BP30
ATE#4 test specification

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Viale Stazione di Prosecco, 15

34010 Sgonico (Trieste) Italy

For questions on technology, delivery and prices please contact the Neonseven Offices in Italy Sgonico and Gorizia

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1 Document Mission/Scope

1.1 Mission

The purpose of this test is to secure that the MMI and physical appearance of the phone is OK. When present on board, also camera is tested during this stage. Label printing and final programming is also handled in this document. The whole process described in this document is identified by name ATE#4.

1.2 Scope

This document applies to NeonSeven S.r.L. Globe2 board test, and should be used as guideline for ATE#4 test of BP30 platform based projects.

2 List of Acronyms

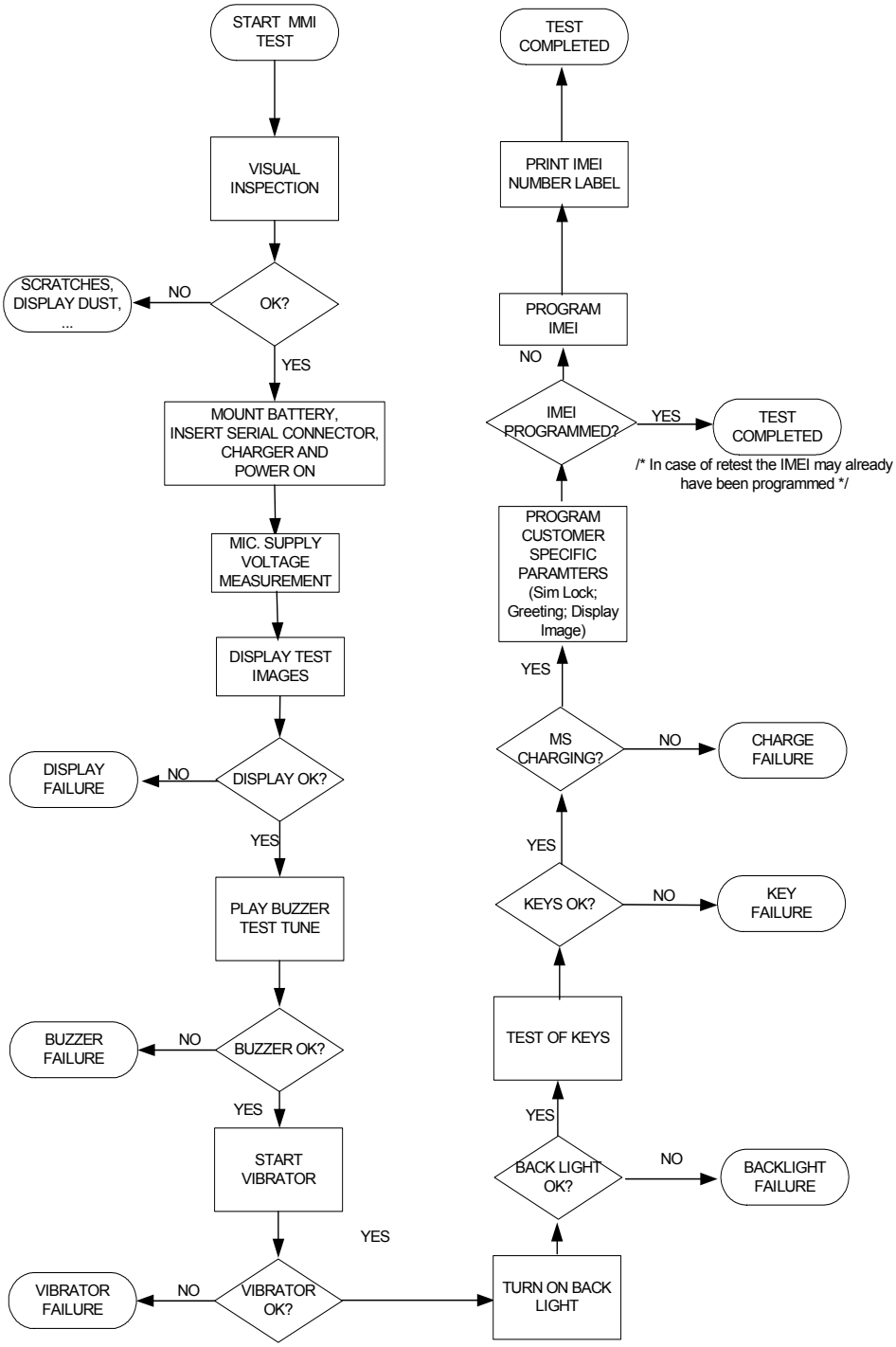
Abbreviation / Term	Explanation / Definition
MMI	Man Machine Interface
DUT	Device Under Test
MS	Mobile Station

