

XMTR CONV MODULE, 16-32MC

MODEL TTRT-4

REV E

TITLE

USED ON  
MODEL SECTION  
TTR-10

LIST SECTIONS

1. SUPPORTING NOTES
2. SUPPORTING LISTS
3. ELECTRICAL/MECHANICAL
4. SUPP ASSY/REF DWGS
5. SPECIFICATIONS
6. LOOSE ITEMS
7. PARTS PECULIAR

SHEET NO.

SEE BELOW  
NONE REQ  
1-8  
9  
10  
NONE REQ  
NONE REQ

LAST SYMBOLS

|      |      |       |
|------|------|-------|
| C835 |      | XY802 |
| L808 | S801 | XZ801 |
| Q807 | T805 | Y802  |
| R825 | W802 | Z801  |

|          |                 |
|----------|-----------------|
| COMPILED | J. FERRERI      |
| CHECKED  | L. GABEL        |
| APPROVED | T. AALTONEN     |
| FNL APPR | <i>L. Gabel</i> |
| ISS DATE | 9-15-64         |

MISSING SYMBOLS

R806

NOTE 1. THE FOLLOWING SYMBOL, #, IN THE REMARKS COLUMN INDICATES THAT THE PART NUMBER IMMEDIATELY FOLLOWING IT IS THE TMC PROPRIETARY MANUFACTURING DRAWING FOR THE CORRESPONDING NUMBER IN THE PART NUMBER COLUMN.

NOTE 2. ALL ITEMS REFERENCED TO THIS NOTE SHALL BE USED WHEN XTAL OVENS ARE REQUIRED BY CUSTOMER.

NOTE 3. ALL ITEMS REFERENCED TO THIS NOTE SHALL BE USED WHEN NO XTAL OVENS ARE REQUIRED BY CUSTOMER.

NOTE 4. CRYSTAL FREQ. SHALL BE DETERMINED BY THE FOLLOWING FORMULA  
SIGNAL FREQ + 1.75 MC

**MATERIAL LIST /  
NUMERICAL PARTS LIST**

REV.

A B C D E

MODEL: TTRT-4

SHEET 1 OF 10

| PART NO.   | DESCRIPTION<br>ELECTRICAL/MECHANICAL | ITEM LOCATION       |                  |                              | QTY.<br>PER<br>UNIT | REFERENCE<br>SYMBOLS | REMARKS  |
|------------|--------------------------------------|---------------------|------------------|------------------------------|---------------------|----------------------|----------|
|            |                                      | USED ON<br>ASSEMBLY | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |                     |                      |          |
| A3365-1    | PC BD,MKG                            | A3365-2             |                  | 1                            | 1                   |                      |          |
| BS100      | SOLDER,TIN ALY                       | A3223-15            |                  |                              |                     |                      |          |
|            |                                      | A3223-28            |                  |                              |                     |                      |          |
|            |                                      | A3223-29            |                  |                              |                     |                      |          |
|            |                                      | A3223-30            |                  |                              |                     |                      |          |
|            |                                      | A3223-31            |                  |                              |                     |                      |          |
|            |                                      | A3365-2             |                  |                              |                     |                      |          |
| CC20RH020C | CAP.,FXD,CER                         | A3365-2             |                  | 1                            | 1                   | C813                 |          |
| CC100-16   | CAP.,FXD,CER                         | A3365-2             |                  | 1                            |                     | C803                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C806                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C810                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C811                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C815                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C816                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C821                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C822                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C823                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C824                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C825                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C826                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C828                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C829                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C831                 |          |
|            |                                      | A3365-2             |                  | 1                            | 16                  | C834                 |          |
| CC100-33   | CAP.,FXD,CER                         | A3365-2             |                  | 1                            |                     | C827                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C830                 |          |
|            |                                      | A3365-2             |                  | 1                            |                     | C832                 |          |
| CE107-1    | CAP.,FXD,ELECT.                      | A3365-2             |                  | 1                            | 4                   | C835                 |          |
|            |                                      | A3365-2             |                  | 1                            | 1                   | C819                 | TANT/INS |
| CI115      | CORE,TOROID                          | A3223-15            |                  | 1                            | 1                   |                      |          |

