

October 1944

SECRET

AMERICAN ECM EQUIPMENT
2464

SECRET

| TYPE NUMBER | RCM CODE NAME | BRIEF DESCRIPTION | FREQUENCY COVERAGE IN MC/S | BANDWIDTH | INPUT WATTS | | OUTPUT POWER IN WATTS | | | TYPE OF MODULATION | ANTENNA STRUCTURE *** | REMARKS |
|--|---------------------------------|--|--|--------------------------------|-------------------------|-----|--------------------------------|------------------------------|-----------------------------|---|--|---|
| | | | | | AC | DC | TOTAL | CARRIER | SIDEBANDS | | | |
| AIRBORNE AND SHIPBORNE JAMMERS | | | | | | | | | | | | |
| AN/ART-2 | Pad | Barrage Jammer Using Self-Quenched Oscillator | 21-50 | 4 to 8 Mc. | 600 | | 50 | | | Non-Coherent Pulses, 80/Sec At 80 Mc/s | Existing Communications Antenna | Designed for Jamming Communications Link of Enemy Ground-Controlled Interception Radar |
| AN/ART-3 | High Power Jackal | High Powered Barrage Communications Jammer | 27-57 With Five Tuning Units | 7 Mc | 2800 | 66 | 1000 Approx | | | F.M. By A Rotating Condenser | Not Definite; Three Wire Fan, Cone, Or Screen May Be Used | As Above |
| AN/ART-6 AN/ART-7 AN/ART-8 AN/ART-9 AN/ART-10 AN/ART-11 | Jackal | Family of Barrage Communications Jammers Covering Band Without Tuning Adjustments | 20-28 27-34 32-38 37-43 42-48 48-75 | | 700 | 66 | 150 Approx | | | Mechanically Frequency Modulated | As Above | Differences between Various Models of Jackal Transmitters Largely in Frequency Coverage. AN/ART-11 Can Also Barrage a Selected 2.5 Mc. Portion of its total Frequency RG. |
| AN/ARQ-1 | Sandy | Combination Receiver and Jamming Transmitter | 14-50 | 40-150 Kc | 400 | 14 | 50 | | | Signal Consist Noise Amplification Up To 200 Kc Width | Communications Antennae | Operator Picks Input Signal Then Throws Switch From "Search" To "Jam". Noise Bandwidth Largely Constant Over Its Tuning Range |
| AN/ARQ-7 | Spotkie | Receiver and Spot Jammer | 38-48 | 30 Kc | 450 | 112 | 50 | | | Random Noise (Buzzers) | Three Wire Fan | "Receive-Transmit" Switch Controls Power To Either The Receiver Or Transmitter. |
| AN/APQ-2 AN/SPT-4 | Rug CXIM | Radar Jammer Against Search | 200-560 | 7 Mc | 450 | 28 | | 20-5.5 20-5.5 | 5-1.5 5-1.5 | Noise-AM With Frequency Components From 100 Kc To 3.5 Mc. | Round Stub Cut To Length, Or Fixed Broadband Stub, Dipole and Reflector For Shipborne Use | Set Ordinarily Pre-Tuned Before Take Off And Requires No Further Adjustments During Flight. |
| AN/ARQ-8 | Low Frequency Dina and Dinamate | Suppressed Carrier Communications Jammer and Search Receiver. Can Be Converted For Use Against German Guided Missiles. | 25-106 | XTR-100 Kc REC-75 Kc | Dina 276 Dinamate 75 | | | | | AM Noise Transmitted Without A Carrier | Whip Or Fixed Wire AS-66/ART AS-67/ART | Designed To Be Used With Dinamate Receiver But Will Operate With Other Receivers. Control Set For Remote Operation Over The 5 Mc Freest Band. |
| AN/APT-1 AN/SPT-1 | (CXDP) Dina II | Barrage and Spot Radar Jammer (Direct Noise Amplifier) | 90-250 | 5 Mc | 500 | 25 | All Energy In Sidebands | | 20-8 (With 832 Tube) | Signal Is Direct Noise | Three Stub Masts Of 20" 832" And 164" Vertical Polarization | Has Remote-Control Box Which Includes Off-On Switch, Power Output Regulator, And Meter Indication Of Transmitter Output. |
| AN/APT-3 AN/SPT-3 (RC-183) | Mandrel (CXDQ) | Barrage and Spot Radar Jammer | 65-136 | 9-5 Mc | 280 | | | | 12-9 3-2 | AM With Random Noise Up To 4.5 Mc | Quarter wave Stub, Cut To Length, Vertical Polarization; Also Two Stub Dipole And Helix | Designed Primarily For Jamming German Frags. Modifications Can Extend Range To 125-150 Mc. New Model Will Have 70-250 Mc Range, 25-125 O/P, 4 Mc S/B, One Dial Tuning |
| AM-16/APT | | Power Amplifier | 65-168 | 1 - 3.5 Mc Band Set As Desired | 700 | 14 | 180-90 Depends On S/T Setting | | | | Same As That Used With Transmitters | Amplifier For AM/APT-1 Or AM/APT-3 (Dina Or Mandrel) RF Driving Power 10 Watts |
| AM-16/APT | | Power Amplifier | 107-230 | 1-4 Mc Set As Desired | 700 | 14 | 180-75 Depends On Freq And S/B | Depends On Driver Unit Used | Depends On Driver Unit Used | | As Above | Designed To Work Into 40 Ohm Unbalanced Line Feeding Antenna Used With Dina Or Mandrel. RF Driving Power, 5 To 10 Watts |
| AN/APT-2 AN/SPT-2 (RC-184) | Carpet I (CXCD) | Radar Jamming Against Warburg | 450-710 | 7 Mc | 265 | 35 | | 6-3 | 1.4-0.4 1.6-0.4 | AM With Random Noise Up To 3.5 Mc | Five Stubs, Cut To Length, Per Vertical Polarization; Also Two Crossed Stub Dipole (Pins) For Circular Polarization. | Normally Used In Sufficient Number To Barrage A Band Of Frequencies. |
| AN/APQ-9 AN/SPT-5 | Carpet III | Barrage Radar Jammer | 475-565 | 7 Mc | 450 | 50 | | 25-15 | 5 | Noise-AM Up To 3.5 Mc | Thin Stub For Vertical Polarization, Also Two Crossed Stub Dipole Circular Polarization | |
| AN/APT-5 AN/SPT-6 | Web or Carpet IV | Barrage Jammer | 350-1500 With ZF-528 | 1.5-3 Mc | 585 | 58 | | 30-8 25 W Up To 800 Mc | | Noise-AM | Under Development Probably Two Crossed Stub Dipole For Circular Polarization | |
| AN/APT-4 | Broadloom I | Medium Power Magnetron Jammer | 150-400 With ZF-590 350-780 With ZF-579 | 6-10 Mc | 1300 | 140 | | 150 | | Noise-AM | Under Development Probable Use Of V-Slows & Split Can | |
| AN/APT-6 | Broadloom II | Jammer Against Radar Communications | 14-260 | 2-6 Mc Adjustable In Steps | 1300 | 140 | | 150 | | Noise-AM | Probable Use Of Fan, Whip And/Or Broadband Stub For Complete Frequency Coverage | |
| AN/APT-7 | Broadloom III | Medium Power Magnetron Jammer | 80-800 With ZF-589 and ZF-590 | 6-10 Mc | 1300 | 140 | | 150 | | Noise-AM | Under Development | |
| AN/APT-8 | Broadloom IV | As Above | Above 800 | | | | | 150 | | Noise-AM | Under Development | |

