



Product Introduction

ME7832A

Protocol Conformance Test System



Discover What's Possible™



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Discover What's Possible™

ME7832A-E-L-1

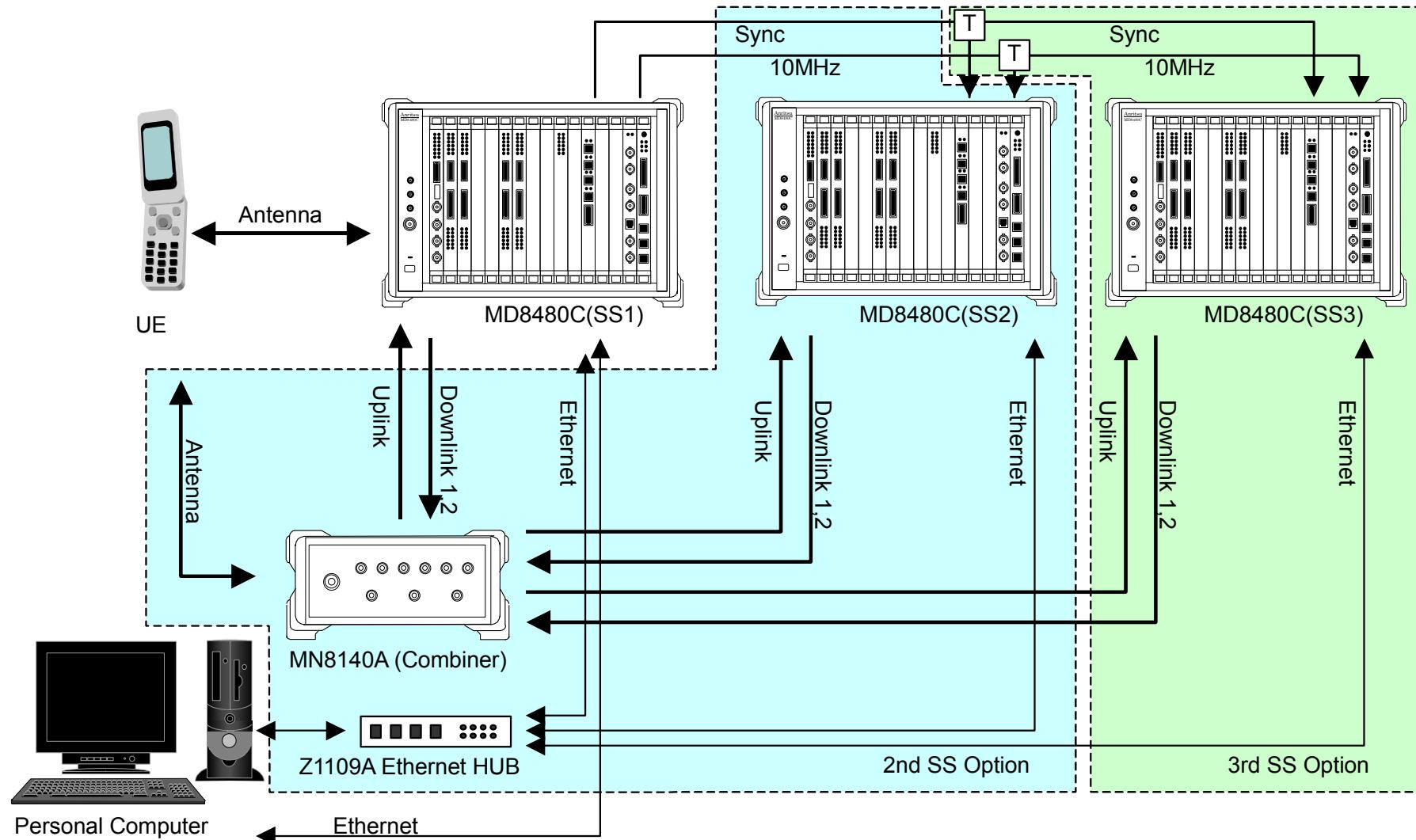
The Industry's Top Test Solution

- ME7832A is the Industry's No.1 protocol conformance test system solution
 - Covers the highest number of test cases for W-CDMA UE protocol conformance
 - Based on 3GPP TS34.123-1 for GCF/PTCRB Terminal Certification
- Proven platform to provide HSPA Evolution for Conformance Test
 - HSPA Evolution solution delivered on the same HW and software platform
 - HSPA Evolution WI080 is now available.
- Parallel Test Controller Option enables dramatic test time reduction
 - Up to 50% reduction in total test run time
 - Uses parallel operation of three MD8480C system simulators

A Complete Integrated Test Solution

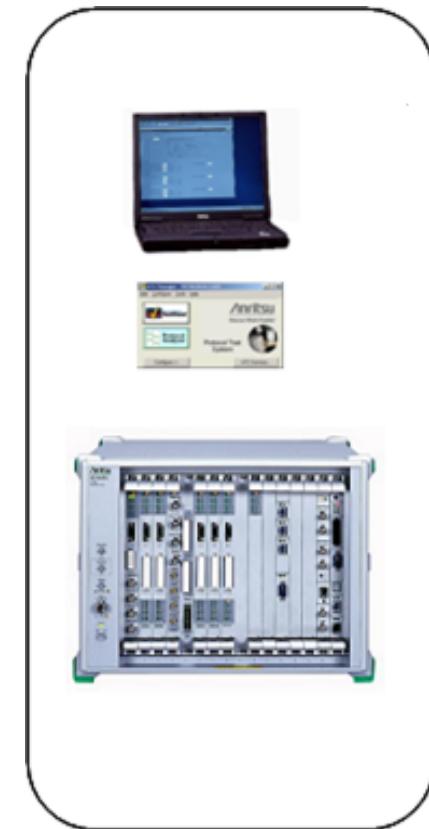
- Enhanced system provides easy operation
 - New GUI with drag-and-drop facility
 - Fully automated execution with single mouse click
- A single all-inclusive integrated solution
 - Easier ordering
 - Includes all necessary hardware and software
 - Has a pre-installed PC
- An Anritsu engineer provides on-site setup and user training
- Integrated support
 - Includes support with software update and maintenance service

