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CAD GENERATED DOCUMENT  
 ANY CHANGES TO THIS DOCUMENT  
 MUST BE SUBMITTED TO THE  
 DESIGN/DRAFTING DEPARTMENT  
 FOR PROPER UPDATE

| REVISIONS |       |      |      |   |         |                    |
|-----------|-------|------|------|---|---------|--------------------|
| ECH       | SHEET | ZONE | REV. | BRIEF DESCRIPTION (SEE ECH FOR COMPLETE CHANGE DETAILS) | DATE    | APPROVED           |
| 14218     |       |      | N/C  | NEW RELEASE   | 8/17/61 | <i>[Signature]</i> |

NOTES: UNLESS OTHERWISE SPECIFIED

MANUFACTURING NOTES:

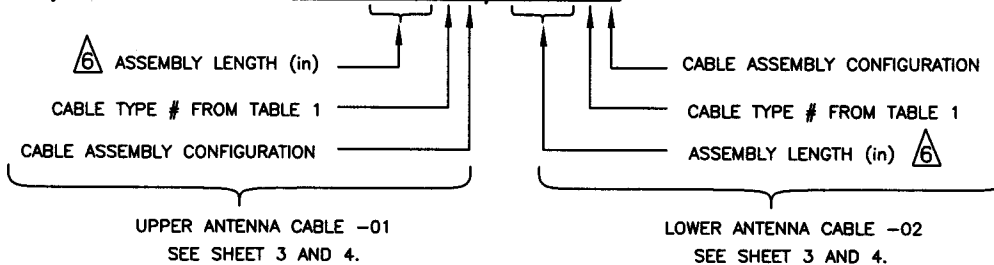
- 1.  LABEL BOTH ENDS OF CABLE.  
 COVER ALL LABELS WITH CLEAR HEAT SHRINK.  
 APPLY BLACK ADHESIVE SHRINK TUBING ACCORDING  
 TO ECS WORK INSTRUCTION W1007.
  - 2. MARK OUTSIDE OF BOX WITH P.O. #,  
 SERIAL #, AND CONTENTS DESCRIPTION PER EXAMPLE:  
 MODE-S RF COAX KIT  
 500-88171-XXXXX/XXXXX  
 P.O. # XXXXX  
 SER # EXXXX
  - 3. COAXIAL CABLE ASSEMBLY LENGTH TOLERANCE, UNLESS OTHERWISE NOTED;
- | LENGTH | ≤ 12      | 12-120    | > 120     |
|--------|-----------|-----------|-----------|
| TOL    | +0.5/-0.0 | +3.5/-0.0 | +5.5/-0.0 |
- 4. TEST WITH MARKERS SET AT 1030 AND 1090 MHz.  
 ATTENUATION: 1.0 - 3.0 dB FOR EACH ANT. RUN. (1.0 dB MAX DIFFERENCE  
 BETWEEN UPPER AND LOWER ANTENNA RUNS)  
 VSWR: ≤ 1.35:1 FOR EACH ANT RUN.  
 DIFFERENTIAL DELAY: THE MAX ONE WAY DELAY DIFFERENCE BETWEEN  
 THE UPPER AND LOWER ANTENNA RUNS IS 40ns.
  - 5. INCLUDE APPROPRIATE TEST DOCUMENTATION WITH EACH CABLE.
- 6.  THE DIFFERENCE IN LENGTH BETWEEN THE UPPER AND LOWER  
 ANTENNA RUNS MUST BE LESS THAN 200 INCHES TO MEET THE  
 DIFFERENTIAL DELAY AND ATTENUATION REQUIREMENTS.

