O₂

Airwave mmO₂ Ltd
Airwave Radio Terminal Connection Certificate

This connection certificate is for the following radio terminal equipment only (the "*Equipment*"):

	Manufacturer:	Version:	Other relevant details:
Supplier Equipment Hardware	Chelton	CH450	
Supplier Equipment Software	Thales	7.1.2	

This above Equipment has been assessed against the following:

	Airwave Conformance Assessments (refer to Annex A)	Airwave Functionality Assessments (refer to Annex B)	Airwave defined Drive Assessment
Assessment Result	Pass	Assessed	Not Assessed
Date(s) Test Performed:	5th October 2005	5th October 2005	

The radio terminal equipment was assessed using the detailed below, Airwave mmO2 Reference System :

Airwave Interface version	R5.2

And is approved for use on the following Airwave mmO2 Network Versions:

Airwave Interface version(s)	R5.2 & R5.1

Subsequent pages of this certificate contain additional information relating to the issue of this certificate.

The testing conducted on the Equipment, or information provided by the manufacturer, suggests that, as configured in accordance with the above specifications, the Equipment which has either Passed or Passed (Self Assessment) is unlikely to adversely impact the Airwave Network.

Signed:

Andy Noy

Andy Noy
Radio Optimisation and Design Manager
Date: 9th May 2006

Author Wilf Tanser Date 09/05/2006

Notices:

Results nomenclature used on face page:

Pass – The Radio Terminal assessments have been successfully demonstrated to Airwave.

Pass (Self Assessment) – The Radio Terminal manufacturer has stated to Airwave that the product meets Airwave specifications.

Not Assessed – The Radio Terminal has not been offered for the relevant assessment section.

Fail – The Radio Terminal assessments have been neither successfully demonstrated nor proven to Airwave.

Disclaimer:

This Airwave Radio Terminal Connection Certificate is for information purposes only and Airwave mmO$_2$ Ltd makes no warranty or guarantee whatsoever as to the fitness for purpose of the Equipment or its ability to operate correctly when connected to the Airwave Network or any other network or equipment. Notwithstanding the issuance of this Certificate, use of the Equipment, connection of the Equipment to the Airwave Network is at the user's risk. Airwave mmO$_2$ Ltd shall not be liable for loss or damages of any kind (whether due to negligence or otherwise) arising in relation to use of the Equipment, its connection to the Airwave Network the issuance or content of this Connection Certificate. Nothing in this Certificate purports to exclude or limit any liability which not be excluded or limited by law.   This certificate does not confer any rights on the recipient as against any third party (including any manufacturer of the Equipment).

Notes:

i)   The functionality assessments stated in Annexes A & B of this document are the Assessment titles from the Airwave Test specifications full details of which are published on the Airwave Service Web site (www.airwaveservice.co.uk) in the TOPS documentation directory. The password for this area is available on request to Airwave.

Author Wilf Tanser Date 09/05/2006

ANNEX A – Conformance (Mandatory) Functionality Exercised.