ME7832A System Overview



Protocol Conformance Test System

- **ME7832A Standard Configuration**
 - One MD8480C system simulator
 - Conformance Test Toolkit core software
 - Pre-installed high-performance PC
 - Dual Core 3 GHz CPU, 4 GB RAM
 - 19 inch TFT, 250 GB HDD, DVD-RW
 - Setup
 - Installation
 - Commissioning
 - Training



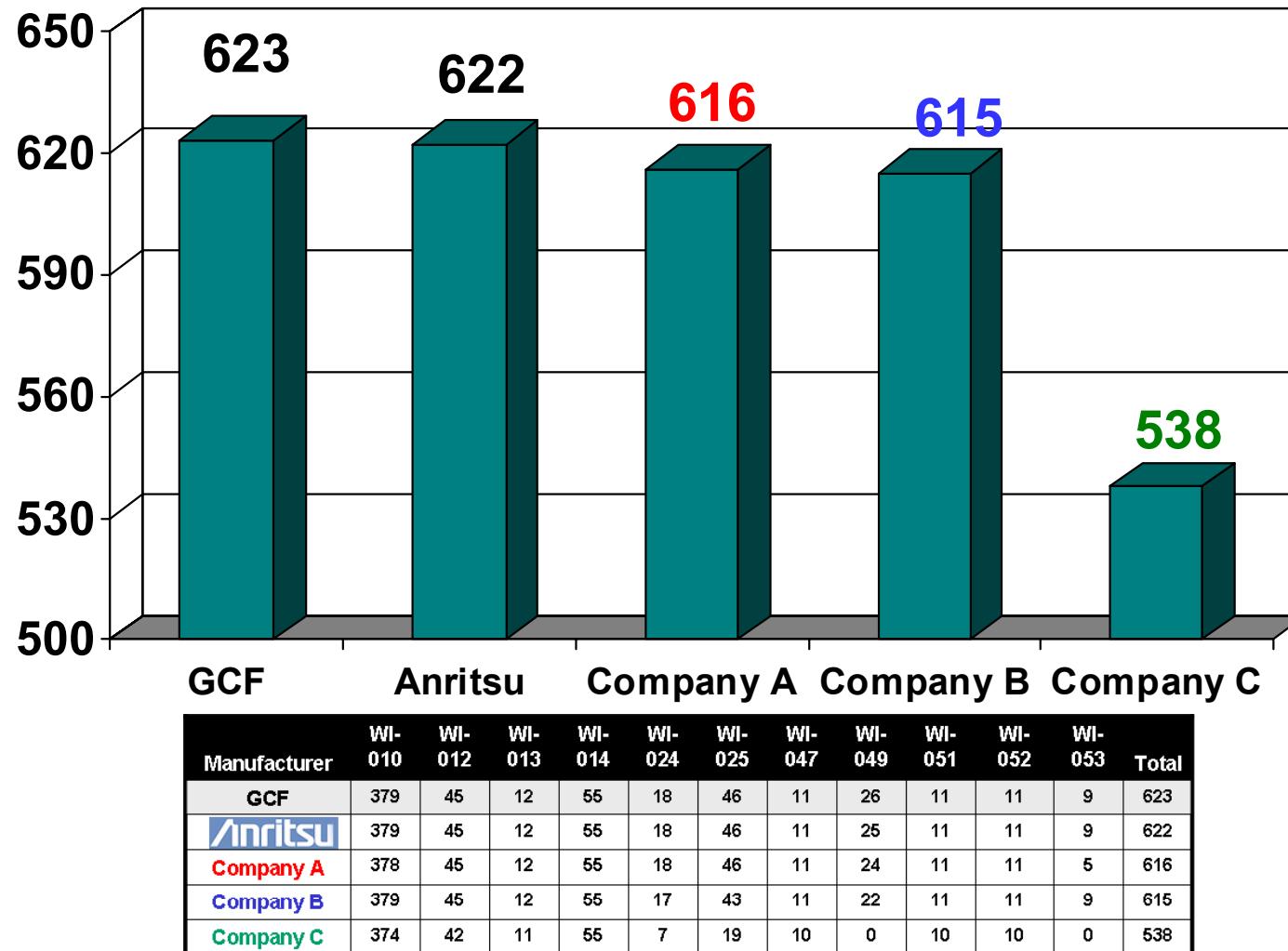
Protocol Conformance Test System

- ME7832A Optional Configurations
 - Addition of 2nd and 3rd MD8480C system simulators
 - WI packages including USIMs
 - RF Combiner Kit
 - Router and cables
 - Additional FDD Band capabilities
 - Contracts
 - Hardware repair
 - Hardware calibration
 - Parallel Test Controller Option
 - For test time reduction
 - System Rack Option



No.1 Protocol Conformance Test Solution

- GCF/PTCRB Terminal Certification Test Cases



Anritsu Competitive Advantages

- No.1 overall in 3G Protocol Conformance test
 - For both GCF and PTCRB
- The only test platform vendor supplying 100% 3GPP test coverage in single platform today
 - One hardware platform(MD8480C) supports both W-CDMA and InterRAT



The image shows the Anritsu ME7832A Protocol Conformance Test System. It consists of a central rack-mounted chassis with various modules and a laptop computer connected to it via a cable. The system is set against a dark green background.

Discover...