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See Note: Unless Otherwise Indicated, Power Supplies For The Equipments Listed On This Page Are 80/115 V, 400-2800 CPS AC And/Or 28 V DC.
See Note: See Chart 8 For Details of Antennae

CHART 1

Special Projects School
Radio Materiel School
Naval Research Laboratory
Washington 25, D.C.
October, 1944

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AMERICAN RCM EQUIPMENT

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| TYPE NUMBERS | NCM CODE NAME | BRIEF DESCRIPTION | FREQUENCY COVERAGE IN MC/S | BANDWIDTH | DC INPUT WATTS | | OUTPUT POWER IN WATTS | | | TYPE OF MODULATION | ANTENNA STRUCTURE *** | REMARKS |
|---|----------------------|---|---|------------------------------------|---|---|---|---------|------------|---|---|--|
| | | | | | AG | DC | TOTAL | CARRIER | SIDE-BANDS | | | |
| AIRBORNE AND SHIPBORNE JAMMERS | | | | | | | | | | | | |
| AN/ARQ-9 (SCR-596 - T2) | | Search Receiver And Spot Jammer | 18-80 With Tuning Units | Variable 1, 3, 7, 10, 200 Kc | 800 | | 80 Variable Dependent On Freq. | | | Noise | Three Wire Fan | Second Model Calls For Three Transmitters, Modified Narrow Band Scanner, Additional Broad Band Scanner |
| TDY (Navy) | | Barrage And Spot Radar Jammer | 368-780 | 7 - 12 Mc | 1800 | | 180 Watts | | | Noise - AM | 2 Broadband Dipole Or One Wideband Conical Antenna With A Conical Counterpoise | TDY-1 Uses 3 Changeable RF Sections To Cover The Frequency Range Of 80 To 1200 Mc. |
| CIGS (Navy) | | Jammer Against Guided Missiles | 18-86 | | | | 1000 To 600 | | | Tone Noise | Sleeve-type Antennas | Predecessor of HJ-4 |
| MAS | | Jammer Against Guided Missiles | 41-81 | | 1800 W at 118 V 60 cps | | 280 | | | Tone | 2 - TCS Type Whip | Jammer Given 280 W. (Ave.) of P.F. Power Modulated At Any One Of Four Audio Rates. |
| TEA (XJ-4 IXC) | | Jammer Against Guided Missiles | 18-86 40-128 | | 8 KW at 440 V 3ø | | 8000 To 1000. 1100 To 800 | | | Tone, Noise With "Cook Thru" Feature | 4 - Sleeve Type 2 - Sleeve Type | TEA Consists Of 2 XJ-4's & IXC's Using Common Power Supply. |
| GROUND JAMMERS | | | | | | | | | | | | |
| AS/PTT-1 | Beaver | Jamming System Using AS/PTT-1 (Dime II) | 98-210 | 8 Mc | | | 100-80 | | | Noise-AM | Two Dipole Radiators Fed In Phase, Each With Corner-Type Reflector. | Beaver Installation Consists Of Dime Transmitter With Power Amplifier (AS-14/PTT Or AS-14/APT) |
| AS/MPQ-1 | Tube | High Powered Truck Mounted Barrage Jammer | 480-800 430-810 | 10 Mc (8 For Tube) | 78 KW (For Tube) | | Above 25 Kw (For Tube) Total 80 Kw | | | Noise-AM | Tower With Paraboloid (Made In England) | Oscillator Uses Two Type 6X4's Beamstream Tubes Each Separately Modulated Over Half The Frequency Range |
| AS/MPQ-2 Modified SCR-399 | | Ground Communications Jammer, Mobile Mount | 0.98-18 With Three Tuning Units | | | | 800 CW 300 Phone | | | Noise And Squeals | Two Half Rhombic Balloon Supported, Whip Antennas Above 10 Mc. Radiation Vertically Polarized | Four AS/MPQ-2 Transmitters Are Used With Radio Control Central AS/MPQ-1 Which Consists Of Eight Receivers To Cover 800 Kc To 100 Mc Per Search Of Enemy Signals And Rapid Tuning Of The Jammer. |
| A-3400 | Ground Cigar (AM) | High Powered Ground Communications Jammer, Transportable | 34-68 | | | | Above 60 KW | | | FM At A Rate Of About 800 CPS Over A Band Of 4 Mc | Cage Antenna Tower Mounted | Transmitter Consists Of Four Push Pull Oscillators Using Resonant Quarter Wave Lines In Both Cathode And Grid Circuits. |
| AN/ART-1 | Cigar | As Above | 30-80 | | 30 KW 360 V, 50 cps or 440 V 60 cps | | 18 KW (Approx) | | | FM Ranging From 150-870 CPS Continuously Varying Rate, 0.5 To 8 Mc. | 3-Mast, Broad-Band, Adjustable Pattern Vertical Rhombic Ant. | Specifications Given Are Tentative. |
| EXPENDABLE JAMMERS | | | | | | | | | | | | |
| AS/CWT-2 | Chick | Air Transportable Expendable Jammer Against CW And Speech Communications | 1-7 Covered By Six Units | Order Of 1-1 Mc | | | Battery Operated 4-8 Hr. Life | Up To 8 | | Spark Type Transmitter | Trailing Wire 100 To 150 Feet | Uses Spark Type Transmitter. Employs Delayed Parabolic Spreading And Devices For Arraying Antenna During Descent. |
| AS/CPT-1 | Chick | Air Transportable Expendable Jammer | 540-880 (Pursburg Frequency) | | | | Storage Battery 1 Hr. Life | 80 Peak | | PPF 60 KC Pulse Period 1/2 μSEC | Self Contained Stub. Mount To Emit Horizontally And Vertically Polarized Waves | Will Radiate Energy Spread Over 90 Mc Band During Descent. |
| DECEPTION JAMMERS | | | | | | | | | | | | |
| AN/APQ-8 And AN/APQ-15 | Moonshine | Pulse Repeater For Probing Pulse Radar Search. Several Models Differing In Frequency, Transmitter Circuit And Delay Circuit | Most Models Operate In The Band 840-880 Also 100-186 | | | | 100 | | | Pulses And Pulsed AM | Depends On Frequency Band To Be Covered | Equipment Consists Of A Receiver And Transmitter Tuned To The Frequency Of The Incoming Signal. A Delay Circuit To Time The Transmitter And A Circuit To Block The Receiver For The Duration Of The Outgoing Signal. |
| | Peter | Pulse Repeater | 470-718 | Four Channels 3-6 Mc/Channel | 800 | 180 | 8 Max. | | | 20-30 CPS Square Wave | | Pulse Repeater With Modulation As Synchronized With Laser. Switching Rate Of Heavy 6E Set As To Produce Pointing Error |
| ** Note: Unless Otherwise Indicated, Power Supplies For The Equipments Listed On This Page Are 80/118 V, 400-2600 CPS AC And/Or 28 V DC | | | | | | Submitted by JELA Revised by Radio Materiel School Naval Research Laboratory Washington 25, D.C. October, 1944 | | | | | | |
| ** Note: See Chart 5 For Details Of Antennas | | | | | | CHART 2 | | | | | | |