| MATERIAL LIST/<br>NUMERICAL PARTS LIST |  | REV. | A B C D E        |  |  |                                      |                  |                              |               |  |      |                     | MODEL: TTRT-4 |                      |  |         |  |  |  |  |  |  | SHEET 2 |  | OF 10 |  |
|--|--|------|------------------|--|--|--------------------------------------|------------------|------------------------------|---------------|--|------|---------------------|---------------|----------------------|--|---------|--|--|--|--|--|--|---------|--|-------|--|
|  |  |      | PART NO.         |  |  | DESCRIPTION<br>ELECTRICAL/MECHANICAL |                  |                              | ITEM LOCATION |  |      | QTY.<br>PER<br>UNIT |               | REFERENCE<br>SYMBOLS |  | REMARKS |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | USED ON<br>ASSEMBLY                  | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |               |  |      |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CI127-1                                |  |      | CORE, TOROID     |  |  | A3223-28                             |                  | 1                            |               |  |      |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3223-29                             |                  | 1                            |               |  |      |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3223-30                             |                  | 1                            |               |  |      |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3223-31                             |                  | 1                            | 4             |  |      |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CL240-100                              |  |      | COIL, RF, FXD    |  |  | A3365-2                              |                  | 1                            |               |  | L802 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3365-2                              |                  | 1                            |               |  | L803 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3365-2                              |                  | 1                            |               |  | L804 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3365-2                              |                  | 1                            |               |  | L805 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3365-2                              |                  | 1                            |               |  | L806 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3365-2                              |                  | 1                            |               |  | L807 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3365-2                              |                  | 1                            | 7             |  | L808 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CL270-0.68                             |  |      | COIL, RF, FXD    |  |  | A3365-2                              |                  | 1                            | 1             |  | L801 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CM15B101J                              |  |      | CAP., FXD, MICA  |  |  | A3365-2                              |                  | 1                            | 1             |  | C805 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CM15B111J                              |  |      | CAP., FXD, MICA  |  |  | A3365-2                              |                  | 1                            | 1             |  | C804 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CM15B200J                              |  |      | CAP., FXD, MICA  |  |  | A3365-2                              |                  | 1                            | 1             |  | C807 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CM15B220J                              |  |      | CAP., FXD, MICA  |  |  | A3365-2                              |                  | 1                            | 1             |  | C802 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CM15B330J                              |  |      | CAP., FXD, MICA  |  |  | A3365-2                              |                  | 1                            |               |  | C808 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A3365-2                              |                  | 1                            | 2             |  | C809 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CM20B511J                              |  |      | CAP., FXD, MICA  |  |  | A3365-2                              |                  | 1                            | 1             |  | C818 |                     |               |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CR110-1-FREQ                           |  |      | CU, QTZ, OVEN    |  |  | A2849                                |                  | 1                            |               |  | Y801 |                     | NOTE 2        |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| OR                                     |  |      |                  |  |  | A2849                                |                  | 1                            | 2             |  | Y802 |                     | NOTE 2        |                      |  |         |  |  |  |  |  |  |         |  |       |  |
| CR110-3-FREQ                           |  |      | CU, QTZ, AMBIENT |  |  | A2849                                |                  | 1                            |               |  | Y801 |                     | NOTE 3        |                      |  |         |  |  |  |  |  |  |         |  |       |  |
|  |  |      |                  |  |  | A2849                                |                  | 1                            | 2             |  | Y802 |                     | NOTE 3        |                      |  |         |  |  |  |  |  |  |         |  |       |  |

