



# MT400, MT401 & MT401FF 406MHz EPIRB Series Sub-Assembly Control & Bill of Material (BOM)

This document is current as at 18<sup>th</sup> January, 2006

## 1. PRODUCT DOCUMENTATION & SUB-ASSEMBLY CONTROL TABLE

| DESCRIPTION                                   | ECN    | OP  | PART NO          | DOCUMENT   |
|---|--------|-----|------------------|------------|
| <b>Product Level</b>                          |        |     |                  |            |
| MT400 Series EPIRB/PLB - Configuration Coding | 4669   | --  | --               | 41776-3    |
| MT400 Technical Description                   | 4296   | --  | --               | 41708-1    |
| MT400 Block Diagram                           | 4296   | --  | --               | 41679-1    |
| MT400 firmware                                | Note1  | --  | --               | OS0010     |
| MT400 Series EPIRB, Technical Service Manual  | Create | --  | --               | 42772-1    |
| <b>Component Level</b>                        |        |     |                  |            |
| MT400 Circuit Diagram                         | 4464   | --  | --               | 10200-4    |
| MT400 PCB (single)                            | 4464   | --  | 580274           | 580274-3   |
| MT400 PCB (panel of 4)                        | 4464   | --  | 580274           | 580274-3x4 |
| MT400 Top Overlay (SMD)                       | 4464   | SMD | --               | 42215-2    |
| MT400 Circuit Specification by Reference      | 4605   | SMD | 97MT400PCB       | Rev 07     |
| MT401 Circuit Specification by Reference      | Create | SMD | 97MT401PCB       | Rev 01     |
| MT400 TopLoad Overlay                         | 4464   | MAY | --               | 42216-2    |
| MT400 BottomLoad Overlay                      | 4464   | MAY | --               | 42217-2    |
| MT400 Circuit Specification by Reference      | 4482   | MAY | 97MT400PCB       | Rev 03     |
| MT401 Circuit Specification by Reference      | 4482   | MAY | 97MT401PCB       | Rev 02     |
| <b>Production - Assembly</b>                  |        |     |                  |            |
| MT400 General Assembly                        | 4470   | --  | config dependant | 10201-5    |
| MT400 Uncoded Chassis Assembly                | 4258   | --  | 97MT400COM       | 41950-2    |
| MT401 Uncoded Chassis Assembly                | 4258   | --  | 97MT401COM       | 41950-2    |
| MT400 Cover Reflector Assembly                | 4259   | --  | 97MT400RCR       | 41788-2    |
| MT400 Battery Pack Assembly                   | 4657   | --  | 97MT400BAT       | 41787-4    |
| MT401 Chassis, Water Contact Assembly         | 4692   | --  | 97MT401RVT       | 42104-2    |
| MT400 Chassis Winding Assembly                | 4692   | --  | 97MT400WND       | 41786-3    |
| MT401 Chassis Winding Assembly                | 4692   | --  | 97MT401WND       | 41786-3    |
| -----   |        |     |                  |            |
| Mounting Bracket Collar Assy - MT401          | Create | --  | 97MT401MTG       | 42208-1    |
| FF Release Base - MT401/G                     | Create | --  | 97BSE401FF       | 42864-1    |