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| REL | ARMY | NAVY | DESCRIPTION | EQUIPMENT USED WITH | FREQUENCY (MC/S) | POLARIZATION | LENGTH OVERALL | LENGTH OUTSIDE PLANE | | WEIGHT | ADJUSTMENT | CONNECTION | REMARKS |
|-----------------|-----------------|-----------------|--|--|---|--|--|----------------------|--|----------|---|------------|--|
| | | | | | | | | LINE | OFF | | | | |
| ANTENNAS | | | | | | | | | | | | | |
| | AS-89/ART | | Whip Antenna | AN/ART-9 AN/ART-10 AN/ARQ-8 | 37-51 | Vertical | 72" | | | | | | |
| | AS-97/ART | | As Above | AN/ART-11 AN/ARQ-8 | 45-65 | Vertical | 54" | | | | | | |
| A-2608 | AS-44/APR | Same | Cone | AN/APR-5 | 1000 - 3100 Without Adjustment | Non-Directional Pattern Perpendicular To Axis Of The Cone. Can Be Mounted To Receive Either Horizontal Or Vertical Polarized Radiation. | 8" | 3" | 8 | 0 | Fixed | Type "B" | Has A 1000 Mc High Pass Filter Incorporated In The Transmission Line To Reduce Spurious Responses Below 1000 Mcgrayside. |
| A-8701 | AS-45/APR | Same | Wave-Guide | AN/APR-6 | 3000-3000 | Primarily Circular Field With Increased Directivity Obtained By Use Of Horn Termination. | Inside Diameter 7/8" X 1 31/32" | | | | Fixed | Wave-Guide | Several Sizes Of Wave Guide Have Been Developed Which Operate Successfully With The AN/APR-6 Microvave Receiver, For Both Airborne And Shipborne Installation. |
| J-303 | AS-33/APT | Same | Thick Stub | AN/APT-8 AN/APQ-1 AN/APQ-9 | 450-775 With SWR Of 2 To 1 Or Less | Vertical | 18 3/8" | 8 1/2" | 8 | 1 | Fixed | | |
| H-313 | AS-34/APT | Same | Thick Stub: Consists Of A Phenolic Impregnated Maple Mast Plated With A Thick Layer Of Copper. | AN/APT-1 AN/APT-3 | 180-840 With SWR Of 2 To 1 Or Less | Vertical | 24 5/16" | 17" | | | Fixed | Type "B" | The Antenna Is Supplied In A Number Of Lengths In Order To Obtain The Best Standing Wave Ratio For The Required Operating Frequencies. These Cuts Are Given Different AT-1 /APT Numbers; Other Lengths Than Those Indicated Here May Be Used Operationally AS-61, -68, -43/APT Are 450 Mountings Of AS-26, -37, -38/APT. H-313 Replaces H-801 Stub (AS-26/APT) Used With Receiver AS/APR-5. |
| H-313 | AS-37/APT | Same | As Above | AN/APT-1 | 114-150 With SWR Of 2 To 1 Or Less | Vertical | 30 8/16" | 23" | | | Fixed | Type "B" | |
| H-313 | AS-38/APT | Same | As Above | AN/APT-1 AN/APT-3 | 70-400 With SWR Of 2 To 1 Or Less | Vertical | 36 5/16" | 29 1/2" | | | Fixed | Type "B" | |
| H-907 | AS-65/ APQ-2 | Same | Thin Round Stub | AN/APQ-2 | 800-700 With SWR Of 2 To 1 Or Less | Vertical | 16 3/8" | 16 3/4" Maximum | 1 | 6 | Cut To Length For Each Freq. | Type "B" | |
| H-1801 | | AS-37/ SPT-4 | Dipole And Reflector | AN/SPT-4 | 340-436 With SWR Of 2 To 1 Or Less | Directional Array, Primarily Horizontally Polarized. | 19 1/8" | | 16 | 0 | Fixed | Type "B" | Shipborne Or Ground Use |
| H-1803 | AS-67/ APQ-2 | | Thick Stub Mounted In Plastic Resinole. | AN/APQ-2 | 190-375 With SWR Of 2 To 1 Or Less | Vertical | 13" | 11 3/4" | 7 | 0 | Fixed | Type "B" | |
| H-2101 | AT-49/ APR-4 | AS-29/APR | 90 Degree Cone Mounted In A Plastic Resinole Which Has A Cylindrical Wall With A Dome | SCR-287, ARC-1 AN/APR-1, -2 AN/APT-8 AN/APT-5 | 280-3000 With SWR Of 2 To 1 Or Less | Vertical | Overall Height 10 1/4" Max. Diameter 10 5/8" | 7 3/4" | 0 | 0 | Fixed | Type "B" | Cone Is Supported By The Resinole Such That No Balis- trics Is Used In The Area In Which The Cone Tapers Into The Type "B" Fitting. H-2101 Replaces H-801 (AS-24/APR) Used With Receiver AN/APR-5. |
| H-2108 | AS-69/APT | Same | "Fishhook" Two Crossed Dipole Mounted At An Angle Of 30° Toward The Ground Plane, Enclosed In A Resinole | AN/APT-2 AN/APT-5 AN/APQ-9 | 500-500 With SWR Of 2 To 1 Or Less | Radiates A Substantially Circularly Polarized Field. | 8 1/8" With 1 Transformer, 11 5/8" With 2 | 6 1/2" | 7 | 0 | Fixed | Type "B" | Each Radiating Element Is Supported By One Conductor Of A Four-Conductor Quarter Wave Transmission Line. A Pair Of Transformer Sections Adapt The Antenna For Operation With Two Transmitters. |