3 Introduction

The purpose of this test is to secure that the MMI and the physical appearance of the phone is OK. The test is divided into a visual inspection of mechanics and electronics, programming of “EEPROM” data in the flash memory and label printing. After inspecting the mechanics, a battery is inserted and a command from the PC test program initiates a test sequence, which starts a display, keyboard, vibrator and a buzzer test; optionally a camera test is started (if camera is present in features list). Furthermore all MMI parameters are programmed and the IMEI number label is printed. When the test is successful the result (together with the test parameters) is written to the “EEPROM” area in the flash memory and a confirmation is sent to the PC.

4 System description

4.1 ATE#4 flow



4.2 Tester hardware

In order to perform ATE#4 tests following hardware is needed:

- PC with serial interface (RS232).
- RS-232 level shifter with fixtures and hardware to drive handshakes (when needed).
- DC power supply (e.g. charger for MS)

5 Mechanics inspection

5.1 Scratches

Visually inspect the MS for scratches and marks. If one is observed, stick a label next to the affected area. Check that the display and the dust seal are correct assembled (centered and no tilt), and that there is no dust under the display window.

5.2 Assembly

Visually inspect the MS for correct assembly. The housing must be closely and tight assembled, and the gap between the front and rear part must be equal all around.

5.3 Key-set printing

Visually check that the printing on the key-set is OK

6 Electronics inspection

6.1 Test sequence

a. Insert a battery into MS
b. Connect charger to MS
c. Connect MS to the PC
d. Power on MS
e. Press button on PC to start test

1. Issue microphone supply measurement command from PC, get measured value from phone. Program this value into the NVRAM, parameter chr_eep_mic_resistor_offset.

2. Visually check if all display pixels is functional
   Acknowledge on PC keyboard if the display test passed or failed

3. Listen if the buzzer emits a ringing tone
   Acknowledge on PC keyboard if buzzer test passed or failed (sound pure?)

4. Feel if the MS starts vibrating
   Acknowledge on PC keyboard if the vibrator test passed or failed

5. Visually check if all backlight LED's are functional
   Acknowledge on PC keyboard if the LED test passed or failed

6. Press all keys on the MS and open/close the flip (to activate the hook off switch) until the display test pattern disappears.
   Acknowledge on PC keyboard if the key-set test passed or failed

6. Automatic detection that MS is charging
7. The test result is written back to the MS

6.2 Optional Test

6.2.1 IrDA Production test

This test ensures that the IrDA functionality on the phone is working correct in RX and TX mode.

The Dummy unit in this test is a known good phone and all commands to this unit are described below. If another type of test equipment is used to test the IrDA functionality on the phone the commands send to the test equipment need to be changed to specific test equipment.

6.2.1.1 Start IrDA test

1. Apply 3.8V supply voltage to Dummy unit with power supply
2. Send command **DWD_enter_irda_test_mode** to Dummy unit
   Parameter: none
   Returns: OK / ERROR

3. Apply 3.8V supply voltage to DUT unit with power supply
4. Send command **DWD_enter_irda_test_mode** to DUT unit
   Parameter: none
   Returns: OK / ERROR