| DESCRIPTION   | ECN    | OP  | PART NO    | DOCUMENT |
|---|--------|-----|------------|----------|
| FF Release Cover - MT401/G                                | Create | --  | 97CVR401FF | 42865-1  |
| <b><u>Production - Test, General</u></b>                  |        |     |            |          |
| MT400 Test, Calibration and Information Management System | 4296   | --  | --         | 41858-1  |
| ATE1 (BON) Test Set-up and Procedure                      | 4482   | BON | --         | 42174-2  |
| ATE2 (CAL) Test Set-up and Procedure                      | 4296   | CAL | --         | 42175-1  |
| ATE3 (LASER) Test Set-up and Procedure                    | 4296   | LSR | --         | 42176-1  |
| ATE4 (FINAL) Test Set-up and Procedure                    | 4534   | TST | --         | 42177-2  |
| ATE5 (FAULT) Test Set-up and Procedure                    | 4296   | --  | --         | 42178-1  |
| LEAK-TEST Test Set-up and Procedure                       | 4296   | MAY | --         | 42179-1  |
| <b><u>Production - Test, Software</u></b>                 |        |     |            |          |
| ATE System Program  | Note 1 | var | --         | TS0065   |
| <b><u>Production - Test, Station Scripts</u></b>          |        |     |            |          |
| ATE1 (BON) Script for MT400 series                        | Note 1 | BON | --         | TS0066   |
| ATE2 (CAL) Script for MT400 series                        | Note 1 | CAL | --         | TS0067   |
| ATE3 (LASER) Script for MT400 series                      | Note 1 | LSR | --         | TS0068   |
| ATE4 (FINAL) Script for MT400 series                      | Note 1 | TST | --         | TS0069   |
| MT400 Series Model Definition                             | Note 1 | LSR | --         | ESMT400T |

**NOTES:**

1. Current Software Status must be obtained from latest revision of Software Master Register 40719

**2. SCHEDULE OF PART USAGE BY MODEL**

| Product No. | Part Code  | Name / Description                          | Quantity Usage | MT400 | MT400G | MT401 | MT401G | MT401FF | MT401FG |
|-------------|------------|---|----------------|-------|--------|-------|--------|---------|---------|
|             |            |   |                |       |        |       |        |         |         |
| 015773      | MT401FFsvc | Float Free housing service kit              | kit services 1 |       |        |       |        | ●       | ●       |
| 015772      | MT401con   | Float Free MT401 conversion kit             | kit services 1 |       |        | ●     | ●      |         |         |
| 015771      | MT400bat   | MT400 series battery service kit            | kit services 1 | ●     | ●      | ●     | ●      | ●       | ●       |
| 015770      | MT400extsw | MT400 external switch service kit           | kit services 1 | ●     | ●      |       |        |         |         |
| 015768      | MT401extsw | MT401 external switch refurbishment kit     | kit services 1 |       |        | ●     | ●      | ●       | ●       |
| 015769      | MT400intsw | MT400/401 internal switch refurbishment kit | kit services 1 | ●     | ●      | ●     | ●      | ●       | ●       |
| 015767      | MT400ant   | MT400 series antenna service kit            | kit services 1 | ●     | ●      | ●     | ●      | ●       | ●       |