| H-2408 | LI | AS-34/SPT | Thin Dipole Consist Of Two Steel Tubes Connected By A Wooden Dowel With Center Clamp And Supported By A Brass Stand-Off. | AN/SPT-1 | 78-300 With SWR Of 2 To 1 Or Less | Can Be Mounted For Either Horizontal Or Vertical Polarization | Length: 66" Diameter: 6" Height Of Stand-Off: 19" | | 31 | 0 | Fixed | Type "B" | For Shipborne Use. When Used With Unbalanced Equip- ment, Conversion Unit H-9408 Must Be Placed Between The Antenna And Equipment. |
| H-2408 | LI | AS-34/SPT | Cone Dipole Antenna With 90 Degree Cone Within A Cylindrical Resinole The Assembly Being Supported By A Brass Stand-Off. | AN/SPT-1 | 300-1000 With SWR Of 2 To 1 Or Less | As Above | Length: 18" Height Of Stand-Off: 30 7/8" | | 27 | 0 | Fixed | Type "B" | As Above Except Conversion Unit H-9410 Is Used |
| H-2508 | | | Ground Based Antenna: Consists Of The Dipole Antenna Fed In Phase, Each Being A Corner Type Reflector. | AN/APT-1 AN/APT-3 AN/14/APT | 90 - 180 With SWR Of 2 To 1 Or Less | As Above | Height: 8" Length: 11 1/2" Width: 4 1/2" | | 208 | 0 | Dipole Require Adjustment To Cover The Band. | Type "B" | Uses H-2608 Conversion Unit For Connecting The Two Balanced Load Dipole To The 90 Ohm Feedline Feeder. See Power Gain Ranging From 13.8 DB At 180 Mc To 6.9 DB At 90 Mc. Will Handle Approximately 100 Watts Input |
| H-2511 | | | As Above | AN/APT-1 AN-18/APT | 180 - 210 With SWR Of 2 To 1 Or Less | As Above | Height: 8 1/2" Length: 9 1/2" Width: 3 1/2" | | 106 | 0 | As Above | Type "B" | As Above, Except Conversion Unit H-2809 Is Used. Gain Ranges From 12.8 DB At 180 Mc To 6.7 DB At 100 Mc. Both H-2608 And H-2511 Arrays Can Be Coupled In Series With Suitable Transformer Units, For 3 DB Additional Gain. |
| H-2803 | | | Two Stubs And Balun: (Balun: Balanced To Unbalanced Line Transformer, Also Known As "Beakole"). The Two Stubs Are Mounted One On Either Side Of The Plane And Bent At An Angle Toward The Tail, Fed 180° Out Of Phase. | AN/APT-1 AN/APT-3 AN-14/APT | 95-180 With SWR Of 2 To 1 Or Less | Primarily Horizontal Polarization. With A Maximum Field At Angles Near The Horizon. | See H-313 | See H-313 | Fixed For Each M-313 Stub Length | Type "H" | H-2803 Consists Of Two AT-37/APT Or Two AT-34/APT Stubs With H-2802 Balun And Equal Lengths Of 50 Ohm Cable. H-2804 Uses Two AT-36/APT Stubs With H-2802 Balun And Similar Feeder Arrangement To The H-2803. Airborne, Primarily For S-208. | | |
| H-2804 | | | As Above | AN/APT-1 AN-18/APT | 150 - 210 With SWR Of 2 To 1 Or Less | | | | | | | As Above | As Above |
| H-2901 | LI | Cant-04 AMB | End Fed Dipole | TDY CSPR | 848 - 700 With SWR Of 2 To 1 Or Less | Primarily Vertically Polarized | Height: 18 7/8" Width: 18" | | 17 | 10 | Fixed | Same | For Shipborne Use |
| H-2908 | LI | Cant-04 AMB | End Fed Dipole | TDY CSPR | 848 - 800 With SWR Of 2 To 1 Or Less | As Above | Height: 11 1/2" Width: 14" | | 14 | 0 | Fixed | Same | For Shipborne Use |
| F-2701 | LI | AS-71/ SPT-8 | Dipole Radiator With A Corner-Type Reflector, Directive Array For Use With Transmitters. | AN/SPT-8 | 480 - 780 With SWR Of 2 To 1 Or Less | Polarization Is In The Direction Of The Axis Of The Pyramidal Angle And Is Adjustable By Rotating The Antenna Assembly. | 18" | | 4 | 0 | Variable, Covers Entire Band With Five Settings. | Type "B" | For Shipborne Or Ground Use. Will Handle Up To 25 Watts Input. Gain In The Maximum Direction Of Approximately 10 DB. |
| H-2300 | | | V-Slotted And Split Can | AN/APT-4 AN/APT-8 | 360 - 1640 | Horizontal | | | | | Variable | S 101 | Two Antennas: One Fixed V-Slotted Dipole For The Range 360-600 Mc And Split Can With Variable Shorting Bar For Tuning Rest Of Range. Will Handle 100 Watts Input Power. |