| MATERIAL LIST /<br>NUMERICAL PARTS LIST |  | REV. | A B C D E |  |                   |  |  |                                      |  |                     |                  |                              | MODEL: TTRT-4 |  |      |                     |           |                      |  |         |  |  | SHEET 3 OF 10 |  |
|---|--|------|-----------|--|-------------------|--|--|--------------------------------------|--|---------------------|------------------|------------------------------|---------------|--|------|---------------------|-----------|----------------------|--|---------|--|--|---------------|--|
|   |  |      | PART NO.  |  |                   |  |  | DESCRIPTION<br>ELECTRICAL/MECHANICAL |  |                     |                  |                              | ITEM LOCATION |  |      | QTY.<br>PER<br>UNIT |           | REFERENCE<br>SYMBOLS |  | REMARKS |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | USED ON<br>ASSEMBLY | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |               |  |      |                     |           |                      |  |         |  |  |               |  |
| CT103-1                                 |  |      |           |  | CAP., VAR, AIR    |  |  |                                      |  | A3365-2             |                  | 1                            |               |  | C812 |                     | 3.2-50UUF |                      |  |         |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | A3365-2             |                  | 1                            |               |  | C814 |                     | 3.2-50UUF |                      |  |         |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | A3365-2             |                  | 1                            |               |  | C817 |                     | 3.2-50UUF |                      |  |         |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | A3365-2             |                  | 1                            | 4             |  |      | C820                |           | 3.2-50UUF            |  |         |  |  |               |  |
| CT104-3                                 |  |      |           |  | CAP., VAR, AIR    |  |  |                                      |  | A3365-2             |                  | 1                            | 1             |  |      | C801                |           | 2.3-15UUF            |  |         |  |  |               |  |
| CV113-11                                |  |      |           |  | CAP., VAR, MICA   |  |  |                                      |  | A3365-2             |                  | 1                            | 1             |  |      | C833                |           |                      |  |         |  |  |               |  |
| FS118-1                                 |  |      |           |  | LATCH, SNAPSLIDE  |  |  |                                      |  | MS3370              |                  | 2                            | 2             |  |      |                     |           |                      |  |         |  |  |               |  |
| FS119-2                                 |  |      |           |  | LATCHGUIDE, SNPSL |  |  |                                      |  | MS3370              |                  | 2                            | 2             |  |      |                     |           |                      |  |         |  |  |               |  |
| FS120-1                                 |  |      |           |  | POST, SNAPSLIDE   |  |  |                                      |  | MS3370              |                  | 2                            | 2             |  |      |                     |           |                      |  |         |  |  |               |  |
| FW04HBN                                 |  |      |           |  | WASH., FLAT       |  |  |                                      |  | A3365-2             |                  | 2                            | 2             |  |      |                     |           |                      |  |         |  |  |               |  |
| FW101-1                                 |  |      |           |  | WASH., NM, N      |  |  |                                      |  | A3365-2             |                  | 10                           | 10            |  |      |                     |           |                      |  |         |  |  |               |  |
| GL102                                   |  |      |           |  | ADHESIVE-Q DOPE   |  |  |                                      |  | A3223-15            |                  |                              |               |  |      |                     |           |                      |  |         |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | A3223-28            |                  |                              |               |  |      |                     |           |                      |  |         |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | A3223-29            |                  |                              |               |  |      |                     |           |                      |  |         |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | A3223-30            |                  |                              |               |  |      |                     |           |                      |  |         |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | A3223-31            |                  |                              |               |  |      |                     |           |                      |  |         |  |  |               |  |
| HD100                                   |  |      |           |  | HEAT SINK         |  |  |                                      |  | A3365-2             |                  | 1                            | 1             |  |      |                     |           |                      |  |         |  |  |               |  |
| JJ219-18-9                              |  |      |           |  | JACK, TIP         |  |  |                                      |  | MS3414              |                  | 6                            | 6             |  |      |                     |           |                      |  |         |  |  |               |  |
| LD1326/MS3379                           |  |      |           |  | CHAS, WRPARD      |  |  |                                      |  | A2849               |                  | 1                            | 1             |  |      |                     |           |                      |  |         |  |  |               |  |
| LD1333/MS3370                           |  |      |           |  | PNL, FRONT        |  |  |                                      |  | A2843               |                  | 1                            | 1             |  |      |                     |           |                      |  |         |  |  |               |  |
| LD1342/MS3414                           |  |      |           |  | BRKT, XTAL SOC    |  |  |                                      |  | A3365-2             |                  | 1                            | 1             |  |      | XY801, 802, XZ801   |           |                      |  |         |  |  |               |  |
| LWE04MRN                                |  |      |           |  | WASH., LK, EXT    |  |  |                                      |  | A2848               |                  | 2                            |               |  |      |                     |           |                      |  |         |  |  |               |  |
|   |  |      |           |  |                   |  |  |                                      |  | A3365-2             |                  | 17                           | 19            |  |      |                     |           |                      |  |         |  |  |               |  |

**MATERIAL LIST /  
NUMERICAL PARTS LIST**

REV.