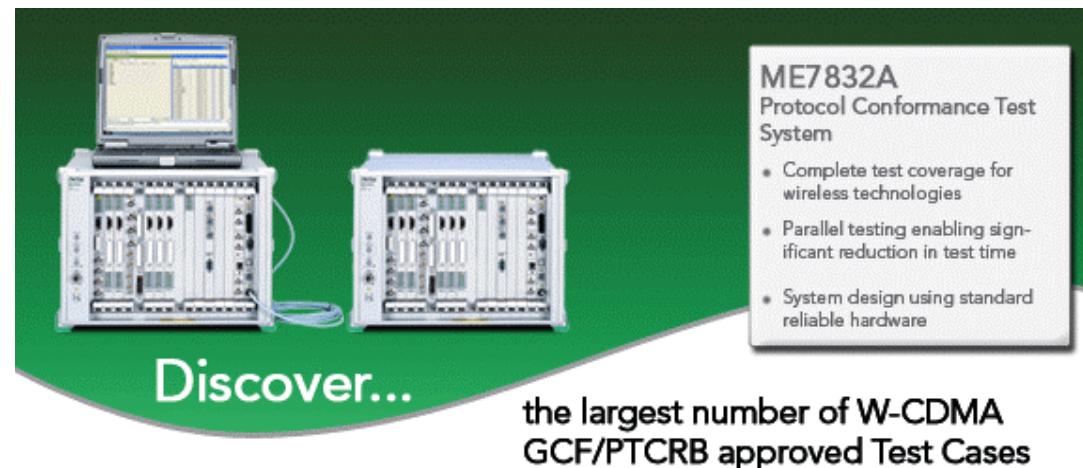
ME7832A
Protocol Conformance Test System

- Complete test coverage for wireless technologies
- Parallel testing enabling significant reduction in test time
- System design using standard reliable hardware

the largest number of W-CDMA GCF/PTCRB approved Test Cases

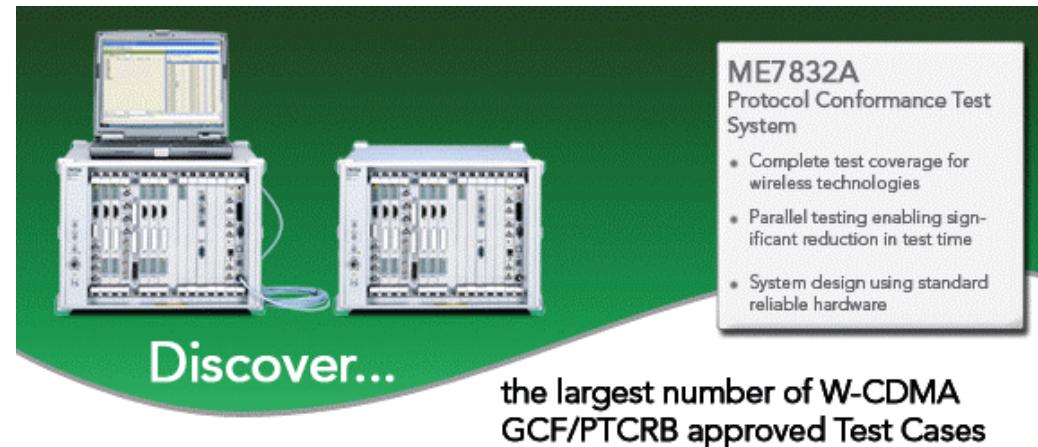
Anritsu Competitive Advantages

- Anritsu leads the market for new technologies on the same hardware platform
 - No current competitor solution for HSPA Evolution for conformance test
 - HSPA Evolution solution delivered on the same HW platform
- Always aims to use the latest TTCN language
 - Latest IWD releases



ME7832A Competitive Advantages

- A highly reliable platform and the most stable platform (test houses statement)
 - Runs without manual interaction for days
- Uses less space in the lab
- Provides today's most user-friendly and easy GUI
 - Enables drag-and-drop and run with a single click
- Easiest setup for automation capability



ME7832A Competitive Advantages

- Unique Parallel Test capability for large test time reduction
 - Up to 3 UE can run simultaneously
 - Multiple PCs, multiple UEs, and multiple test cases will run at same time with a single click
- Real-time log analysis



ME7832A Solution Benefits

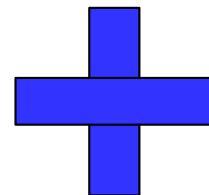
- A complete fully-integrated test system
 - Simplified system options
 - Easier configuration
 - New competitive pricing structure based on a package solution
 - Installation and training included
 - One day on-site
 - One year software and firmware updates included
- Largest number of approved GCF/PTCRB test cases for W-CDMA
 - Ahead of all competitors
- Parallel Test Controller Option
 - Test Time Reduction to Less Than 24 Hours

ME7832A Solution Benefits

- Future expandability to HSPA Evolution
 - On same hardware platform(MD8480C)
- Graphical User Interface
 - Provides exceptional ease of use
- Standard MD8480C system simulator hardware
 - Proven repeatability and reliability