* May Be Mounted In Inclined Or Horizontal Position To Give Other Polarization.

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CHART 5

Submitted By J21A
Revised By Special Projects School
Radio Materiel School
Naval Research Laboratory
Washington 25, D.C.

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AMERICAN RCM EQUIPMENT

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| TYPE NUMBERS | RCM CODE NAME | BRIEF DESCRIPTION | COVERAGE IN MC/S | SENSITIVITY IN MICROVOLTS | BANDWIDTH IN MC/S | INPUT WATTS | | PRESENTATION | TUNING | ANTENNA STRUCTURE *** | REMARKS |
|---|---------------------------|---|---|--|----------------------------|-------------------------|-----|---|--|--|---|
| | | | | | | AC | DC | | | | |
| AIRBORNE AND SHIPBORNE RECEIVERS | | | | | | | | | | | |
| AN/ARQ-5 | Nickelodeon | Broad-Band Panoramic Search Receiver For AM And FM Signals. Will Have AN/ARQ-12 Companion Unit. | 18 - 80 And 48 - 80 | 85 (Approx) | | 188 | 10 | Visual: 3 Inch CRT For Each Unit | Automatic Scanning | Not Critical; Single Or Two Antennas Can Be Used. | Presents Simultaneously The Entire Frequency Range. |
| AN/ARR-5 (Heliocaster S-27) | | Communications Search Receiver For CW, AM And FM Signals. | 26 - 143 In Three Bands | 0.06 Watts For 20 Microvolts At Input | | 100 | 30 | Outputs For Phone, Video And Panoramoscope. | Manual | Not Critical | Application In General Investigational Work. May Be Used With AN/APA-10 Or AN/APA-11. |
| AN/ARR-7 (Heliocaster SX-20) | | Communications Search Receiver. Sensitive For CW Or FM Signals. | 0.85 - 43 | As Above | | 140 | 30 | As Above | Manual And Optional Motor Driven Tuning Over Adjustable Portion Of Band. | Not Critical | Separate Power Supply 77-AN/AR Will Supply Either AN/ARR-5 Or AN/ARR-7 Receiver Together With AN/APA-10 Or AN/APA-11. |
| AN/APR-1 (Similar ARC-1) Redesigned SCR-507 | | Broad Band Rec For All Types Of Pulses And Other Signals | 40 - 3400 With Four Tuning Units. (See "Remarks") | 10 | 8 | 90 | | Headphones Or CRT Indicator | Manual Tuning; Three Units, Single Dial Control; One Unit, Two Dial Control. | Quarter Wave Stub For Low Frequencies, Cone Assembly Above 300 Megacycles. | Similar AN/APR-1 Shipborne Receiver. Tuning Unit Area TH-1(40-100 MC), TH-2(170-300 MC), TH-3(300-1000MC), TH-4(850-3400 MC) |
| AN/APR-2 CXC | Goldmark "Coffee Grinder" | Broad Band Receiver For All Types Of Pulses And Other Signals (Including CW-Automatic Tuning Only) | 90 - 1000 In Two Bands 90 - 480 48 - 1000 | 0.5 To 3 Millivolts Insensitive | | 100 | 80 | Visual, Aural And Tape Recording. | Manually Or Automatically. Two Butterfly Tuners Aligned For Continuous Coverage, Fed By Separate Antennas. | Same As Above | Scan Rate Set At 8 Or 6 KPS. Visual Panoramic Indication Of Signals And Tape Recording Of Their Approximate Frequency, Time Of Arrival, And Duration. |
| AN/APR-3 (Similar RC-164) | American Bookor | Improved Warning System For OCI, AI And OL. | AI Channel 480 - 850 OL,OCI Channel 830 - 600 | Order Of 1 Millivolt At Detector. | AI Channel Adjustable 3-85 | | 100 | Yellow, Red Or Green Lights Respectively Where German AI, OL Or OCI Is Picked Up. | Tunable RF Filter For AI Channel; OL And OCI Has Fixed RF Section. | Each Channel Uses A Quarter Wave Stub Fed By A Cable Connector Containing Microwave Rejection Filter. 8 KV Sensitivity At Antennas | Provides For Simultaneous Reception In Three Channels, Two For German AI, And The Third For OL And OCI. |
| AN/APR-4 (Improved SCR-507 Army Version AN/APR-1) | | Broadband Radar Search Receiver. | 40 - 3300 With Four Tuning Units (See "Remarks") | 50 To 100 | Variable 4 Or 0.8 | 180 | 30 | Headphones And Visual Indication. | Three Units: Motor Driven Sector Sweep, One Unit; Manual Tuning, Two Dials. | Quarter Wave Stub For Low Frequencies And Cone Assembly Above 300 Megacycles. | Unit Construction Receiver. Includes Variable IF Bandwidth And Manual IF Gain Control. TH-1(100-800MC), TH-2(170-3500MC), TH-3(800-1000MC), TH-4(850-3300MC). |
| AN/APR-5A1 Using CV18/APR-5 Mixer (NAVY SPR-2A) | | Microvave Search Rec. For CW, MCW And/Or Pulse Signals. | 1000 - 3060 | 500 For MCW & CW | 10 | 160 | 80 | Visual For CW And Either Headphones Or Visual For All Modulated Signals | Single Dial Manual Tuning | Broadband Cone Mounted To Receive Either Horizontal Or Vertical Polarized Radiation. | Visual Indication Of CW Is By Means Of A Front Panel Meter. AN/APR-5A1 Is The Aircraft Version Of The AN/APR-5 |
| AN/APR-5A1 Using CV18/APR-6 Mixer | | Same As Above | 3000 - 8130 | 50 | 10 | 180 | 85 | Same As Above | Same As Above | Horn With Wave Guide Mounted To Receive Horizontal Or Vertical Polarized Radiation. | Covers The Tuning Range On The Second Harmonic Of The L/O Freq. |
| RDC | | Motor Tuned Wide-Band Receiver For Wide-Band Panoramic Presentation | 28.5 - 140 In 3 Bands | | | 270 At 115 V. 60 CPS | | Cathode Ray Oscilloscope With Sweep Rate Less Than 18 Per Sec. | Automatic | Fan Or Single Wire | Used With CRO In GRCM To Give Wide-Band Panoramic Radio Reception |
| AN/APA-6 | | Pulse Analyzer For AN/APR-4, AN/ARR-5, AN/ARR-6, AN/ARR-7, AN/APR-1 And AN/ARC-1 | | Requires About 100 Millivolts Signal Input | | 90 | | Cathode Ray Oscilloscope And Meter | Can Be Used With Any Receiver Capable Of Pulse Reception With 20/PS OF 100 Millivolts | | Can Handle Pulses From 1/3 To 100 Microseconds Duration, With P/P From 5-5000 Pulses/Sec. |
| AN/APA-7 | | Photographic Adapter For Use With AN/APA-6 And AN/APA-11. | | | | 90 | | Monitor CRT Together With Photographic Tube. | Operator Adjusts Video Gain To Control Trace Intensity. | | Derives Horizontal Sweep And Synchronizing Voltages From AN/APA-11. Uses 8 Sensitive CRT. Direct Exposure On 24 IN Film. |
| AN/APA-10 | | Panoramoscope For Use With AN/APR-1, -4, AN/ARR-5, -7, And Other Receivers Having Same IF Frequency. | ± 80 KC With AN/APR-1, -4 ± 900 KC With AN/ARR-5 | | | 188 | | Signals Appear As Flips On CRT | Operator Can Vary Scan Width From 100 KC Down To Zero Scan. | | Unit May Also Be Used As A General Purpose Scope. |
| AN/APA-11 | | Used With AN/APR-1, -4, Four Modes Of Operation Pulse Analyzer, P/P Oscilloscope, Sawtooth Sweep Calibration. | | | | 190 | | Cathode Ray Oscilloscope | Mode Of Operation Controlled By A Single "Operation" Switch. | | Connected To Video Output Of Search Receiver; Determines Pulse Shape, Duration And P/P Of The Selected Radar Signals. |
| AN/APA-23 | | Electro-Mechanical Tape Recorder Attachment For Search Recs, AN/APR-1, -4, AN/APR-5, -7 | 40 - 1000 With Three Tuning Units | About 0.88 Volt Input | | 198 | 50 | Tape, Visible To Operator Through Window. | Slow Motor Sweep With Adjustable Tuning Range | | Can Operate Unattended By Calibrating Frequency Scale And Marking Time At Beginning Of Operation. |
| (CDB-152) RDL | Blinker | Panoramic Search Rec. For Investigation Of Burglary Frequencies | 265 - 455 Or 455 - 645 | Under 500 | 0.6 MC | | 40 | Headphones And Visual Indication By Dial Lights | Manual Or Automatic | Broadband Quarter Wave Stub Or Cone Assembly | |

