# SRT Marine Technology

# P244 Neon II+ Class B Transceiver (413-0079)

# Production Method Manual

| Issue | Date | Author | Review No. | Details |
|---|---|---|---|---|
| 1A | 15/03/16 | B Wu | | First draft |
| 1B | 18/04/16 | B Wu | | Comments from ADM, SH and PP addressed |
| 1C | 27/04/16 | B Wu | | Added step to add label to mounting bracket |
| 1 | 27/4/16 | S Horan | WIFI-81 | Formal Release at Issue 1 |

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# 1. INTRODUCTION

## 1.1. Purpose

This document provides basic guidance to suppliers for the production of the Neon II+ Class B Transceiver packaged product – SRT part number (413-0079).

This includes detailed assembly instructions for the Neon II+ Class B transceiver (413-0080).

## 1.2. Scope

This document outlines final assembly specification and any special instructions required for delivery of product.

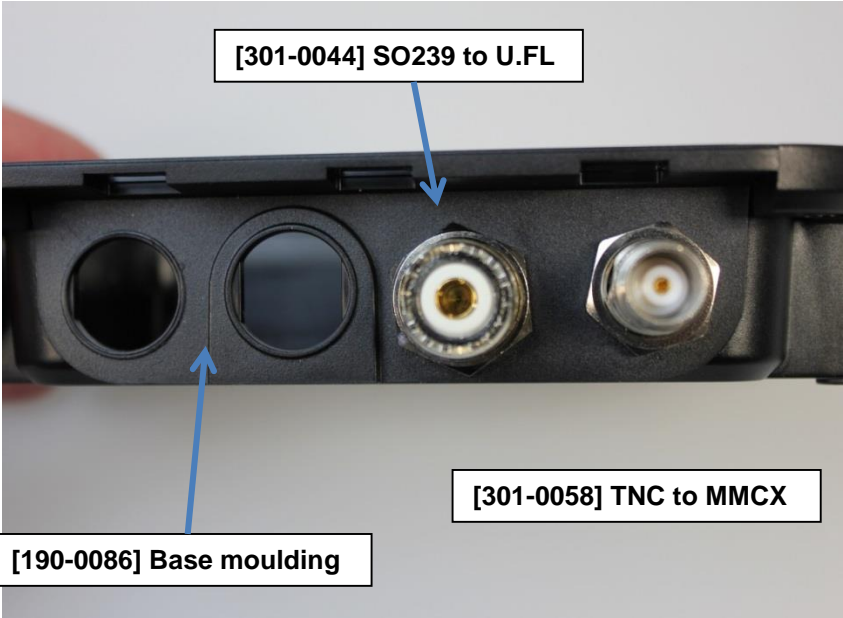## 1.1. Definitions and Abbreviations

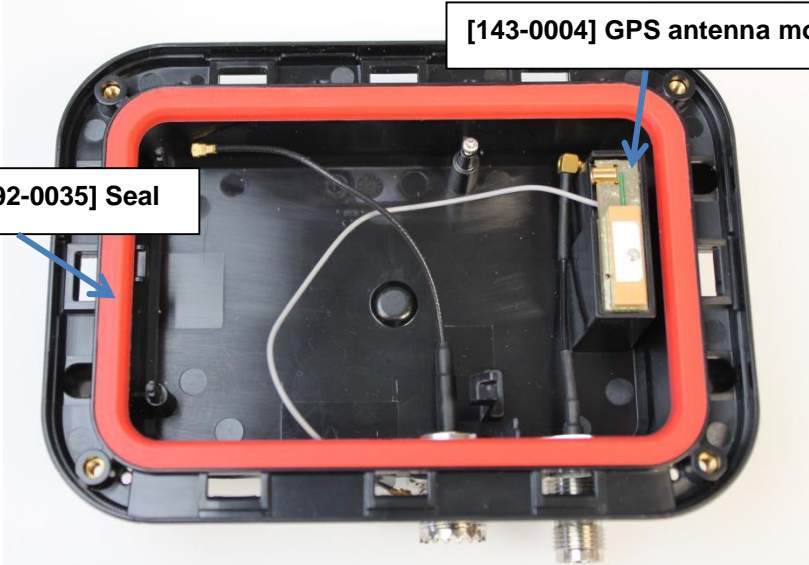| BOM | Bill Of Materials |
|-----|-------------------|
| ESD | Electrostatic Discharge |
| GPS | Global Positioning System |
| PCA | Printed Circuit-board Assembly |
| QA | Quality Assurance |
| VHF | Very High Frequency |