ME7832A System Configuration Options

ME7832A Standard Configuration



ME7832A-050
2nd System Simulator

ME7832A-01X
Frequency Bands

ME7832A-051
3rd System Simulator

ME7832A-07X
Work Item Test Cases

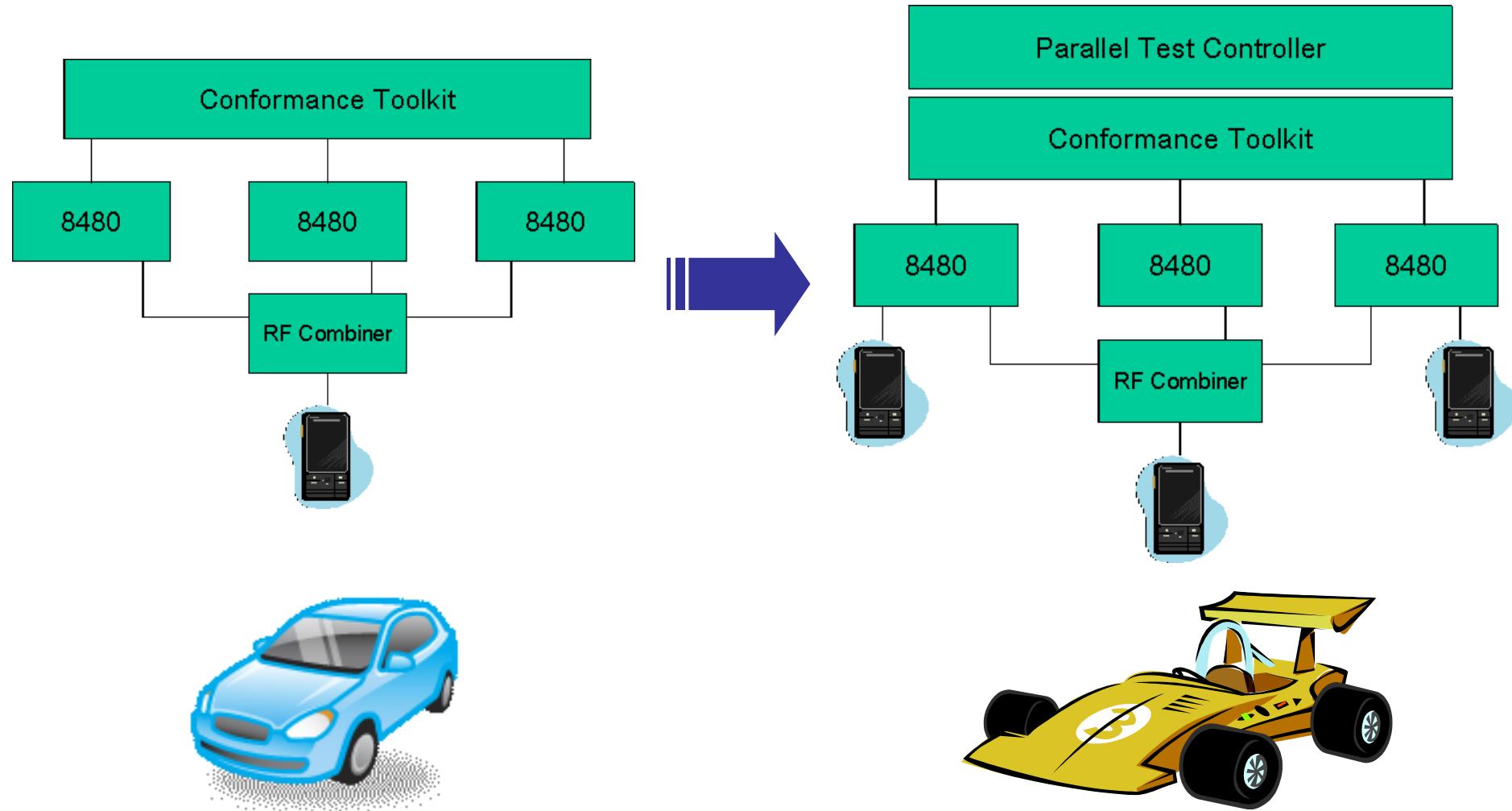
MN8140A
RF Combiner Unit

ME7832A-030
Parallel Test Controller

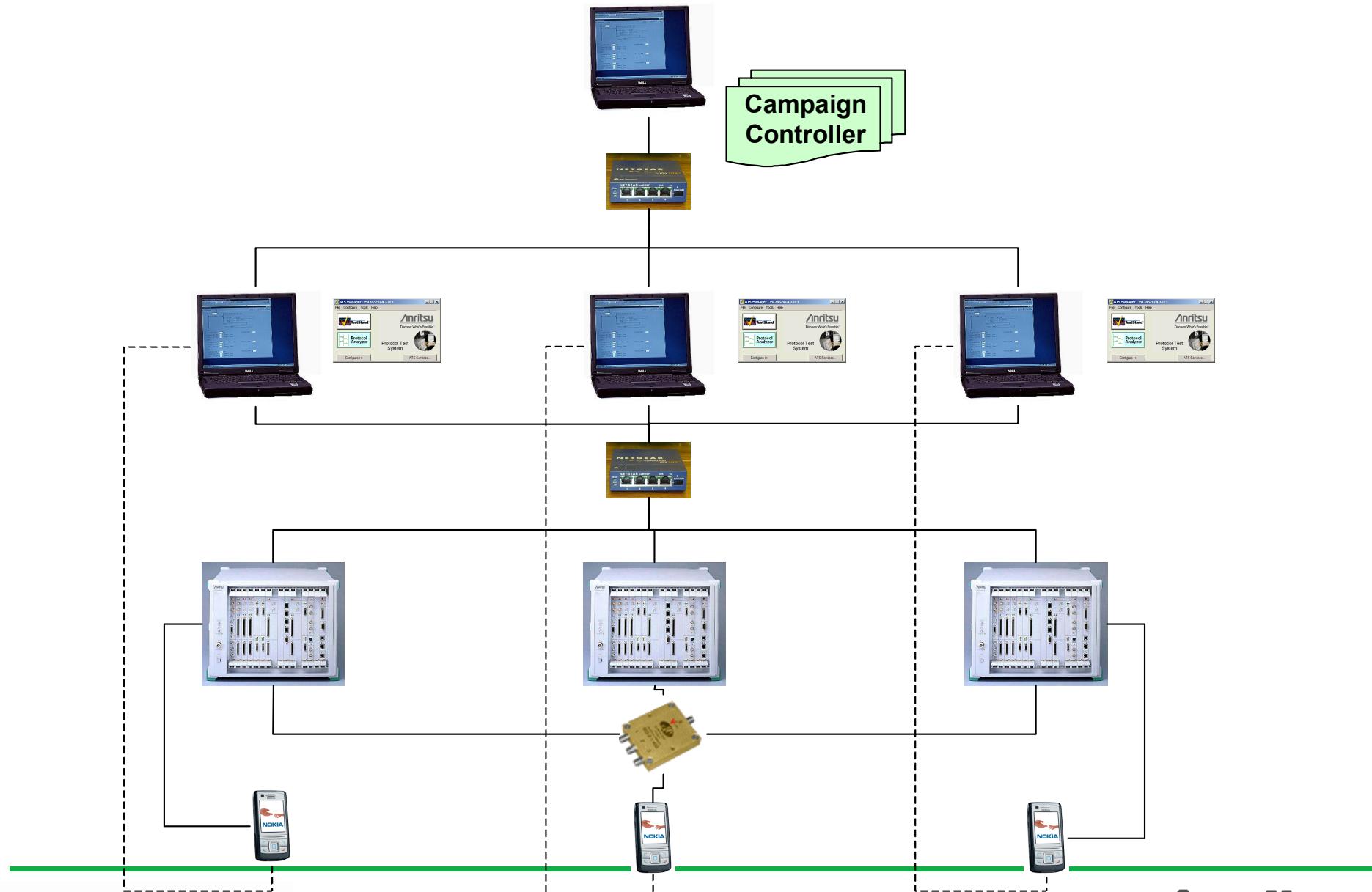
Parallel Test Controller Option

Reducing Conformance Test Times

Parallel Test Controller Concept



Parallel Test Controller System Overview



Example Of Test Time Reductions

- Based on GCF Work Items 10, 12, 13 and 14
 - Automatable test cases
 - 489 Tests need One MD8480C, 72 Tests need Two MD8480C and 4 Tests need Three MD8480C
 - One MD8480C (without parallel operation)
 - 44 hours, one-box test cases
 - 2 hours, two-box test cases
 - 0.5 hours, three-box test cases
 - Two MD8480C in parallel operation
 - 22 hours, one-box test cases
 - 2 hours, two-box test cases
 - Three MD8480C in parallel operation