|                       |          |                                |              |   |           |
|-----------------------|----------|--------------------------------|--------------|---|-----------|
| ALL LENGTHS IN INCHES |          | ECS                            |              | ELECTRONIC CABLE SPECIALISTS<br>FRANKLIN, WI 53132<br>PHONE: (414) 421-5300 |           |
| APPROVALS             | DATE     | TITLE                          |              |   |           |
| C. CHAPMAN            | 08/15/01 | TDR-94D MODE-S<br>RF COAX KITS |              |   |           |
| CHECKED BY:           |          | SIZE                           | DWG CODE     | LEVEL   | DWG NO.   |
| DESIGNED BY:          |          | C                              | 66197        |   | 500-88171 |
| PROJECT ENG:          |          | SCALE:                         | EFFECTIVITY: | SHEET 1 OF 4  |           |
| ENG. MGR:             |          |                                |              |   |           |

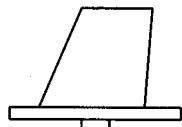
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## TDR-94D MODE-S EXAMPLE KIT PART NUMBER

### P/N 500-88171-3006A/2404A

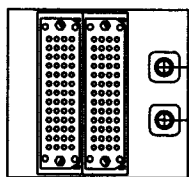


MODE-S  
UPPER  
ANTENNA



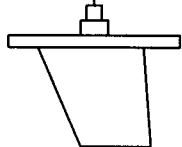
(SEE SHEET 3 & 4)  
500-88171-XXX-XX-01

TDR-94D



(SEE SHEET 3 & 4)  
500-88171-XXX-XX-02

MODE-S  
LOWER  
ANTENNA



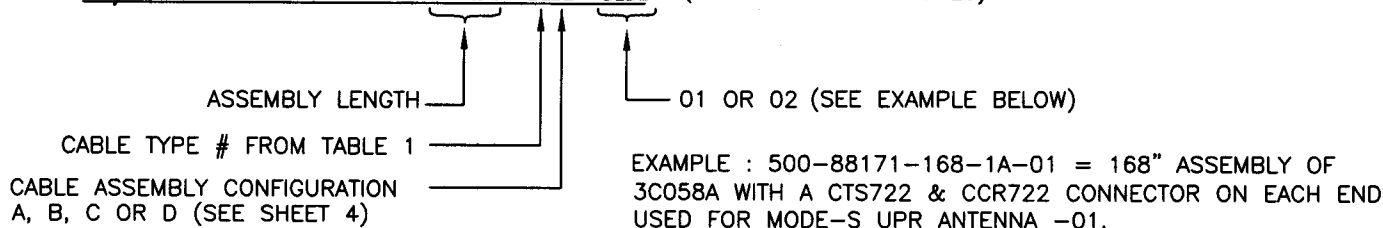
|              |   |                                |          |
|--------------|---|--------------------------------|----------|
| 1            | 500-88171-XXX-XX-02                       | LWR MODE-S COAX CABLE          | 2        |
| 1            | 500-88171-XXX-XX-01                       | UPR MODE-S COAX CABLE          | 1        |
| QTY REQ'D    | COMPONENTS PART NO.<br>OR IDENTIFYING NO. | NOMENCLATURE<br>OR DESCRIPTION | ITEM NO. |
| XXXXX/XXXXX  |   |                                |          |
| KIT PART NO. | PART LIST                                 |                                |          |

|  |              |              |           |
|--|--------------|--------------|-----------|
| <b>ELECTRONIC CABLE SPECIALISTS</b><br>FRANKLIN, IN 47132<br>PHONE: (314) 421-8300 |              |              |           |
| SIZE   | CASE CODE    | LEVEL        | DWG NO.   |
| C  | 66197        | C/A          | 500-88171 |
| SCALE:   | EFFECTIVITY: | SHEET 2 OF 4 |           |

NOTES: SEE SHEET 1

**CABLE ASSEMBLY PART NUMBER**

**P/N 500-88171-XXX-XX-XX** (ALL LENGTHS IN INCHES)



EXAMPLE : 500-88171-168-1A-01 = 168" ASSEMBLY OF 3C058A WITH A CTS722 & CCR722 CONNECTOR ON EACH END USED FOR MODE-S UPR ANTENNA -01.