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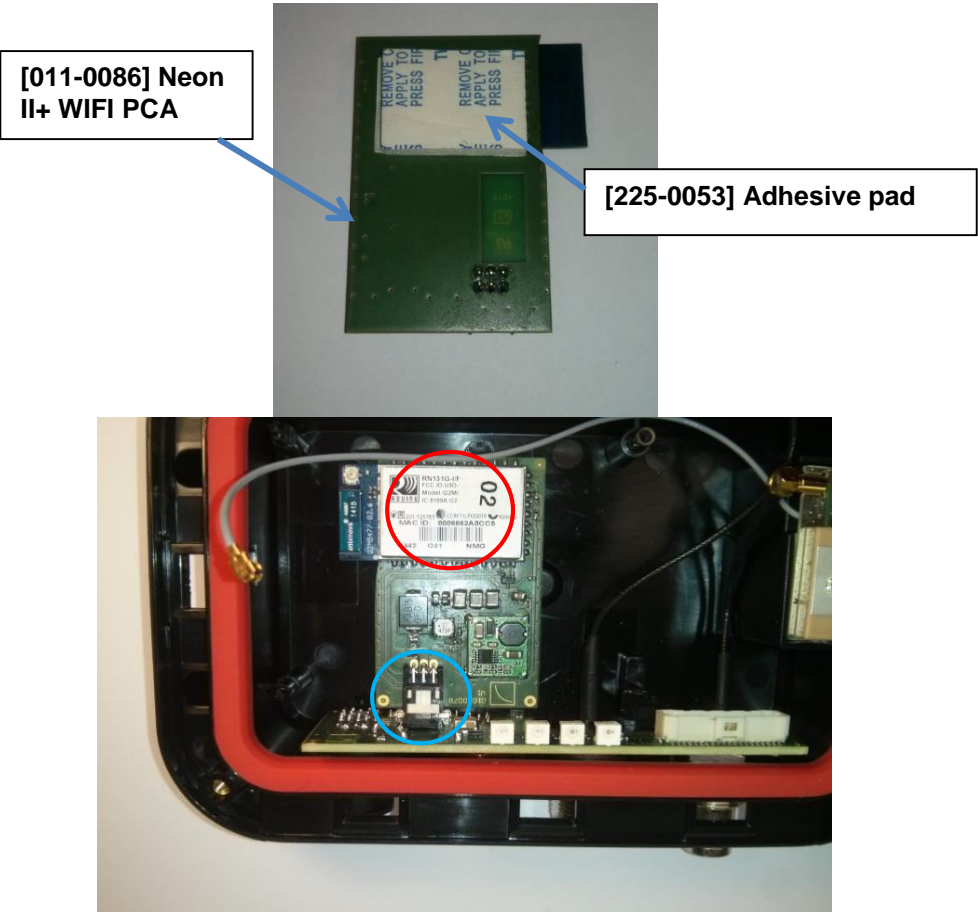
## 2. PRODUCTION ASSEMBLY PROCESS

