.

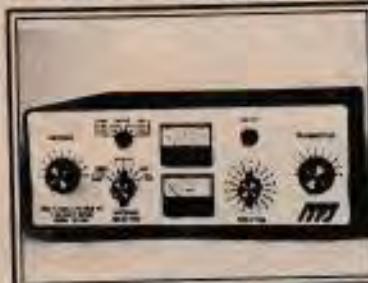
Built-in 4:1 balun for balanced lines. 1000V capacitor spacing.

Matches everything from 160-10 meters: dipoles, inverted vees, random wires, verticals, mobile whips, beams, balanced and coax lines.

Easy to use, anywhere. Measures 8x2x6", has SO-239 connectors, 5-way binding posts, finished in eggshell white with walnut-grained sides.

\$139

NEW MFJ DELUXE 3 KW Versa Tuner IV



This is MFJ's best 3 KW Versa Tuner IV. The MFJ 984 Deluxe 3 KW Versa Tuner IV gives you a combination of quality, performance, and features that others can't touch at this price.

PERFORMANCE: You can run up to 3 KW PEP and match any feedline continuously from 1.8 to 30 MHz: coax, balanced line or random wire.

FEATURES: A 10 amp RF ammeter insures maximum power to antenna at minimum SWR.

A separate meter gives SWR, forward, reflected power in 2 ranges (200W and 200 watts).

A flexible antenna switch lets you select 2 coax lines thru tuner and 1 thru or direct, or

random wire, balanced line or dummy load.

A 200 watt 50 ohm dummy load lets you tune your exciter off air for peak performance.

All metal, low profile cabinet gives RFI protection, rigid construction. Black Anodized aluminum front panel, 5x14x14 in.

A flip stand fits tuner for easy viewing.

Efficient, **tempe 4:1 balun, 250 pF, 600V volt capacitors, 18 position dual inductor, 17 amp ceramic rotary switch, 2% meters, SO-239 coax connectors, Ceramic feedthru for random wire, balanced line. Binding post for ground.**

\$499

MFJ-16010 RANDOM WIRE TUNER lets you operate all bands — 1.8 to 30 MHz — with a simple random wire. Up to 200 watts RF OUTPUT.

Operate **all bands** — anywhere, with any band, even — using a random wire and an antenna tuner small enough to carry in your hip pocket. Ultra compact 2x3x4 inches.

Operate from your apartment with a wall-to-wall antenna, or motel room with a wire dropped from a window. Enjoy ham radio on a camping or backpack trip with a wire thrown over a tree. Pre-

+ Operate all bands with a simple random wire.

\$69

pare for an emergency. Take it on a Dixie Day or Field Day. One year unconditional guarantee.

Match low and high impedances by interchanging input and output. SO-239 coax connectors.



HANRADIO TEST INSTRUMENTS

Hansen

These models are the precision built through-line type watt meter providing P.E.P. and average power indication. The newly designed CT method directional coupler by toroidal core enables to read out highly accurate and flat frequency response.

At the power measurement, RMS and P.E.P. 2 mode, measurement is available. Especially P.E.P. mode, measurement and hold the SSB, PEP & Peak Power while transmitting is possible by selecting FOLLOW/HOLD two functions.

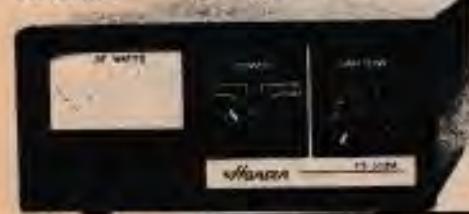
The SWR scale of these models are duplicated with L (low power) and H (high power) to enable more accurate reading for SWR value.

PEAK POWER SWR METER



\$99

FS-301M



FLAT RESPONSE POWER & SWR METER

\$79

FS-601 MH
PEAK POWER
SWR METER

\$89



FS601MH

1.8 - 60MHz (V.H.F. band)
0 - 200, 2KW - 2 ranges ±10%
1:1 - 1:3
50 - 52 ohms
M TYPE (SO-239)
AC 100V/220V (4V A)
(PEP measurement only)
200(W) x 100(H) x 140(D) mm
1.6 kg.

Specifications:	FS-301M
Frequency	1.8 - 30MHz
Power range	0 - 20, 200W - 2 ranges ±10%
VSWR	1:1 - 1:3
Impedance	50 - 52 ohms
Connector	M TYPE (SO-239)
AC source	
Dimensions	160(W) x 70(H) x 110(D) mm
Weight	800 g

FS-500H

1.8 - 30MHz
0 - 20, 200, 2000W 3 range ±7%
1:1 - 1:5
50 - 52 ohms
M TYPE (SO-239)
AC 100V/220V (4V A)
(PEP measurement only)
200(W) x 100(H) x 140(D) mm
1.6 kg.



...pioneer in amateur radio

ANTENNA TUNERS

AT-130

\$199

The AT-130 is a compact and lightweight antenna tuner designed for base or mobile use. (Includes the new three bands).

SPECIFICATIONS

(ANTENNA COUPLER) • Frequency Range: 8 amateur bands from 3.5 to 29.7 MHz • Input Impedance: 50Ω • Output Impedance: 20 to 300Ω, unbalanced • Through Power: 150W max. (3.5 MHz band: 120W) • Insertion Loss: Less than 0.5 dB at optimum match (SWR Meter) • Frequency Range: 3.5 to 29.7 MHz • Max. Power: 150W • Measurable Range: 1.1 to 10:1 • Min. Power Required: 2W (General) • INPUT Connector: UHF type (SO239) • ANT Connector: UHF type (SO239 GND: Wing nut and STUD) • Dimensions: 152 (L)W x 60 (D)H x 159 (4.92H mm (inch)) • Weight: 1.6 kg (3.5 lbs) approx.



AT-230 \$289



The AT-230 antenna tuner includes the new three bands and functional features such as a through-line wattmeter, SWR meter and antenna selector switch. The AT-230 greatly adds to the effectiveness of your station.

SPECIFICATIONS

(ANTENNA COUPLER) • Frequency Range: 9 amateur bands from 1.8 to 30.0 MHz • Input Impedance: 50 ohms • Output Impedance: 10 to 500 ohms, unbalanced • Through Power: 200 watts max. (WATTMETER) • Type: Through line wattmeter • Frequency Range: 1.8 to 30.0 MHz • Measurable RF power: Up to 20/200 watts, switched • Kinds of RF Power: Forward and reflected power, switched • Impedance: 50 ohms • Accuracy: Better than ±10% of full scale (SWR METER) • SWR detection. Toroidal core directional coupler • Measurable Range: 1.1 to 10 • Min. Power Required: 4 watts (GENERAL) • Connectors: INPUT: UHF type, 50 ohms • Connectors, ANT-1: UHF type; ANT-2: UHF type; ANT-3: Wire antenna only; GND • Dimensions: 180 (7.25W) x 133 (5.3H) x 287 (11.6D) mm (inch) • Weight: 3.4 kg (7.5 lbs)

The KW e-Zee Match is designed to provide an improved system of matching between a Transmitter output or Receiver input and an antenna system. The unit covers bands 10-80 meters inclusive and enables resistive loads from 15 ohms to 5,000 ohms to be matched. Reactive components in an antenna system can be considerably reduced and the standing-wave-ratio (S. W. R.) improved. This will also tend to improve results when dealing with television interference (TV 1).

\$129



DIP METER DM-81

FEATURES

1. Measurable frequency range is 700kHz to 250MHz in seven bands
2. A capacitive probe allows measurements without removing coil shields
3. All seven dip meter coils, capacitive probe, earphone and ground clip lead, can be carried within the unit for easy transport and storage
4. Convenient for both indoor and outdoor measurements all solid-state and built-in battery
5. HC-25U and FT-243 sockets enable use as a crystal checker and marker generator
6. Amplitude modulation is convenient in aligning receivers

when using your DM-81 as a signal generator. Also, when used as the master generator, amplitude modulation is helpful in precisely calibrating the dial scale even for a receiver having no SFO.

7. An FET and transistor are used in the meter circuit to provide extremely good sensitivity
8. As an absorption frequency meter, your DM-81 is both to align transmitters and measure field strength
9. An earphone plug allows you to monitor transmit signals. It is possible to measure resonant circuit frequencies of toroidal coils. This is not possible with conventional dip meters.

APPLICATIONS

(1) Measure Resonant Frequency by Inductive or Capacitive Coupling.	(4) Xtal Checker or Marker Generator.	(7) Use as a Heterodyne Frequency Meter or CW Monitor.
Inductive Capacitive	Use a Crystal in Place of Coil	Use as an AM Modulation Monitor
(2) Antenna Resonant Frequency.	(5) Measure Tank Circuit Resonance.	(8) Measure an Unknown C.
Antenna — One-Turn Loop	By Either Absorption or Dip	Standard Inductance
(3) Signal Generator.	(6) Measure Field-Strength.	(9) Measure an Unknown L.
1—2-3 Turn Pick-Up Coil + GND	10cm—1m Antenna One Turn Loop To Case Ground	Standard Capacitance



\$159

TEST AND MEASURING EQUIPMENT

Model 1000-A Wattmeter

The Model 1000-A Wattmeter measures RF power in 50 ohm coaxial cables and transmission lines. It accepts plug-in elements that range from 0.1 watt to 5000 watts full-scale, and from 2MHz to 1000 MHz.

The Wattmeter includes a built-in line section with connectors for $\frac{1}{2}$ " 50-ohm cables and transmission lines. The connectors may be male or female Quick Match connectors. To use the Wattmeter, simply connect it between the source of RF power and either an antenna or "dummy" load, plug in the appropriate measuring element, select the forward or reflected orientation of the element and read the results on the 4 $\frac{1}{2}$ " 3-scale display.

The Model 1000-A is a versatile Wattmeter. The built-in line section can be removed and used with accessory cables from 33' up to 200' from the meter. The meter unit is protected by a rugged, shock-proof housing. On the back of the meter are two sockets for storing extra measuring elements. Measuring elements for the Model 1000-A are ordered separately, based on the accompanying table.

The DIELECTRIC Model 7004 SNIFFER is a non-directional, adjustable amplitude, RF Signal Sampling Element. It's designed to permit easy coupling into a coaxial line for counting of frequency, spectrum analysis or scope display.

A FULL LINE OF RF COUPLERS AND TERMINATING LOAD RESISTORS ARE AVAILABLE. WRITE GLENWOOD FOR DETAILS

HAMRADIO TEST INSTRUMENTS

Hansen

Measuring Method	Directional Coupler
Maximum Handling Power	1 KW
SWR Indication	1:1 - 3:1
Frequency Range	3.5 - 150 MHz
Circuit Impedance	50 ohm
Measuring Accuracy	RF Power $\pm 20\%$
Connector	SO-239
Meter Sensitivity	SWR Meter 100 μ A F.S.D. POWER Meter 100 μ A F.S.D.
Accessories	Connector cable for illumination lamp Magic fastener x 2, pcs.
Dimensions	150(W) x 70(H) x 65(D) mm
Weight	400 g.

This model is a compact through-line type Power SWR & FS meter designed for the wide frequency range measurement for the amateur radio station. Equipped "On the Air" LED light up in accordance with the output power. Reversible two antenna systems or antenna and dummy load by easy switch operation.



SWR-3S

\$45



MODEL 8000 WATT METER CASE \$85



MODEL 8000 WATT METER CASE \$85

DIELECTRIC

- Shock Mounted Meter
 - 4 $\frac{1}{2}$ " Mirrored Scale
 - 2 Year Warranty
 - Quick Match Connectors
 - Nickel Plated Plug-In Elements
 - Accurate "Taut Band" Meter Movement
- SPECIFY TYPE N OR SO-239 CONNECTORS.**

Specifications: Model 1000-A

Power Range 0.1 W-5KW
Frequency Range 2-1000 MHz
VSWR 1.05:1 max., with N connectors
Accuracy $\pm 5\%$ of full scale
Impedance 50 ohms

PLUG-IN ELEMENTS

INTERCHANGABLE WITH BIRD MODEL 42 ELEMENTS.

Power Range	Frequency (MHz)					
	2-30	25-60	50-125	100-250	200-500	400-1000
5 watts	2012	2020	2028	2036	2045	
10 watts	2013	2021	2029	2037	2046	
25 watts	2014	2022	2030	2038	2047	
50 watts	2004	2015	2023	2031	2039	2048
100 watts	2005	2016	2024	2032	2041	2049
250 watts	2006	2017	2025	2033	2042	2050
500 watts	2007	2018	2026	2034	2043	2051
1000 watts	2008	2019	2027	2035	2044	2052
2500 watts	2009	2004-2010, \$75				
5000 watts	2010	2012-2052 \$87				

MODEL NUMBERS

Available at its BNC connector is an unrectified RF signal, adjustable over a range of 35 dB to 51 dB $\pm 5\%$ below the signal within the coaxial line. The SNIFFER can be used to sample any signal between 2 and 1000 MHz at power levels of up to 1000 Watts.

IDEAL FOR MOBILING



SWR-50B

\$43

Specifications:

Impedance	50 - 52 ohms
Frequency Range	3.5 - 150MHz
Power Range	0 - 20, 200W - 2 ranges
SWR Measuring Range	1:1 - 1:3
Punctual Power	3.5 - 30MHz (HF Band) 200W 50 - 150MHz (VHF Band) 50W
Meter Sensitivity	100 μ A F.S.D.
Connector	M Type ISO-239 1x TX, 2x ANT
Dimensions	150(W) x 65(H) x 70(D) mm
Weight	400 g.
Accessory	Bar Antenna 1pc. Power Cable 1 pc. Magic Fastener x 2 pairs

OSKERBLOCK[®]

SWR-200B



\$97

SWR Meter

Type - Directional Coupler
Ratio: 1:1 to 1:10 & 1:00
Frequency Range: 1.2 MHz to 200 MHz
Impedance: 50 ohms
Full Scale Minimum Power:
100 W at 3.5 MHz
50 W at 7 MHz
10 W at 14 MHz
5 W at 28 MHz
1 W at 56 MHz

Meters: Sensitive: 9999 D.C.
Connectors: M Type or UHF Type (SO-239).
Dimensions: 9.5" w x 4.5" h x 12.5" d. 4.5 lbs.
Weight: 1.250 lbs. (2.2 kg.) net.

200 B.

POWER Meter

Type: Thermocouple
Power Ranges:
1-200W, 1-20W, 1-2W, 1-200mW
1-20W, 1-2W, 1-200mW, 1-20mW
Average: 1-20W, 1-2W, 1-200mW
Sales: 1-20W, 1-2W, 1-200mW
1-20W, 1-2W, 1-200mW

SWR-300



\$119

MODEL SPC-6B 0-20W, 0-200W, at 50 MHz \$35
MODEL SPC-2B 0-20W, 0-200W, AT 144MHz \$35
MODEL SPC-07A 0-2W, 0-20W, AT 430MHz \$49



SWR Meter

Directional Coupler Type
Ratio: 1:1 to 1:10 & 1:00
Frequency Range: 50MHz to 300MHz
Add SWR & Power Coupler
Model SPC-6B: 35MHz to 54MHz
Model SPC-2B: 144MHz to 148MHz
Model SPC-07A: 430MHz to 450MHz
Impedance: 50 ohms
Full Scale: Minimum Power:
10W at 3.5MHz, 3MHz
2W at 14MHz, 20MHz
0.2W at 27MHz, 28MHz
0.02W at 56MHz, 144MHz, 408MHz

POWER Meter

Through Line Type
Power Range:
0-20W, 0-200W, 0-2KW
at 3.5/7/14/28MHz
0-20W, 0-200W
at 27/28MHz
Accuracy: ±15% at SWR 1
Safety Rating:
2kW at SWR 1-1
500W at SWR 1-3
200W at SWR 2-5

Meter Sensitivity: 9999 D.C.
Connectors: UHF type (SO-239) or M Type.
Dimensions: 9.5" w x 4.5" h x 12.5" d.
1.250 lbs. (2.2 kg.) net.

Weight: 1.250 lbs. (2.2 kg.) net.

MODEL D1200 \$499

DIGIMAX

D1200 has a built in audio multiplier.

Temperature controlled ovens have long been the accepted industry standard for maintaining crystal controlled precision measuring instruments within frequency tolerance over a wider temperature range than is economically achievable using a TCXO (temperature compensated crystal oscillator) time base. Two objectional characteristics of these ovens are: 1. Bulk. 2. High current consumption. DM presents its latest innovation: A ±1 PPM proportional oven that not only operates from external power but from batteries as well. DM's streamlined high accuracy low current proportional type 10 MHz oven out-modes all others.

**D612** \$399

with AC-12 ac adapter

Aging: 8 parts in 10¹²/month typ.
Internal output: 10 MHz TTL buffered.
External input: for 10 MHz TTL compatible.

INPUT IMPEDANCE

Non-prescaled: 1 Meg in parallel with 25 pF
Prescaled: 50 ohms in parallel with 25 pF

SENSITIVITY (typical)

10 mV to 25 mV	100 Hz to 25 MHz
10 mV to 20 mV	25 MHz to 250 MHz
15 mV to 50 mV	250 MHz to 1 GHz
25 mV to 85 mV	2.8GHz on rear panel 50 OHM & 1 Meg

DISPLAY

9 LED readouts with the following features:
Easy to read .5" seven segment characters. Leading zero suppression assures error-free readings. Display blanking to minimize power consumption. When no signal is present first eight digits are blanked, ninth digit displays 1 or 0.

FREQUENCY RANGE (typical)

Non-prescaled: 50 Hz to 50 MHz
Prescaled: 10 MHz to 12 GHz

RESOLUTION (selectable)

Non-prescaled:	0.1 Hz, 1 Hz, 10 Hz
Prescaled:	10 Hz, 100 Hz, 1 KHz
5 VDC to 14.5 VDC	
115 VAC with AC-12 ac adapter	
Internal battery pack: 6 "C" cells	
Optional rechargeable NiCd battery pack	
Current requirements: 260-500 mA typ.	