A B C D E

MODEL: TTRT-4

SHEET 4 OF 10

| PART NO.    | DESCRIPTION<br>ELECTRICAL/MECHANICAL | ITEM LOCATION       |                  |                              | QTY.<br>PER<br>UNIT | REFERENCE<br>SYMBOLS | REMARKS |
|-------------|--------------------------------------|---------------------|------------------|------------------------------|---------------------|----------------------|---------|
|             |                                      | USED ON<br>ASSEMBLY | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |                     |                      |         |
| LWI04MRN    | WASH.,LK,INT                         | A3365-2             |                  | 4                            | 4                   |                      |         |
| LWI06MRN    | WASH.,LK,INT                         | A3365-2             |                  | 1                            | 1                   |                      |         |
| LWI08MRN    | WASH.,LK,INT                         | A2843               |                  | 1                            | 1                   |                      |         |
| LWI37MRN    | WASH.,LK,INT                         | A3365-2             |                  | 1                            | 1                   |                      |         |
| MP126-1     | KNOB,THD                             | A2843               |                  | 1                            | 1                   |                      |         |
| MS3370      | PNL,FRONT                            | LD1333              |                  | 1                            | 1                   | MACH                 |         |
| MS3372      | BRKT,MTG,CAP.                        | A3365-2             |                  | 1                            | 1                   |                      |         |
| MS3377      | PL,SD,L/R                            | A2848               |                  | 2                            | 2                   |                      |         |
| MS3379      | CHAS,WRPARD                          | LD1326              |                  | 1                            | 1                   | MACH                 |         |
| MS3380      | SHIELD,RF                            | A3365-2             |                  | 3                            | 3                   |                      |         |
| MS3414      | BRKT,XTAL SOC                        | LD1342              |                  | 1                            | 1                   | MACH                 |         |
| MS3446      | PL,XTAL RET.                         | A2849               |                  | 1                            | 1                   | NOTE 3               |         |
| MS3560      | SHIELD,RF OUT                        | A3365-2             |                  | 1                            | 1                   |                      |         |
| MS4401      | BRK'T,RET.                           | A2848               |                  | 1                            | 1                   |                      |         |
| NP559       | PL,ID,FREQ                           | A2848               |                  | 1                            | 1                   |                      |         |
| NP563       | PL,ID,COMM                           | A2848               |                  | 1                            | 1                   |                      |         |
| NT129-440-4 | NUT,PLN,SPLINE                       | MS3379              |                  | 12                           |                     |                      |         |
|             |                                      | MS3414              |                  | 2                            |                     |                      |         |
|             |                                      | MS4401              |                  | 4                            | 18                  |                      |         |
| NT137-0440  | NUT,PLN,HEX,N                        | A3365-2             |                  | 10                           | 10                  |                      |         |
| NTH0440BN6  | NUT,PLN,HEX                          | A3365-2             |                  | 11                           | 11                  |                      |         |

**MATERIAL LIST /  
NUMERICAL PARTS LIST**

REV.

A B C D E

MODEL: TTRT-4

SHEET 5 OF 10

| PART NO.      | DESCRIPTION<br>ELECTRICAL/MECHANICAL | ITEM LOCATION       |                  |                              | QTY.<br>PER<br>UNIT | REFERENCE<br>SYMBOLS | REMARKS |
|---------------|--------------------------------------|---------------------|------------------|------------------------------|---------------------|----------------------|---------|
|               |                                      | USED ON<br>ASSEMBLY | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |                     |                      |         |
| NTH2532BN10   | NUT, PLN, HEX                        | A3365-2             |                  | 1                            | 1                   |                      |         |
| NTH3732BN18   | NUT, PLN, HEX                        | A3365-2             |                  | 1                            | 1                   |                      |         |
| OC100-1<br>OR | OVEN, XTAL, 12VDC                    | A2849               |                  | 1                            | 1                   | Z801                 | NOTE 2  |
| OC100-2<br>OR | OVEN, XTAL, 24VDC                    | A2849               |                  | 1                            | 1                   | Z801                 | NOTE 2  |
| OC100-3<br>OR | OVEN, XTAL, 115VAC                   | A2849               |                  | 1                            | 1                   | Z801                 | NOTE 2  |
| OC100-4       | OVEN, XTAL, 32VDC                    | A2849               |                  | 1                            | 1                   | Z801                 | NOTE 2  |
| PC102-1       | PC BD, ETCHING                       | PC102-2             |                  | 1                            | 1                   |                      |         |
| PC102-2       | PC BD, MACH                          | PC102-3             |                  | 1                            | 1                   |                      |         |
| PX104-2-022   | INS SLVG, SZ 24                      | A3365-2             |                  | 2                            | 2                   |                      | YEL     |
| PX104-3-022   | INS SLVG, SZ 24                      | A3365-2             |                  | 2                            | 2                   |                      | RED     |
| PX104-4-022   | INS SLVG, SZ 24                      | A3365-2             |                  | 2                            | 2                   |                      | GRN     |
| PX104-6-022   | INS SLVG, SZ 24                      | A3365-2             |                  | 2                            | 2                   |                      | BLU     |
| PX104-7-022   | INS SLVG, SZ 24                      | A3365-2             |                  | 3                            | 3                   |                      | GY      |
| PX370-3-7     | INS SLVG-TEF                         | A3365-2             |                  | 1                            | 1                   |                      |         |
| PX829-1       | PAD, TSTR MTG                        | A3365-2             |                  | 7                            | 7                   |                      |         |
| RC20GF102J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            |                     | R802                 |         |
|               |                                      | A3365-2             |                  | 1                            |                     | R824                 |         |
|               |                                      | A3365-2             |                  | 1                            | 3                   | R805                 |         |
| RC20GF123J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            | 1                   | R820                 |         |
|               |                                      | A3365-2             |                  | 1                            | 1                   | R820                 |         |