 - 12.7 hours, one-box test cases
 - 2 hours, two-box test cases
 - 0.5 hours, three box test cases
-
- | Parallel Operation | One Box | Two Boxes | Three Boxes | Total |
|---------------------------|------------|-----------|-------------|------------|
| One MD8480C (no parallel) | 44 hours | 2 hours | 0.5 hours | 46.5 hours |
| Two MD8480C in parallel | 22 hours | 2 hours | - | 24 hours |
| Three MD8480C in parallel | 12.7 hours | 2 hours | 0.5 hours | 15.2 hours |

ME7832A Test Cases Reliability Benefits

Conformance Test Cases Reliability

- Overall reliability of the Interim Working Document (IWD) release has increased to 99%

	Percentage of overall Test Cases with 100% reliability
IWD	TP62 - MD8480C
D07IWD_03	77%
D07IWD_23	93%
D07IWD_47	93%
D07IWD_47 (CAG#12/PVG39)	96%
D08IWD_23	99%

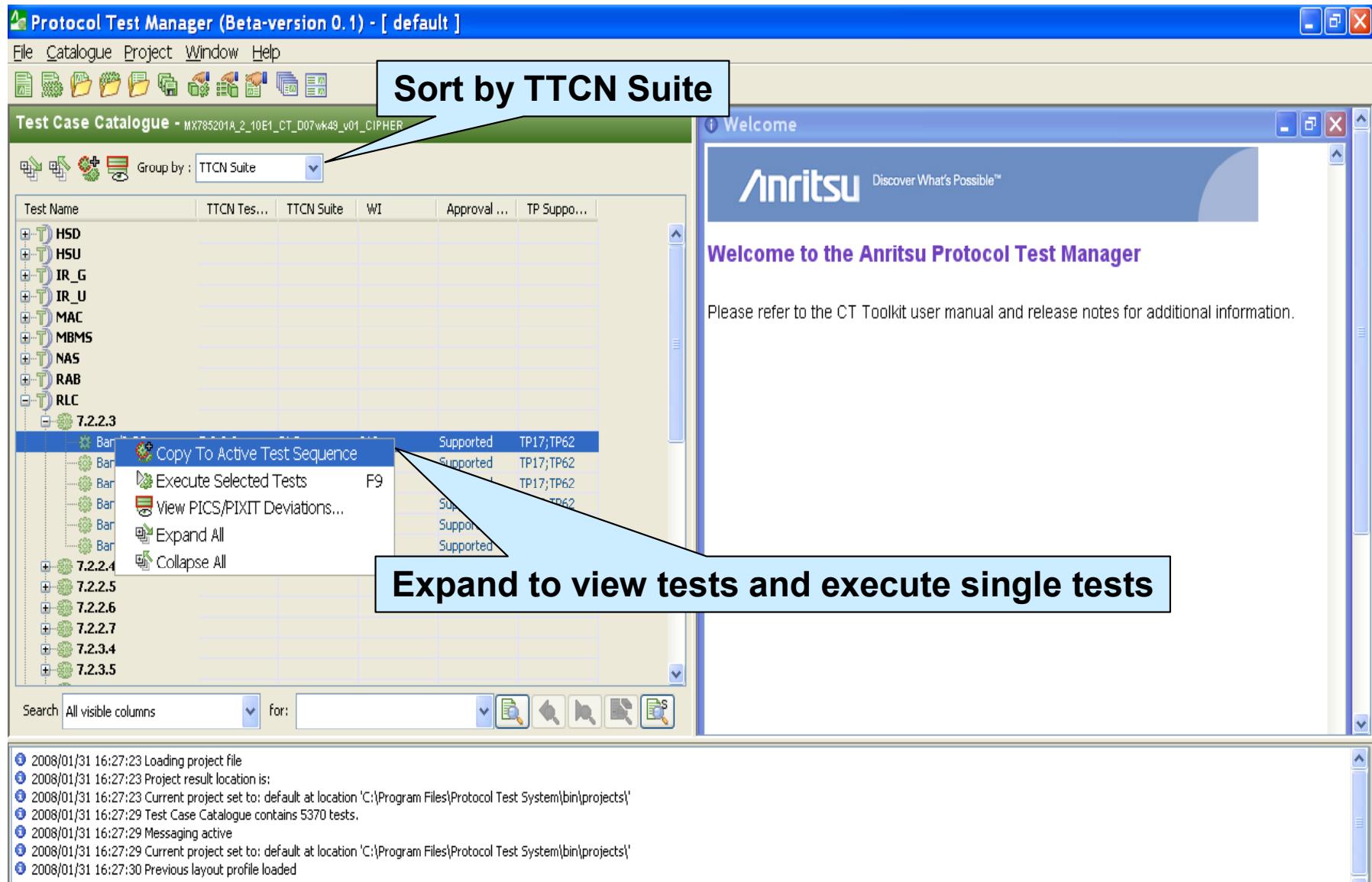
- Reliability measured after running each test case five times
 - If five continuous “Pass” results observed then that test case brings 100% reliability