| Product No. | Part Code   | Name / Description   | Quantity Usage | MT400 | MT400G | MT401 | MT401G | MT401FF | MT401FG |
|-------------|-------------|--|----------------|-------|--------|-------|--------|---------|---------|
| 013358      | 61A0356     | MT400 - mounting bracket collar  | 1              | ●     | ●      |       |        |         |         |
| 014617      | 97MT401MTG  | MT401 - mounting bracket collar (c/w magnets for defeat mechanism)     | 1              |       |        | ●     | ●      |         |         |
| 013357      | 61A0355     | Mounting bracket common base   | 1              | ●     | ●      | ●     | ●      |         |         |
| 015466      | 97CVR401FF  | Replacement Float Free Housing cover assembly (use with existing base) | 1              |       |        |       |        | ●       | ●       |
| 013365      | 97MT400PCB  | MT400 Electronic Circuit Module  | 1              | ●     | ●      |       |        |         |         |
| 014125      | 97MT401PCB  | MT401 Electronic Circuit Module  | 1              |       |        | ●     | ●      | ●       | ●       |
| ---         | MT400exPCB# | MT400 Exchange Circuit Module  | services 1     | ●     | *      |       |        |         |         |
| ---         | MT401exPCB# | MT401 Exchange Circuit Module  | services 1     |       |        | ●     | *      | ●       | *       |
| 015766      | MT401FFblt  | HRU bolt c/w SS nuts   | kit services 1 |       |        |       |        | ●       | ●       |
| 002106      | 74A4G16PEM  | Screws - cap retention   | 1              | ●     | ●      | ●     | ●      | ●       | ●       |
| 013654      | 74A6G25PEM  | Screws - battery retention   | 1              | ●     | ●      | ●     | ●      | ●       | ●       |
| 014011      | 74A4G10CEM  | Screws - switch ext switch assy  | 1              | ●     | ●      | ●     | ●      | ●       | ●       |
| 009768      | 74A2G10PEM  | Screws - leak test hole  | 1              | ●     | ●      | ●     | ●      | ●       | ●       |
| 015173      | 61A0504     | FF Adapter Plate (only)  | 1              |       |        |       |        | ●       | ●       |
| 013366      | 97MT400WND  | MT400 lower chassis c/w lanyard  | 1              | ●     | ●      |       |        |         |         |
| 014126      | 97MT401WND  | MT401 lower chassis c/w lanyard  | 1              |       |        | ●     | ●      | ●       | ●       |
| 013333      | 280018      | Lanyard Retention heat shrink tubing                                   | mult of 75mm   | ●     | ●      | ●     | ●      | ●       | ●       |
| 014289      | 61A0399     | MT400/401 Cap (only) with reflective tape                              | 1              | ●     |        | ●     |        | ●       |         |
| tba         | tba         | MT400G/401G Cap (only) with reflective tape                            | 1              |       | ●      |       | ●      |         | ●       |
| 013337      | 400563      | Security Label   | 1              | ●     | ●      | ●     | ●      | ●       | ●       |
| 013739      | 46A0441     | Ballast Weight   | 1              | ●     | ●      | ●     | ●      | ●       | ●       |
| 014610      | 310221      | Instruction manual 400/401   | 1              | ●     | ●      | ●     | ●      |         |         |
| 015472      | 310337      | Instruction manual 401FG/FGG   | 1              |       |        |       |        | ●       | ●       |
| 014135      | 310209      | Placard 400/401  | 1              | ●     | ●      | ●     | ●      |         |         |
| 015442      | 310336      | Placard 401FF/FG   | 1              |       |        |       |        | ●       | ●       |

**NOTES:**

\* Details to be advised. PCB Issue and firmware revision constraints apply.

