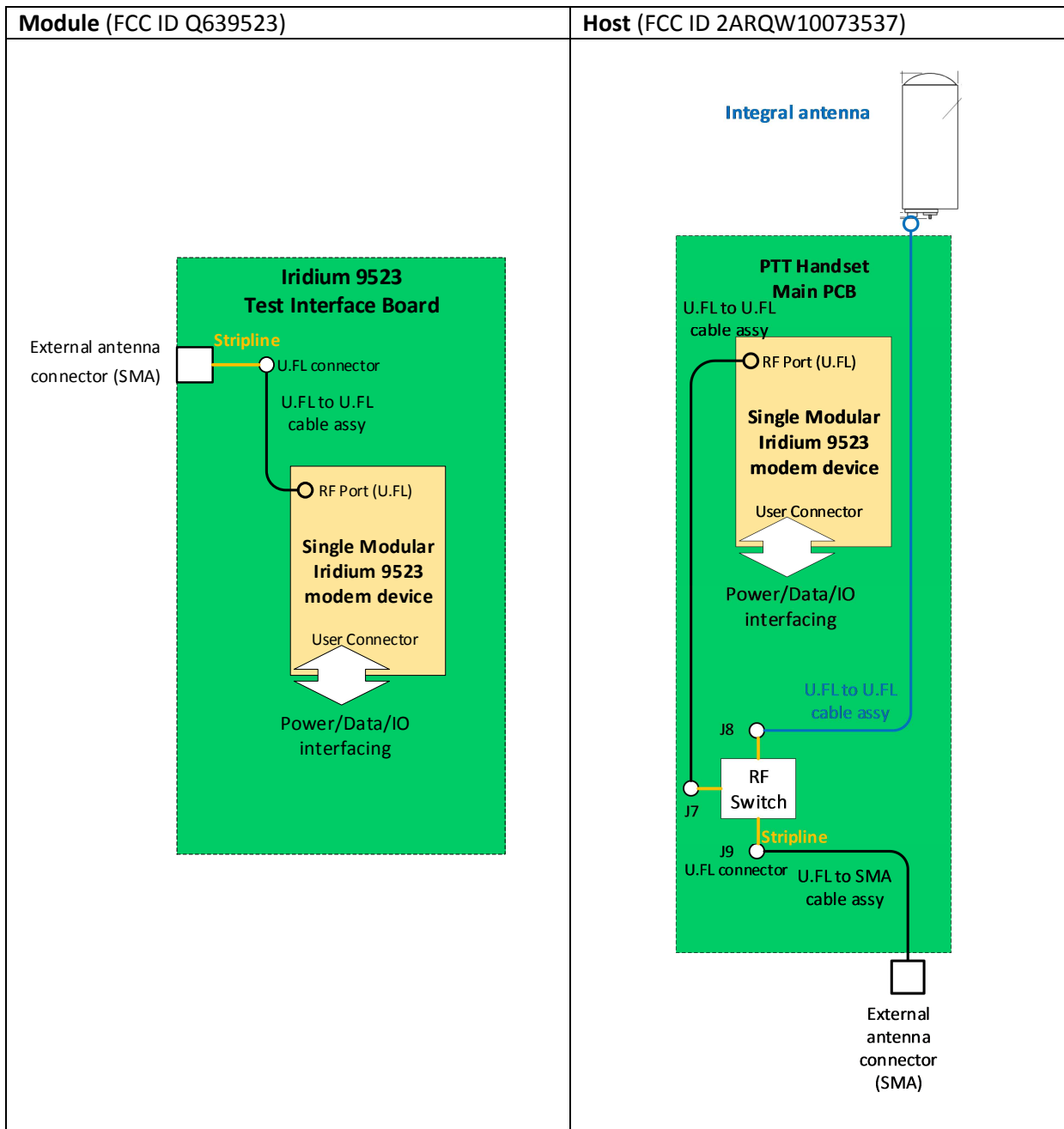


## Justification Statement for FCC Test Exhibits for Bracer™ PTT Handset and Ancillaries 2ARQW10073537

The 2ARQW10073537 PTT Handset “Host” integrates the Single Modular Iridium 9523 modem device, FCC ID Q639523. With reference to FCC guidance<sup>1</sup>, this document is provided as justification for the inclusion of Test Exhibits, including the re-use of some of the original results for the Single Modular Iridium 9523 modem device.