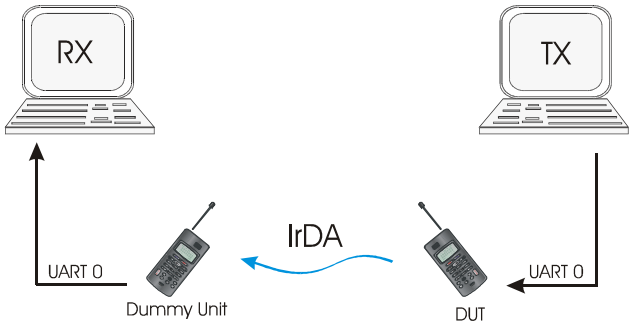
6.2.1.2 IrDA sending test

[DUT]
Send command **DWD_enter_irda_test_mode** to DUT
Parameter: none
Returns: OK / ERROR

[Dummy unit]
Send command **DWD_receive_irda_data** to Dummy
Parameter: Baud rate = 115200, Pattern = 2, timeout in seconds = 5
Returns: OK / ERROR

[DUT]
Send command **DWD_send_irda_data** to DUT
Parameter: Baud rate = 115200, pattern = 2
(This command shall be sent within 5 seconds after Receive IrDA command is sent to Dummy unit)

If Dummy unit returns OK the test pattern is recognized and the IrDA sending test is **passed**
If the Dummy unit returns ERROR the IrDA sending test is **failed**

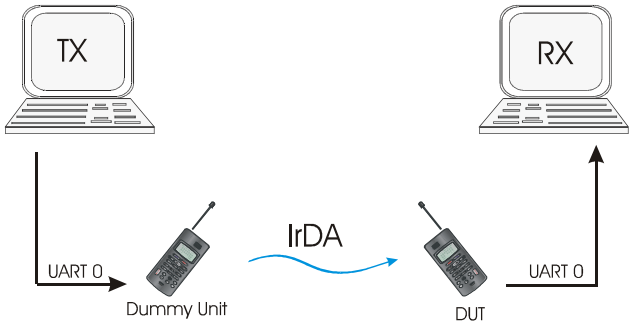


6.2.1.3 IrDA receiving test

//DUT//
Send command **DWD_receive_irda_data** to DUT
Parameter: Baud rate = 115200, Pattern = 2, timeout in seconds = 5
Returns: OK / ERROR

// Dummy Unit //
Send command **DWD_send_irda_data** to Dummy
Parameter: Baud rate = 115200, pattern = 2
(This command shall be sent within 5 seconds after Receive IrDA command is sent to DUT unit)

If DUT unit returns OK the test pattern is recognized and the IrDA receiving test is **passed**
If the DUT unit returns ERROR the IrDA receiving test is **failed**



6.2.1.4 Stop IrDA test

//DUT//
Send command **DWD_exit_irda_mode** to DUT
Parameter: none
Returns: OK / ERROR

//Dummy Unit //
Send command **DWD_exit_irda_mode** to Dummy
Parameter: none
Returns: OK / ERROR

7 Programming

7.1 Program customer specific parameters

1. Startup logo in the LCD display
1. MMI text language
2. User settings (tones and levels, redial on/off, clock setting, messages setup, welcome greeting and etc.)
3. Net-operator settings (pre-paid options as e.g. AOC settings and etc.)
4. SIM lock type and code
5. Customer specific parameters (stock number and etc.)
6. Production week and year
7. IMEI number

8 Label printing

1. PC is printing IMEI number label
2. Acknowledge on PC keyboard if the label is OK or needs to be reprinted
3. Switch off the MS
4. Remove the battery from the MS
5. Stick the IMEI number label on the predetermined location on the rear part
6. Stick protection tape on the display window

9 References

9.1 External

Title	Doc ID
ATE#4_test_specification_1.3.doc	

9.2 Internal

Title	Doc ID
IrDATestHardware.doc	AH01.SW.TN.000005

10 Document change report

	Change Reference		Record of changes made to previous released version	
Rev	**Date**	**CR**	**Section**	**Comment**
1.0	28/06/2004	Diego Barbana	Document Created	
2.0	10/02/2006	Diego Barbana	Document revised	

11 Approval

Revision	Approver(s)	Date	Source/signature
1.0	Stefano Godeas	28/06/2004	Document stored on server
2.0	Stefano Godeas	10/02/2006	Document stored on server