General points:
- Gloves should be worn when handling items throughout the manufacturing process.
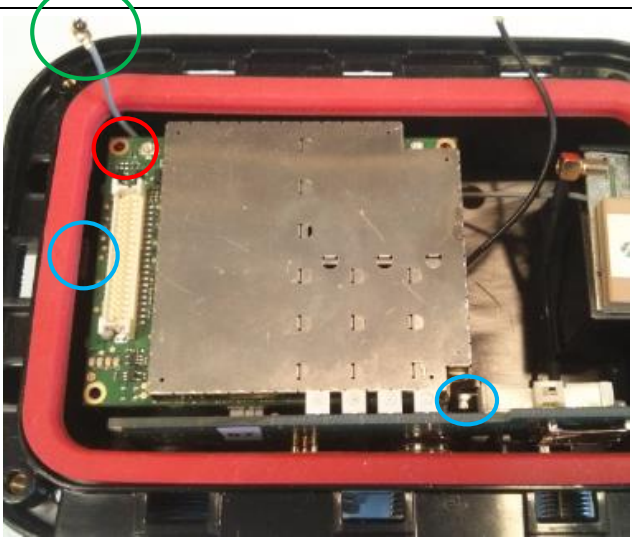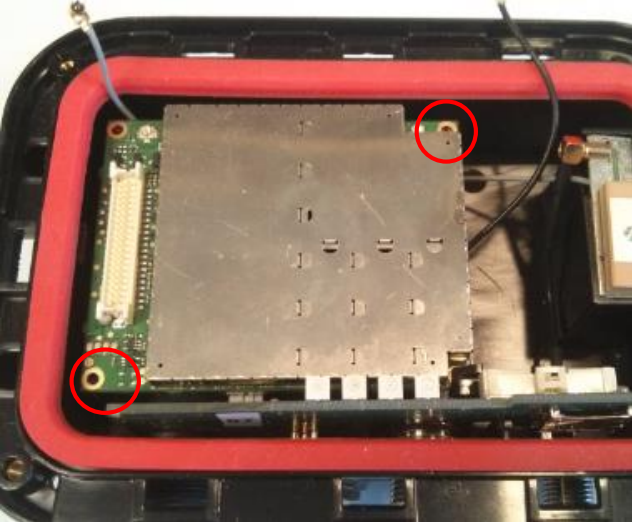- ESD precautions must be taken when handling electronic components.
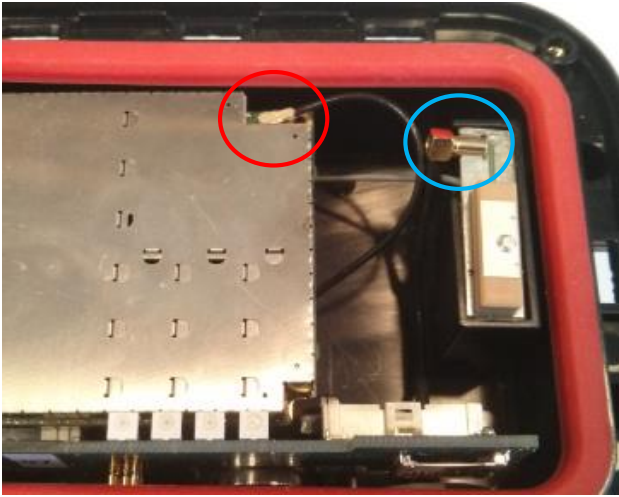
### 2.1. Neon II+ Class B Transceiver Assembly

| 1. | 1.1 Take the top moulding [190-0086]. Give it a visual inspection, checking for any Imperfections. This may be marks, scratches, discolouration, mould errors etc. If in doubt please seek advice from the QA department.<br><br>1.2 Take the VHF cable assembly [301-0044]. Ensure both the o-ring and nut are included.<br><br>1.3 Take the GPS cable assembly [301-0058]. Ensure both the o-ring and nut are included.<br><br>**QUALITY CARE POINT: ensure the o-rings are evenly seated in the channel in the connector body.**<br><br>1.4 Attach both cable assemblies to the base moulding. Use a torque setting of **1.5Nm.**<br><br>**QUALITY CARE POINT: take care not to scratch or mark the plastic when using the torque driver.** | **[301-0044] SO239 to U.FL**<br><br>**[190-0086] Base moulding**<br><br>**[301-0058] TNC to MMCX** |
|---|---|---|

| | | |
|---|---|---|
| 2. | 2.1 Take the GPS antenna module [143-0004] and secure into position using an adhesive strip [225-0034]<br><br>**QUALITY CARE POINT:  check module assembly is correct.  It should fit into the slot comfortably**<br><br>2.2 Take the seal [192-0035] and align with the base moulding.<br><br>**QUALITY CARE POINT:  place firmly into place so seal studs engage into enclosure location holes** | **[143-0004] GPS antenna module**<br><br>**[192-0035] Seal** |

| 3. | 3.1 Take the WIFI Connector PCA [011-0087] | |
|---|---|---|

3.1 Take the WIFI Connector PCA [011-0087]

Ensure the seals are present and nuts available.