MODEL D500 \$249**D510** \$299

with AC-12 ac adapter



INPUT IMPEDANCE

Non-prescaled: 1 Meg in parallel with 25 pF
Prescaled: 50 ohms in parallel with 25 pF

SENSITIVITY (typical)

Non-prescaled: 10 - 15 mV 100 Hz - 25 MHz	100 Hz to 25 MHz
Prescaled: 10 - 15 mV 50 MHz - 250 MHz	25 MHz to 250 MHz
15 - 50 mV 250 MHz - 450 MHz	250 MHz to 1 GHz
25 - 75 mV 450 MHz - 10 GHz	10 GHz to 12 GHz

DISPLAY: 8 digit LED, seven segment characters.
Leading zero suppression assures error-free readings.

RESOLUTION (selectable)

Non-prescaled:	1 Hz, 10 Hz
Prescaled:	10 Hz, 100 Hz

FREQUENCY RANGE (typical)

Non-prescaled:	50 Hz to 50 MHz
Prescaled D500:	50 MHz to 512 MHz
Prescaled D510:	50 MHz to 1 GHz

POWER REQUIREMENTS

8 VDC to 14.5 VDC, 100 to 250 mA typical
115 VAC with AC-12 ac adapter

HAM IV \$369

Designed for medium communications antenna arrays of up to 15 sq. ft. (1.4 sq. m) wind load area.

- Bell Rotor Design—total weather protection
- Dual 56 Ball Bearing Race—proven support system
- Machined Steel Ring Gear—best ever used
- Machined Stainless Steel Ring Drive Gear Systems—time tested durability
- Electric Locking Wedge—securely locks antenna in place
- North or south center scale
- Illuminated Directional Indicator—easily locates antenna position
- Zener Regulated Meter Circuit—accurate positional readout
- Snap-Action Control Switches—lifetime operation
- Low Voltage Control—safe operation



Value packed with professional features. The CD45 will handle 8.5 sq. ft. (.79 sq. m) when mounted inside a tower; or 5 sq. ft. (.46 sq. m) when mast adaptor is used.

- Bell Rotor Design—total weather protection
- Dual 50 Ball Bearing Race—proven support system
- Diecast Ring Gear—best ever used
- Stamped Steel Gear Drive System—heavy-duty, trouble-free gear train
- North or south center scale
- Illuminated Directional Indicator—easily locates antenna position
- Snap-Action Control Switches—lifetime operation
- Low Voltage Control—safe operation



SOUTH CENTRE KIT
MOUNTING PLATE KIT

\$10
\$18

STANDARD LOWER MAST SUPPORT
HEAVY DUTY LOWER MAST SUPPORT

\$24
\$89

T²X Tailtwister® \$469

The world famous Tailtwister is capable of handling antennas with wind load areas of 20 sq. ft. (1.9 sq. m)

- Thickwall Castings—handles large loads
- 138 Ball Bearings—large load capacity
- Triple Bearing Race—exceptional lateral control
- Six-Bolt Assembly—superior strength
- Machined Steel Ring Gear—long life with maximum load
- Stainless Steel Drive Gear System—time tested durability
- Electric Locking Wedge—securely locks antenna in place
- North or south center scale
- Illuminated Directional Indicator—easily locates antenna
- Snap-Action Control Switches—lifetime operation
- L.E.D. Control Indicators—positive operational signals
- Zener Regulated Meter Circuit—accurate positional readout
- Low Voltage Control—safe operation

**AR40 \$159**

The AR40...for large FM-TV and compact communication antenna arrays up to 3.0 sq. ft. (0.28 sq. m) wind load area

- Dual 12 Ball Bearing Race—exclusive in its class
- Automatic Position Sensor—never needs resetting
- Fully Automatic Control
- Solid-State Control—silent operation
- Low Voltage Control—safe operation



	AR40	CD45 II	HAM IV	T ² X (Tailtwister)
ANTENNA WIND LOAD AREA CAPACITY				
Mounted inside tower	3.0 sq. ft. (0.28 sq. m)	8.5 sq. ft. (0.79 sq. m)	15.0 sq. ft. (1.4 sq. m)	20.0 sq. ft. (1.9 sq. m)
With optional H.D. lower mast adaptor*	N/A	N/A	7.5 sq. ft. (0.7 sq. m)	N/A
With standard lower mast adaptor	1.5 sq. ft. (0.14 sq. m)	5.0 sq. ft. (0.46 sq. m)	N/A	N/A
MOTOR TURNING POWER—Stall torque				
	250 in. lbs (40 N.m)	600 in. lbs (85 N.m)	900 in. lbs (130 N.m)	1000 in. lbs (143 N.m)
SWING ASSEMBLY—In line assembly eliminates external bearing assistance				
	Dual Rate 12 Ball Bearings	Dual Rate 98 Ball Bearings	Dual Rate 98 Ball Bearings	Triple Rate 138 Ball Bearings
BRAKE CONSTRUCTION—Holds antenna in place				
BRAKE POWER—Amount of torque to hold antenna in place	Motor Arresting 450 in. lbs (51 N.m)	Disc Brake 800 in. lbs (90 N.m)	Disc Brake & Electric Wedge 5000 in. lbs (585 N.m)	Disc Brake & Electric Wedge 8000 in. lbs (1017 N.m)

A MATCHING PAIR**KR-500 Elevation Rotator**

KR-500 provides 180° boom rotation for antennas used in OSCAR, EME, etc. Heavy duty can be used with stacked arrays. Rotation, 1 min. for 180°. Limit switches. Motor disc brake holds to 1750 inch-pounds (2000 cm-KG).



**\$249
+\$5 FREIGHT**

FOR YOU SATELLITE BUFFS**KR-400 Azimuth Rotator**

Medium duty rotator, supports 400 lbs (181 KG). Ideal for Long Boomers, HF inbanders, VHF arrays. Motor disc brake same as KR-500, also limit switches. Rotation is 1 min./360°.



**\$179
+\$5 FREIGHT**

Accommodates booms 1.25-1.625" D (31.75-41.27 mm), masts to 1.5-2.5" D (38-63.5 mm). Weatherproof. Attractive direction indicator. 115VAC, 50/60Hz. Shipping wt. 14 lbs. (6.34 KG).



Accommodates masts 1.5-2.5" D (38-63.5 mm). Supplied with junctional direction indicator. 115VAC, 50/60 Hz. Shipping weight is approx. 18 lbs. (8.16 KG).

COAXIAL ANTENNA SWITCHES

Model 375 Coax Switch

Single Pole 6 position with grounding of all unused positions
Axial mounted connectors.
\$36


Model 376 Coax Switch

Single Pole 5 position with grounding of all unused positions. Shift switch position grounds all outputs.
Radial mounted connectors.
\$36


Model 590 Coax Switch

Single pole 5 position, non-grounding type switch. Axial mounted connectors.
\$36


Model 590G Coax Switch

Single Pole 5 position with grounding of all unused positions. Axial mounted connectors.
\$36


Model 592 Coax Switch

Single Pole 2 position switch, non-grounding.
Axial mounted connectors.
\$32


Model 593 Coax Switch

Single Pole 3 Position with grounding of all unused positions
Power 1 KW-2 KW PEP
Impedance 50-75 ohms
VSWR 1.2:1 up to 150 MHz
Crosstalk (measured at 30 MHz) is -45 dB between adjacent outlets and -80 dB between alternate outlets
Dimensions 1-3/4" high, 5" wide, 3" deep
Weight 1 lb.
Mount Wall or desk


COAXIAL ANTENNA CHANGEOVER RELAY

model 377

Economical and reliable. Can be operated from VDX circuit for completely automatic operation or from PTT or manual T/R switch. Receiver input is automatically grounded when the relay is in the Transmit position. Wide AC operating voltage range and low operating current.



Model 377

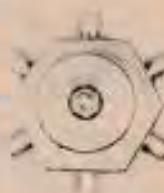
* specifications

Power Rating	1000 watts CW (2000 watts SSB)
VSWR	Less than 1.15:1, DC to 150 MHz
Power Requirements	0.015 Amperes, 48 to 130 volts AC
Connectors	UHF Type SO-239
Dimensions	3-1/2" x 1-1/2"
Shipping Weight	1 lb.

\$40

Model 550A Coax Switch \$34

Single Pole 5 position switch. Radial mounted connectors.


Model 594 Coax Switch \$36

2 Pole 2 Position

Power	1 KW-2 KW PEP
Impedance	50-75 ohms
VSWR	1.2:1 up to 150 MHz
Crosstalk	-45dB (measured at 30 MHz)
Dimensions	1-3/4" high, 5" wide, 3" deep
Weight	1 lb.
Mount	Wall or desk

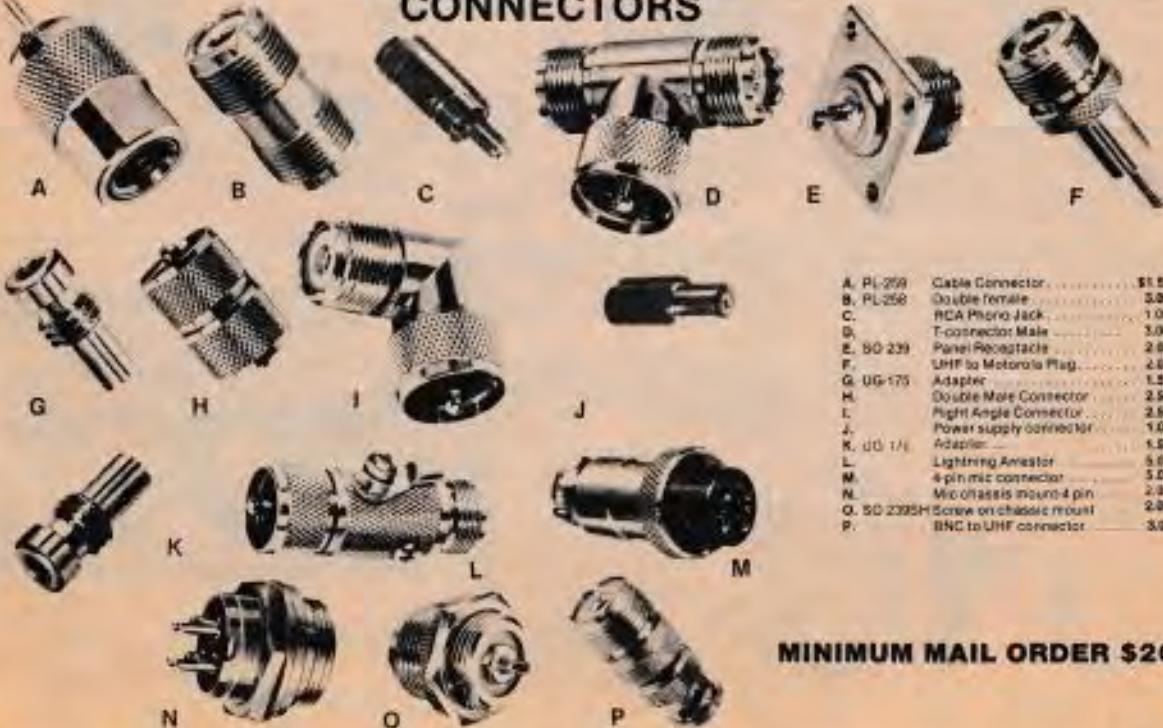

Model 595 Coax Switch \$39

Single Pole 6 Position with grounding of all unused positions.

Power	1 KW-2 KW PEP
Impedance	50-75 ohms
VSWR	1.2:1 to 150 MHz



CONNECTORS



MINIMUM MAIL ORDER \$20

COAX, ROTOR, AND ANTENNA WIRE

Add \$2 per 100' for shipping, minimum charge \$1.

COAXIAL CABLES

		NOMINAL ATTENUATION	
		MHz	dB/100 ft.
RG8/u Foam	75¢/FT	50	12
		100	18
		200	28
		300	33
		400	38
RG8/u Regular	60¢/FT	100	2.0
		200	3.0
		400	4.7
		500	7.0
RG-213u	65¢/FT	100	2.1
Non-contaminating		200	3.1
		400	5.0
		500	5.8

RG-58u 18¢/FT SOLID CONDUCTOR

100	4.1
200	9.2
400	19.5
500	14.5

RG-58Au 21¢/FT STRANDED CONDUCTOR

100	5.3
200	9.2
400	12.8
500	20.0

RG-8x 35¢/FT MINIATURE FOAM

100	3.0
200	4.5
400	6.0
500	7.0

ROTOR WIRE

8-CONDUCTOR

for CD45, HAM IV, T2X
etc.

42¢/FT

5-CONDUCTOR

for AR-40, Big Talk
etc.

25¢/FT

NO. 14 STRANDED COPPER WIRE

8¢/FT

NEW, MOLDABLE PLASTIC

COAX-SEAL®

Seals coax fittings from moisture and corrosion

- Only material that will adhere to poly vinyl or vinyl outer coax jackets.
 - Forms and seals over odd shaped and difficult fittings.
 - Non-contaminating and non-conductive
 - Wide ambient temperature range (-30°F to +180°F).
 - Stays flexible for years thus insuring moisture proof connections.
 - Reuseable - allows you to quickly disconnect fittings and reseal them with the same material.
 - It's must for satellite TV-microwave work - work antenna at solder joints - in the shack.
- Packaged in convenient 12" x 60" roll.

COAX-SEAL® The new space age material that is quick and simple to apply. Remove backing from approximately 6" of plastic wrap outer covering toward fitting. After wrapping, heat to form a smooth surface and force out air. **EFFECTIVE - FOOL PROOF - INEXPENSIVE**



\$4

INSULATORS

CI Center insulator for multiband doublers. Accepts 1/4" or 5/8" coax. \$9

EI End insulators for multiband doublers. Pair of 7" (178 mm) heavily serrated end insulators. \$7

KENPRO End insulators 4" long, 1 1/4" max. diam. *3



\$35

Glenico BL-50A Balun 1.8 to 30 MHz. made in Japan 1:1 toroid balun. New deluxe version. 4000W P.E.P. dipole attachments only 5 1/2 oz.



Hy-gain BN-86 Balun.
1 to 1 at 52 ohms
weights 1 lb.

\$36

BALUNS



\$33

KENPRO-KA-50
Freq: 1.8-50 MHz
Power: 1 KW on CW,
2 KW PEP
Weight: 170 gr.

KW BAL-1

1 to 1 ratio and only 4 oz.
Designed for 50 ohm.

\$30

80 Thru 10 Meters Highest Amateur Power, 52-ohm Impedance

Model 270-11

Pre-assembled antenna, 80-40-20-10-10 Meters. Only two imp. adjustments and terminations and ready to use. Approximate length only: 110 feet.

All antennas include antenna wire traps, 50 feet of RG-8/U coaxial cable and PL-259 connector, two end insulators, and a BAW Model CC-30 Dipole Center Connector. Traps weigh approximately 8 ounces each.

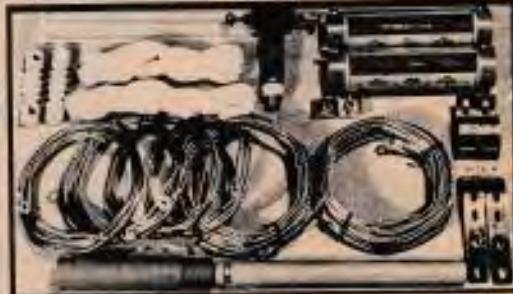


\$109

FIVE BAND TRAP ANTENNA

MT-240X

The MT-240X is a compact multi-band wire antenna.



Impedance 50 ohms. *89

Frequency range 3.5-28MHz

1KW PEP 500W CW

Lower than 1.2:3.5,7,14,28MHz band

Lower than 2.0:21MHz band

Overall length .7m/23m Double doublet

TET ANTENNA SYSTEMS

HB33SP



\$319

- 20, 15 and 10 meters

HB34D

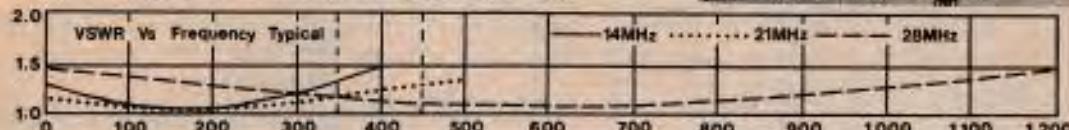


\$359

- Wideband. Low SWR. No tuner needed

- Exclusive phased dual drive gives higher gain

- Transmitter power is radiated not lost in the traps



HB35T

\$439



- High technology antenna designs provide full band coverage. Antenna tuner not required, even with solid state transceivers.
 - Dual driven elements for maximum power transfer. Capacitive coupling for broad bandwidth.
 - Highest quality materials throughout. All tubing 6061-T6 aluminum alloy. Stainless steel fasteners for all electrical connections.
- Tubing is cut and drilled to precision tolerances for easy assembly. No tuning adjustments.

MV074

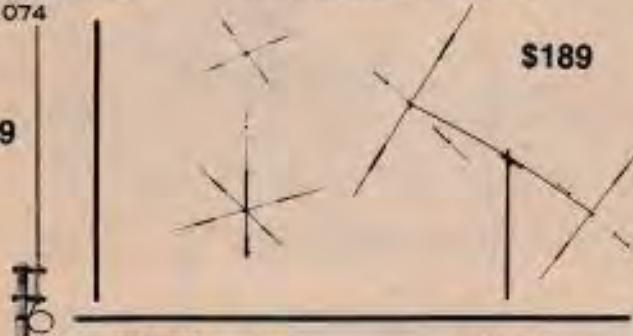
TA-8

4 element vertical
antenna for 430MHz

All band utility antenna for
7/10/14/21/24.5/28/50/144 MHz

MV-074

\$49



\$189

SQ22

\$99

Two 2 element Swiss Quads mounted side by side on a single boom. Complete with phasing harness and all hardware. Shown vertically polarized, it displays very low VSWR across the entire 2 meter band. Also available for 430 Mhz — order SQ 007.