Graphical User Interface Benefits

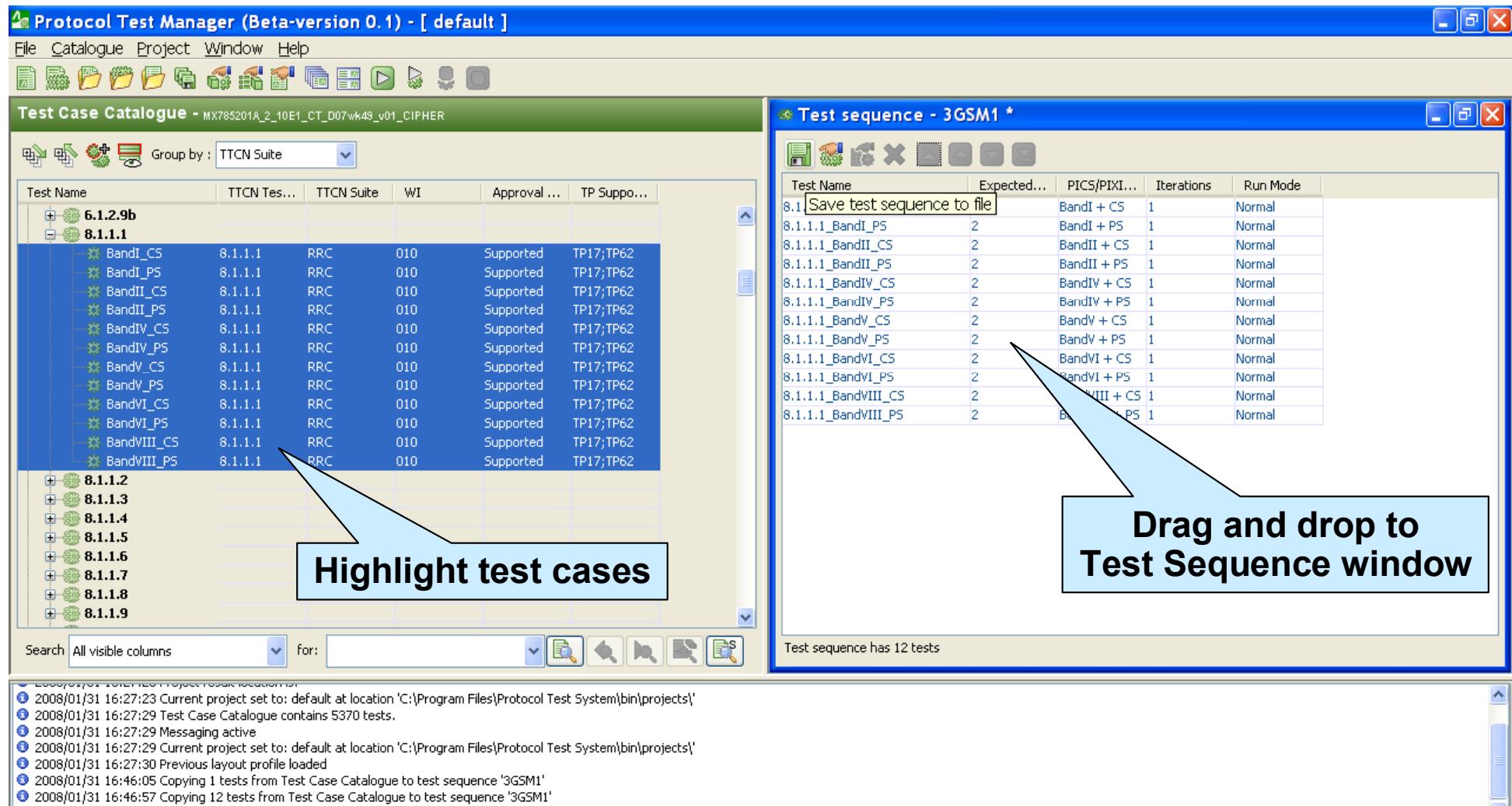
Graphical User Interface

- New user interface developed
 - Test system configuration
 - Test Campaign definition
 - PICS/PIXIT management
 - Campaign execution
 - Results management and reporting
- Existing campaign spreadsheet will be supported and enhanced until new user interface supports a comparable feature set