**TABLE 2 ( ECS COAX CONNECTORS )**

|    |         |  |  |
|----|---------|--|--|
| 30 | CTS022  | CONN.,TNC, 180 DEG. FOR 310801               |  |
| 29 | CNS022  | CONN.,N, 180 DEG. FOR 310801                 |  |
| 28 | CNR022  | CONN.,N, 90 DEG. FOR 310801                  |  |
| 27 | CCS022  | CONN.,C, 180 DEG. FOR 310801                 |  |
| 26 | CCR022  | CONN.,C, 90 DEG. FOR 310801                  |  |
| 25 | CTS122  | CONN.,TNC, 180 DEG. FOR 311201               |  |
| 24 | CNS122  | CONN.,N, 180 DEG. FOR 311201                 |  |
| 23 | CNR122  | CONN.,N, 90 DEG. FOR 311201                  |  |
| 22 | CCS122  | CONN.,C, 180 DEG. FOR 311201                 |  |
| 21 | CCR122  | CONN.,C, 90 DEG. FOR 311201                  |  |
| 20 | CTS922  | CONN.,TNC, 180 DEG. FOR 311501,311601        |  |
| 19 | CNS922  | CONN.,N, 180 DEG. FOR 311501,311601          |  |
| 18 | CNR922  | CONN.,N, 90 DEG. FOR 311501,311601           |  |
| 17 | CCS922  | CONN.,C, 180 DEG. FOR 311501,311601          |  |
| 16 | CCR922  | CONN.,C, 90 DEG. FOR 311501,311601           |  |
| 15 | CTS3522 | CONN.,TNC, 180 DEG. FOR 352001               |  |
| 14 | CNS3522 | CONN.,N, 180 DEG. FOR 352001                 |  |
| 13 | CNR3522 | CONN.,N, 90 DEG. FOR 352001                  |  |
| 12 | CCS3522 | CONN.,C, 180 DEG. FOR 352001                 |  |
| 11 | CCR3522 | CONN.,C, 90 DEG. FOR 352001                  |  |
| 10 | CTS522  | CONN.,TNC, 180 DEG. FOR 432101               |  |
| 9  | CNS522  | CONN.,N, 180 DEG. FOR 432101                 |  |
| 8  | CNR522  | CONN.,N, 90 DEG. FOR 432101                  |  |
| 7  | CCS522  | CONN.,C, 180 DEG. FOR 432101                 |  |
| 6  | CCR522  | CONN.,C, 90 DEG. FOR 432101                  |  |
| 5  | CTS722  | CONN.,TNC, 180 DEG. FOR 3C142B,311901,3C058A | 446549-1/446921-2/985184-1,320-1066-015/320-1066-012 |
| 4  | CNS722  | CONN.,N, 180 DEG. FOR 3C142B,311901,3C058A   | M39012/01-0503,1-225661-5,82-4427,KN-59-242          |
| 3  | CNR722  | CONN.,N, 90 DEG. FOR 3C142B,311901,3C058A    | M39012/05-0503,225394-2,82-4442,KN-59-345            |
| 2  | CCS722  | CONN.,C, 180 DEG. FOR 3C142B,311901,3C058A   | M39012/26-0503,225555-6,31-4452,KA-59-292            |
| 1  | CCR722  | CONN.,C, 90 DEG. FOR 3C142B,311901,3C058A    | M39012/30-0503,225554-6,31-4474,KA-59-273,KA-59-236  |
| #  | ECS P/N | DESCRIPTION                                  |  |