See Note: Unless Otherwise Indicated, Power Supplies For The Equipments Listed On This Page Are 80/115 V, 400-2600 Cycles AC And/Or 28 V DC.
See Note: See Chart 8 For Details Of Antennas

SECRET

Similar to Navy RDC

SECRET

AMERICAN RCM EQUIPMENT

SECRET

| TYPE NUMBERS | RCM CODE NAME | BRIEF DESCRIPTION | FREQUENCY COVERAGE IN MC/S | SENSITIVITY IN MICROVOLTS | IF BANDWIDTH IN MC/S | ISFOT | | METHOD OF PRESENTATION | TUNING | ANTENNA STRUCTURE | SIZE SEARCH | WEIGHT (LBS) | PROCUREMENT STATUS | REMARKS |
|----------------------------------|---------------|--|--|---------------------------|----------------------|-------|----------------------|---|--|--|---------------------|--------------------------|-----------------------|---|
| | | | | | | AC | DC | | | | | | | |
| HOMING AND D.R. EQUIPMENT | | | | | | | | | | | | | | |
| AB/APA-17 | | Broadband Direction Finding System. Designed For Use With AB/APA-1, -4 | 300-1000 | | | 125 | 80 | Video Pulses Are Viewed Directly On The Screen Of An Electrostatic Oscilloscope PFI | Remote Control Switch Used In Connecting Antenna Portions To Receiver (AB/APA-1, -4). | 2 Antenna System; One Each For Vertical And Horizontal Polarized Signals. Mounted Back To Back On The Same Rotating Base Plate | | 75 | Production Beginning | Polarization Determined By Switching Between The Vertical And Horizontal Antennas In The Rotating System. |
| AB/APA-24 | Better | Direction Finding System Used With Any Receiver Having Proper Frequency Coverage | 100-155 158-275 275-450 450-750 | | | | 1 (Without Receiver) | Barophones Or Scope Connected To Receiver Output Used To Detect The Null | Remote Control Servo System Positions The Antenna, With Compass Direction Obtained By A Solenoid Indicator | 2 Electrically Separate Antennas. One A Vertical Aerial And The Other A Horizontal Dipole; Retractable Mount | | 20-45 (Depends On Model) | Production Beginning | An Antenna And Receiver Attachment For Direction Finding By Minimum Indication. Provides Horizontal And Vertical Polarization. 6" Accuracy. |
| AB/APQ-14 | Math | Homing Receiver For Glide Bombs | 90-130 | About 60 | 2 | | 120 Battery Operated | | See Remarks Operates On Radar Pulsed Signals Only | Systems Of Stubs For Horizontal Polarization | 12" X 11 9/16" X 7" | 23 Without Batteries | Models In Development | Equipment Controlled In Flight By A Low Switching Device And Differentiating Circuit To Provide Hor. And Vert. Definition |