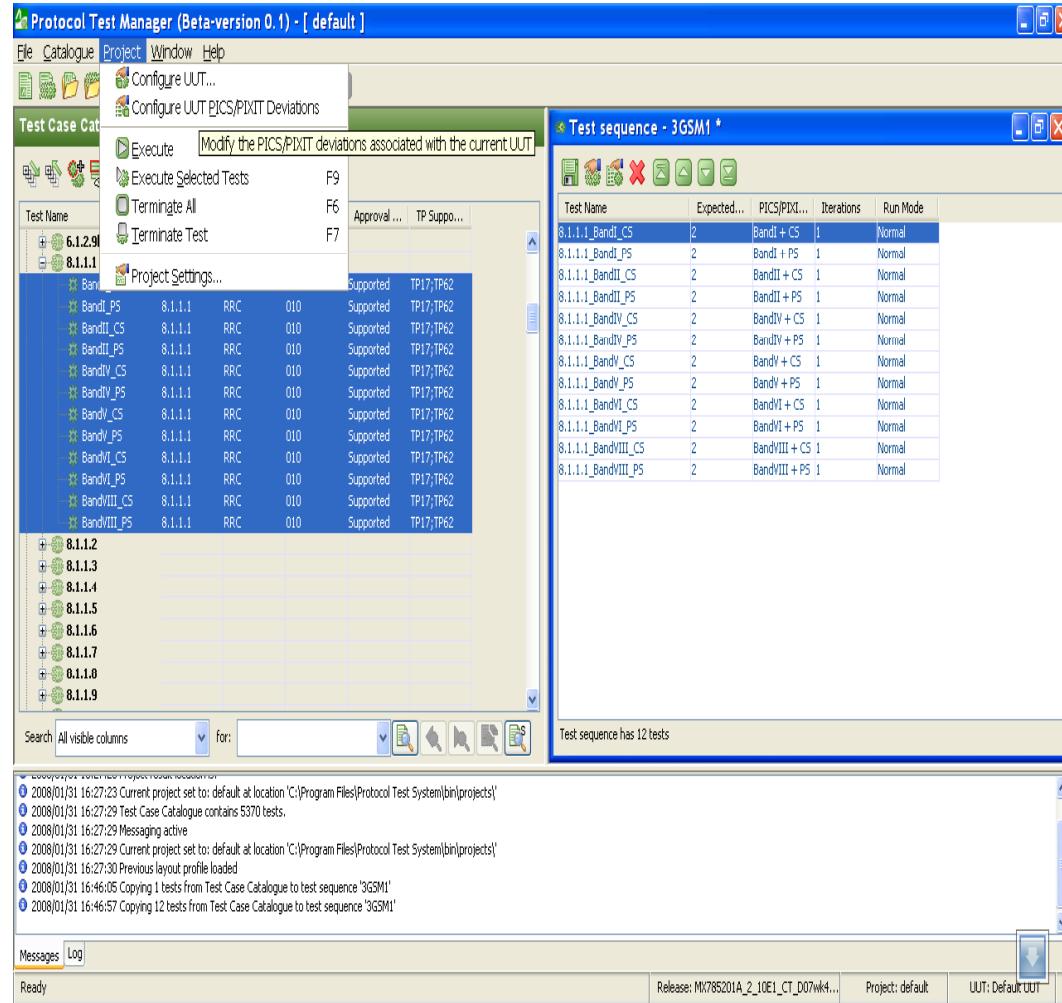
Test Cases Selection



Drag & Drop Test Case Into Test Sequence



Modifying PICS/PIXIT For UE



Executing Test Sequences

Protocol Test Manager (Beta-version 0.1) - [default]

File Catalogue Project Window Help

Test Case Catalogue - MX785201A_2_10E1_CT_D07wk49_v01 Active test sequence

Left click to execute test sequence

Test Name	TTCN Tes...	TTCN Su...				
6.1.2.9b						
8.1.1.1	BandI_CS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandI_PS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandII_CS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandII_PS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandIV_CS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandIV_PS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandV_CS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandV_PS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandVI_CS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandVI_PS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandVIII_CS	8.1.1.1	RRC	010	Supported	TP17;TP62
	BandVIII_PS	8.1.1.1	RRC	010	Supported	TP17;TP62
8.1.1.2						
8.1.1.3						
8.1.1.4						
8.1.1.5						
8.1.1.6						
8.1.1.7						
8.1.1.8						
8.1.1.9						

Test sequence - 3GSM1 *

Test Name	Expected...	PICS/PIXI...	Iterations	Run Mode
8.1.1.1_BandI_CS	2	BandI + CS	1	Normal
8.1.1.1_BandI_PS	2	BandI + PS	1	Normal
8.1.1.1_BandII_CS	2	BandII + CS	1	Normal
8.1.1.1_BandII_PS	2	BandII + PS	1	Normal
8.1.1.1_BandIV_CS	2	BandIV + CS	1	Normal
8.1.1.1_BandIV_PS	2	BandIV + PS	1	Normal
8.1.1.1_BandV_CS	2	BandV + CS	1	Normal
8.1.1.1_BandV_PS	2	BandV + PS	1	Normal
8.1.1.1_BandVI_CS	2	BandVI + CS	1	Normal
8.1.1.1_BandVI_PS	2	BandVI + PS	1	Normal
8.1.1.1_BandVIII_CS	2	BandVIII + CS	1	Normal
8.1.1.1_BandVIII_PS	2	BandVIII + PS	1	Normal

Test sequence has 12 tests

2008/01/31 16:27:23 Current project set to: default at location 'C:\Program Files\Protocol Test System\bin\projects'
 2008/01/31 16:27:29 Test Case Catalogue contains 5370 tests.
 2008/01/31 16:27:29 Messaging active
 2008/01/31 16:27:29 Current project set to: default at location 'C:\Program Files\Protocol Test System\bin\projects'
 2008/01/31 16:27:30 Previous layout profile loaded
 2008/01/31 16:46:05 Copying 1 tests from Test Case Catalogue to test sequence '3GSM1'
 2008/01/31 16:46:57 Copying 12 tests from Test Case Catalogue to test sequence '3GSM1'

Viewing Test Results

Sort by pass/fail or re-run failed tests

The screenshot shows the Protocol Test Manager interface. On the left, the 'Test Case Catalog' pane lists various test cases like HSD, HSU, IR_G, etc. On the right, the 'Results' pane displays a detailed table of test results for a specific run. A callout box points to the 'Verdict' column in the results table, which includes columns for Test Name, Iterations, Start Time, Execution Time, Result, and Verdict.