### Comparison of Test Configurations of Module and Host



<sup>1</sup> Frequently Asked Questions and Answers about Modules, 996369 D02 Module Q and A v01  
[https://apps.fcc.gov/kdb/GetAttachment.html?id=vwCq9pC68KkaN6E7YFmWHA%3D%3D&desc=996369%20D02%20Module%20Q&A%20v01&tracking\\_number=44637](https://apps.fcc.gov/kdb/GetAttachment.html?id=vwCq9pC68KkaN6E7YFmWHA%3D%3D&desc=996369%20D02%20Module%20Q&A%20v01&tracking_number=44637)

<b>Module (FCC ID Q639523)</b>	<b>Host (FCC ID 2ARQW10073537)</b>
<p>Connection diagram showing Single Modular Iridium 9523 modem device fitted to Iridium 9523 Test Interface Board, as used for Part 25 &amp; Part 15 testing of Single Module by TRAC (as per report TA-006099-00-W-US1), with reference to “Internal Photos” exhibit for FCC ID Q639523.</p>	<p>Connection diagram showing Single Modular Iridium 9523 modem device fitted to Main PCB of QinetiQ Bracer™ PTT Handset “host”.</p>
<p>The Test Interface Board (TIB) provides access to the modem’s two connectors:</p> <ol style="list-style-type: none"> <li>1) User Connector – 40-way port for power input, GPIO and serial interfaces (on underside of modem);</li> <li>2) RF Port – U.FL connector.</li> </ol> <p>The TIB conditions the power inputs to the 9523 modem.</p> <p>The RF port is attached via a U.FL co-axial cable assembly to the TIB, and connected via stripline on this PCB to an SMA connector for an external antenna.</p>	<p>The Main PCB provides access to the modem’s two connectors:</p> <ol style="list-style-type: none"> <li>1) User Connector – 40-way port for power input, GPIO and serial interfaces (on underside of modem);</li> <li>2) RF Port – U.FL connector.</li> </ol> <p>The Main PCB routes power input rails to the 9523 modem, which are conditioned on a mezzanine Daughter PCB (not shown in the diagram above).</p> <p>The RF port is attached via a U.FL co-axial cable assembly to the Main PCB, and connected via stripline on this PCB to a 2-way RF switch to U.FL connectors for either the integral antenna or an external antenna.</p>

## Justification Statement for Test Exhibits for Host

Item	Rationale	Proposed exhibit
Part 15	Bespoke PCBs have been developed for the Bracer™ PTT Handset, therefore EMC performance needs to be tested.	Part 15 EMC test report for PTT Handset “Host”: Document TRA-037400-36-03D
Part 25	<p>Equivalence of the test configuration (Iridium Test Interface Board [TIB]) used for radio testing of the 9523 “Module” and its use (as mounted on Main PCB) in the PTT Handset “Host” is claimed, on the basis that:</p> <ul style="list-style-type: none"> <li>a) In both cases, the RF port of the 9523 module is simply routed via stripline on the test/host board to another connector with no intentional modification of the signals;</li> <li>b) The TIB and the Main PCB perform directly equivalent roles of providing the required power supply rails to the 9523 module (as well as other interfacing, e.g. for control and data).</li> </ul> <p>In addition, Iridium LLC and QinetiQ have successfully undertaken joint RF performance testing – including RF output – of the Bracer™ PTT Handset, as required for Iridium certification purposes.</p>	<p>Radio Test report for Q639523 “Module”: Document TRA-006099-00-W-US1</p> <p>plus Rationale (left) to justify equivalence.</p>
RF Exposure (SAR)	<p>Original modular grant for 9523 modem includes condition “must be installed to provide a separation distance of at least 20 cm from all persons”.</p> <p>Bracer™ PTT Handset is intended for body-worn use with its integral antenna (as noted in the User Manual), thus this condition is violated when this antenna is in use. Therefore Specific Absorption Rate (SAR) measurements are required for this use case.</p> <p>When the external antenna is in use, the 9523 Modular Grant condition is applied, on the basis of equivalence of connection.</p>	<p>KDB SAR report for PTT Handset “Host” for use of the integral antenna: Document 75942542 Report 02</p> <p>Read-across of 20 cm separation condition from Module’s Q639523 Modular Grant for Rule Part 25 when using the external antenna.</p> <p>Bracer™ PTT User Manual (Document QINETIQ/18/02745) for Host provides instructions and training in the use of both configurations.</p>