# These items not presently available, please contact Standard Communications Pty Ltd.



### 3. BILL OF MATERIALS- 97MT400PCB, 97MT401PCB

| Part Number                  | Quantity Used | Designator                 | Description                                   | Footprint             |
|------------------------------|---------------|----------------------------|---|-----------------------|
| 013342,<br>013343,<br>013356 | 1             | J4                         | ANTENNA MOUNTING BRACKET, CUSTOM              | MT400-Ant             |
| 14798                        | 1             | L15                        | inductor smd                                  | 0805HQ                |
| 14710                        | 1             | C118                       | Capacitor                                     | 7343                  |
| 14706                        | 1             | D9                         | Schottky barrier dual diode (common cathode)  | SOT-323               |
| 14704                        | 2             | R69 R70                    | resistor smd                                  | 0805R                 |
| 14347                        | 1             | SW2                        | Ultra-micro SMT, hermetically sealed dry reed | CT05-xxxx-J1          |
| 14177                        | 2             | D7 D8                      | ESD Suppresion Diode                          | 0603R                 |
| 14096                        | 1             | J5                         | Contact Spring Clip - MT401 (41942-x)         | 46A0449               |
| 13971                        | 1             | F1*                        | fuse  | 1206                  |
| 13927                        | 2             | R54 R55                    | resistor smd                                  | 1206                  |
| 13919                        | 1             | L7                         | inductor smd                                  | 12L132XXSM            |
| 13918                        | 2             | R16 R37                    | resistor smd                                  | 0603R                 |
| 13917                        | 1             | U5                         | Low Voltage Comparator with Hysteresis        | SOT-23/5              |
| 13916                        | 2             | L10 L11                    | inductor smd                                  | 0805HQ                |
| 13914                        | 1             | R30                        | resistor smd                                  | 1206                  |
| 13600                        | 1             | D5                         | LED high intensity green SMD R/A              | SMD_led1              |
| 13599                        | 2             | D1 D6                      | LED high intensity white SMD R/A              | SMD_led1              |
| 13579                        | 3             | C1 C53 C54                 | cap ceramic smd                               | 1206                  |
| 13568                        | 1             | L3                         | inductor smd                                  | 0805HQ                |
| 13563                        | 2             | L8 L9                      | inductor smd                                  | 12FB0XT               |
| 13562                        | 1             | L13                        | inductor smd                                  | 0805HQ                |
| 13559                        | 1             | L6                         | inductor smd                                  | 0805HQ                |
| 13550                        | 1             | L12                        | inductor smd                                  | 0805HQ                |
| 13548                        | 1             | L14                        | inductor smd                                  | 0805HQ                |
| 13518                        | 1             | D3                         | DAS70-04                                      | SOT-23                |
| 13516                        | 1             | J3                         | 2 Pin Male Connector, PCB Mount, Latching     | JST_B2P-VH            |
| 13512                        | 2             | Y3 Y4                      | crystal                                       | HC-49/SM              |
| 13511                        | 1             | U4                         | Low-noise ULDO                                | SOT-23/5              |
| 13509                        | 1             | Q6                         | transistor smd                                | SO8R                  |
| 13508                        | 1             | U8                         | Wideband UHF power amp module                 | RA07M4047M<br>(RIVET) |
| 13507                        | 2             | Q1 Q5                      | N-Channel MOSFET Digital 25V                  | soT-23                |
| 13492                        | 3             | C37 C50 C81                | Bi-Polar Capacitor                            | ECEV_8.2/8.2          |
| 13490                        | 6             | FB1 FB5 FB9 FB10 FB11 FB12 | ferrite bead smd                              | 0603R                 |
| 13488                        | 1             | S2                         | integrated circuit, custom                    | Pad05                 |
| 13487                        | 1             | S1                         | transducer                                    | HCS1405A/B            |
| 13464                        | 1             | L5                         | inductor smd                                  | CDRH125               |
| 13463                        | 1             | Y1                         | Crystal Oscillator                            | XTAL_MC406            |
| 13460                        | 1             | SW1                        | switch leaded to specification                | MT400_SWITCH          |
| 13458                        | 5             | C58 C90 C99 C110 C123      | cap ceramic smd                               | 0603R                 |
| 13433                        | 2             | R18 R20                    | resistor smd                                  | 0603R                 |
| 13432                        | 1             | Y2                         | crystal                                       | HC-49/SM              |