CONFUSION DEVICES

| TYPE NUMBER | DESCRIPTION | FREQUENCY MC/S | LENGTH IN INCHES | WIDTH IN INCHES | STRIPS PER UNIT PACKAGE | TYPE NUMBER | DESCRIPTION | FREQUENCY MC/S | LENGTH IN INCHES | WIDTH IN INCHES | STRIPS PER UNIT PACKAGE | TYPE NUMBER | DESCRIPTION | FREQUENCY MC/S | LENGTH IN INCHES | WIDTH IN INCHES | STRIPS PER UNIT PACKAGE |
|-------------|------------------------------|----------------|------------------|-----------------|-------------------------|-------------|------------------------------|----------------|------------------|-----------------|-------------------------|-------------|------------------------|----------------|------------------|-----------------|-------------------------|
| CHA-2 | Paper Backed Best Chaff | 375 | 15 | 0.041 | 3600 ± 200 | CHB-0 | Paper Backed Flat Chaff | 107 | 53 | 0.25 | 80 ± 5 | CHA-1 | Chaff Bags (Disturbed) | 70-300 | 400 ± 10 FT. | 0.6 | 3 |
| CHA-3 | As Above | 490-550 | 10 | 0.045 | 2000 ± 150 | CHB-1 | As Above | 200 | 27 | 0.125 | 250 ± 10 | CHA-2 (3) | Submerged Best Chaff | 230-300 | 150 | 0.06 | 2800 |
| CHA-4 | As Above | 700 | 7 7/8 | 0.045 | 30,000 ± 2000 | CHB-0A | As Above Combination Package | 80-200 | 68; 48; 36; 30 | 0.25 | 80; 100; 120; 150 | CHA-3 (3) | As Above | 250-300 | 15 | 0.045 | 2400 ± 200 |
| CHA-5 | As Above | 3000 | 1 7/8 | 0.045 | 30,000 ± 2000 | CHB-1A | As Above | 210-330 | 27 | 0.125 | 300 ± 15 | CHA-2A (3) | As Above | 280-300 | 150, 10, 10 | 0.06 | 2700 Or Each |
| CHA-25 (3) | As Above Combination Package | 280-300 | 10 1/2; 12; 10 | | 2400 ± 200 Of Each | | | | | | | CHA-2B (3) | As Above | 450-500 | 11 1/2, 10 | 0.045 | 2000 Or Each |
| CHA-26 | As Above | 490-550 | 11 1/2; 10 | 0.045 | 1800 ± 150 Of Each | | | | | | | | | | | | |

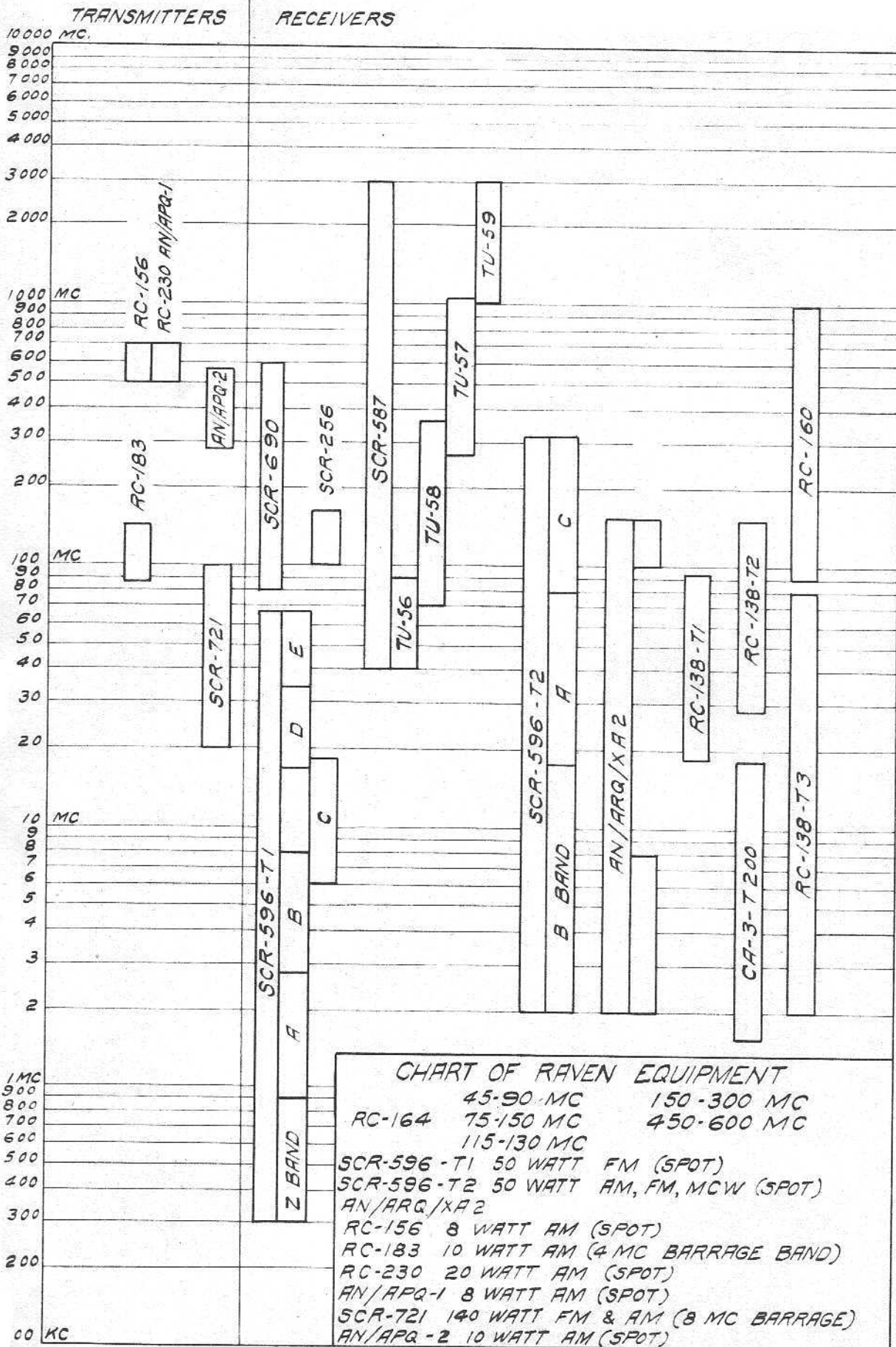
For data on "Window" (Ray Type Of Confusion Device) Refer To Associated Diagrammed Sheets.