\$119

MV4BH \$99
Vertical for 10-40 meters

MV5BH \$119
Vertical for 10-80 meters

	HB34D	HB35T	HB-33sp	20Msp	SQ007	SQ22	MV-74	MV-4 BH	MV-5 BH	TA-8	AX-21DN
Band	14/21/28MHz	14/21/28MHz	14/21/28MHz	14MHz	432MHz	144MHz	432MHz	7/14/21/28	2-50/14	7/10/14/21	144MHz
Element	3/4w	4/5w	3	3	2x2	2x2	4	—	—	—	10w
Gain	10.12/11dB	10.12/12.5dB	6.58/6.10dB	10dB	16dB	16dB	7.4dB	—	—	—	12dBx2
F/B Ratio	23dB	23dB	20dB	20dB	20dB	20dB	—	—	—	—	26dB
V.S.W.R	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Power R	2kWpep	2kWpep	2kWpep	2kWpep	250Wpep	250Wpep	250Wpep	2kWpep	2kWpep	—	500Wpep
Impedance	50ohm	50ohm	50ohm	50ohm	50ohm	50ohm	50ohm	50ohm	50ohm	50ohm	50ohm
Element L	8.4m	8.4m	8.0m	8.0m	0.17m	0.57m	1.5m	5.5	7.2m	1.2m	1.07m
Boom L	6.0m	8.0m	4.0m	5.0m	0.56m	2.0m	—	—	—	3.6m	3.5m
Turning Radius	4.89m	5.56m	4.59m	3.87m	0.43m	1.00m	—	—	—	—	1.76m
Wind Surface Area	0.61m ²	0.75m ²	0.48m ²	0.29	0.00m ²	0.18m ²	0.04m ²	—	—	—	0.23m ²
Wind Load IIA STD 50 MPH	61.0kg	75.0kg	46.0kg	36.7kg	3.0kg	15.0kg	3.4kg	—	—	—	23.0kg
Weight	19.5kg	23.5kg	13.5kg	18.8kg	1.2kg	1.85kg	0.75kg	2.4kg	—	5.1kg	3.5kg
PRICE	\$300	\$430	\$319	\$200	\$119	\$99	\$49	\$99	\$119	\$100	\$125

TELEX hy-gain
TELEX COMMUNICATIONS, INC.

Directional Triband Antennas

TH7DX

7-Element, Broadband Triband Beam

This amazing new tribander, using a dual driven 7 element system on a 24 ft. (7.3m) boom maintains a VSWR of less than 2:1 on all bands, including ALL of ten meters. No compromise on gain performance was needed to achieve this efficiency. A unique combination of trapped and monoband parasitic elements produces an average front-to-back ratio of 22 dB on 20 and 15 meters and 17 dB on 10 meters. In a parasitic array such as this, high efficiency traps are used rather than parallel stubs. These Hi-Q traps are capable of handling the maximum legal power with a 2:1 safety margin, and are superior to parallel stubbing for ease of assembly and maintenance as well. The TH7DX uses stainless steel hardware for all electrical—and most mechanical connections plus taper swaged 6063-T832 thick wall aluminum tubing. The antenna includes exclusive, die-cast aluminum, rugged boom-to-mast clamp, and heavy gauge element-to-boom brackets. The TH7DX comes complete with a Hy-Gain BN-86 balun.

\$799

3-Element Triband Beam

TH3JRS

Hy-Gain's Thunderbird Junior offers top performance with a compact design that makes it ideal where space is limiting factor. Featuring separate and matched air dielectric Hy-Q traps for each band, if feeds with 52 ohm coax, delivers maximum F/B ratio without compromise. The TH3JRS has a SWR of less than 1.5:1 at resonance on all bands. All hardware and clamps are stainless steel. Maximum power, 300 watts dc. Hy-Gain ferrite balun BN-86 is recommended for use with the TH3JRS.

CONVERT YOUR TH6DX

Hy-Gain hasn't forgotten about the thousands of proud TH6DX owners. A conversion kit is available which offers all of the broadband advantages of the TH7DX and includes a complete stainless steel hardware package. It's easy to assemble. And when completed, you've got the finest triband antenna in the market, the TH7DX.

\$289

We still have two TH6DX in stock at the old price of \$509 — Hurry, they won't last long at this price!

5-Element Broadband Triband Beam

The TH5 is now a BROADBAND TRIBAND! The TH5Mk2 offers an outstanding average 8.5 dB gain on 20, 15 and 10 meters. Separate air dielectric HyQ traps on each band allow the TH5Mk2 to be set to a F/B ratio of 25 dB with a minimum beam width. It features five elements on a 19 ft. (5.8 m) boom with four active elements on 10, 15 and 20 meters. Also standard on the TH5Mk2 is Hy-Gain's exclusive Beta Match, and stainless steel hardware and compression clamps. A BN-86 ferrite balun is supplied.

3-Element Triband Beam

TH3Mk3S

The TH3Mk3S Thunderbird features separate and matched air dielectric Hy-Q traps capable of handling maximum legal power and feeds with 52 ohm coax. Hy-Gain Beta Match presents tapered impedance for maximum efficiency on all three bands. Provides dc ground to eliminate precipitation static. The TH3Mk3S delivers an average of 8 dB gain, maximum F/B ratio, with SWR less than 1.5:1 at resonance on all bands. Its mechanically superior construction features taper swaged, snotted tubing and stainless steel hardware and clamps. Comes with cast aluminum, rifled boom-to-mast clamp. Hy-Gain ferrite balun BN-86 is recommended.

\$459

OTHER HY-GAIN BEAMS AVAILABLE
WRITE GLENWOOD FOR DETAILS

HF Antenna Specifications

ALL THESE BEAMS ARE SHIPPED FREIGHT COLLECT

Model No.	Ø	Ø	Vertical Gain			Length (feet)	Width (feet)	Feed Point Impedance	Antenna Height	SWR	Max Gain	F/B Ratio	Front-to-Back Ratio	Bandwidth (MHz)	Horizontal Beamwidth (degrees)	Vertical Beamwidth (degrees)	
			H	M	L												
TH7DX	8.1	20.0	2	27	—	24	7.3	50.8	20	18-25	51.540.5	20, 15, 10	240	100	100.2	9.4	82
TH6DX	6	20	1	27	—	14	2	32.8	15.7	18-25	51.740.5	20, 15, 10	121	100	100.8	5.1	80
TH3JRS	6	20	3	20.4	6.3	12	11.5	21.8	16.2	1-10	51.6-61.2	20, 15, 10	87	50	128.7	3.4	20
TH5Mk2	8.5	20	5	27.5	9.6	2	12.4	50.8	11.8-20	31.7-40.5	20, 15, 10	130	80	100.1	7.2	77	

ANTENNAS FOR APARTMENT DWELLERS

TT-40 NEW

A low profile horizontal antenna that extends 14' to give you up to 500W PEP on 7, 14, 21 and 28 MHz. VSWR 1.3

\$129



model 370-10 portable whip antenna

Designed especially for apartment dwellers and renters who cannot have a permanent antenna. This simple unit tunes the 2, 5, 10, 15, 20, and 40-meter amateur bands, as well as all 40 channels of the 27 MHz CB band. When properly adjusted to the operating frequency, VSWR is 1.1:1. Weighs less than 2 pounds, complete with base loading coils,* coaxial feed line, and counterpoise. Disassembled for packing or storage, whip is only 22-1/2" long, mount is 14" long. Whip extends to 57". *Loading coils not used for 5-meters or 2-meters. Power rating is 360 watts CW and SSB.

\$67

MODEL 10-SWP \$65

Model 10-SWP is a portable antenna, similar to the 370-10, but designed for short wave listening only. It covers 11-49 meters without the need for counterpoise or coil changes. Comes with 10' of coax feed line. Assembled length - 75".



A4 4 ELEMENT 20 15 10 METERS

A true champion, our new A4 is based on the very successful ATB-34. It outperforms many larger beams because of our high Q traps and excellent spacing to element length ratios. A4 gives maximum performance with good dimensions and turn radius. Improve the number and quality of your contacts with a contest winning A4.

A3 3 ELEMENT 20 15 10 METERS

Make friends of your neighbors with A3 compact dimensions, low profile and small turn radius. Satisfy your budget with A3 economy pricing. You will also realize savings by using a lighter weight tower and rotator. This is one compact beam that has the strength and power of most larger antennas.



A3

\$399

4 BAND ADAPTER KITS 30-40 METERS

Add more capability to your A3 or A4 beam with these easy to use add on kits. All components are included to give you 7 MHz or the new 10 MHz WARC band coverage. The adapters simply clamp to the existing element tubing to give four band performance.

A743 7 MHz/10 MHz kit for A3
A744 7 MHz/10 MHz kit for A4

\$149 each

A743 & A744	7 MHz Section (30m)	10 MHz Section (30m)
Driven Element (ft) with Adapter Kit (in)	59.21 min. 35.4 max. 10.12 to 10.77	27.11 min. 28.41 max. 8.27 to 8.66
Wind Loading (lb/in)	.56	.27
Weight (lb)	.94	2.29
Bandwidth (kHz)	150	150
Side Rejection (dB)	40	40



A4

\$529

A3 A4

Forward Gain	6 dBi	8.9 dBi
Front to Back Ratio (Avg)	25:1	25 dB
VSWR	1.2 : 1 Typical	1.2 : 1 Typical
Bandwidth (Avg)	500 kHz	500 kHz
Power Rating	2000 W PEP	2000 W PEP
Feed Point Impedance	50 ohms	50 ohms
Connector	Twin terminal stainless steel takes all coax.	Twin terminal stainless steel takes all coax.
Boom (ft/in) (cm)	14' x 1.63" - 1.50" 426.7 x 4.13 - 3.81	18' x 2" 548.6 x 5.1
Longest Element (ft/in) (cm)	27.75" x 1.13" - .50" 845.8 x 2.90 - 1.27	32" x 1.13" - .50" 975.4 x 2.9 to 1.3
Wind Surface Area (ft ²) (m ²)	4.36	5.5
Weight (lb) (kg)	.27	.37
Turnaround Radius (ft) (cm)	12.9	16.8
Max Diameter (in) (cm)	1.25 min. 2 max. 3.18 to 5.08	1.25 to 2.13 3.2 to 5.4

**ALL THESE
ANTENNAS
SHIPPED FREIGHT
COLLECT**

HF MULTIBAND VERTICALS



4-BTV

• Lowest SWR—PLUS!

- Bandwidth at its broadest! SWR 1.6 to 1 or better at band edges.

• Hustler exclusive trap covers "Spritz" extruded to otherwise unattainable close tolerances assuring accurate and permanent trap resonance.

• Solid one inch fiberglass trap forms for optimum electrical and mechanical stability.

• Extra heavy duty aluminum mounting bracket with low loss—high strength insulators.

• All sections $1\frac{1}{4}$ " heavy wall, high strength aluminum. Length 21'5".

• Stainless steel clamps permitting adjustment without damage to the aluminum tubing.

• Guaranteed to be easiest assembly of any multi-band vertical.

• Antenna has $\frac{3}{8}$ "-24 stud at top to accept RM-75 or RM-75-S Hustler resonator for 75 meter operation when desired.

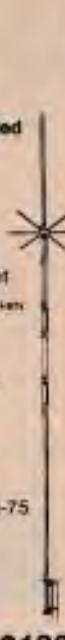
• Top loading on 75 meters for broader bandwidth and higher radiation efficiency!

• Feed with any length 50 ohm coax.

+ \$5 FREIGHT

• Power capability—full legal limit on SSB and CW.

• Ground mount with or without radials; roof mount with radials.



\$199

Cushcraft HF verticals are optimized for wide bandwidth and low angle of radiation necessary to long haul DX communications. They feature our new high Q stabilized trap design rated to 2000 watts PEP. The new larger diameter element tubing is 6063-T832 seamless aluminum. The base mount will take up to a 1 $\frac{1}{2}$ " (4.7 cm) O.D. mast with formed clamps for ground radials and/or guy wires. All models may be either roof or ground mounted. A good ground radial system is recommended for maximum performance.



AV3

Excellent performance and low height for 20-15-10 meters, only 14 ft. 4.2 m high

\$109

+ \$5 FREIGHT

AV4

Covers the 40-20-15-10 meter amateur bands with low V.S.W.R. Overall height 19 ft., 5.9 meters

\$189

+ \$5 FREIGHT

AV5

Our most popular vertical covers 80-40-20-15-10 meters with excellent bandwidth. The antenna is only 25 ft., 7.4 meters high and it has our new capacitive "X" hat.

\$209

+ \$5 FREIGHT

TELEX hy-gain



18HTS \$729 (for 80 through 10 meters)

Shipped Freight Collect
The 18HTS features automatic band selection achieved through a unique stub decoupling system which effectively isolates various sections of the antenna so that an electrical $\frac{1}{4}$ wavelength (or odd multiple of a $\frac{1}{4}$ wavelength) exists on all bands. Approximately 250 kHz band width at 2:1 VSWR on 80 meters. With the addition of a base loading coil, it also provides exceptional 160 meter performance. Includes all stainless steel hardware, and tilt-over base.

18AVT/WBS \$189

(for 80 through 10 meters) + \$5 FREIGHT

Five band capability with automatic band switching is accomplished through the use of three improved Hy-Q traps featuring large diameter coils for a more favorable L/C ratio. 2:1 or lower SWR at band edges on 40-10 meters. Approximately 40 kHz band width below 2:1 VSWR on 80 meters. Includes all stainless steel hardware.

14AVQ/WBS \$110

(for 40 through 10 meters) + \$5 FREIGHT

The Hy-Gain 14AVQ/WBS is a self-supporting, automatic band switching vertical that delivers outstanding performance with exceptional L/C ratio and a very low angle radiation pattern. Includes all stainless steel hardware.

12AVQS \$85 (for 20, 15, and 10 meters)

The Hy-Gain 12AVQ is a completely self-supporting triband vertical antenna. The 12AVQ delivers exceptionally low angle radiation with 1.5:1 SWR or less on all three bands. Includes all stainless steel hardware.

18VS \$52

(for 80 through 10 meters)

This 18' (5.5 m) radiator has a loading coil at base that allows precision antenna resonating. The 18VS may be installed on a short 1 $\frac{1}{2}$ " (41.9 m) diameter mast driven into the ground.

14RMQ \$63

Roof Mounting Kit

The 14RMQ roof mounting kit provides rugged support for Hy-Gain Models 18AVT/WBS, 18VS, 14AVQ/WBS and 12AVQS. Kit includes base plate, mast, radial/guy wires, and mounting hardware.



HF MOBILE ANTENNA KENWOOD 5 BAND HELICAL TYPE

HF MOBILE ANTENNA

Band.....	3.5, 7, 14, 21, 28 MHz	Weight.....	1.115 kg (2.453 lbs)	Length.....	Base Element 1245 (49-0) mm (inch)
Impedance.....	50 ohms	Base Element	180g	3.5 MHz Element	185 (7-9/32) mm (inch)
VSWR.....	3.5, 7, 14 MHz 1.5:1	3.5 MHz Element	600g	7 MHz Element	1250 (49-7/32) mm (inch)
	21, 28 MHz 1.3:1	7 MHz Element	155g	14 MHz Element	1150 (39-15/16) mm (inch)
Max. Power Input.....	200W pep	14 MHz Element	95g	21 MHz Element	485 (19-3/32) mm (inch)
		21 MHz Element	40g	28 MHz Element	165 (6-1/2) mm (inch)
MA-5 10-80 METER HELICAL ANTENNA	\$149	28 MHz Element	35g	VP-1 BUMPER MOUNT FOR MA-5	\$60
					+ \$5 FREIGHT



Super Hustler Resonators—
Power Rating: legal Limit SSB
Supers have widest band-width

Model	Band	
RM-10-S	10 meters	\$30
RM-11-S	Citizens Band	\$30
RM-15-S	15 meters	\$30
RM-20-S	20 meters	\$36
RM-40-S	40 meters	\$42
RM-75-S	75 meters	\$68
RM-80-S	80 meters	\$68

Super Resonators
RM(S)
2 KW PEP
Greatest Coverage

Model QD-1
Quick Disconnect
\$27

Model RSS-2
Resonator Spring
\$11

Model BM-1
Bumper Mount
\$28

Model MO-1
For Deck or
Fender
Location
\$39

+ \$5 FREIGHT

Model MO-2
For Bumper
Mount
Location
\$39 + \$5 FREIGHT

\$30

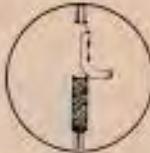
Model BSM-2 Bell Mount

MODEL MO-1

For deck or fender mounting—Fold is at roof line 15" above base.

MODEL MO-2

For bumper mounting—Fold is at roof line 27" above base.



Rotates 360° in
horizontal plane
for easy garaging



We keep people talking.

THESE HY-GAIN MOUNTS AND ACCESSORIES ARE
COMPATIBLE WITH THE HUSTLER MASTS LISTED ABOVE.

511 Extra heavy duty mounting spring	\$21.00
573 Insulated gutter clip	\$4.00
415 Heavy duty bumper mount	\$22.00

Hy-Gain 270 Mobile Antenna

MARINE AND LAND

SWR bandpass, 144 to 150 MHz
Input impedance, 50 ohms
Height 8' nominal
Feedline - RG58/U coax
PL-259 connector
4 1/2" x 2 1/2" stud base fitting

\$109

The Hy-Gain 270 is a 2-meter mobile antenna designed to eliminate hard tuning, high SWR, poor pattern due to irregular ground plane, and fade from whip flex. Constructed of all white fiberglass and chrome, the 270 develops 6 dB gain through the use of 2 stacked 1/2 wave radiators with a self-contained 1/4 wave decoupling system. The 270 operates independently from the car body to reduce tune-up problems, minimize pattern distortion, and maximize range in all directions. Fiberglass sealed antenna and feedpoint insure top performance without loss to corrosion. The 270 is designed for use with Hy-Gain Bumper Mount 415, Shipped Freight Collect.