| Part Number | Quantity Used | Designator                 | Description                  | Footprint  |
|-------------|---------------|----------------------------|------------------------------|------------|
| 13431       | 1             | U2                         | integrated circuit smd       | SOIC-20    |
| 13430       | 1             | U3                         | integrated circuit smd       | SO8R       |
| 13429       | 1             | U6                         | integrated circuit smd       | RU-16      |
| 13428       | 2             | U1 U7                      | integrated RF circuit smd    | SSOP16/154 |
| 13298       | 4             | R27 R65 R66 R72            | resistor smd                 | 0603R      |
| 13297       | 1             | D2                         | Schottky Diode               | SMC/403-03 |
| 13293       | 1             | Q4                         | P-channel MOSFET             | SO8R       |
| 13173       | 1             | C8                         | cap ceramic smd              | 0603R      |
| 13000       | 2             | L1 L2                      | inductor smd                 | 0805HQ     |
| 12650       | 1             | C91                        | cap ceramic smd              | 0603R      |
| 12404       | 1             | C17                        | cap ceramic smd              | 0603R      |
| 11863       | 1             | R60                        | resistor smd                 | 0603R      |
| 11684       | 1             | C95                        | cap ceramic smd              | 0805R      |
| 11667       | 1             | R9                         | resistor smd                 | 0603R      |
| 11484       | 1             | C33                        | cap ceramic smd              | 0603R      |
| 11482       | 2             | R10 R35                    | resistor smd                 | 0603R      |
| 11464       | 1             | Q9                         | resistor equipped transistor | soT-323    |
| 11314       | 3             | C7 C60 C86                 | cap ceramic smd              | 0603R      |
| 11060       | 1             | C46                        | cap ceramic smd              | 0603R      |
| 11027       | 1             | R38                        | resistor smd                 | 0603R      |
| 11017       | 3             | Q2 Q8 Q10                  | transistor smd               | SOT-323    |
| 10902       | 1             | C111                       | cap ceramic smd              | 0603R      |
| 10901       | 1             | C6                         | cap ceramic smd              | 0603R      |
| 10899       | 7             | C2 C15 C20 C25 C27 C32 C52 | cap ceramic smd              | 0603R      |
| 10891       | 1             | R22                        | resistor smd                 | 0603R      |
| 10888       | 1             | R1                         | resistor smd                 | 0603R      |
| 10886       | 2             | R36 R62                    | resistor smd                 | 0603R      |
| 10882       | 1             | R4                         | resistor smd                 | 0603R      |
| 10722       | 2             | C3 C5                      | cap ceramic smd              | 0603R      |
| 10236       | 2             | R34 R44                    | resistor smd                 | 0603R      |
| 10234       | 6             | R17 R23 R26 R28 R63 R64    | resistor smd                 | 0603R      |
| 10229       | 1             | R32                        | resistor smd                 | 0603R      |
| 10227       | 1             | R31                        | resistor smd                 | 0603R      |
| 9983        | 3             | R6 R7 R8                   | resistor smd                 | 0603R      |
| 9685        | 1             | Q11                        | NPN transistor               | SOT-323    |
| 8787        | 1             | R68                        | resistor smd                 | 0805R      |
| 8762        | 2             | R24 R50                    | resistor smd                 | 0603R      |
| 8745        | 2             | C61 C114                   | cap ceramic smd              | 0603R      |
| 8737        | 1             | R71                        | resistor smd                 | 0805R      |
| 8733        | 1             | R58                        | resistor smd                 | 0603R      |
| 8731        | 1             | R59                        | resistor smd                 | 0603R      |
| 8729        | 2             | R52 R67                    | resistor smd                 | 0603R      |
| 8720        | 1             | C82                        | cap ceramic smd              | 0603R      |
| 8717        | 1             | C47                        | cap ceramic smd              | 0603R      |
| 8714        | 2             | C87 C116                   | cap ceramic smd              | 0603R      |
| 8713        | 2             | R56 R57                    | resistor smd                 | 0603R      |