Visually inspect the soldering of the multi way connectors on the Connector PCA for things such as

- Quality of solder joints
- Presence of short circuits
- Damaged components (check area around connector pins)

3.2 Assemble the PCA into the enclosure. Use a torque setting of **1.5Nm** for the nuts.

**QUALITY CARE POINT: Ensure the o-rings are located on the inside of the enclosure.**

**QUALITY CARE POINT: Ensure the o-rings are seated flat against the enclosure and the connector body.**



[011-0087] WIFI Connector PCA

o-ring

nut

| 4. | 4.1 Take the WIFI PCA [011-0086] and fix an adhesive foam pad [225-0053] to the underside directly underneath the WIFI module.<br><br>**QUALITY CARE POINT: Follow ESD precautions when handling the WIFI PCA**<br><br>4.2 Attach the WIFI PCA to the WIFI Connector PCA via the 6 way board to board connector (circled in blue).<br><br>4.3 Apply some pressure in the area circled in red to ensure the enclosure base has made good contact with the adhesive.<br><br>**QUALITY CARE POINT: Ensure pressure applied is not excessive, causing damage to the board-to-board connector or the WIFI module**. | **[011-0086] Neon II+ WIFI PCA**<br><br>**[225-0053] Adhesive pad** |

| 5. | 5.1 Take the Cobalt PCA [011-0014] and fix into the enclosure. Use the locating pin (circle in red) and push down to engage the 2 retaining clips (circled in blue).<br><br>**QUALITY CARE POINT: Follow ESD precautions when handling the Cobalt PCA**<br><br>**QUALITY CARE POINT: the grey GPS cable should pass underneath the Cobalt PCA.**<br>**The U.FL connector (circled in green) should be accessible by the locating pin.** |  |
|---|---|---|
| 6. | 6.1 Apply screws [222-0025] to secure Cobalt to enclosure. This requires a Torx 06 screwdriver. |  |

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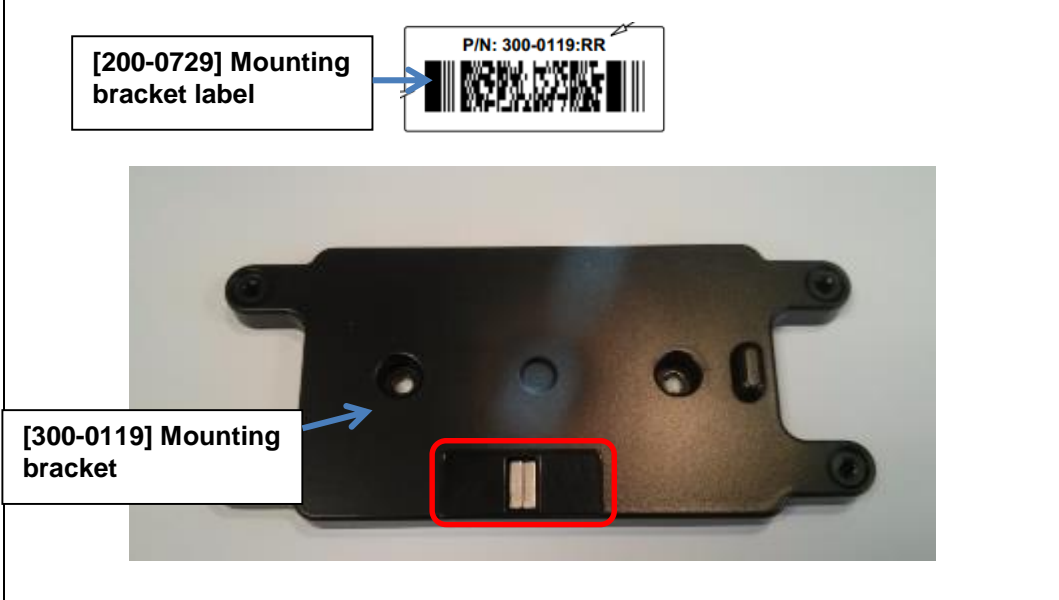| | | |
|---|---|---|
| 7. | 7.1 Take the U.FL end of the black SO239 cable [301-0044] and secure onto the Cobalt PCA (red)<br><br>7.2 Take the MMCX end of black TNC cable [301-0058] and secure onto the GPS antenna module (blue)<br><br>**QUALITY CARE POINT: take care to ensure both connectors are firmly 'clicked' into place.  Gently pull each cable to ensure the connectors are firmly attached.** |  |
| 8. | 8.1 Take the U.FL end (grey lead) of the GPS antenna module [143-0004] and secure on to the Cobalt PCA.<br><br>**QUALITY CARE POINT: take care to ensure the connector is firmly 'clicked' into place.** |  |