MAMARONECK, NEW YORK

THE TECHNICAL MATERIEL CORPORATION

**MATERIAL LIST /  
NUMERICAL PARTS LIST**

REV.

A B C D E

MODEL: TTRT-4

SHEET 6 OF 10

| PART NO.      | DESCRIPTION<br>ELECTRICAL/MECHANICAL | ITEM LOCATION       |                  |                              | QTY.<br>PER<br>UNIT | REFERENCE<br>SYMBOLS | REMARKS |
|---------------|--------------------------------------|---------------------|------------------|------------------------------|---------------------|----------------------|---------|
|               |                                      | USED ON<br>ASSEMBLY | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |                     |                      |         |
| RC20GF183J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            |                     | R807                 |         |
|               |                                      | A3365-2             |                  | 1                            | 2                   | R808                 |         |
|               |                                      | A3365-2             |                  | 1                            | 1                   | R805                 |         |
| RC20GF222J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            |                     | R816                 |         |
|               |                                      | A3365-2             |                  | 1                            | 2                   | R819                 |         |
| RC20GF273J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            |                     | R803                 |         |
|               |                                      | A3365-2             |                  | 1                            | 2                   | R823                 |         |
| RC20GF331J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            |                     | R812                 |         |
|               |                                      | A3365-2             |                  | 1                            |                     | R813                 |         |
|               |                                      | A3365-2             |                  | 1                            | 3                   | R817                 |         |
| RC20GF390J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            | 1                   | R800                 |         |
| RC20GF470J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            | 1                   | R818                 |         |
| RC20GF472J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            |                     | R801                 |         |
|               |                                      | A3365-2             |                  | 1                            | 2                   | R804                 |         |
| RC20GF560J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            |                     | R822                 |         |
|               |                                      | A3365-2             |                  | 1                            | 2                   | R825                 |         |
| RC20GF561J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            |                     | R809                 |         |
|               |                                      | A3365-2             |                  | 1                            |                     | R810                 |         |
|               |                                      | A3365-2             |                  | 1                            | 3                   | R821                 |         |
| RC20GF680J    | RES, FXD, COMP                       | A3365-2             |                  | 1                            | 1                   | R815                 |         |
| RG188/U       | CBL, RF                              | CA418-9             |                  | 8                            | 8                   |                      |         |
| RV106UX8B501A | RES, VAR, COMP                       | A3365-2             |                  | 1                            | 1                   | R814                 |         |
| RV111U501A    | RES, VAR, COMP                       | A3365-2             |                  | 1                            | 1                   | R811                 |         |
| SC131-0440BN3 | SCR, MACH-UNDC                       | A2848               |                  | 6                            |                     |                      |         |
|               |                                      | A2849               |                  | 4                            | 10                  |                      |         |
| SC131-0440BN5 | SCR, MACH-UNDC                       | A2848               |                  | 2                            | 2                   |                      |         |

**MATERIAL LIST /  
NUMERICAL PARTS LIST**

REV.