Mobile Tri-Band ANTENNA ADAPTER

- Allows 3 Band Operation
- NO BAND SWITCHING
 - NO COIL CHANGES
 - ANY 3 BANDS—10-20 METERS
 - COMPATIBLE WITH ANY SYSTEM

\$10

TWO METER ANTENNAS



AFM-4D AR-2 ARX-2
144-150 MHz FM - RINGO Ringo Ranger
\$145 135-175 MHz 137-160MHz
+ \$5 FREIGHT 100W 100W
\$47 **\$63**
+ \$5 FREIGHT

ARX-2K RANGER KIT
 Converts: AR-2 to ARX-2
\$37 + \$5 FREIGHT

ARB-2K **\$37 + \$5 FREIGHT**
 Converts: ARX-2 to ARX-2B

FOR YOU OSCAR OPERATORS

A-144-20T **\$159 + \$5 FREIGHT** **ARX450B** **\$79**

OTHER CUSHCRAFT VHF - UHF DX - ARRAYS

6, 10, 15 & 20 METER BEAMS. AVAILABLE

WRITE GLENWOOD FOR DETAILS & PRICES.

Ringo Ranger II

A-147-20T FM TWIST 145 & 147 MHz **\$145**
+ \$5 FREIGHT



A-147-4 4 ELEMENT YAGI 1000W 146-148 MHz



A 147-11
11 ELEMENT YAGI
 (Not illustrated)
1000W 146-148 MHz
\$85
+ \$5 FREIGHT

A449-11 **\$79**

A-147-22 POWER PACK 1000 Watts 146-148 MHz



\$249

+ \$5 FREIGHT

Two Meter Boomers They feature tripon reflectors for additional front-to-back ratio and clearer patterns. All stainless steel hardware and heavy gauge heat treated aluminum are used throughout. Whatever your choice of two meter amateur activity, the Boomer will fit your needs. For FM use the 220FB or 214FB.



\$81 **214FB** **\$159** **220FB**

THESE BEAMS ARE SHIPPED FREIGHT COLLECT



\$425

hy-gain

V2S

A 2-meter vertical, 3 dBd or 5.2 dBi gain derived from the famous extended double zepp antenna design. The radiating elements are two collinear 5/8 waves fed in phase. Two sets of 1/4 wave radials properly decouple the lower radiator from the mast.



V3S
 Same as V2S above
 except for 220-225 MHz.

V4S
 Same as V2S above
 except for 440-450 MHz.

- Requires no tuning
- Easy to assemble
- Weather protected RF connection
- Radiation pattern independent of height or mast length

SPECIFICATIONS	214	203
Mechanical		
Boom length	186"	43 1/2"
Longest element	387"	40 1/2"
Turning radius	95"	43 1/2"
Wind survival	80 mph	80 mph
Mast diameter	1 1/4"-1 1/2" O.D.	1 1/4"-1 1/2" O.D.
Boom diameter	1 1/4" O.D.	1 1/4" O.D.
Wind load area	1.65 ft ² max.	4.05 ft ² max.
Net weight	5.5 lbs	2.2 lbs
Electrical		
Forward gain	13.0 dBd	6.1 dBd
Front-to-back ratio	20 dB	20 dB
Maximum SWR	2:1	2:1
Band width	2 MHz	4 MHz
Maximum power	250/500 PEP 290/500 PEP	
Impedance	52 ohms	52 ohms
Vertical beam width	35° vertical	25° vertical
Horizontal beam width	35° horizontal	60° horizontal
Stacking distance	82" min.	82" min.

\$67 **\$34**

Hy-Gain 214



**SHIPPED
FREIGHT
COLLECT**

CHECK WITH YOUR LOCAL FREIGHT COMPANY FOR AN ESTIMATE AS THE HYGAIN 214 PACKAGE IS 8 FEET LONG AND WEIGHS 3.1 KG

Larsen

MOBILE ANTENNAS

5/8 BASE LOADED ANTENNA Handles full 200 watts of power.
(WHIP AND COIL)

Deliver full 3 db GAIN
over 1/4 wave whip!

With Larsen Külrod Antennas you get:

- Lowest silhouette and smallest dimensions for minimum wind drag.
- Very, very low V.S.W.R. . . . less than 1.5 to 1.
- No high RF loss mounting springs to deteriorate effective radiation.
- Tough and reliable base structure guaranteed weather and water resistant.
- Just cut whip for required frequency following the supplied chart.

TMB-34 Bracket for 3/4" hole.
TMB-38 Bracket for 3/8" hole.
TMB-58 Bracket for 5/8" hole.



\$5

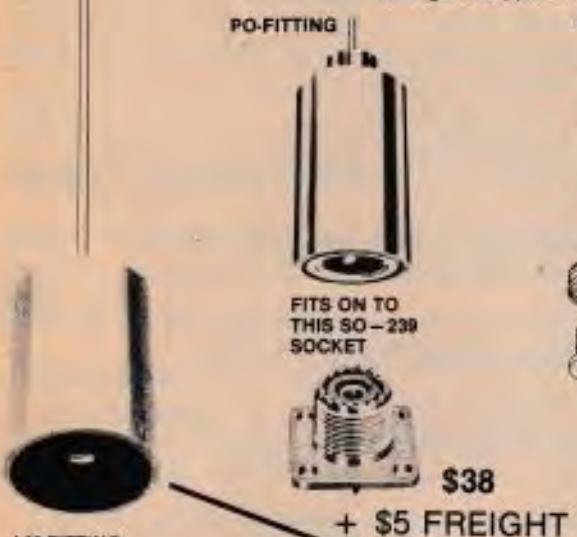
W-490 (49" WHIP ONLY)

\$11
+ \$5 FREIGHT

**1/4 WAVE ANTENNA
(COMPLETE)**



\$10



OTHER LARSEN VHF & UHF
ANTENNAS AND FITTINGS AVAILABLE
WRITE GLENWOOD
FOR DETAILS



GUTTER CLAMP



TRUNK LID



Permanent
Body Mount
LM-K Mount requires
3/4" hole in vehicle.
Only 3 simple parts go
on quickly following
easy step by step
instructions.



TRUNK GUTTER



MAGNETIC MOUNT

All Temporary Mounts come complete with coax and plug. Coax is factory attached to mount.
Permanent Mounts also include coax, plug & adapter.

	GUTTER CLAMP	TRUNK LID	PERM BODY MOUNT	TRUNK GUTTER	MAGNETIC MOUNT	COIL ONLY	5/8 WAVE WHIP	1/4 WAVE WHIP
LM FITTING	\$22	\$21	\$9	\$14	\$23	\$25	\$11	\$5
PO FITTING	\$24	\$22	—	—	\$24	\$27	\$11	\$10
NLA FITTING	\$24	\$21	\$10	\$15	\$24	\$27	\$11	\$11

General Information

SHIPPING

Delivery is free on most items, with the exception of towers, antennas, rotors and cables, when the order is prepaid by cheque, money order, cash, telegraphic or bank transfer (N.W.T. and some out-of-way points excepted.) We accept Visa and Mastercharge. For charge card orders, shipments on account, or where special delivery arrangements are required (such as Air Freight, Air Express, C.O.D.) you pay the full shipping cost and the shipment will either be sent Freight collect, or you will be billed for the shipping. Lighter-weight transceivers are shipped via 1st class air mail registered. Heavier equipment is sent via Parcel Post, Postpak or Rapides. Normal delivery is two to three weeks which allows one week for receipt of your order, one week for processing and shipping and one week for delivery. We do our best to fill the orders in the chronological order that they are received. If we are out of stock or anticipate a delay, we will advise you by card.

You can place your order either by mail, or by phoning our order desk (604) 984-0425.

On orders over \$100 we will deduct the cost of your call up to a maximum of \$5. Sorry, but we can not accept collect calls.

In the event of a mail strike, we hope that we can continue to serve you by receiving your order by phone, your payment by charge card or bank transfer. We will endeavour to maintain delivery using alternative carriers.

PRICING

Because of inflationary problems in our economy and those of the countries from which we import, together with currency exchange fluctuations, we are sometimes faced with price increases which we can no longer absorb if we are to remain in business. We therefore reserve the right to change the price of any item in this catalogue, confirmation of your order being subject to your acceptance of the price change. We hope that you will bear with us in understanding these problems. Nevertheless, we will endeavour to maintain our reputation for the finest quality at the lowest possible prices.

RETURNS AND EXCHANGES

A 15% restocking charge will be made on goods returned unamaged within 10 days of an order cancelled after goods have been shipped. Proof of purchase must accompany returned items and freight or postage should be prepaid. Returned items should be insured to protect you against loss or damage as we cannot accept responsibility for loss or damage to uninsured parcels. Material cut-to-length or special orders are not returnable or exchangeable.

C.O.D. AND COLLECT ORDERS

Because of customers refusing to accept delivery after ordering C.O.D., resulting in us having to absorb two-way freight charges plus shipping and handling costs, we reluctantly must insist on a 25% down payment on C.O.D. and Collect orders. For lesser ordering, you can transfer funds by bank wire to: The Toronto-Dominion Bank, 15th and Lonsdale Branch, North Vancouver, for the account of Glenwood Trading Co. Ltd. On C.O.D. orders the customer pays the shipping. The Post Office only accepts C.O.D. orders for up to \$200 value. If the item you order costs more than this it will be shipped next best way collect, or in accordance with your instructions. — but remember in these cases the shipping is on you, and a 25% down payment is required.

WARRANTY AND SERVICE

All the equipment we sell has been Glenwood tested. Specifications are correct to the best of our knowledge. We only advertise what we feel is good equipment. If you desired equipment is not advertised, we can usually sell it to you, but there is probably a reason why we don't advertise it. All our transceivers carry a ninety-day parts and labour and one year parts guarantee providing they have not been misused, tampered with or otherwise mistreated. Our charge-out rate for service technicians' labour for out-of-warranty work is \$36 an hour, minimum charge one hour. Please write to our service department regarding any malfunction for instructions for return and repair. Tubes and Hailo (tropo) transistors are not covered by warranty.

MINIMUM MAIL ORDER \$20

MINIMUM \$5 SHIPPING AND HANDLING CHARGE ON ALL SPARE PARTS ORDERS

Orders less than \$20.00 are subject to \$5.00 handling charge.

Renseignements Généraux

ENVIRONNEMENT

Nous expédions, sans frais pour le client, la plupart des nos articles, à l'exception des antennes, des pylônes, des rotateurs et des câbles, quand la commande est payée d'avance par chèque, mandat postal, ou espèces, trancheur télégraphique ou bancaire (excepté pour les Territoires du N.O. et autres lieux très éloignés). Les émetteurs-récepteurs de poids léger sont acheminés en première classe recommandée, par avion. Les articles plus lourds sont envoyés au tarif des colis postaux ou rapide. Vous pouvez compter un délai normal de 2 ou 3 semaines entre la mise à la poste de votre commande et la réception des articles; c'est le temps requis pour recevoir votre commande, la remplir et pour vous expédier les pièces. Nous serons nos clients en donnant la priorité aux premières arrivées. Nous Répondrons dès que possible à toutes les demandes. Quant nous prévoyons un retard dans la livraison, nous prendrons soin d'en avertir nos clients.

Vous pouvez passer vos commandes en téléphonant au bureau des commandes (604) 984-0425. Pour des commandes de plus de \$100 nous déduisons le prix de votre appel jusqu'à un maximum de \$5. Nous regrettons de ne pouvoir accepter des appels à frais virez. Pour accéder au paiement, nous acceptons les cartes de crédit Visa et Mastercharge. Pour les arrangements de livraison rapide (c'est à dire la liaison autre que par le poste), ou pour paiement à la livraison, par carte de crédit, ou envoi à crédit, les marchandises seront soit emballées en port dû, ou bien sous forme facturée pour l'expédition. En cas de grève des postes, nous espérons pouvoir continuer à vous servir en recevant votre commande par téléphone, votre paiement par carte de crédit ou transfert bancaire. Nous nous efforcerons de maintenir la liaison en utilisant d'autres transporteurs.

L'inflation qui touche notre économie et celle des pays dont nous importons, les variations des cours du change nous obligent parfois à haussier les prix de certains articles; nous y sommes contraints pour assurer la rentabilité de notre entreprise. Nous nous réservons donc le droit de modifier le prix de n'importe quel article de ce catalogue, dans les cas où il y a modification dans les prix, la commande devient sujette à l'approbation du client. Nous souhaitons que vous acceptiez ces contraintes; nous nous excusons des inconvenients qui en résultent. Soyez assurés que nous nous efforçons de garder cette réputation qui est notre, d'offrir la meilleure marchandise au plus bas prix.

RETOURS ET ÉCHANGES

Une retenue de 15% est faite sur le prix de toute marchandise retournée intacte en octobre de 10 jours. La même politique s'applique pour les commandes achetées après livraison de la marchandise. Dans le cas d'un retour de marchandise, le preuve d'achat doit toujours accompagner les articles; le coût de transport incombe alors au client. On vous conseille d'acheter ces articles contre la partie du le bris; nous ne pouvons pas assumer la responsabilité des pertes ou des dommages encourus durant le transport. On ne peut rembourser ou échanger les matériaux coupés sur mesure et les articles faisant l'objet d'une commande spéciale.

LIVRAISON CONTRE REMBOURSEMENT (C.R.)

Un versement initial de 25% doit accompagner toute commande à être livrée contre remboursement (C.R.). Nous sommes forcés de prendre cette mesure parce que des gens refusent parfois d'accepter la livraison des articles. Un documenteur, l'expéditeur est donc d'assumer la totalité des frais encourus pour l'emballage et le transport aller et retour de la marchandise.

Pour accroître la rapidité des transactions, nous pouvons utiliser votre paiement à la Banque Toronto-Dominion, 15th & Lonsdale Branch, North Vancouver, pour dépôt au compte de Glenwood Trading Co. Ltd.

Le client paie le transport des commandes livrées contre remboursement (C.R.). La poste n'accorde pas les commandes C.R. supérieures à \$200.00. Si l'article commandé coûte plus de \$200.00, il vous sera expédié sur le basse "Collect", c'est-à-dire qu'il faudra à percevoir du destinataire; ou suivre toute autre plan, à votre convenance. Dans ces derniers cas, dépendant, le transport est à vos frais et un versement initial de 25% sera exigé.

GARANTIE ET SERVICE

Nous vérifions l'équipement que nous vendons. Au meilleur de notre connaissance, il respecte les spécifications fournies. Nous n'annonçons que de bons produits. Si nous devons échanger des articles, nous pouvons vous les fournir, avec la réserve qu'il y a peut-être une raison pour laquelle nous ne les anniquions pas.

Nos émetteurs-récepteurs sont couverts par une garantie de 90 jours, pièces et réparation. Les pièces qui n'ont pas été l'objet d'abus ou de mauvaise utilisation ont une garantie d'un an. Le tarif horaire de nos techniciens de service de réparation travaille sur des articles non couverts par la garantie de 90, minimum tarif d'une heure. En cas de panne ou de difficulté, consultez notre service de réparation; celui-ci vous renseignera sur le fonctionnement de l'appareil et, si nécessaire, vous donnera des instructions pour le retour de l'appareil défectueux.

Tes lampes et les transistors de sortie ne sont pas couverts par la garantie.

COMMANDE MINIMUM \$20

\$5 MINIMUM D'EXPÉDITION ET DE MANUTENTION POUR DES PIÈCES DE RECHANGE

BOOKS, TECHNICAL PUBLICATIONS AND SUPPLIES

MINIMUM MAIL ORDER \$20

"HAM" RADIO CODE COURSE - 6 PRE-RECORDED CASSETTES \$33

This cassette code course is designed to get the beginner in Amateur Radio on his or her way towards achieving that goal which will lead to the successful completion of the Canadian Amateur Radio Examination as set by the Department of Communications for the Morse code requirement.

The Morse code on these tapes has been computer generated. All characters in this series are sent at 14 words per minute but have much larger spacing between them to give the effect on slower speeds. (With the exception of Tape six side A which is sent at 10 w.p.m. for both.)

Tapes one to four gently introduce the Morse letters, numbers, and the punctuation sounds. Practice sessions are provided every second character learned. They last approximately five minutes long and are progressively more difficult. (The more letters you learn, the larger the alphabet in each practice session.) Major practice sessions are provided every 6th character learned. These are about fifteen minutes long and contain all the letters, numbers, and punctuations that you have learned in the previous set of six characters. These too get more difficult as you learn more and more of the Morse code.

By the time you complete these tapes you will be ready for the last two sessions. Tape five and six are all practice in either plain English and/or Cipher groups. By the end of these tapes you should be ready and able to copy ten words per minute with very good accuracy. You'll need more practice... but you are already well on your way to that goal.

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1983 U.S. CALL BOOK

CONTAINS ALL W&K LISTINGS WITH LICENCE CLASSES, NAMES AND ADDRESSES, PLUS MANY CHARTS AND REFERENCES.

CALL BOOKS

1983 FOREIGN CALL BOOK

FOR ALL DX'ERS. CONTAINS OVER 235,000 CALLS, NAMES AND ADDRESSES.

\$26

Order both books at the same time for \$50 including shipping.