**TABLE 1 ( ECS COAX CABLE )**

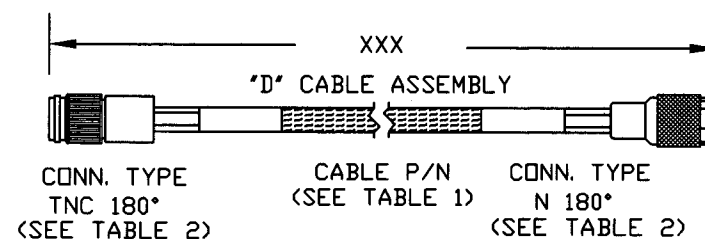
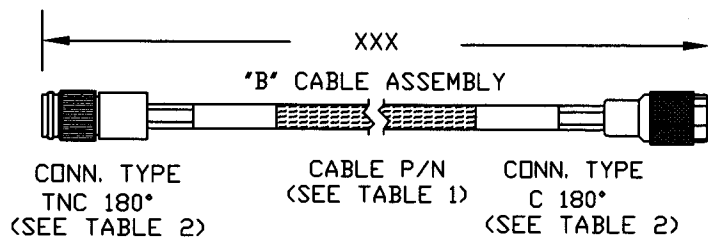
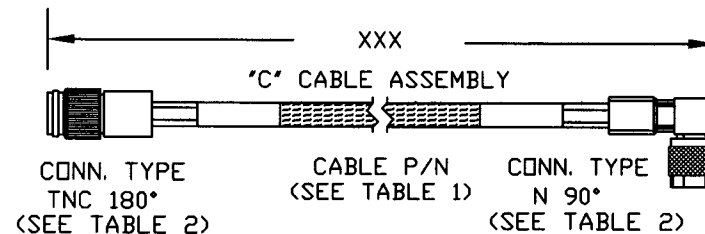
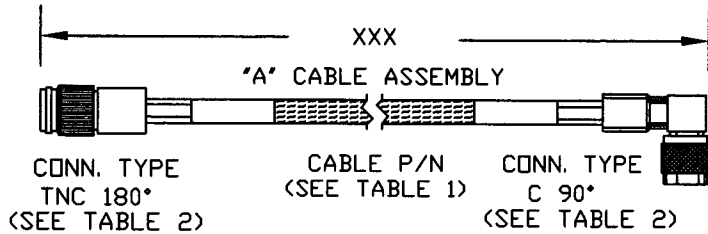
|   |         |                   |             |
|---|---------|-------------------|-------------|
| 9 | 310801  | 384 TO 852 INCHES | 0.1042      |
| 8 | 311201  | 240 TO 576 INCHES | 0.1042      |
| 7 | 311501  | 186 TO 456 INCHES | 0.1042      |
| 6 | 311601  | 144 TO 372 INCHES | 0.1117      |
| 5 | 352001  | 108 TO 276 INCHES | 0.1042      |
| 4 | 311901  | 102 TO 276 INCHES | 0.1217      |
| 3 | 3C142B  | 90 TO 234 INCHES  | 0.1217      |
| 2 | 432101  | 90 TO 220 INCHES  | 0.1117      |
| 1 | 3C058A  | 80 TO 180 INCHES  | 0.1217      |
| # | ECS P/N | LENGTH            | DELAY ns/in |

NOTES: SEE SHEET 1

**ECS** ELECTRONIC CABLE SPECIALISTS  
FRANKLIN, WI 53132  
PHONE: (414) 421-5300

SIZE: C CASE CODE: 66197 LEVEL: DWG NO: 500-88171  
SCALE: EFFECTIVITY: SHEET: 3 OF 4

### CABLE ASSEMBLY CONFIGURATIONS



#### CABLE LABELING

500-88171-XXX-XX-01  
 SER# EXXXX  
 UPR MODE-S ANT

500-88171-XXX-XX-02  
 SER# EXXXX  
 LWR MODE-S ANT

NOTES: SEE SHEET 1

|   |              |               |           |
|---|--------------|---------------|-----------|
| <b>ELECTRONIC CABLE SPECIALISTS</b><br><small>FRANKLIN, WI 53132<br/>         PHONE: (414) 421-5300</small> |              |               |           |
| SIZE  | CAGE CODE    | LEVEL         | DWG NO.   |
| C   | 66197        |               | 500-88171 |
| SCALE:  | EFFECTIVITY: | SHEET: 4 OF 4 |           |