A B C D E

MODEL: TTRT-4

SHEET 7 OF 10

| PART NO.        | DESCRIPTION<br>ELECTRICAL/MECHANICAL | ITEM LOCATION                                |                  |                              | QTY.<br>PER<br>UNIT | REFERENCE<br>SYMBOLS | REMARKS                          |
|-----------------|--------------------------------------|--|------------------|------------------------------|---------------------|----------------------|----------------------------------|
|                 |                                      | USED ON<br>ASSEMBLY                          | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |                     |                      |                                  |
| SC143-0440B10   | SCR,MACH-NYLON                       | A3365-2                                      |                  | 5                            | 5                   |                      |                                  |
| SC143-0832B8    | SCR,MACH-NYLON                       | A2843  |                  | 1                            | 1                   |                      |                                  |
| SCBP0440BN3     | SCR,MACH                             | A2848  |                  | 2                            | 2                   |                      |                                  |
| SCBP0440BN4     | SCR,MACH                             | A2848<br>A3365-2                             |                  | 4<br>17                      | 21                  |                      |                                  |
| SCBP0440BN5     | SCR,MACH                             | A3365-2                                      |                  | 2                            | 2                   |                      |                                  |
| SCBP0440BN12    | SCR,MACH                             | A2849  |                  | 2                            | 2                   |                      | NOTE 3                           |
| SCBP0632BN4     | SCR,MACH                             | A3365-2                                      |                  | 1                            | 1                   |                      |                                  |
| SCFP0440BN 6    | SCR,MACH                             | A2848  |                  | 2                            | 2                   |                      |                                  |
| SW192-12NSJ     | SW,ROTARY-TAP                        | A3365-2                                      |                  | 1                            | 1                   | S801                 |                                  |
| TA111-2-2-1.00G | TAPE,URETHANE                        | MS4401                                       |                  | 1                            | 1                   |                      |                                  |
| TE117-48        | SPACER,SLV                           | A2848  |                  | 2                            | 2                   |                      |                                  |
| TE164-7         | NUT,PLN,CLINCH                       | PC102-3                                      |                  | 4                            | 4                   |                      |                                  |
| WA131-22        | WASH.,SPG TENS                       | MS3370                                       |                  | 2                            | 2                   |                      |                                  |
| WI123-24        | WIRE,ELEC,MAG,HT                     | A3223-29                                     |                  | 24                           | 24                  |                      | SZ 24                            |
| WI123-28        | WIRE,ELEC,MAG,HT                     | A3223-15<br>A3223-28<br>A3223-30<br>A3223-31 |                  | 30<br>18<br>30<br>24         | 102                 |                      | SZ 28<br>SZ 28<br>SZ 28<br>SZ 28 |
| WI149-1         | CBL,SP,SHLD/JKT                      | CA808-2                                      |                  | 11                           | 11                  |                      | 2/C                              |
| WL100-8         | WIRE,ELEC,BUSS                       | A3365-2                                      |                  | 14                           | 14                  |                      | SZ 24                            |



**MATERIAL LIST /  
NUMERICAL PARTS LIST**

REV.

A B C D E

MODEL: TTRT-4

SHEET 8 OF 10

| PART NO. | DESCRIPTION<br>ELECTRICAL/MECHANICAL | ITEM LOCATION       |                  |                              | QTY.<br>PER<br>UNIT | REFERENCE<br>SYMBOLS | REMARKS   |
|----------|--------------------------------------|---------------------|------------------|------------------------------|---------------------|----------------------|-----------|
|          |                                      | USED ON<br>ASSEMBLY | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |                     |                      |           |
| TX100    | TRANSISTOR                           | A3365-2             |                  |                              | 1                   | Q807                 | PA        |
| TX109    | TRANSISTOR                           | A3365-2             |                  | 1                            |                     | Q801                 | OSC       |
|          |                                      | A3365-2             |                  | 1                            |                     | Q802                 | BUFFER    |
|          |                                      | A3365-2             |                  | 1                            |                     | Q803                 | BAL. MIX. |
|          |                                      | A3365-2             |                  | 1                            |                     | Q804                 | BAL. MIX. |
|          |                                      | A3365-2             |                  | 1                            |                     | Q805                 | AMPLIFIER |
|          |                                      | A3365-2             |                  | 1                            | 6                   | Q806                 | DRIVER    |

**MATERIAL LIST /  
NUMERICAL PARTS LIST**

REV.

