



EXCELPOINT SYSTEMS (PTE) LTD

PRODUCT SPECIFICATION	
PROJECT	Automatic RF Test System (ARTS)
CUSTOMER	Excelpoint
REVISION	1.1
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AUTOMATIC RF TEST SYSTEM (ARTS)

	Product Development Department		Marketing Department	Customer
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DATE	11/04/2003	11/04/2003		

Specifications are subject to change without prior notice.

~ CONFIDENTIAL ~



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8 *Product Specification*
9 *for*
10 *Automatic RF Testing System*
11 *(ARTS)*

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2 **DOCUMENT CHANGE HISTORY**

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Version	Date	Person	Remarks
1.1	11/04/2003	Zou Libo	

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1 **1. Introduction**

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The main purpose of designing this testing system is to simplify and automate the Bluetooth RF Testing by integrating the Anritsu Bluetooth Testing System with CSR specific testing functions.

ARTS is developed to testing Bluetooth™ modules incorporating CSR's Bluecore range of devices. In general, testing radio frequency (RF) based products is a complex issue however this system provides a generic production testing which is intended to give confidence that the final shipped modules compliances with Bluetooth RF specification. The ARTS testing system is built upon CSR's test interface and an Anritsu 8850 RF tester. The testing system itself does concentrate on the RF aspect. It will be working as one of the individual test station in the module production line. Due to the limitation of the Anritsu RF testers, this system will only cover 8 Bluetooth RF test cases (see below in red) among the total of 14 test cases, however, this should be sufficient to verify the RF performance during mass production.

TRM/CA/01/C	Output Power (class 1)
TRM/CA/02/C	Power Density
TRM/CA/03/C	Power Control
TRM/CA/04/C	TX Output Spectrum – Frequency range
TRM/CA/05/C	TX Output Spectrum – 20 dB Bandwidth
TRM/CA/06/C	TX Output Spectrum – Adjacent channel power
TRM/CA/07/C	Modulation Characteristics
TRM/CA/08/C	Initial Carrier Frequency Tolerance
TRM/CA/09/C	Carrier Frequency Drift
TRC/CA/01/C	Out-of-Band Spurious Emissions
RCV/CA/01/C	Sensitivity – single slot packets



RCV/CA/02/C	Sensitivity - multi-slot packets
RCV/CA/03/C	C/I performance
RCV/CA/04C	Blocking performance
RCV/CA/05/C	Intermodulation Performance
RCV/CA/06/C	Maximum Input Level

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3 2. Overview

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5 ARTS is designed as an generic Bluetooth RF testing system which can be
6 implemented in the production line for Bluetooth Module manufacturing.
7 Although it covers only 8 RF test cases instead of total 16 test cases requested
8 by SIG for Bluetooth qualification, however, it is sufficient for production
9 verification.

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ARTS provides a friendly user interface for both Production Engineer and
11 Production Operator.

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12 ARTS records all the test result related with every Bluetooth Module for future
13 debugging and tracking.

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16 The aim of this document is to cover the following areas of interest:

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- Basic Functions
- User Interface
- Testing Flow Chart

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22 3. Basic Functions

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24 ARTS is designed as a individual test station :

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27 3.1 Bluetooth RF Test Cases Coverage:

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- Output Power Testing
- Power Control Tesiting (Calss 1 module only)
- Modulation Characteristics

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- 1 • Initial Carrier Frequency Tolerance
- 2 • Carrier Frequency Drift
- 3 • Sensitivity – single slot packets
- 4 • Sensitivity - multi-slot packets
- 5 • Maximum Input Level
- 6 • PIO PIO Loop back test
- 7 • AIO AIO Loop back test
- 8 • PCM loop back PCM external loop back test
- 9 • UART UART Access test
- 10 • USB USB Access test

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13 **3.2 Parameter setting on the Module:**

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- PS-ANA-Trim: Adjusting Frequency Accuracy.
- Bccmd-Security-Active: Activate Security at last step in production.
- Bdaddr: Generating and program BT address

20 Following works are excluded from this project:

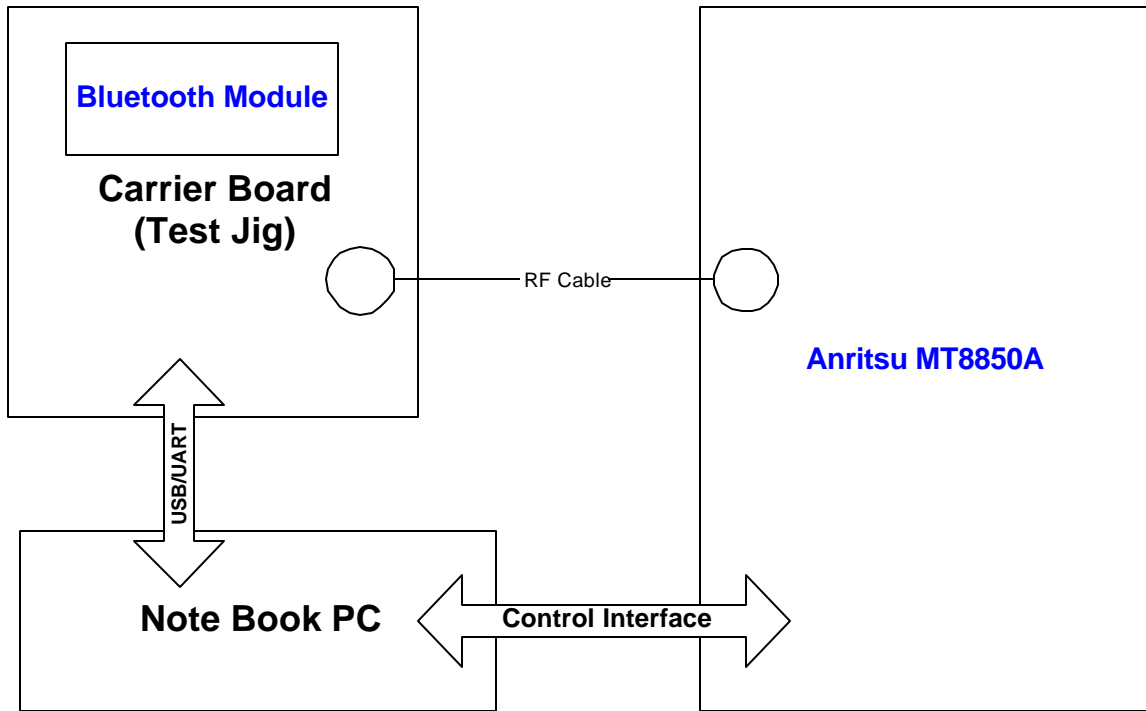
- 21 1. Flash Programming.
- 22 2. Product level Functional testing.
- 23 3. Basic validation testing such as inquiry, connecting, etc.
- 24 4. Customer & shipment & components specific PS setting (Exp. Country
- 25 code, manufacturer ID) (only for individual module setting)
- 26 5. Hardware jigs.

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28 **Development Environment:**

- 29 1. Anritsu Device.
- 30 2. VB
- 31 3. Anritsu Blue Test
- 32 4. CSR DLL
- 33 5. USB HCI module /w base carrier board and RF connector

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