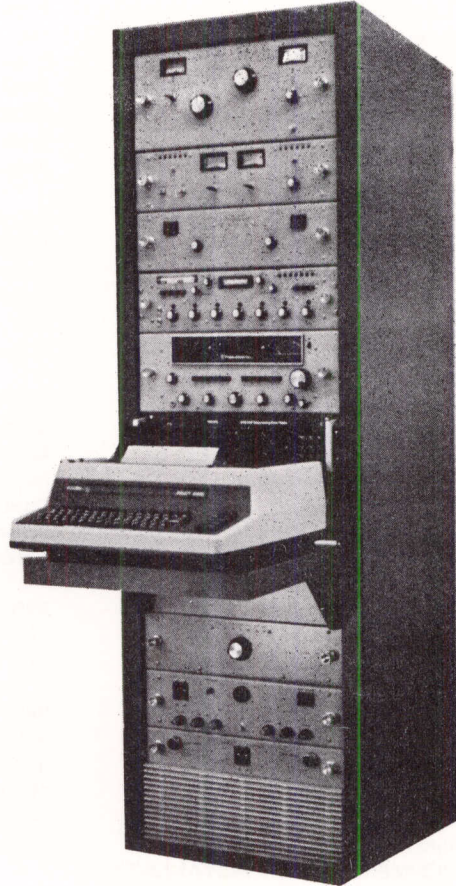




HIGH FREQUENCY ARQ COMMUNICATIONS SYSTEM Model TRS-1K/ARQ

TECHNICAL BULLETIN 201-1412

- * *Frequency Range 2MHz to 30MHz*
- * *Synthesized or multi-channel*
- * *Automatic transmitter tuning with manual override*
- * *Automatic Error Correction*
- * *Precision frequency control*
- * *CW, AM, AME, USB, LSB, ISB, FSK*
- * *Rugged, modular construction*



The TRS-1K/ARQ High Frequency ARQ Communications System is the result of combining the field proven T.M.C. Model HFT-1K H.F. Radio Transmitter System with the North American Philips Corporation Model STB-750 A.R.Q. System to produce a versatile radio terminal capable of satisfying all of the requirements for a reliable radio teleprinter link.

It has the ability to operate in either the ARQ (Automatic request for repetition) mode or the FEC (Forward error correction) mode between shore stations, ship-shore or ship-ship.

THE TECHNICAL MATERIEL CORPORATION

**TECHNICAL SPECIFICATIONS
TRS-1K/ARQ SERIES**

STANDARD MODELS

OPERATING PARAMETERS

Frequency Range
Frequency Selection
Frequency Stability
Frequency Display
Modes of Operation

Power Output
Input/Output Impedance
Tuning

TRS-1KE/ARQ Multi-Channel 1KW HF Transmitter-Receiver
TRS-1KJ/ARQ Synthesized 1KW HF Transmitter-Receiver
TRS-1KE/ARQ
2-30MHz
Eight pre-set channels
One part in 10^{-6} /day
Front panel card
CW, AME, USB, LSB, ISB
Optional: Audio FSK
1000 watts Peak Envelope Power (PEP); 1000 watts average
50 ohms nominal, unbalanced .2-to-1 VSWR adjustable to 3:1.
Transmit: Automated with manual, front-panel override 30 seconds nominal
Receive: Front-panel manual tuning (1KJ) or channel switch (1KE).

ARQ TERMINAL

Audio Frequencies
Shift
Audio Input/Output
Teleprinter I/O
Current
Speed

Adjustable to 1500, 1700 or 1900Hz
 ± 85 Hz.
Interfaces directly with the transmitter and receiver units.
Neutral or polar signal
60V or 80V/20MA
50 baud, 7 or 7½ units.

TRANSMIT CHARACTERISTICS

Unwanted Sideband Rejection
Spurious Signals
Intermodulation Distortion
Residual Noise and Hum
Carrier Suppression
Harmonic Suppression

500Hz tone is minimum 50 db below PEP.
Minimum 50 db below PEP.
Minimum 35 db below either tone of a two-tone test at rated PEP.
Minimum 50 db below PEP. Power supply ripple 55 db below PEP.
Continuously variable to -55 db. Optional: selectable at 0, -3, -6, -20, -30, -55 db.
Minimum 45 db below PEP for second harmonics: 55 db for higher order. Op-
tional RF filter available for added rejection.

RECEIVE CHARACTERISTICS

If Selectivity

SSB: 300-2700Hz at 3 db points. Optional: 250-3040Hz, 250-6080Hz. AM
(TRS-1KE): 6KHz symmetrical at 3 db points; (TRS-1KJ): 12KHz symmet-
rical at 3 db points with selection to 6KHz and 3KHz. Optional selection to
1KHz and 0.4KHz.

If Ripple
Sensitivity 10 db (S + N)/N

Within 3 db absolute in SSB mode.
1.0uv SSB/3KHz passband 2-30MHz (400KHz-29.9999MHz TRS-1KJ)
4.0uv AM/6KHz passband 2-30MHz (400KHz-29.9999MHz TRS-1KJ)
Minimum -80 db.
300Hz tone minimum 50 db down.
Minimum 40 db below full output.

If Rejection
Opposite Sideband Rejection
Hum and Noise

ENVIRONMENTAL AND INSTALLATION

Cooling

Filtered, forced are in semi-pressurized cabinet. Intake air at bottom front (op-
tional bottom rear); exhaust out top rear.

Operating Conditions
Storage Conditions
Primary Power

0 C to + 50 C, up to 90% Relative Humidity at MSL.
-30 C to + 80 C, up to 90% Relative Humidity at MSL.
230 volts AC $\pm 10\%$, 50/60Hz, single phase (three-phase optional). Taps pro-
vided for 210, 220, 240 or 250 volt operation. Optional 380 volt supply
available on request. Consumption: Maximum 3.2KW Average of CW, 0.9pf.
Solid state power supply. Optional voltage regulator on request.
72"(182.5cm)*high x 23" (58.4cm) wide x 26" (66.0cm) deep .654 lbs./297.3kg
installed. (*Rack space included for accessory equipment.)

Size and Weight

Shipping Data

Loose Items

Commercial packing for domestic U.S. Shipment. Five (5) containers.
Largest: 75" x 27" x 35". Total weight and cube: 1060 lbs./74.4 cu. ft.
Two technical manuals (operator/installation/service). Mating signals and
RF connectors.

ORDERING INFORMATION

Models

TRS-M-1KE/ARQ: Multi-channel manually tuned 1 KW Transmitter
TRS-M-1KJ/ARQ: Synthesized manually Tuned 1 KW Transmitter
TRS-A-1KE/ARQ: Multi-channel automatically tuned 1 KW Transmitter
TRS-A-1KJ/ARQ: Synthesized automatically tuned 1 KW Transmitter

Specifications Are Subject to Change Without Notice.

THE TECHNICAL MATERIEL CORPORATION

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