A B C D E

MODEL: TTRT-4

SHEET 9 OF 10

| PART NO. | DESCRIPTION<br>SUPP ASSY/REF DWGS | ITEM LOCATION       |                  |                              | QTY.<br>PER<br>UNIT | REFERENCE<br>SYMBOLS | REMARKS   |
|----------|-----------------------------------|---------------------|------------------|------------------------------|---------------------|----------------------|-----------|
|          |                                   | USED ON<br>ASSEMBLY | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |                     |                      |           |
| A2843    | PNL ASSY,FRONT                    | A2848               |                  | 1                            | 1                   |                      |           |
| A2848    | TTRT-4 FNL ASSY                   | TTRT-4              |                  | 1                            | 1                   |                      |           |
| A2849    | PC BD/CHAS ASSY                   | A2848               |                  | 1                            | 1                   |                      |           |
| A3365-2  | PC BD ASSY                        | A2849               |                  | 1                            | 1                   |                      |           |
| CA418-9  | CBL ASSY,RF                       | A3365-2             |                  | 1                            | 1                   | W802                 |           |
| CA808-2  | CBL ASSY,SHLD                     | A3365-2             |                  | 1                            | 1                   | W801                 |           |
| CH315    | CHART,UNIT BKDN                   | TTRT-4              |                  | 1                            | 1                   |                      |           |
| CK664    | DIAG,BLOCK                        | TTRT-4              |                  | 1                            | 1                   |                      |           |
| CK692    | DIAG,SCHEM                        | TTRT-4              |                  | 1                            | 1                   |                      |           |
| PC102-3  | PC BD,MECH ASSY                   | A3365-1             |                  | 1                            | 1                   |                      |           |
| TZ141    | XFMR,RF                           | A3365-2             |                  | 1                            | 1                   | T801                 | #A3223-15 |
| TZ154    | XFMR,RF                           | A3365-2             |                  | 1                            | 1                   | T802                 | #A3223-28 |
| TZ155    | XFMR,RF                           | A3365-2             |                  | 1                            | 1                   | T803                 | #A3223-29 |
| TZ156    | XFMR,RF                           | A3365-2             |                  | 1                            | 1                   | T804                 | #A3223-30 |
| TZ157    | XFMR,RF                           | A3365-2             |                  | 1                            | 1                   | T805                 | #A3223-31 |

THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, NEW YORK

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| MATERIAL LIST /<br>NUMERICAL PARTS LIST | REV. | A | B | C | D | E |  |  |  |  |  |  |  |  |  |  |  |  |  | MODEL: | TTRT-4 |       |    |    |
|   |      |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |        |        | SHEET | 10 | OF |

| PART NO. | DESCRIPTION<br>SPECIFICATIONS | ITEM LOCATION       |                  |                              | QTY.<br>PER<br>UNIT | REFERENCE<br>SYMBOLS | REMARKS |
|----------|-------------------------------|---------------------|------------------|------------------------------|---------------------|----------------------|---------|
|          |                               | USED ON<br>ASSEMBLY | USED TO<br>MOUNT | QTY. PER<br>USED TO<br>MOUNT |                     |                      |         |
| S114     | ZN CHROMATE PRM               |                     | MS3370           |                              |                     |                      |         |
| S115     | ENAM, SMOOTH GY               |                     | MS3370           |                              |                     |                      |         |
| S404     | IRIDITE, YEL                  |                     | ALL MS-          |                              |                     |                      |         |
| S809     | TEST PROC                     |                     | TTRT-4           | 1                            | 1                   |                      |         |

# REVISION SHEET

THE TECHNICAL MATERIEL CORP.  
MAMARONECK NEW YORK

TTRT-4

MODEL \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

| DATE     | REV. | PAGE       | EMN # | DESCRIPTION                                    | CHK. | APP.               |
|----------|------|------------|-------|--|------|--------------------|
| 10/29/64 | A    | <u>5</u> 6 | 12736 | Revised sheet 5/6 as per EMN # 12736           |      | <i>[Signature]</i> |
| 1/28/65  | B    | -----      | 13316 | Revised cover and sheets 3,4,5,6 and 8 per EMN |      | <i>[Signature]</i> |
| 3/24/65  | C    | -----      | 13633 | Revised cover and sheets 4,6 and 7 per EMN     |      | <i>[Signature]</i> |
| 10/15/65 | D    | 8          | 14953 | Revised per EMN                                |      | <i>[Signature]</i> |
| 7/15/66  | E    | 5,6        | 16510 | Revised per EMN                                |      | <i>[Signature]</i> |
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