MISCELLANEOUS TEST EQUIPMENTS

| TYPE NUMBERS | USE | TUNING RANGE (MC) | POWER OUTPUT | POWER SUPPLY | SIZE | WEIGHT LBS. | REMARKS | TYPE NUMBERS | USE | TUNING RANGE (MC) | POWER OUTPUT | POWER SUPPLY | SIZE | WEIGHT LBS. | REMARKS |
|------------------|---|---|--------------|--------------------------------|-------------------------------|-------------|--|--------------|--|---|--------------|--|--|-------------|---|
| TS-47/AP | Test Oscillator For AB/APA-1, -4 | 40-200 Harmonics To 3000 Mc | 100 MW | 80/110/230 V 60-2500 CFS | 6 3/8" X 8" X 15 7/8" | 15 | RF Output Can Be Sine Wave Modulated About 50% At 1000 CFS Or Pulse Modulated At FMP OF 500 With TD U/S Pulses. Has Adjustable Stub Antenna, Or Type "B" Antenna Connector | TS-87/AP | RF Wattmeter For Depot Use | 60-250 Measures Range Of 2-25 Watts | | No External Power Required | Carrying Case 1 Ft. Cube | 25 | Consists Of A PI Matching Section, Lamp Load, And Photoelectric Cell Indicator. |
| AS/WPT-71 | Training Oscillator | 450-750 | | 3-8 W Carrier 1.5-9.5 Sideband | 360 W AC | 1-21D 1-21D | 100% Modulation Using Either CV, Pulse, Sine Wave 50 And 200 Mc, Pulse And 150 CFS | TS-110/AP | RF Wattmeter For Depot Use | 50-750 Measures Range Of 2-600 Watts | | No External Power Required | 20" X 12" X 12" | 20 | Thermocouple Type With Lossy Emissor Resistor To Dissipate The RF Power. |
| AS/TPQ-71 (Over) | Low Power Transmitter For Training Purposes | 100-230 With 2 MC Maximum Bandwidth | | 75 W 110 V 60-200 CFS | 1-21D | 41 | Plate Modulation At 25, 75, 125, 200, 300 And 1000 Mc. Antenna-Wire 10" Long. AB/TPQ-71 Covers 80-270 MC With 200 HV 0/P. And Mod Of AM Sine Wave, Pulse, Sine And 0.5MC Or 2MC FH AT 40-100 CFS | TS-60/AP | Coaxial Wattmeter | 400-1000 | | | 6" X 6" X 22" | 13 | Variable Length Coaxial Resonating Cavity, Crystal Rectifier, And Microammeter |
| EC-1244A | Heterodyne Frequency Meter For AB/APA-3 | 70-145 Sensitivity From 0-50 U/S, High To Low | | Batteries B1 2-48 V A1 1-18V | 6" X 6" X 6" | 24 | Used By Zero Beating Signal Audibly With Phases Or By Tuning To Dip In Plate Current Reading Of I-130-A. | TS-83/AP | Carrier Checker II Combination Mod Monitor, 7/0 Meter And Prog. Meter For APQ-1, -2 | 200-450 400-700 | 200 V 50 MA | 80 W 80/110 V 60-2500 CFS | Same As I ATE Except 11" Deep | 23 | Absolute Error: 0.5% Sensitivity: Overall: 25 MV Without Prog. Meter: 25 MV |
| TS-98/AP | Heterodyne Frequency Meter | 60-225 | | 25 W 80/110/230 V 60-2500 CFS | 6" X 8" X 8" | 15 | Indication By Barophones Or Meter (I-130-A). Similar To EC-1244-A In Performance. Error: Less Than 0.2% | TS-84/AP | Parametric Spectrum Analyzer | Any RCM Band With Center Frequency Within Range Of 50-1010 MC | | 125 W 80/110 V 60/2500 CFS | 6 3/4" X 8 5/16" X 10" | 24 | Dial Accuracy: 1% Sensitivity: 500 Micro Volts |
| TS-174/V | Heterodyne Frequency Meter | 20-250 Also Works Up To 300 | | Battery Operated | 16" X 12" X 13" | 42 | Heterodyne Oscillator-Mixer Amplifier Type With Crystal Check Points At Every 5 MC Interval. | TS-92/AP | Double Feeding Alignment Device For Cima | 20-200 Bandwidth Approx. 100 MC | | 50-25 W 110 V 60-2500 CFS | 16" X 6" X 6" | 20 | Adjustable Bandwidth 0.5 To 7 Mcgany. Sensitivity: 1 Micro Volt |
| TS-176/V | Heterodyne Frequency Meter For Field Use | 25-1000 | | Battery Operated | Carrying Case 16" X 12" X 13" | 42 | Heterodyne Oscillator-Mixer Amplifier Type With Crystal Check Points At Every 5 MC Interval. | TS-151/AP | Pickup Assembly Consisting Of Rod Antenna RF Choke And Crystal Detector | | | | 24" X 1" X 4" | 1 | Used Between Jumper And Output Meter To Obtain More Precise Reading In Aligning Transmitter |
| TS-70/AP | RF Wattmeter For Depot Use | 200-800 | | No External Power Required | 24" X 24" X 18" | 30 | Consists Of A Parallel - Line Matching Section, Lamp Load And Photoelectric Cell Indicator | AS/URA-71 | Training Generator Giving Three Types Of Interference: (1) Burps (2) Missing Notes (3) Random Keying | | | 1 Volt (Fixed) To Feed 175 Micro Also 1.5 Watts. | Three Sources Available: 25 W At 60 MC 24 W At 1.5 MC 324 At 11.5 MC | 24 | Designed To Be Mounted In The Vehicle Containing The AS/URA-71 As Part Of This Equipment. |

Submitted by JILA
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 Radio Material School
 Naval Research Laboratory
 Washington 25, D.C.
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