| Part Number    | Quantity Used | Designator                 | Description   | Footprint        |
|----------------|---------------|----------------------------|---|------------------|
| 8712           | 1             | R61                        | resistor smd  | 0603R            |
| 8647           | 1             | R51                        | resistor smd  | 1206             |
| 8628           | 1             | C115                       | trimmer capacitor   | TZC03            |
| 8621           | 1             | C117                       | cap ceramic smd   | 0805R            |
| 8585           | 1             | R14                        | resistor smd  | 0603R            |
| 8583           | 6             | R2 R12 R15                 | resistor smd  | 0603R            |
| 8583           |               | R19 R41                    | resistor smd  |                  |
| 8583           |               | R49                        | resistor smd  |                  |
| 8582           | 3             | R13 R43 R73                | resistor smd  | 0603R            |
| 8581           | 1             | R25                        | resistor smd  | 0603R            |
| 8579           | 2             | R3 R33                     | resistor smd  | 0603R            |
| 8574           | 11            | R5 R11 R21 R29 R39 R40 R42 | resistor smd  | 0603R            |
| 8574           |               | R45 R46 R47 R48            |   |                  |
| 8572           | 2             | C18 C94                    | cap ceramic smd   | 0603R            |
| 8571           | 17            | C19 C29 C39 C43 C56 C66    | cap ceramic smd   | 0603R            |
| 8571           |               | C67 C74 C78 C79 C93 C98    |   |                  |
| 8571           |               | C101 C102 C104 C109 C113   |   |                  |
| 8569           | 4             | C10 C31 C122 C126          | cap ceramic smd   | 0603R            |
| 8569           | 1             | C125                       | cap ceramic smd   | 0603R            |
| 8568           | 18            | C41 C44 C59 C64 C68 C70    | cap ceramic smd   | 0603R            |
| 8568           |               | C72 C76 C88 C92 C96 C97    |   |                  |
| 8568           |               | C105 C106 C108 C112 C119   |   |                  |
| 8568           |               | C121                       |   |                  |
| 8420           | 1             | C80                        | Bi-Polar Capacitor  | 6032             |
| 8418           | 6             | C23 C55 C69 C75 C77 C100   | Bi-Polar Capacitor  | 3216             |
| 8412           | 4             | C36 C51 C89 C103           | Bi-Polar Capacitor  | 3528             |
| 8406           | 2             | FB3 FB7                    | ferrite bead smd  | FBM3216          |
| 8405           | 3             | FB2 FB4 FB6                | ferrite bead smd  | FBM4532          |
| 8400           | 1             | D4                         | diode smd   | SOT-323          |
| 8324           | 2             | D10 D11                    | Varactor diode smd  | SOD-323          |
| 6860           | 1             | Q3                         | NPN RF transistor   | SOT-89           |
| 6854           | 1             | C120                       | cap ceramic smd   | 0805R            |
| 6850           | 25            | C4 C11 C14 C16 C21 C22     | cap ceramic smd   | 0805R            |
| 6850           |               | C24 C26 C28 C34 C35 C38    |   |                  |
| 6850           |               | C40 C42 C48 C49 C57 C62    |   |                  |
| 6850           |               | C63 C65 C71 C73 C83 C84    |   |                  |
| 6850           |               | C85                        |   |                  |
| 6675           | 2             | Q12 Q13                    | P-Channel enhancement mode vertical D-MOS                         | SOT-23           |
| 4567           | 1             | C30                        | cap ceramic smd   | 1206             |
| 2720           | 1             | Q7                         | UHF transistor  | SOT-23           |
| *              | 1             | MECH2                      | Used for the mechanical retention of GPS helix & mounting bracket | GPSANT_DWG_41827 |
| not applicable | 1             | TP                         | Test Point Pad  | TP(THRU)         |
| not applicable | 1             | TP18                       | Test Point Pad  | TP(thru)         |
| not applicable | 1             | TP12                       | Test Point Pad  | TP(THRU)         |



| Part Number    | Quantity Used | Designator           | Description   | Footprint            |
|----------------|---------------|----------------------|---|----------------------|
| not applicable | 1             | J1                   | SIB-106-02-F-S-LC   | SIB-106-02-F-S(F)    |
| not applicable | 1             | Man5                 | PCB Drawing Sheet (manufacturing / drawing aid only)            | A4                   |
| not applicable | 1             | Man1                 | Multilayer PCB Layer Inspection Box (manufacturing aid only)    | 4_LAYER_INSP         |
| not applicable | 1             | Man2                 | Modification Strike-out Box (manufacturing aid only)            | MOD_BOX_1            |
| not applicable | 2             | L17 L18              | microstrip printed inductor                                     | printed_inductor_5nh |
| model option   | 1             | MECH1                | Mechanical outline, fixing pts (2) and elect interface location | GPS_DWG_580290       |
| not applicable | 2             | Fid1 Fid2            | marking   | FIDUC_PCB            |
| not fitted     | 1             | L4                   | inductor smd  | 0805HQ               |
| not applicable | 1             | Man6                 | GME EPIRB logo  | LOGO_GME_EPIRB       |
| not fitted     | 1             | F1                   | fuse  | 612                  |
| not fitted     | 2             | D12                  | ESD Suppresion Diode  | 0805R                |
| not fitted     | 6             | C9 C12 C13 C107 C124 | cap ceramic smd   | 0603R                |
| not applicable | 2             | Man3 Man4            | ATE / Assembly Alignment Hole (manufacturing aid only)          | ATE_ALIGNMNT_HOLE    |



## 4. EXPLODED ASSEMBLY VIEW - MT400/401/401FF