Test Name	Iterations	Start Time	Execution Time	Result	Verdict
6.1.1.5_BandI_CS	1	2007-11-30...	237	show	Passed
6.1.1.5_BandI_CS	1	2007-11-30...	257	show	Passed
6.1.1.5_BandI_PS	1	2007-11-30...	252	show	Passed
6.1.1.5_BandI_PS	1	2007-11-30...	256	show	Passed
6.1.1.7_BandI_CS	1	2007-11-30...	161	show	Passed
6.1.1.7_BandI_CS	1	2007-11-30...	159	show	Passed
6.1.1.7_BandI_PS	1	2007-11-30...	157	show	Passed
6.1.1.7_BandI_PS	1	2007-11-30...	237	show	Passed
6.1.2.10_BandI_CS	1	2007-11-30...	324	show	Passed
6.1.2.10_BandI_CS	1	2007-11-30...	234	show	Passed
6.1.2.10_BandI_PS	1	2007-11-30...	242	show	Passed
6.1.2.10_BandI_PS	1	2007-11-30...	238	show	Passed
6.1.2.10a(I-V)_BandI_CS	1	2007-11-30...	241	show	Passed
6.1.2.10a(I-V)_BandI_CS	1	2007-11-30...	233	show	Passed
6.1.2.10a(I-V)_BandI_PS	1	2007-11-30...	238	show	Passed
6.1.2.10a(I-V)_BandI_PS	1	2007-11-30...	233	show	Passed
6.1.2.1_BandI_CS	1	2007-11-30...	472	show	Failed
6.1.2.1_BandI_CS	1	2007-11-30...	472	show	Failed
6.1.2.1_BandI_PS	1	2007-11-30...	473	show	Failed
6.1.2.2_BandI_CS	1	2007-11-30...	414	show	Passed
6.1.2.2_BandI_CS	1	2007-11-30...	403	show	Passed
6.1.2.3_BandI_CS	1	2007-11-30...	229	show	Passed
6.1.2.3_BandI_PS	1	2007-11-30...	227	show	Passed
6.1.2.3_BandI_PS	1	2007-11-30...	231	show	Passed
6.1.2.4_BandI_CS	1	2007-11-30...	342	show	Passed
6.1.2.4_BandI_CS	1	2007-11-30...	352	show	Passed
6.1.2.4_BandI_PS	1	2007-11-30...	352	show	Passed

Left click and to launch Protocol View

Protocol Test Manager (Beta-version 0.1) - [default]

File Catalogue Project Window Help

Test Case Catalog Open existing results GH#12 PVG#39 v01

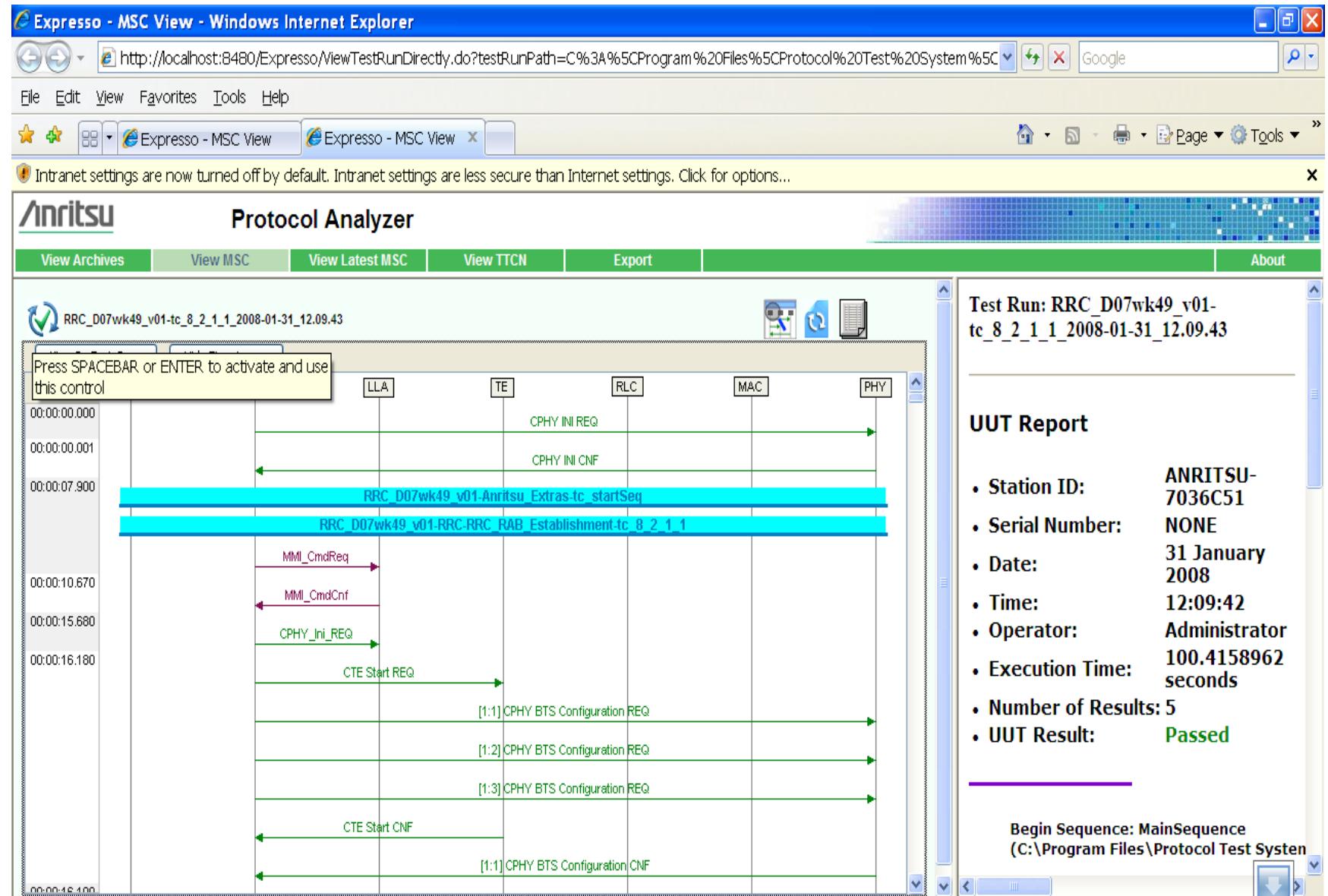
Group by : TTCN Suite

Search All visible columns for:

2007/12/13 20:34:46 Current project set to: default at location 'C:\PROGRAM~1\PROTOCOL~1\bin\projects'

2007/12/13 20:34:47 Previous layout profile loaded

Protocol Analyser View



Abbreviations

WI	Work Item
IWD	Interim Working Document
CAG/PVG	Conformance and Interoperability Agreement Group / PCS Validation Group
PICS	Protocol Implementation Conformance Statement
TTCN	Tree Tabular Combined Notation

Note

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