FROM THE CANADIAN AMATEUR RADIO FEDERATION

Canadian Amateur Certificate Study Guide	\$8.00
Canadian Amateur Radio Regulations Handbook	\$8.00
Advanced Amateur Certificate Study Guide	\$8.00

OPERATING SUPPLIES

RADIOGRAM PADS 70 sheets

\$2

LOG BOOKS

\$4

Mini Log 4 x 6 **\$2**

ARRL PUBLICATIONS

- RADIO FREQUENCY INTERFERENCE** Solutions to a real problem that faces every radio amateur. **\$6.00**
- REPEATER DIRECTORY** 1982 edition. Listing of U.S. and Canadian repeaters. **\$2.50**
- SINGLE SIDEBAND FOR THE RADIO AMATEUR** A compilation of the best s.s.b. articles from QST. **\$6.00**
- SOLID STATE BASICS** Designed to clear away all the mystery that surrounds, semiconductor devices. **\$8.00**
- SOLID STATE DESIGN FOR THE RADIO AMATEUR** Practical circuits and theory. **\$9.00**
- World Map, 1980 edition Great Circle map with country prefix list, ITU region boundaries, time zones and much more **\$6.00**

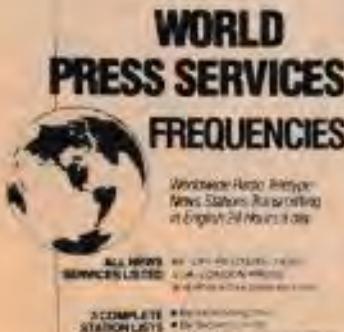
- FM AND REPEATERS FOR THE RADIO AMATEUR** Complete manual of fm and repeater operation and equipment design. **\$8.00**
- HINTS AND KINKS** Contains over three hundred practical ideas for your ham-shack. **\$8.00**
- ARRL ANTENNA ANTHOLOGY** The best from QST. **\$7.00**
- ARRL ANTENNA BOOK** Contains theory and construction of all types of antennas. **\$12.00**
- WEEKEND PROJECTS FOR THE RADIO AMATEUR** Easy to build projects from QST, Vol. 1. **\$6.00**
- ARRL ELECTRONICS DATA BOOK** Reference guide of charts, tables, & circuits. **\$6.00**

RSGB PUBLICATIONS

VHF-UHF MANUAL **\$24.00**

- THE RADIO AMATEUR'S HANDBOOK** The standard manual of Amateur Radio Communications. **\$17**
- ARRL OPERATING MANUAL** Definitive source of good operating practices applied to over a dozen most popular Amateur Radio activities. **\$8.00**
- A COURSE IN RADIO FUNDAMENTALS** Classroom text and home study guide. **\$6.00**
- TUNE IN THE WORLD WITH HAM RADIO** All the beginner needs to know to obtain the Novice license. Package includes text and code practice cassette. **\$9.00**
- LICENSE MANUAL** Complete text of amateur regulations, FCC exam syllabus, radio theory for Technician through Extra. **\$6.00**
- LEARNING TO WORK WITH I.C.S.** Discover the basics of I.C.S. while building simple electronic projects. **\$4.00**

GUIDES TO BROADCAST FREQUENCIES



\$11

WORLD RADIO TV HANDBOOK

The Authoritative Directory of International Radio and Television

\$23

FAST SCAN ATV

P.C. ELECTRONICS

ALL YOU NEED IN ONE BOX.



TC-1 \$589

Connect to the ant. terminals of any TV set, add a good 450 antenna, a camera, and you are there... Show the shack, home movies, computer games, etc.

FEATURES

- 10 WATTS RMS OUTPUT ON SYNC. DC RESTORED MODULATOR.
- STANDARD FREQ. AVAILABLE: 439.25, 434.0, AND 426.25 MHZ SPECIFY XMTR FREQ. AND DOWN- CONVERTER OUTPUT ON CHANNEL 3 OR 2.
- BROADCAST STANDARD 4.5 MHZ SUBCARRIER SOUND WITH HIGHGAIN MIC AMP.
- 8 MHZ BANDWIDTH MODULATOR FOR HIGH RESOLUTION VIDEO, COLOR, AND COMPUTER ALPHANUMERICs.
- BUILT-IN REGULATED AC POWER SUPPLY.
- TUNEABLE DOWNSAMPLER COVERS 420 to 450 MHZ. CONTAINS LOW NOISE 1.7 DB MRF901 PREAMP, PLUS HOT CARRIER DOUBLE BALANCED MIXER.

TVC-4 L ATV DOWNSAMPLER

Stripline MRF901 (1.7 db NF) preamp and double balanced mixer module digs out the weak ones but resists intermod and overload. Connects between uhf antenna and TV set tuned to channel 2 or 3. Varicap tunes 420 to 450 mHz. Requires +12 to 18 vdc @ 20 ma.

\$159



The MTJ-H21 Combination Enhancer/Stabilizer/Distribution Amplifier is a full featured video enhancer. Video enhancer lets you see individual strands at hair or easier of grain. Stabilizer stabilizes VHS tape play. Copyguard tapes on any TV set without roll and jitter. Distribution amplifier gives you three outputs with amplification so that each makes copies as good as the original.

Enhancer Control dramatically improves picture clarity, detail and sharpness. Control is measured.

Stabilizer Control reduces picture noise exaggerated by enhancement.

Distribution Amplifier boosts video. Faded pictures due to low VCR signals are improved.

Enhancer before recording to cancel VCR and tape noise. You can enhance during viewing to bring out detail and sharpness and improve viewing quality of older tapes.

Use six feet leads resulting in less money and get viewing quality comparable to two field mode recordings. A bypass switch lets you compare enhanced with unenhanced picture.

An RF modulator is required for use with standard TV sets.

Distribution Control removes copyguard and stops picture roll and jitter. You can play copyguard tapes on any TV set (with RF modulator) and duplicate any protected tapes. Simple adjust control for added picture. Fine tuning adjustment is needed for the duration of the tape. A flexible bypass switch is provided.

Distribution Amplifier gives you three outputs. You can use it as a distribution amplifier with the Enhancer and the Stabilizer bypassed. When it is in the "power OFF" mode, the input is connected to one output. It includes a circuit that improves horizontal stability and reduces picture hunting. Use with video tape between two VCRs or VCR and monitor. An RF modulator is required for use with standard TV sets.

COMBINATION VIDEO ENHANCER/STABILIZER/DISTRIBUTION AMPLIFIER



\$219

- Enhancer improves picture clarity, detail and sharpness. Reduces picture noise.
- Stabilizer removes copyguard, stops picture roll and jitter.
- Distribution Amplifier has three outputs.
- Use with any video tape recorder.

COMAX TELEREADER

CWR-685E Telesader Terminal

A versatile, portable radioteletype terminal, the CWR-685E is designed for convenient use in any location. With built-in modems and display screen and an external sending keyboard, the CWR-685E can transmit, receive and display messages in either Morse (CW), Baudot or the computer-standard ASCII code. Among the many special features are high and low RTTY tones, selectable baud rates and frequency shifts, a 15-line transmitting buffer memory, six memory channels, and automatic transmit/receive control. All functions are controlled by front panel push-buttons, for simple and accurate operation. Its compact size and DC power operation make the CWR-685E ideal for use in vehicles, boats and other portable installations. Add nothing more than a power supply and transceiver to create a complete CW/RTTY station.



\$1349 COMPLETE WITH KEYBOARD

Main Features

- CW, Baudot and ASCII transmission and reception
- Built-in 5" green phosphor CRT display
- 4-page display, 32 characters x 20 lines per page
- Built-in RTTY and CW modems
- External detachable keyboard (similar to standard typewriter keyboard) with 3-foot cord
- 6 memory channels (63-character capacity each)
- Transmitting buffer memory (480 characters)
- High and low RTTY tones
- Storage and loading capability using external cassettes
- 13.8V DC power source
- Compact size: 12 3/4" W x 5" H x 11 1/4" D (323mmW x 127 mmH x 286mmD)

Code/Speed Flexibility

- Variable transmission/reception speeds
 - CW: 3-40 wpm
 - RTTY (Baudot/ASCII): 45.45 - 300 bauds (six speeds)
 - (300 bauds possible with external modem)
- Variable CW weight
- ASCII transmission/reception of both upper and lower case letters
- CW practice function
- Automatic CW speed tracking during reception
- CW ID-function
 - Automatic change for using memory channels
 - Control of transmission buffer change
 - Direct change

Special Features

- Automatic and manual transmission/reception switching
- AFSK modulator
- Echo function for automatic readout or sending of received data
- Normal and reverse sense
- Unshift-on-space function
- CW PLL filter
- Status display indicates
 - Memory channel in use for transmission
 - Working condition of all circuits
 - Screen picture number
- Built-in monitor circuit with two speakers
 - Output/signal monitor
 - CW sidetone/AFSK output monitor
- Rub-Out function erases one line or 15 lines for transmission correction
- Automatic carriage return, line feed and letter/figure code insertion for RTTY printout
- Cross pattern checking output terminal
- Scroll function

Interfacing

- Printer output: Centronics-compatible parallel interface
- External monitor output
- Cassette tape recorder input and output

CWR-670 Telereader Receive Only \$569

- Automatic CW speed tracking
- Display output: 512 characters x 2 pages
- Normal and reverse sense
- Printer output: Centronics-compatible parallel interface
- RF/VHF/video display output
- Oscilloscope output
- 13.8V DC power source
- CW, Baudot and ASCII reception
- Variable reception speeds
 - CW: 3-50 wpm
 - Baudot/ASCII: 45.45 - 300 bauds (six speeds) (300 bauds possible with external modem)
- Switchable 36 or 72 characters per line
- High/low tone switch



- Compact size: 7 7/8" W x 12 5/8" D x 2 3/4" H (200mmW x 320mmD x 70mmH)
- Weight only 2.3 kg (5.1 lb.)

KG-12N Display Monitor \$249

Designed to fit Telereader equipment and computers with composite video output, the 12" (31cm) CRT displays up to 2000 characters, using an implosion-proof green phosphor. Dependable 14-transistor circuitry with DC restoration for raster prevention.

\$249

- AC 120V/220V power source
- 12 1/4" W x 11 1/4" H x 12 5/8" D (310mmWx285mmHx321mmD)
- Weight only 7 kg (15.4 lb.)

**8510P Dot Matrix Printer \$999**

This compact desk-top dot matrix serial impact printer is ideal for hard-copying CRT displays, and for data communication and peripheral minicomputer terminals. Features include variable fonts, dot graphics, 4-copy capability, print speed of 100 characters per second, 136 characters per line.

Centronix-compatible parallel interface for compatibility with Telereader equipment.

- Power source: AC 100/115/220/240V
- Dimensions: 15 (5/8" W x 11 1/4" D x 4 3/4" H (398mmW x 285mmD x 121mmH)
- Weight: 8.5 kg (18.7 lb.)

**DP-8240 Dot Matrix Printer \$459**

An inexpensive and compact dot matrix printer, designed to match telereader equipment as well as personal and micro-computers. 40 columns on 4 1/2" wide paper.

\$459

- 55-2400 bauds (six speeds)
- 280(w) x 200(d) x 101(h) mm.
- weight only 4 kg.
- 96 character ASCII character set, plus block graphics characters.

**DP-8480 Dot Matrix Printer \$729**

An industrial grade printer at a no-frills price. The DP-8480 dot matrix printer character generator includes 64 block graphic characters.

\$729

**CWR-610 Morse Master \$239**

Receives CW (Morse), RTTY (Ba dot) and ASCII II. Built-in Centronics compatible parallel interface. Displays 576 characters x 2 pages; total 1008 characters.

\$239

- CW: 15-250 characters/min.
- RTTY: 45.45 bands (up to 110 bands)
- 161(W)x205(D)x48(H)mm.



CONNECTING CABLE BETWEEN TELEADER AND PRINTER. \$49

DTU-2M DEMODULATOR

A complete self-contained Modulator/Demodulator for RTTY and other date transmission.



***139**

The demodulator is a phase locked loop AFSK decoder for 170 Hz shift. Autostart automatically turns on the RTTY unit on reception of valid zone frequency shift tone. Anti-splice prevents the printer from running open if someone sends a continuous space tone. The printer control disables the keying transistors if the incoming tones get distorted or interfered with. This prevents the printing of garbage.

Visual indicators are provided for a mark and space indication, also indication for valid zone frequency and pitch to 170 Hz operation are provided. The valid tone indicator makes tuning the demodulator very easy. In addition to this there is a scope output for precise tuning of the phase locked loop. Power requirements: 150 volts at 60mA for the printer, 12 volts at 400mA for the unit itself. Connecting wires and 4-Led diodes are included.

The unit does not include power supply, 1 or 2 12V relays, and up to six switches, depending on the controls wanted.

TOUCH TONE® PAD

Automatic Electric

\$47

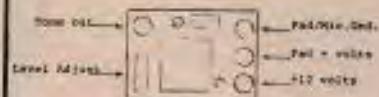


Complete Pad and Tones
Mechanical Type
Less Mounting Box.

TOUCH TONE COUPLER

Audio interface
between TT pad and
any 2 meter rig.
Size: 2.5 cm. x 2.5 cm.

***11**



SUPER TWO

***21**



The most popular 2-MTR Preamp in Canada. Fits any 2 MTR rig. Size 2 cm x 2 cm x 5.5 cm. Takes any 12 V DC source, 18-20 dB gain.

\$5 MINIMUM ORDER

EXPERIMENTERS — HOME BREWERS

MINIMUM ORDER \$5

PRICES SLASHED TO CLEAR — LOOK HERE FOR BARGAINS

R.F. POWER TRANSISTORS 2N4375 Pinals — Only \$2 each

RESISTORS - A mixed bag of 0.25W to 3W and 1 ohm to 1 meg ohm. Approx. 100 bag \$1.

RESISTORS - 4.7K ohm 2W Resistors. Bag of 50. Only \$1 per bag.

ELECTROLYtic CAPACITORS. 16mF - 500mF. 5V-15V. Approx. 20 per bag. Only \$2.

CERAMIC DISC CAPACITORS. 0.001uF to 4700 pF. TV-3KV. Approx. 125 per bag. Only. \$2.

ALL ITEMS
NEW AND
UNUSED



\$9.00

HIPOWER ADAPTER

NI-CAD MODEL
CHARGER NO. 645C8

IDEAL FOR USERS
OF:
PORTABLE TRANS-
CEIVERS
CASSETTE RECOR-
DERS
CALCULATORS.
— AND ESPECIALLY
AT CHRISTMAS —
TOYS
CSA APPROVED.*

RARE NICADS

In some areas handy-talkie owners are having a hard time finding rechargeable nicad penlight cells. The scarcity, according to one radio store owner, is the result of the popularity of battery powered Christmas toys and games. People are catching on that a small charger and nicad batteries are a better buy than the disposable alkaline and carbon types.

NICADS — "AA" SIZE
\$3 each

INSTRUCTIONS
The MODEL 645C8 Ni-Cad charger is provided with 3 "snap-on" holders so that you can charge, at one time two cells, three cells or four cells. Be careful to observe polarity when inserting cells in the holders, that is the positive (+) end of the cell must correspond to the positive (+) mark on the holder. Do the cell holder firmly to the terminals on the charger, and then plug the charger into any standard AC wall outlet. After 15 hours the Nickel Cadmium cells will be fully charged.

MORSE TUTOR D-70



DIPOLE ANTENNA AD270



\$139

DATONG
ELECTRONICS LIMITED

\$169

INSTANT MORSE PRACTICE

Imagine the convenience of having your own source of accurate Morse for instant receiving practice anywhere at any time! The Datong MORSE TUTOR produces digitally a random stream of five character groups at variable speed and with variable extra spacing between letters. You can select letters or numbers or a mixture and unlike records or tapes, the sequence never repeats. A Morse practice oscillator is also built in. Just plug in a standard key to practice sending.

A COMPACT INDOOR RECEIVING ANTENNA SYSTEM WITH WIDEBAND COVERAGE FROM 100 KHz TO 30 MHz

MODEL AD270 has no adjustment and needs no external tuning units. The actual antenna comprises a wire dipole (overall length only 3 metres) together with a rather special FET bipolar amplifier unit. The broadband signal from the remotely located antenna is piped via TV-type coax to the interface unit (which now contains a switchable 12dbm amplifier) located near the receiver.

Although only 3 metres long, MODEL AD270 has the same directional properties as a full-size dipole, even at 600kHz. Despite its small size, signal-to-noise ratios produced by MODEL AD270 at any frequency are similar to those from a conventional dipole cut to resonance for that frequency, and the unit makes an ideal accessory for a good coverage receiver where space for antennas is limited.

OUTDOOR ACTIVE DIPOLE ANTENNA MODEL AD370

Model AD370 makes an ideal outdoor (or indoor) antenna for use with good general coverage communications receivers.

- Weather resistant construction for outdoor use.
- Excellent sensitivity from 200 kHz to well over 30 MHz.
- Strong signal performance to professional standards.
- Overall length only 104 inches. Uses two taper-ground stainless steel whips 50 inches long.
- Fitted with 8 metres of coaxial down lead (easily extended if necessary).
- Good rejection of interference picked up by the feeder due to excellent balance.

\$199



CONVERTS INCOMING VLF SIGNALS TO FREQUENCIES 28MHz HIGHER,
FOR EASY TUNING ON NORMAL COMMUNICATIONS RECEIVERS.



\$89

- Covers 0 to 500kHz plus up to 1MHz at lower sensitivity
- No receiver modifications are required.
- High sensitivity – only a short antenna is required.
- Crystal controlled for high stability.
- Rugged diecast aluminium case
- SO239 coaxial connectors for input and output.
- Circuitry completely bypassed and antenna connected directly to receiver when Model VLF is switched off.
- Powered by internal 9 volt battery (PP3) or external supply.

KEYBOARD MORSE SENDER –

Model MK \$379

Four independent message memories are provided, each with 64 character capability and editing facilities. You can also programme as many pauses as you like into a message. On playback, when the memory pauses, you then have the option of continuing from memory (by pressing "CONT.") or of first inserting copy from the keyboard. This is ideal for contests where call sign and report can be typed into a prerecorded reply. Memory readout is also halted whenever any keyboard character is pressed.