| 9. | 9.1 Take the 40 way cable assembly [301-0045] and attach from Cobalt PCA to the WIFI connector PCA.<br><br>**QUALITY CARE POINT: Ensure connectors are fully clicked in.** | <br>[301-0045] 40 Way cable assembly |
|----|----|----|

| 10. | 10.1    Insert the 2GB micro SD card [261-0022]<br><br>**QUALITY CARE POINT: Note that the SD card socket is reverse entry.**<br>**See bottom picture for reference (Connector PCA should already be secured into the base enclosure)** | <br><br><br><br>**[261-0022]**<br>**2GB Micro SD card** |
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|---|---|---|
| 11. | 11.1 Take the enclosure lid [190-0087] and place on top of unit but do not fully clip on |  [190-0087] Enclosure lid |
| 12. | **12.1 THE UNIT IS NOW READY FOR NEON II+ OEM PRODUCTION TEST** | See 'LD4099 – Neon II Production Manual V1.doc' for guide to using the Neon II Test System.<br>See 'WIFI-80 Neon II+ WiFi PCA & OEM Production Test Specification' for the latest test procedure |
| 13. | 13.1 Once the Neon II+ transceiver has passed production test, secure the lid.<br><br>Use 4x socket screws [222-0028] with a torque setting of **0.7Nm**. |  |

## 2.2. Neon II+ Class B Transceiver Packaged Product Assembly

| 1. | 1.1 Take the Mounting Bracket [300-0119] and apply the Neon II+ Mounting bracket label [200-0729] over the label recess (highlighted in red)<br><br>**QUALITY CARE POINT: Keep the orientation shown in the photo, i.e. Serial number should be closer to the centre of the bracket** |  |
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| 2. | 2.1 Place all accessories into the carton [210-0073], component of [305-0003].<br><br>Accessories are:<br><br>• 12W Power & Data cable with plastic bag [301-0059]<br><br>• 4x mounting screws [222-0027] + 2x anti-tamper screws [222-0042] all placed inside a plastic bag [211-0002]<br><br>• Mounting bracket [300-0119] with label (from step 1) placed inside a plastic bag [211-0006] | [210-0073]<br>Neon II Carton<br><br> |
|---|---|---|
| 3. | 3.1 Place the carton insert [210-0074] , component of [305-0003] into the main carton.<br><br>**QUALITY CARE POINT: Note angle of the corners.  This gives the insert the most strength.** | [210-0074]<br>Neon II Carton Insert<br><br> |

| | | |
|---|---|---|
| 4. | 4.1 Insert the Neon II+ transceiver into a plastic bag [211-0006] and then into the carton.<br><br>4.2 Place the ratings label [200-0700] into the carton. The label can be placed underneath the transceiver if deemed more secure. |  |
| 5. | 5.1 Close carton lid |  |

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| 6. | 6.1  Apply carton label [200-0699]<br><br>6.2  **QUALITY CARE POINT: Ensure the label is applied square to carton edges. Use an alignment fixture to achieve the stated dimensions.** |  |
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# ASSEMBLY FINISH

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