CONFORMANCE TEST - MANDATORY

Tests Completed

5.1.1	Scan for network followed by successful registration
5.1.2	De-Registration
5.1.3	Attempted Registration At Denied EBTS
5.1.4.1	Successful Authentication With Class 2 Encryption
5.1.4.2	Un-successful Authentication With Class 2 Encryption
5.1.5	Authenticated Registration With Class 3 Encryption Enabled
5.1.6.2	Change of SCK System R5.1 & Future Only
5.1.8.1	Static Disable
5.1.8.2	Static Enable
5.1.8.3	Registration When Disabled
5.1.8.4	Handover To New EBTS In Disabled State
5.1.8.5	Static Disable Followed By Loss & Restoration Of Power
5.1.10	Radio Check
5.2.1.1	Change Of Attached Talk Group
5.2.1.2	Normal Priority Group Call
5.2.1.3	Normal Priority Group Call With Clashing PTT Request
5.2.1.4	Normal Priority Group Call With Priority Interrupt
5.2.2	Incoming Private Individual Call
5.2.3	Outgoing Private Individual Call
5.2.4	Outgoing Telephony Call
5.2.5	Incoming Telephony Call
5.2.6	Status Call From Radio Terminal To Attached Group
5.2.7.1	Emergency Status
5.3.2	Undeclared Handover
5.3.3	Unannounced Handover In Normal Group Call
5.3.4	Announced Type 3 Handover In Normal Group Call
5.3.5	Announced Type 3 Handover In Full Duplex Telephony Call
5.3.6.1	Queuing - Unannounced Group Call
5.3.6.2	Queuing - Announced Type 3 Group Call
5.3.7	Successful Queuing During Telephony Call Restoration
5.3.8	Pre-emption During Group Call Restoration
5.3.11.1	Loss of service Group Call (Receiving)
5.3.11.2	Loss of service Group Call (Transmitting)
5.3.11.3	Loss of service Full Duplex Telephony Call
5.3.13.1	Subscriber Class (ATG) Highly preferred SC at Adjacent EBTS Site
5.3.13.2	Subscriber Class (ATG) Sole ADJ not Highly preferred SC
5.3.13.3	Subscriber Class (ATG) Reselection of preferred SC EBTS site
5.3.13.4	Subscriber Class (ATG) Future proof Config
5.4.1	Private Call To Engaged Radio Terminal
5.4.2	Private Call To De-Registered Radio Terminal
5.4.3	Attempted Group Call To Non Enabled Group
5.4.4.1	Normal Priority Group Call out of area (GSSI)
5.4.4.2	Emergency Priority Group Call out of area (GSSI)
5.4.5	Telephony Call Barred By System
5.4.6	Incoming private call to radio terminal in group call
5.4.7	Incoming telephony call to radio terminal in group call
5.5.1	Open loop Power Control on IFR
5.5.2	Closed loop Power Control on IFR
5.6.1.2	Single dominant EBTS system In Class 3 Encryption
5.6.2	Dom EBTS with Wide Area site available
5.6.3	No SVCs Non Dominant & Available Dominant And Wide Area EBTS
5.6.4	No SVCs ND EBTS & available DOM & Wide Area EBTS

5.6.5	All SVCs Non Dominant EBTS & Available Wide Area EBTS
5.6.6	All SVCs Non Dominant & Available Dominant And Wide Area EBTS
5.7.1	Message RX in idle
5.7.2	Message RX when receiving group call
5.7.3	Message RX with terminal in telephony call
5.7.4	Message TX with terminal in idle mode
5.7.5	Message RX when transmitting in group call
5.7.6	Message TX when transmitting in group call
5.7.7	Message TX with terminal in telephony call
5.7.8	Message TX to terminal with a full data store
5.7.9	Message RX at terminal with a full data store

Tests Not Assessed

5.1.6.1	Change of SCK Systems R3, R4 & R5.0 Only
5.1.7.1	Basic Transmit Inhibit
5.1.7.2	Transmit Inhibit In Operation With Cell Handover
5.1.9.1	Basic Ambient Call
5.1.9.2	Radio terminal in ambient call ignores normal group call
5.1.9.3	Radio terminal in ambient call iniatesnormal group call
5.1.9.4	Radio terminal in ambient call iniates EM group call
5.1.9.5	Radio terminal in ambient call iniates private call
5.1.9.6	Radio terminal in ambient call iniates Telephony call
5.2.7.2	Follow Up Emergency Group Call
5.3.1.1	Sampling & Measurement Of Serving & Neighbour Cells (UNB)
5.3.1.2	Sampling & Measurement Of Serving & Neighbour Cells (ENB)
5.3.9	Manual Change Of MNC
5.3.10.2	Manual Change Of MCC
5.3.12.1	Subscriber Class (Terrestrial) Not Valid At Adjacent EBTS Site
5.3.12.2	Subscriber Class (Terrestrial) Not Valid At sole Adjacent EBTS Site
5.3.12.3	Subscriber Class (Terrestrial) Reselection of Valid EBTS site
5.3.12.4	Subscriber Class (Terrestrial) Future proof Config
5.6.1.1	Single dominant EBTS system In Class 2 Encryption

Author Wilf Tanser Date 09/05/2006

ANNEX B – Functionality and Services (Optional) Assessments.

Assessed

6.1.1   TalkGroup Scan (Passive)
6.1.2   DGNA
6.1.3   Patch & re-Group
6.1.4   Multiselect & re-group
6.1.5.1   Radio Previously Turned Off
6.1.5.2   Radio Previously In Private Call
6.1.6   Change Of Group During Call
6.1.7   Talking Party Identification At Radio Terminal
6.6.1.1   DTMF Outgoing Call
6.6.1.2   DTMF Incoming Call

Author Wilf Tanser Date 09/05/2006