Using the "AUTO REPEAT" function you can automatically repeat the same message with up to a 15 second delay between repetitions. This is ideal for CQ calls or especially at high sending speeds, for meteor scatter work.

All memory contents are retained when the unit is switched off (and even while you change the batteries).

Other features include: solid state keying with separate positive and negative outputs; two speed ranges (5 to 33 and 20 to 132

THE ULTIMATE "MORSE KEY"



words per minute); built-in side-tone; built-in beep tone to indicate "key pressed" and/or "buffer full"; delay control to increase the inter character delay (for easier message editing); weight control; high quality construction using P.T.H. board and reverse printed panel.

DATONG ELECTRONICS LIMITED



\$239

FEATURES

- Twelve poles of tuneable active filtering bring a new standard of performance to receiver pass-band control.
- Independent low and high-pass filters beat crystal filter standards of skirt selectivity yet cut-off frequencies are continuously variable from 200 to 3500 Hz.
- Built-in independent notch filter.
- Designed specifically to improve reception of SSB, CW, RTTY, AM signals in interference conditions.

AUDIO FILTER

MODEL FL1 is a most unusual audio filter. It is highly versatile add-on unit for communications receivers which gives great flexibility in helping to extract the signals you want (SSB, CW, RTTY etc.) from background interference. It simply connects in series with the loudspeaker or headphones. Fully variable bandwidth and centre frequency plus "flat-topped" pass-band response give similar effects to "I.F. pass-band tuning" for SSB or RTTY reception, and bandwidth down to 20Hz (with limited a.f.c.) gives an amazing capability for pulling weak CW stations out of the QRM.

MODEL FL1 is also completely unique in being able to tune itself when notching out unwanted whistles. That's why we call it the "Frequency-Agile Audio Filter." If a whistle appears on your channel, **MODEL FL1** will normally remove it from audibility within a couple of seconds... completely automatically! This ability makes conventional notch filters look positively stone-age and allows the notch width to be so narrow (5Hz) that you lose virtually nothing of the signal you want.



\$289

FL-2**Multimode Audio Filter**

Fully variable low-edge selectivity and notch filter for improving any receiver.

- Model FL2
- Gives the benefits of "IF shift" or "pass-band tuning" techniques without the drawbacks.
 - Optimal bandwidth selection for RTTY and SSTV reception.
 - DX AM broadcast reception.

SPEECH PROCESSORS.**'LEAVE IT SWITCHED, I CAN'T COPY YOU WITHOUT IT'****ASP \$239****MODEL D-75 R.F. SPEECH PROCESSOR****\$175**

- Input monitor LED — lights when clipping is between 0 and 20 db.

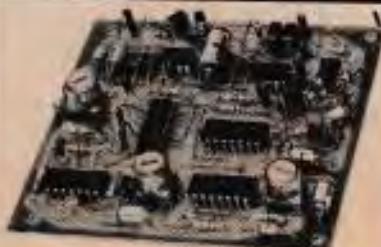
- Power LED

- Low/High input impedance selector

- Stylish appearance to blend with any rig.

Remember: all DATONG R.F. clippers connect in series with your microphone. No internal connections are required. For R.F. clipping at minimal cost our MODEL RFC/M is still available. MODEL RFC/M is a fully assembled and tested R.F. clipper in PCB module form. You provide controls, case and power source.

This is a statement well known to users of our R.F. speech processors: Using the advanced technique of R.F. clipping these units greatly increase your talk power and help your voice punch through the QRM. They work on any rig, with any speech mode, at any power level, and on any band. Simply connect in series with your microphone to get a really punchy speech signal. The use of R.F. clipping technique raises your average power level and also enhances the intelligibility of your speech signal. **MODEL ASP**, our latest model offers for the first time the ultimate convenience of instant push-button selection of the desired amount of clipping. No manual knob setting or meter watching is required. Advanced circuitry does the work quicker and more accurately. Other features include: "TONE" button (for setting the transmitter microphone gain), switchable microphone impedance, left monitoring by three light emitting diodes.

**\$139****RFC/M****\$79**

The world famous **MODEL RFC** is still available and so is **MODEL RFC/M** which is a fully tested printed circuit board module as used in **MODEL RFC**.

ACCESSORIES

IMPROVES SENSITIVITY AND SIGNAL-TO-NOISE RATIO OF RECEIVERS AND TRANSCEIVERS IN THE RANGE 5 TO 200 MHz

CONNECTS IN SERIES WITH THE ANTENNA - R.F. SWITCHED. 9 dB GAIN TYPICAL

\$99

FEATURES

- Extra wide bandwidth saves separate preamplifiers for each band.
- Handles strong signals without overload (intercept point +10dBm).
- Low noise figure.
- Carefully chosen gain level minimises receiver overload and cross modulation.
- R.F. activated bypass relay allows easy use with transceivers.
- Rugged diecast aluminium case with SO 239 connectors and PTH printed circuit board.



MFJ-1020 NEW INDOOR ACTIVE ANTENNA sits on your desk ready to listen to the world. Rivals, even exceeds reception of outside long wire. Unique **Tuned** Active Antenna minimizes intermod, provides RF selectivity, reduces noise outside tuned band. Also use as preselector for external antenna. Covers 300 KHz to 30 MHz. Four bands: 3-1, 1-3, 3-10, 10-30 MHz. Adjustable telescoping antenna. Controls: Tune, Band Selector, Gain, On-Off/Bypass, LED, FET, bipolar circuitry. 9-18 VDC or 9 V battery for portable use. Phono jack for external ant. 6x2x6 in.

Rivals long wires

\$129



EL CHEAPO

PHONE PATCH



\$12

MFJ Dual Tunable SSB/CW Filter "Signal Enhancer"



\$139

Dual filters give unmatched performance. The primary filter lets you peak, notch, low pass or high pass, with extra steep skirts. Auxiliary filter: 70 dB notch, 40 Hz peak. Both filters tune from 300 to 3000 Hz with variable bandwidth from 40 Hz to nearly flat. Constant output as bandwidth is varied; linear frequency control. Switchable noise limiter for impulse noise. Simulated stereo sound for CW lets ears and mind reject QRM. Inputs for 2 rigs, switch selectable. Plugs into phone jack. Twin walls for speaker. OFF bypasses filter. 9-18 VDC, 300 mA.

ANTENNA SWITCH



Push-button switch will connect any of 3 antennas to the transceiver.

Rated at 250W.

\$15

SWL ANTENNA

\$65

- Only 40 feet long
- NEW PATENTED HIGH EFFICIENCY TRAPS
- Automatically tunes the popular 11, 13, 16, 19, 25, 31 and 49 short wave bands.
- Can be installed as a flat top, sloper or inverted V.
- Weatherproof construction for long trouble free service.
- Completely assembled. (Less feed cable.) Center insulator terminated with SO-239 Connector.
- Designed to be fed with RG58 coax for maximum efficiency.

L.P. FILTERS

NYE Viking LP filter



\$40

A 2 to 30 MHz 2 KW low pass filter that reduces TVI with less than 0.5 DB insertion loss. 52 ohm input - output.



\$39

Kenwood LF-30 A low pass filter

VLF/MW/SWL Antenna Tuner

Greatly improves 10KHz to 30 MHz reception.

\$129



This MFJ-955 VLF/MW/SWL preselecting antenna tuner greatly improves reception of 10KHz thru 30 MHz signals, especially those below 2 MHz.

Lets you peak desired signals while rejecting interference. Reduces overload, background noise, crossmodulation, and intermodulation. VLF signals come piping in.

Switch between two antennas and two receivers. Bypass position connects antenna directly to receiver. 5½x2x3 inches. Black, egg shell white aluminum cabinet.

ACCESSORIES

SP-40 Compact Mobile Speaker

Max. Input: 3 W
Impedance: 4 Ω
Dimensions: 68(2.7)W x 64(2.6)H x 54(2.2)D mm (inch)
Weight: 250 g (0.6 lbs) approx.

\$35

KB-1 Deluxe VFO Knob \$19
(Matches TS-530S, TS-630S,
TS-820S, R-320, VFO-230,
VFO-240)



MB-100 Mobile Mount \$49

**HA-3****VERTICAL ANTENNA**

(for TS-560) Covers the three bands 16m, 10m, 6m. Small size and light weight makes it easy to disassemble and relocate. Provided with radials for all bands which can be easily adjusted to obtain optimum performance. Complete coupling between the antenna and feeder is obtained with a built-in balun, so feeder radiation is completely suppressed. Uses a waterproof type trap coil.

\$179

SPECIFICATIONS

• Frequency: 16m, 10m, 6m band • VSWR: 16m band = less than 1.5 : 1 (250 kHz center frequency), 10m band = less than 1.5 : 1 (450 kHz center frequency), 6m band = less than 1.5 : 1 (11.5 MHz center frequency) • Input impedance: 50Ω • max. input power: 150W PEP continuous, 300 W PEP • Dimensions: Vertical = 2.7m approx., Horizontal = 1.7m approx., • Weight = 2.2 kg (4.8 lbs.) approx.

VoCom

5/8 Wave Collapsible 2-Meter Gain Antenna \$29

- Nearly 10 dB improvement over standard "rubber ducky"
- BNC connector fits most current hand-holds
- 47" extended, only 8" telescoped
- Base spring/tuning coil protects radio and antenna from accidents
- Better than 1.5:1 VSWR across the entire 144-146 MHz band
- Individually tuned matching network for top performance

The simplest, most economical way to improve your hand-held's performance. Try it — you'll never believe what it can do until you've experienced it yourself!

VIBROPLEX**THE ORIGINAL KEY**

Deluxe Model: \$109

Presentation Model: \$159

In 1890 Horace Martin searched for relief from the "glass arm" wireless operators were getting from pounding straight keys. He innovated by placing the key on its side and our semi-automatic key was born. Press the thumb piece and the vibrating lever bar produces dots. Make dashes manually with the finger piece. Speeds as low as 20 wpm or as high as practical can be sent with the speed lever. The original bug is still buzzing whenever speed and perfection are desired.

Standard Model: \$89

THE VIBROKEYER

The Vibrokeyer is designed for bug operators who want to move to electronic transmitting without relearning keying. The single lever paddle initiates automatic dots and dashes through your electronic transmitting unit. For those who want to combine traditional skill with electronic force.

Deluxe Model: \$99 Standard Model: \$79



Deluxe Model: \$99

THE IAMBIC

We recently took the distinctive look, quality and craftsmanship of Vibroplex and molded them into the finest iambic paddle anywhere. The dual paddle allows operators to utilize automatic dot/dash insertion and other unique features of the modern electronic keyer. Vibroplex distinction for the modern operator.

Standard Model: \$79

All of our keys are available in Standard and Deluxe models. The Original is also available in the Presentation model.

Standard Model: All Standard models come with a neat, crisp, recessed, painted base with polished and chromed top parts. Attention to detail in the finishing process gives Vibroplex an unequalled quality appearance. Highly conductive large coin-silver contacts provide a clear, sharp signal, and non-skid rubber feet keep the keyer in its place.

Deluxe Model: All Deluxe models feature a chromed base, buffed and polished to a mirror finish. As in fine watches and other precision instruments, their jeweled movement serves to prolong life, maintain smoother, easier operation and prevent binding.

Presentation Model: The Presentation model is the top of the line at the top. Available only in the Original key, the Presentation features 24 carat gold plated base top, and an adjustable super speed control main spring to offer a wider range of sending speed without sacrificing signal quality or causing pendulum drag.

Keyer Combo MFJ/Bencher

MFJ-422 Combo \$159

The best of all CW worlds - a deluxe MFJ Keyer in a compact configuration that fits right on the Bencher iambic paddle! You can buy the combination.

New MFJ Keyer — small in size, big in features. Cuts 8044 IC, adjustable weight and tone, front panel volume and speed controls (8-50 wpm). Built-in dot-dash memories. Speaker, speaker, and push button selection of semi-automatic/lure, or automatic modes.

Ultra-reliable solid state keying: grid-block, cathode and solid state transmitters (300 V, 10 mA max., +300 V, 100 mA max.). Fully shielded. Uses 9 V battery or 110 VAC with optional adapter. MFJ 1012, \$9.95.

Beautiful functional engineering: The keyer mounts on the paddle base to form a small (4 1/8" x 2 5/8" x 5 1/2") attractive combination that is a pleasure to look at and use.

TELEGRAPHIC KEYERS

NYE VIKING Speed-X KEYS



**NYE VIKING \$40
CODE PRACTICE SET**



You get a sure, smooth, Speed-X model 424-002 transmitting key, linear circuit oscillator and amplifier, with a built-in 2" speaker, all mounted on a heavy duty aluminum base with non-skid feet. Operates on standard 9V transistor type battery (not included).



Model 114-310-003 \$25
Heavy die cast base with black wrinkle finish. With switch. Smooth adjustable bearings and heavy duty coin silver contacts.



SSK-1-K

IAMBIC KEYER

Keys neg. or pos. keyed transmitter up to 200 Ma at 250 V.
115V AC of internal 9V batt.
Built-in audio osc. and speaker
5-60 w.p.m. speed control.

KP-100 SQUEEZE KEY

- Transistor or relay switching keying
- Semi/Auto switch
- Auto character space switch
- Tone control
- AC 117/220V or DC 13.8V
- Weight control
- 130(W) x 70(H) x 230(D) mm.
- Weights 1.8 kg.



KATSUMI ELECTRIC \$179



EK-150

BRASS POUNDER KEY

An excellent key for the beginner



Code Practice Oscillator

\$8

3-way operation: light indicator, variable pitch tone, or light-tone combined. Built-in speaker, terminals for key/earphone. Battery operated transistor oscillator. Two C batteries required. 6 1/4" x 3 1/4" x 2".

The new "Master Key" features an isolated contact assembly that keeps the keying circuit separated from the base, the key arm assembly and all exterior metal parts. Heavy die-cast body eliminates need for sub-base or securing to operating desk. Gold-plated silver contacts and adjustable iron key arm with Navy knob.

\$40



No. 114-330-001



Model 114-321-003

Heavy duty key with navy knob. Coin silver contacts. Chrome plated base with switch.



Cat. No. SSK-1

Model SSK-1 Features: extra-long form-fitting molded paddles with adjustable spring tension ... adjustable contact spacing. Knife-edge bearings. Extra-large, gold-plated silver contacts. Nickel-plated brass hardware. Heavy die cast base with non-skid feet. Base and dust cover black-crackle finished. Shipping weight, 2 1/4 pounds.

MEMORY KEYER SKM-1

All the features of the SSK-1-K plus selectable 4-256 Bit or 2-512 Bit or 1-1024 Bit Memories with Repeat Switch and Reset Button. Internal Nicad Holds Memories. Automatic Return to Playback after Recording.

\$299



\$149

ELE-KEY MODEL EK-150 FEATURES:

- Speeds from 8 to 60 w.p.m.
- Perfect 3 to 1 Dot to Dash ratio
- Plug-in unit P.C.B. and solid-state circuitry
- Full Dot and Dash memories
- Adjustable Tone and Volume of Side-Tone
- Built-in Speaker, Headphone Jack
- Switch for Semi/Bugl/Auto
- Power Supply 100-120V a.c. (50/60Hz) or 7-13.5V D.C.
- Built-in Relay and Transistor Switch keyed line. Relay rated max. 700V, 500mA-Transistor 150V, 2 AMP DC

KM-22 PADDLE



\$59

SIMILAR PADDLE TO THE EK-150
BUT NO ELECTRONICS
HEAVY BASE
—WEIGHS 1.2 KG.



\$17

MICROPHONES

KENWOOD MC-5C



\$59

**MC-60 DELUXE DESK-TOP MICROPHONE
(50 kΩ/500 Ω)**



\$99

**MC-60A DELUXE DESK-TOP MICROPHONE
(50 kΩ/500 Ω)**



\$109

MC-60A



\$109

The MC-60A microphone has built-in pre-amplifier to obtain quality audio sound. The microphone plus adaptor is necessary (MU-60) when using with TR-7950/TR-7930.

- N4 = 4 pin
- S6 = 6 pin with UP/DOWN switch
- S8 = 8 pin with UP/DOWN switch

MC-45



\$69

MC-45 Touch-Tone® (with 500Ω automatic transmit) microphone.

MC-46



\$85

MC-46 16-key autopatch UP/DOWN microphone.

CURLY CORD



\$6

COILED MIC CORD WITH 4-PIN MIC PLUG
8' EXTENDED, 10' COILED.

MC-10



\$20

MC-10
(50 kΩ)
Hand Microphone
50k Ohm impedance
Freq. response 150 — 5000 Hz.
Also available, MC-10A
500 OHM Impedance

MC 30S, 35S



\$39

MC-30S (500Ω)
MC-35S (50 kΩ)
Hand Microphone
SELECTABLE NOISE
CANCELLING MIC

MC-40S



\$39

UP/DOWN
Microphone
for manual band scan
500 Ω

DM-90A



\$18

600 OHMS

HC-10 DIGITAL WORLD HAM CLOCK



THE HC-10'S EXCITING FEATURES INCLUDE:

- Two 24-hour displays with a high-precision quartz time base.
- Preprogrammed time differences of 10 major cities around the world (QMT, TOKYO, SYDNEY, HONOLULU, LOS ANGELES, CHICAGO, NEW YORK, CARACAS, RIO DE JANEIRO), plus two additional programmable regions.
- Large fluorescent display tubes, to allow fast, easy reading.
- "TOMORROW" and "YESTERDAY" indications, to prevent confusion on date and hour at individual cities.
- Memorization of present time (such as QSO starting time) and recall later (such as QSO ending time). Recalled starting time is shown on left display, and ending time on right display.
- Attractive, functional layout, with switch buttons on slanted panel. Cabinet is rugged prism shaped for stability. With a pleasing color combination and modern styling, the HC-10 will enhance the appearance of any ham shack.

\$179

HEADPHONES

TELEX.

**HFC-91**

Ultralight underchin. Acoustic delay of 1 millisecond enhances intelligibility on CW or SSB. Shaped response, 100-3000 Hz. Low impedance, 8-20 ohms. Weight, 1.5 ounces (42.5 g).

ORDER NO. 1300 \$15

**HMC-2**

Featherweight underchin, adjustable rugged aluminum tone arms direct signals into the ear. Great for contests. 100-3000 Hz. Low impedance, 8-20 ohms. Weight, 1.2 ounces (34 g).

ORDER NO. 1301 \$24

**HTC-2**

Lightweight dual driver headset. Choice of the "pros" who must wear them for hours. 100-3000 Hz. Low impedance, 8-20 ohms. Weight, 1.6 ounces (45.4 g).

ORDER NO. 1302

\$39

**PRO COM 200**

The DXer

This dual driver headset has a powerful, electret microphone with a typical frequency response of 200 to 3500 Hz. The driver material is dual impedance low (800 - 1000 ohms) and high (10,000 ohms). The headphones is low impedance (8-20 ohms) and has a very sensitive 200 to 12,000 Hz frequency response.

ORDER NO. 1315

Weight, 1.67 ounces (47g)

\$139

**C-610**

An ideal lightweight headphone for code courses, code practice or actual operating. Low impedance (8-20 ohms), 50-12,000 Hz. Weight, 8 ounces (227 g).

ORDER NO. 1303 \$20

**SWL-610**

2000 ohms impedance, 50-12,000 Hz. Weight, 8 ounces (227 g).

ORDER NO. 1304

**PC-100**

Full cushion comfort and long life make this dynamic headphone ideal for the novice. 50-12,000 Hz, 8-150 ohms. Weight, 12 ounces (340 g).

ORDER NO. 1305

\$27

**C-1320**

C-1320 is the "top of the line". Fully cushioned, audiometric type drivers are ultrasensitive. It's the DXer's choice. 20-20000 Hz, 8-20 ohms. Weight, 15 ounces (425 g).

ORDER NO. 1307

CS-7
The CS-7 is same as C-1320 above except - 600 ohms.

ORDER NO. 1308 \$79

**C-1210**

Ultimate in comfort and performance. Mylar diaphragms assure continued sensitivity for digging out those weak signals. 20-20000 Hz, 8-20 ohms. Weight, 12 ounces (341 g).

ORDER NO. 1306 \$47

**HEADPHONE JACK BOX**

Ham clubs, field days or contest operation. No more "jerry rigs" for multiple headphone operation. Six 1/8" (2.4mm) phone jacks with individual volume controls. 4' (1.2m) cord with 1/4" (6.4mm) phone plug. Ideal for code classes.

ORDER NO. 1309 \$24

**PRO COM 300**

The Contester

The ultimate in comfort, like Pro Com 200. An ultralight, single-sided, aviation style headset with a powerful electret microphone. This dual impedance low (800 - 1000 ohms) and high (10,000 ohms) microphones has a 200 to 3500 Hz frequency response specifically designed for human voice. The low (8-20 ohms) impedance, dynamic receiver element has a very sensitive 200 to 12,000 Hz frequency response of 3000 to 3500 Hz.

ORDER NO. 1316

Weight, 1.02 ounces (29g)

\$155

**HS-4 (B72)**
Headphones**KENWOOD****HS-5 (B72)**
Deluxe
Headphones

\$31



\$59

MODEL HS-4. Comfortable communications headphones with a natural sound. Freq. response: 200-3000 Hz.

MODEL HS-5. Deluxe communications headphones with interchangeable ear pads for best performance under varying background noise conditions. Freq. response: 150-4000 Hz.

HS-6

\$35

MODEL HS-6. Ultra-lightweight headphones. Freq. response 100-15,000 Hz.

POWER SUPPLIES

PS-20



\$129

Supplies regulated 13.8V DC at 4A continuous, 4.5A intermittent load with complete ease and safety due to the use of generous heat sinks and an automatic reset electronic overload trip.

SPECIFICATIONS

- Power Consumption: Approx. 600W
- Output Voltage: 13.8V DC
- Output Current: 4.5A (Intermittent load 50% duty cycle), 4A (Continuous load current)
- Output Voltage Fluctuation: Within ±50 mV (at load current 4A), Within 0.1V or 0-4A of load current
- Ripple Voltage: Less than 5 mV at 13.8V DC, 4A
- Dimensions: 123 (4 7/16)W x 133 (5 1/4)H x 235 (9 1/4)D mm (inch)
- Weight: 9 kg (19.6 lbs)

PS-6



\$139

• Built-in Speaker

SPECIFICATIONS

- Power Consumption: Less than 90W
- Output Voltage: DC 13.8V
- Output Current: Intermittent 3.5A, Continuous 2A
- Protection Circuit: Operating point at output current 4.5A/SPEAKER SECTION
- Rated Input: 1W
- Impedance: 8 ohms
- Speaker Diameter: 2.7 mm (3 inch)
- Frequency Response: 200-3,500 Hz
- Dimensions: 152 (6 7/16)W x 90 (3 9/16)H x 274 (8 7/16)D mm (inch)
- Weight: 3.2 kg (7.1 lbs)

KDR 123P



\$39

UNIVERSAL 2 MTR. POWER SUPPLY, 117V SUPPLIES 12V at 3 AMP REGULATED. GOOD FOR MOST 10W 2 MTR. RIGS.

PS-30



\$189

The PS-30 has the large current capacity (with 50% intermittent load duty cycle) of 20A, including 5A of the external terminal load current for convenience when using other instruments or conducting a variety of tests, etc., and supplies DC power of good quality due to the voltage stabilizing and ripple reducing circuits.

SPECIFICATIONS

- Power Consumption: Approx. 600W
- Output Voltage: 13.8V DC
- Output Current: 20A (Intermittent load 50% duty cycle), 15A (continuous load current)
- Output Voltage Fluctuation: Within ±700 mV (at load current 20A), Within 400 mV at 2-20A of load current
- Ripple Voltage: Less than 20 mV at 13.8V DC, 20A
- Dimensions: 180 (7 1/16)W x 133 (5 1/4)H x 287 (11 5/16)D mm (inch)
- Weight: 9 kg (19.6 lbs)

KPS-12



\$169

Output Current	12 A Intermittent (50% Duty cycle) 10 A Continuous
Ripple Component	Less than 1 mV (r.m.s.) (at 10 A output current 120 VAC ± 10 V input)
Regulation	Less than ± 0.05 V
Protection Circuit	Current-limiting circuit activates at 13 ~ 15 A

PS-10



\$149

- Power requirement: 120/220/240V AC, 50-60 Hz
- Power consumption: 80W (approx.)
- Output voltage: 13.8V DC
- DC current: 3.5A (Intermittent load, 50% duty cycle), 3A (continuous load current)
- Output fluctuation: within ±50 mV (at 3.5 A load current), within 0.1 V (at 0-3.5 A load current)
- Ripple voltage: less than 5 mV at 13.8 V DC, 3.5 A
- Back-up voltage: current: 13.8V DC, 2.5 mA
- Dimensions: 146 (5 8/16)W x 73 (2 9/16)H x 180 (7 2/16)D mm (inch)
- Weight: 3.2 kg (7.3 lbs) approx.

[SPEAKER]

- Max. input power: 1.5 W
- Impedance: 8Ω
- Diameter: 65 mm

HODEC

125P
Pilot
Light

***85**

125 MW
Volt/Amp.
Meter

**125 MW
*99**



Input: 117V Output: 13.5V
5 Amps constant, 7 Amps surge
Ripple RMS: 10 mV Max.
Load Reg: 0-6V Max.
GOOD FOR MOST 25W 2MTR RIGS

THREE EXCITING RIGS COVERING THE WORLD OF 70 cm

TR-3500

70 CM FM Handheld

440-449.995 MHz in 5-kHz steps
TX OFFSET switch keyboard
programmable ±5 kHz to ±9.995 MHz
1.5 W/300 mW HI/LOW power switch
Auto. squelch position on squelch
control
Tune switch for TU-35B optional
programmable CTCSS encoder
Other features include 10 memories,
lithium battery memory back-up,
programmable automatic band
scan, memory scan, UP/DOWN
manual scan, repeater reverse,
16-key autopatch, keyboard fre-
quency selection, slide-lock battery.

\$449



TR-9500

70 CM SSB/CW/FM transceiver

Dual digital VFO's cover 430-440
MHz in 100-Hz, 1-kHz, 5-kHz, 25-kHz,
or 1-MHz steps. Transmit frequency
tuning for OSCAR operations.
USB, LSB, CW, and FM modes.
Facilitates 70 cm OSCAR
operations.
6 memories, with back-up terminal.
Automatic band scan of entire band
or any 1-MHz segment, memory
scan, and SSB, CW search of
selected 10-kHz segment.
HI-10 W, LO-1 W, power output.
Other convenient features include
noise blanker, RIT, ISB, CW RF
gain control, FM squelch, CW side-
tone, and basic UP/DOWN mic.

\$899



TR-8400

"Go synthesized on 440 MHz FM".
5 memories, memory/band scan

\$679



TR-8400 FEATURES:

- Synthesized coverage of 440-450 MHz in 25-kHz steps.
- Automatic scan of memories and of 440-450 MHz band (in 25-kHz steps). Locks on busy channel and resumes when signal disappears. HOLD or mic PTT button cancels scan.

- TONE switch to activate sub-tone device (not Kenwood supplied). DTMF (Touch-Tone) terminal on rear panel.
- Four-digit frequency display and S/R bar meter. Other LEDs indicate BUSY, ON AIR, and REPEATER operation.
- HI/LOW (10 W/1 W) RF output power switch.

- Five memories and memory backup terminal on rear panel.
- Two VFOs.
- Offset switch for ±5 MHz transmit offset and simplex operation. Fifth memory allows any other offset by memorizing receive and transmit frequencies independently.

- Up/down manual band scan in 25-kHz steps with UP/DOWN microphone supplied with TR-8400.
- Only 5-3/4 inches wide, 2 inches high, and 7-5/8 inches deep. Weighs only 3.75 pounds.

MATCHING PS-10 (POWER SUPPLY)

\$149

The model PS-10 is a regulated DC power supply and speaker designed to match the TR-8400 reliable fixed station operation.



[SPEAKER]

- Max. input power: 1.5 W • Impedance: 8Ω
- Diameter: 66 mm



Miniaturized, 5 memories, memory/band scan



\$449

FEATURES:

- **Smallest ever Kenwood mobile**
Measures only 5-3/4 inches wide, 2 inches high, and 7-3/4 inches deep, and weighs only 3.3 pounds. Mounts even in the smallest subcompact car, and is an ideal combination with the equally compact TR-8400 synthesized 70-cm FM mobile transceiver.
- **25 watts RF output power**
Even though the TR-7830 is so compact, it still produces 25 watts output for reliable mobile communications. HI/LOW power switch selects 25-W or 5-W output.
- **Five memories**
May be operated in simplex mode or repeater mode with the transmit frequency offset ± 600 kHz. The fifth memory stores both receive and transmit frequency independently, to allow operation on repeaters with nonstandard splits. Memory backup terminal on rear panel.

- **Memory scan**
Automatically locks on busy memory channel and resumes when signal disappears or when SCAN switch is pushed. Scan HOLD or microphone PTT switch cancels scan.
- **Extended frequency coverage**
Covers 143.900-148.995 MHz in switchable 5-kHz or 10-kHz steps, allowing simplex and repeater operation on some MARS and CAP frequencies.
- **Automatic band scan**
Scans entire band in 5-kHz or 10-kHz steps and locks on busy channel. Scan resumes when signal disappears or when SCAN switch is pushed. Scan HOLD or microphone PTT switch cancels scan.
- **UP/DOWN manual scan**
With UP/DOWN microphone provided, manually scans entire band in 5-kHz or 10-kHz steps.

- **Offset switch**
Allows VFO and four of five memory frequencies to be offset ± 600 kHz for repeater access (or to be operated simplex during transmit mode).
- **Four-digit LED frequency display**
Indicates receive and transmit frequency during simplex or repeater-offset operation.
- **S/RF bar meter and LED indicators**
Bar meter of multicolor LEDs shows relative receive and transmit signal levels. Other LEDs indicate BUSY, ON AIR, and REPEATER offset.
- **Tone switch**
Activates internal subaudible tone encoder (not Kenwood-supplied).
- **Optional accessories:**
- MC-46 16-button autopatch IDTMF UP/DOWN microphone

CLEARANCE SALE

ONLY A FEW LEFT

TR-7800

25W
\$499

SAVE \$60



FEATURES

15 multifunction memory channels, selected with a rotary switch. M1-M3... memorize frequency and offset (± 600 kHz or simplex). M14... memorize transmit and receive frequencies independently for nonstandard offset. M0... priority channel, with simplex, ± 600 kHz, or nonstandard offset. Internal backup for all memories, by installing four AA NiCd batteries (not Kenwood-supplied) in battery holder. LED S/RF bar meter. TONE switch to actuate subaudible tone module (not Kenwood-supplied).

Priority channel (memory "0") and priority alert. Covers 143.900-148.995 MHz, in 5-kHz or 10-kHz steps. Built-in autopatch DTMF (Touch-Tone[®]) encoder. Front-panel keyboard for selecting frequency, transmit offset, and autopatch encoder tones, programming memories, and controlling scan. Automatic scan of entire band (5-kHz or 10-kHz steps) and memories. Manual scan of band and memories, with UP/DOWN microphone (standard). Repeater REVERSE switch. Selectable power output: 25 W (HI)/5 W (LOW).

TR-7850

40W
\$559

SAVE \$70

NEW LOW
PRICE



IS BACK IN CANADA

YOU WON'T BELIEVE THIS PRICE

COMPLETE WITH TOUCH-TONE® MIC.



- 25 WATTS
- 10 MEMORIES
- BAND & MEMORY SCAN

**144MHz C-MOS MICROPROCESSOR CONTROLLED DIGITAL PLL FM TRANSCEIVER
10 MEMORY CHANNELS, MEMORY AND BAND SCANNING**

FREQUENCY COVERAGE

A. 144-148 MHz. TX & RCV in 500Hz steps.

RECEIVER

Another SUPER RECEIVER from KDK! UHF (Not VHF) dual gate MOS-FETs with electronic auto tuning for RF amplifier and 1st mixer. VHF MOS-FET for 1st IF amplifier. One-chip multi-purpose LSI for all 2nd IF and detector related circuits plus squelch and audio pre-amplifier. Ultra-sensitive squelch with wide range front panel control provides maximum flexibility to set squelch at optimum level for whatever type QSO is intended, ultra-OK or super-local. New high power audio IC with internal protection against over-voltages and shorted output circuits.

TRANSMITTER

New transmitter continuing in the KDK tradition. Direct VCO varicap modulation gives true FM, not phase modulation. VCO operates on final transmit frequency; eliminates mixers and multiplying stages. Use of newest high power gain transistors achieves 2-stage only exciter. New high power gain output power module will not break down even with infinite VSWR load. Heavy duty solid state antenna switching followed by 4 stage low pass filter. All these combine to provide exceptionally clean, spot free output. AFC (auto power control) protects against accidental over power transmission and unintentional off-band transmission.

10 CHANNELS OF COMPUTER MEMORY

Frequencies may be stored and recalled from memories at any time, by simple operation of rotary switch and the WRITE button. No need to watch knobs when tuning them, again facilitating eyes on the road operations. For easy use, memories are split into two groups of 5 memories, A1 - 5 and B1 - 5.

INTERNAL MEMORY BACK-UP BATTERY



The C-MOS microprocessor needs only 57 nano-amps to hold memory contents. Not milli-amps or micro-amps. Internal battery will hold memory contents for more than a year! Also holds DIAL setting electronically even if DIAL knob is accidentally moved while transceiver is turned off. No need to mess around with back-up cables, switches, plugs, etc.

THE MORE MEMORY CHANNELS A TRANSCEIVER HAS, THE MORE IMPORTANT THIS FEATURE IS!

MEMORY SCANNING

Full auto-scan of each group of memory, A1 - A5, and B1 - B5. Scanning in two modes: CLOSED -- scanning stops at Busy channel, OPEN -- scanning stops at vacant channel, HOLD -- permits instant operation on channel located by scanning.

PROGRAMMABLE BAND SCANNING

For band scanning, unit scans upwards in 500Hz (12.5kHz) increments. Starts at frequency stored in memory A5 until reaching frequency stored in memory B5. Upon reaching upper limit B5, returns and resumes scanning from lower limit A5. Scanning in two modes, OPEN, CLOSED, and HOLD features same as for memory scanning. A zero-center detector is provided to prevent scanning from stopping prematurely before reaching true center of channel. Scanning increments may be changed by diode matrix changes. Scanning in larger increments will result in faster scanning.

FM-2025A mark II

DUPLEX USING OFFSET SWITCH



Front panel LED's display both transmitting and receiving frequencies as switched by operation of P/T switch.

DUPLEX USING MEMORY CHANNELS

PDT switch position AxB gives 3 pairs of duplex operation with any offset within frequency coverage of transceiver and dialling increments. Unit receives on A memory frequencies and transmits on corresponding 3 memory frequencies. For example, if memory A2 is 145.700 and B2 is 148.995MHz, unit will receive on 145.70 and transmit on 148.995MHz. Front panel LED's will switch automatically with P/T switch and always show actual frequency being received or transmitted.

INTERNAL MULTI-PURPOSE TONE OSCILLATOR

100Hz (1750Hz) sub audible tone (tone burst). Frequency may be retuned by adjusting internal trim-pot. For larger changes exceeding full range of trim-pot, change capacitor values.

180W x 60H x 195D mm.



NOW INCLUDES A FREE TOUCH-TONE® MIC (VALUE \$65).

ONLY \$399

All mode (FM/SSB/CW) 25 watts, plus...!!!

NEW

TR-9130



\$719

FEATURES

25 Watts RF output

All modes (FM/SSB/CW), utilize a new high power linear module, for more reliable FM operation and increased DX on SSB or CW.

FM/USB/LSB/CW all mode operation

For added convenience in all modes of operation, the mode switch, in combination with the digital step (DS) switch, determines the size (100 Hz, 1 kHz, 5 kHz, 10 kHz) of the tuning step, and the number of digits displayed.

Six memories

On FM, memories 1 through 5 for simplex or ± 600 kHz offset, with the OFFSET switch. Memory 6 for non-standard offset. All six memories may be operated simplex, any mode.

Memory scan

Scans memories in which data is stored. Stops on busy channels.

Internal battery memory back-up

With 9 volt Ni-Cd battery installed, (not KENWOOD supplied), memories will be retained approximately 24 hours, adequate for the typical move from base to mobile. A terminal is provided on the rear panel for connecting an external back-up supply.

Compact size and light weight

170 (6-11/16) W x 68 (2-11/16) H x 241 (9-1/32) D mm (inches). 2.4 kg (5.3 lbs.) weight.

Automatic band scan

Scans within whole 1 MHz segments (i.e., 744.0-744.999 MHz), for improved scanning efficiency.

Dual digital VFO's

Incorporates two built-in digital VFO's, selected through use of the A/B switch, and individually tuned.

Transmit frequency tuning for OSCAR operations

On SSB or CW, the tuning knob or UP/DOWN buttons on the microphone may be used to adjust the transmit frequency during transmission.

16-key autopatch UP/DOWN microphone version

The TR-9130 is available with the MC-46 16-key autopatch UP/DOWN microphone, or with the basic UP/DOWN microphone. Manual UP/DOWN scan of entire band possible using either microphone.

Squelch circuit on all modes (FM/SSB/CW)

The squelch circuit is effective on SSB, CW, and FM.

Repeater reverse switch

For checking signals on the repeater input, on FM.

Tone switch

For activating a tone device, (not KENWOOD supplied).

CW semi-break-in circuit with sidetone

Built-in, for convenience in CW operations.

Extended frequency range

Covers 143.9 to 148.9999 MHz, which includes certain MARS and CAP frequencies.

Transmit offset switch

High performance noise blanker

Suppresses pulse-type noise on SSB and CW.

RF gain control

For all modes of operation.

RIT (Receiver Incremental Tuning) circuit

Useful during SSB/CW operations.

Amplified AGC

Enhances SSB and CW operation. The AGC time constant is automatically optimized for each mode of operation.

HIGH POWER switch

Selects 25 or 5 watts RF output on FM or CW.

Accessory terminal

A four pin accessory terminal is provided for use with a linear amplifier or other accessory.

Quick release mounting bracket (Supplied)

Digital display with green LED's

High performance receive-transmit design

The use of a low-noise dual-gate MOSFET plus two monolithic crystal filters in the receiver front-end results in excellent two signal characteristics. Care in transmitter design assures clean signals in all modes.



ONLY 2 LEFT

CLEARANCE SALE TR-9000

The TR-9000 combines the convenience of FM with long distance SSB and CW. It is extremely compact - perfect for mobile operation. Matching accessories are available for optimum fixed-station operation.

Five memories, four for simplex or ± 600 kHz repeater offsets and the fifth for a non-standard offset. Memorizes transmit and receive frequency independently.

MATCHING ACCESSORIES FOR FIXED-STATION OPERATION:

- PS-20 power supply \$129
- SP-120 external speaker \$57
- BO-9 System Base... with power switch, SEND/RECEIVE switch for CW operation, backup-power supply for memory retention. (BC-1 backup power adaptor may also be used for this application), and headphone jack \$69

Two digital VFOs, with selectable tuning steps of 100 Hz, 5 kHz, and 10 kHz.
FM, USB, LSB, and CW
Only 6-11/16 inches wide
2-21/32 inches high
9-7/32 inches deep.

ONLY \$619

TR-2500


KENWOOD
...pioneer in amateur radio

BIG performance. small size... smaller price!!!

The TR-2500 is a compact 2 meter FM handheld transceiver featuring an LCD readout, 10 channel memory, lithium battery memory back-up, memory scan, programmable automatic band scan, Hi/Lo power switch and built-in sub-tone encoder.

- **Extremely compact size and light weight**
Measures 6.6 (2.5-9) W x 16.8 (1.5-8) H x 4.0 (1.5-8) D, mm (inchest). Weights 540 grams (1.2 lbs) with Ni-Cd pack. (Photo shown: actual size.)
- **LCD digital frequency readout**
Easy to read in direct sunlight or dark (only lamp switch). Low current drain. Shows frequencies and memory channels, plus four "Arrow" mode indicators.
- **Ten channel memory**
Nine memories for simplex or ± 600 KHz offset. "MO" memory for non-standard split frequency repeaters.
- **Lithium battery memory back-up**
Built-in lithium battery (estimated 5 year life) maintains memory when Ni-Cd pack is fully discharged or removed.

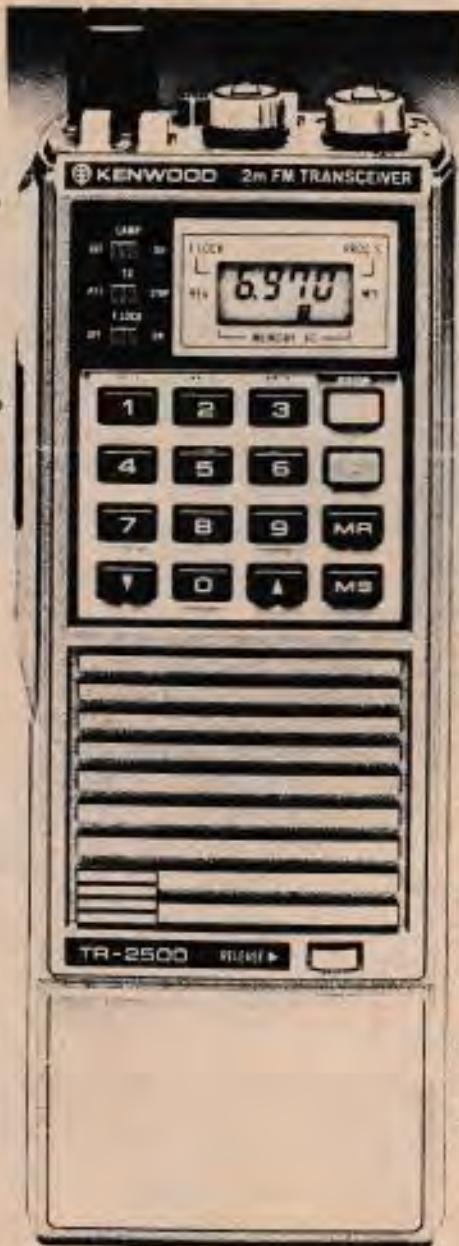


ST-2

CONVENIENT TOP CONTROLS



Power output selection
Switches between 2.5 watts or 0.6



- **Memory scan**
Scans only channels in which frequency data is stored. Stops on busy channel, resumes scan approximately 2 seconds after signal ceases.
 - **Programmable automatic band scan**
Upper and lower frequency limits and scan steps of 5 KHz and larger (5, 10, 15, 20, 30 KHz, etc.) may be programmed. Scan locks on busy channel, resumes approximately 2 seconds after signal ceases.
 - **UP/DOWN manual scan**
Up/Down manual scan in 5 KHz steps.
 - **Built-in tunable sub-tone encoder**
Sub-tone encoder, with activate switch, tunable variable resistor in desired CTCSS tone. Optional TU-1 programmable DIP switch encoder accessory available.
 - **Build-in 16 key autopatch encoder**
16 keys provide telephone multi-line modulation.
 - **"SLIDE-LOC" battery pack**
Slides into position, locks into place.
 - **Reverse operation**
Shifts receiver to transmit frequency, and transmitter to receive frequency.
 - **Keyboard frequency selection**
Sets operation frequency across full range.
 - **Extended frequency coverage**
Covers 143.900 to 148.995 MHz in 5 KHz steps.
 - **Optional power source**
Using optional MS-1 mobile or ST-2 AC charger power supply, radio may be operated while charging. (Automatic plug-in connections.)
 - **High impact plastic case**
Provides extra strength to resist damage.
 - **Battery status indicator**
Flashes to indicate low battery charge level.
 - **Two lock switches**
Prevent accidental frequency change and accidental transmission.
- Standard accessories included:**
- Flexible rubberized antenna with HNC connector
 - 400 mAh heavy duty Ni-Cd battery pack
 - AC charger
 - Plugs for external microphone and speaker

OPTIONAL ACCESSORIES:

- | | |
|--|-------|
| • ST-2 Base station power supply and quick charger (approx. 1 hr.) | \$119 |
| • MS-1 13.8 VDC mobile stand/charger/power supply | \$65 |
| • TU-1 Programmable "DIP switch" (CTCSS) encoder | \$55 |
| • SMC-25 Speaker microphone | \$45 |
| • LH-2 Deluxe top grain cowhide leather case | \$75 |
| • PB-25 Extra Ni-Cd battery pack, 400 mAh, heavy-duty | \$49 |
| • BT-1 Battery case for AA manganese or alkaline cells (not Ni-Cd) | \$17 |
| • VB-2530 RF power amplifier | \$129 |
| • SC-4 soft vinyl case with belt clip | \$29 |
| • BC-5 DC quick charger | \$75 |

KENWOOD**R-1000****COMMUNICATIONS RECEIVER**

Now, a high-performance, easy-to-operate Communications Receiver with single-knob tuning system and digital frequency display!



\$649

R-1000 FEATURES:

- Covers 200 kHz to 30 MHz continuously.
- 30 bands, each 1 MHz wide.
- Five-digit frequency display with 1-kHz resolution and analog dial with precise gear dial mechanism.
- Built-in 12-hour quartz digital clock with timer to turn on radio for scheduled listening or control a recorder through remote terminal.
- Three IF filters for optimum AM, SSB, CW, 12-kHz and 6-kHz (adaptable to 6-kHz and 2.7-kHz) for AM wide and narrow, and 2.7-kHz filter for high-quality SSB (USB and LSB) and CW reception.
- Effective noise blanker.
- Terminal for external tape recorder.
- Tone control.
- Built-in 4-inch speaker.

- Wire antenna terminals for 200 kHz to 2 MHz and 2 MHz to 30 MHz; Coax terminal for 2 MHz to 30 MHz.
- Voltage selector for 100, 120, 220, and 240 VAC. Also adaptable to operate on 13.8 VDC with optional DCK-1 kit.
- Dimmer switch to control intensity of S-meter and other panel lights and digital display.
- Step attenuator to prevent overload.

OPTIONAL ACCESSORIES:

- | | |
|--|------|
| • SP-100 matching external speaker. | \$50 |
| • HS-6 lightweight, open-air headphones set. | \$25 |
| • HS-5 and HS-4 headphones. | \$30 |
| • DCK-1 modification kit for 12-VDC operation. | \$10 |

KENWOOD**R-600****COMMUNICATIONS RECEIVER**

\$519

R-600 FEATURES:

- 150 kHz to 30 MHz continuous coverage, AM, SSB, or CW.
- 30 bands, each 1 MHz wide, for easier tuning.
- Five digit frequency display, with 1 kHz resolution.
- 6 kHz IF filter for AM (wide), and 2.7 kHz filters for SSB, CW and AM (narrow).
- Up-conversion PLL circuit,

for improved sensitivity, selectivity, and stability.

- Communications type noise blanker eliminates "pulse-type" noise.
- RF Attenuator allows 20 dB attenuation of strong signals.
- Tone control.
- Front mounted speaker.
- "S" meter, with 1 to 5 SINPO scale, plus standard scale.
- Coaxial, and wire antenna terminals for 2 MHz to

30 MHz. Wire terminals for 150 kHz to 2 MHz.

- 100, 120, 220, and 240 VAC, 50/60 Hz. Selector switch on rear panel.
- Optional 13.8 VDC operation, using DCK-1 cable kit.
- Other features include carrying handle, headphone jack, and record jack.

OPTIONAL ACCESSORIES:

- DCK-1 DC Cable Kit.
- SP-100 External Speaker.

JRC**Japan Radio Co., Ltd.****WHEN ONLY THE VERY BEST IS GOOD ENOUGH****\$2000***** MEMORY UNIT NDH-518 \$400**

The memory unit can be easily mounted on the receiver, into which the connecting cable connector must only be plugged in. The NDH-518 has a 96-channel capacity, allowing you to enjoy upgraded and sophisticated operation.

- Channels: 96 channels
- Input/output: 22-bit BCD code
- Write-in: Voluntary
- Dimensions: 340(W) x 50(H) x 200(D)mm
- Weight: Approx. 3.5kg

*** LOUDSPEAKER NVA-515 \$80**

Beautifully finished to fit the design of the receiver. Clear and soft tone quality assured.

- Impedance: 4 ohms
- Max. input power: 3W
- Dimensions: 130(W) x 140(H) x 200(D)mm
- Weight: Approx. 1kg



NVA-515
Frequency
Controller
\$249

NRD-515**SPECIFICATIONS**

Receiving frequency range	100kHz to 30MHz
Receiving modes	RTTY/CW/USB/LSB/AM
Receiving system	Double superheterodyne
First IF	70.455 MHz
Second IF	455 kHz
CW/SSB	AM
Less than 0.5uV	Less than 2uV
Less than 2uV	Less than 8uV
-6dB	-60dB
8kHz or more	10kHz or less
2kHz or more	8kHz or less
0.5kHz or more	3kHz or less
0.25kHz or more	2kHz or less
* mark denotes option.	
Less than 50dB per hour after warming up.	
70dB or more	
70dB or more	
50 to 75-dBm, unbalanced	
Frequency stability	
Image rejection ratio	
IF rejection ratio	
Input impedance	
AF outputs:	
Speaker output	
Headphone output	
Power requirements	
Dimensions	
Weight	

*** 600Hz FILTER CFL-260 \$85**

Provides sharp selectivity, ensuring comfortable CW reception. Must only be plugged into the receiver unit.

*** 300Hz FILTER CFL-230 \$125**

Provides sharp selectivity in CW reception, rejecting interference.

RF-3100**\$489**

The Panasonic RF-3100 portable 31-Band portable radio has PLL Quartz-Synthesizer tuning that "locks" onto SW stations. Operates on AC or battery. SW frequencies from 1.8 to 30 MHz. are in 29 bands. All-band 5-digit frequency readout. Horizontal design with front mounted controls for shoulder strap operation. Double superheterodyne for clean SW reception, BFO pitch and RF gain controls. Separate bass and treble controls. Wide/Narrow bandwidth selector. Meter for tuning and battery strength. LED operation indicator. Meter light switch. 3 1/2" PM dynamic speaker. Comes with detachable shoulder belt. Battery power (6 "D" batteries not included). Made in Japan.



Panasonic
RF-6300

\$1099**Panasonic****RF-6300**

The new Panasonic RF-6300 Command Series PLL synthesized 8-band portable communications receiver lets you hear the world. The RF-6300 has features such as microcomputer pre-set tuning and PLL quartz synthesized digital tuner. Microcomputer stores up to 12 different frequencies for push-button recall. FM/MW/LW/SW1-5 reception. Manual tuning knob. Wide/Narrow bandwidth selector. Double superheterodyne system. Fast/Slow manual tuning. Built-in quartz digital alarm clock. 5 inch dynamic PM speaker. 3 antennas. Multi-voltage. Detachable AC cord. Operates on 6 "D" batteries (not included). Made in Japan.

WORLD WIDE RECEIVER

With something for everyone. The digital frequency counter makes accurate tuning easy. Covers everything from Aeronautical and Marine Beacons through AM Broadcast, the entire Short Wave band, and on up through TV, FM Broadcast, Aircraft, Police, Ham, Marine VHF, to the UHF Public Service band. On Short Wave bands, a calibrator, BFO, Upper or Lower sideband switch, wide/narrow band width switch, RF gain control, and an antenna adjust control help you bring in those hard-to-tune stations. A light display switch allows you to turn off the dial light and digital display to conserve power when running on batteries. Truly a receiver that will offer a wide range of enjoyment for the whole family.

GLOBAL NR-82 F1

\$499



SPECIFICATIONS

Semiconductors:	1-LSI, 4-ICs, 7-FETs, 34-Transistors, 1-Voltage regulator and 42-Diodes.
Frequency Range:	LW 145 - 360 KHz MW 525 - 1600 KHz SW1 1.6 - 3.8 MHz SW2 3.8 - 9 MHz SW3 9 - 22 MHz SW4 22 - 30 MHz IF LW/MW/SW1 - 455 KHz SW2-SW4 1st. IF: 2 MHz 2nd. IF: 455 KHz VHF1,2,3,5,UHF 1st. IF: 10.7 MHz 2nd. IF: 455 KHz
Output Power:	SW (Max) 3W (10%)
Power Supply:	AC 110-120/220-240 Volt 50/60 Hz DC 12V [8 "D" cells], Ext. DC 12-14V
Speaker:	12.5cm Permanent Dynamic Speaker (3.2 ohm)
Antenna:	Ferrite Bar Antenna for LW, MW & SW1. 3 Telescopic Antenna for SW, VHF & UHF.
Display:	LW-SW4 Read-Out up to 1 KHz. VHF1-VHF5 Read-Out up to 10 KHz.

FEATURES

- Double-conversion
- USB/LSB Switch
- Antenna adjust control
- RF Gain control
- Squelch control
- SW Calibrator
- Highly accurate digital read-out
- BFO
- Speaker/Headphone jack
- Tape record/playback switch
- Bass and Treble controls
- Light display ON/OFF switch
- V.UHF ANT Connector (Coaxial)
- SW Ext. Ant. Terminal (Screw)
- Ext. Battery Jack
- 452mm(W) x 288mm(H) x 130mm(D).
- 17.8 (W) x 11.3 (H) x 5.1 (D) in.
- Weighs 5.4 kg

FULL 390

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(see p. 41)