



CS8 Device Tester

Platform Manual

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1. Introduction

1.1. Purpose

The *CS8 Platform Manual* provides a high-level overview of the key hardware and software components necessary to configure and use the CS8 platform.

1.2. Intended Audience

This manual is intended for those who have a working knowledge of wireless communication equipment, and are familiar with the automated testing of mobile devices. It is assumed you are familiar with the *Test Manager* GUI environment. For detailed information on the Test Manager, refer to the *Test Manager User Manual*.

1.3. Before You Get Started

Before beginning, install all software and power up the test system. The controller PC is shipped with the *Test Manager Test Executive* software installed.

1.4. Accessing Documentation

There are two ways to access this document from the Controller PC:

1. Windows Explorer
2. Test Manager

1.4.1. Accessing Documentation from Windows Explorer

Access the manual offline by navigating to: **Desktop>Spirent Manuals>CS8 Documentation>Platform Manual.pdf**. The *Setup Guide* is located under **Desktop>Spirent Manuals>CS8 Documentation**.

2. Associated Hardware

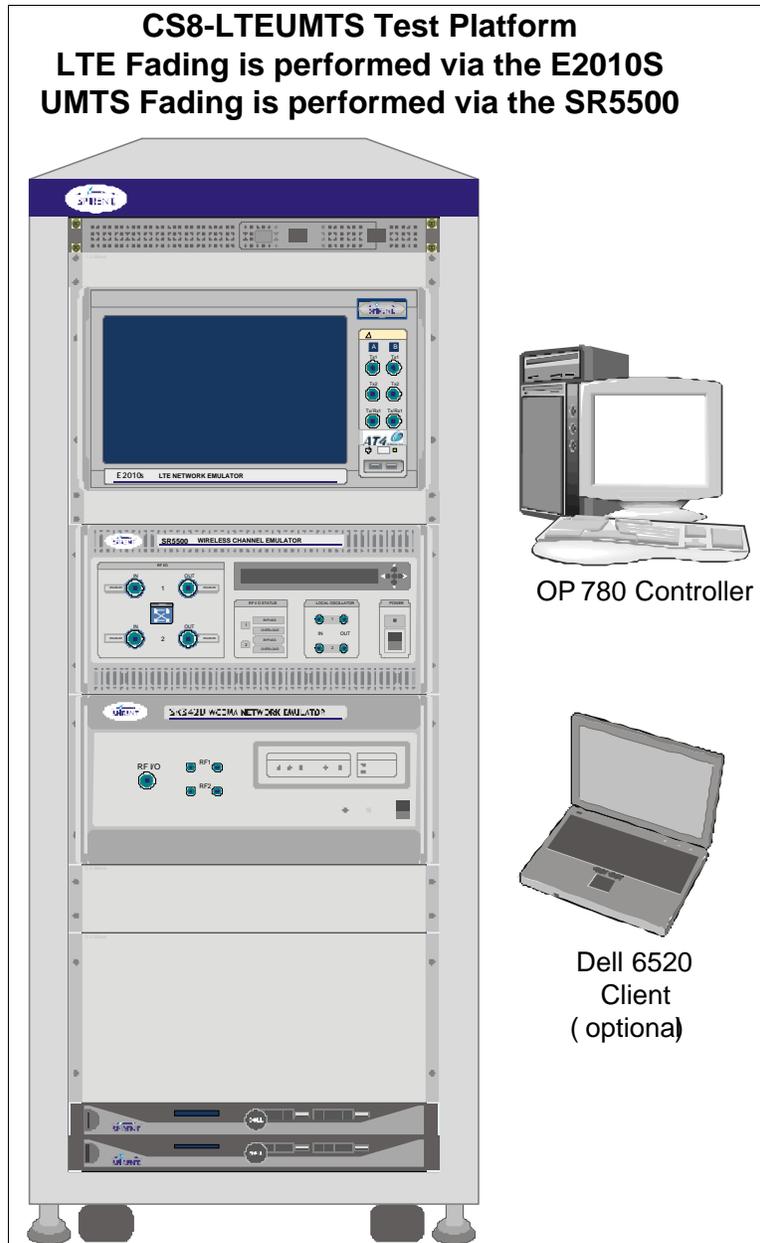


Figure 2-1: CS8 LTE UMTS-Fade (C342) Platform Instrument Diagram

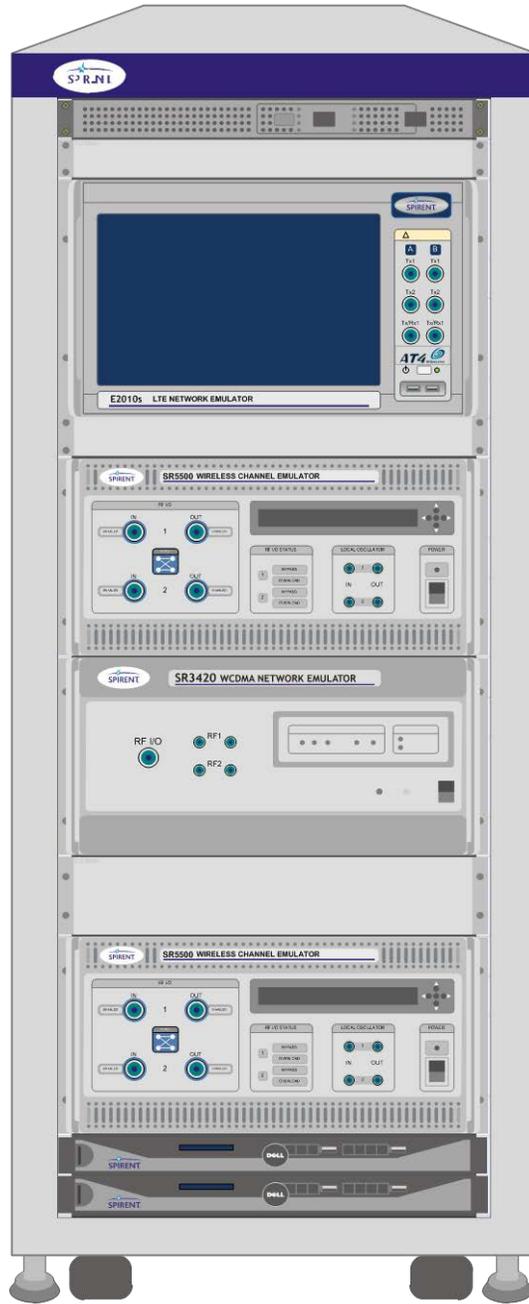


Figure 2-2: CS8 LTE C344 Platform Instrument Diagram



Figure 2-3: CS8 LTE Prot Platform Instrument Diagram

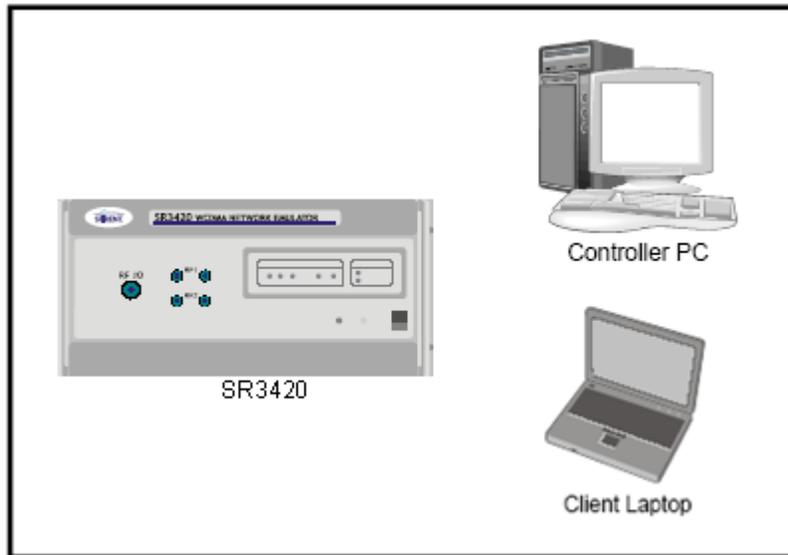


Figure 2-4: CS8 UMTS A50 Platform Instrument Diagram

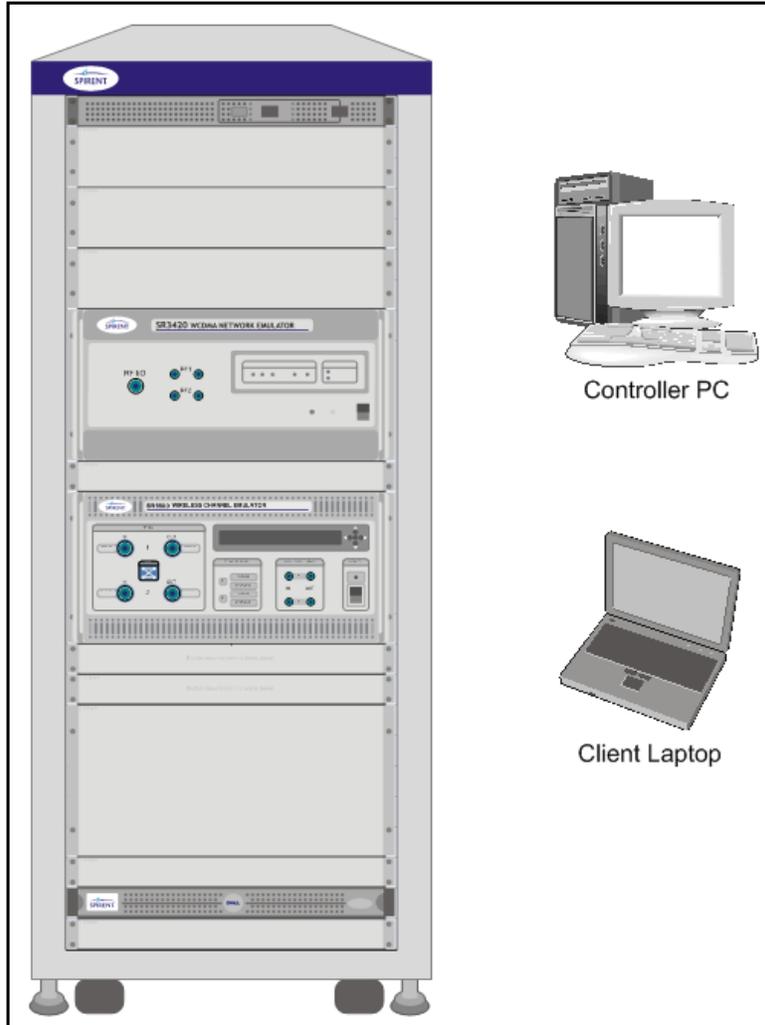


Figure 2-5: CS8 UMTS A100 Platform Instrument Diagram

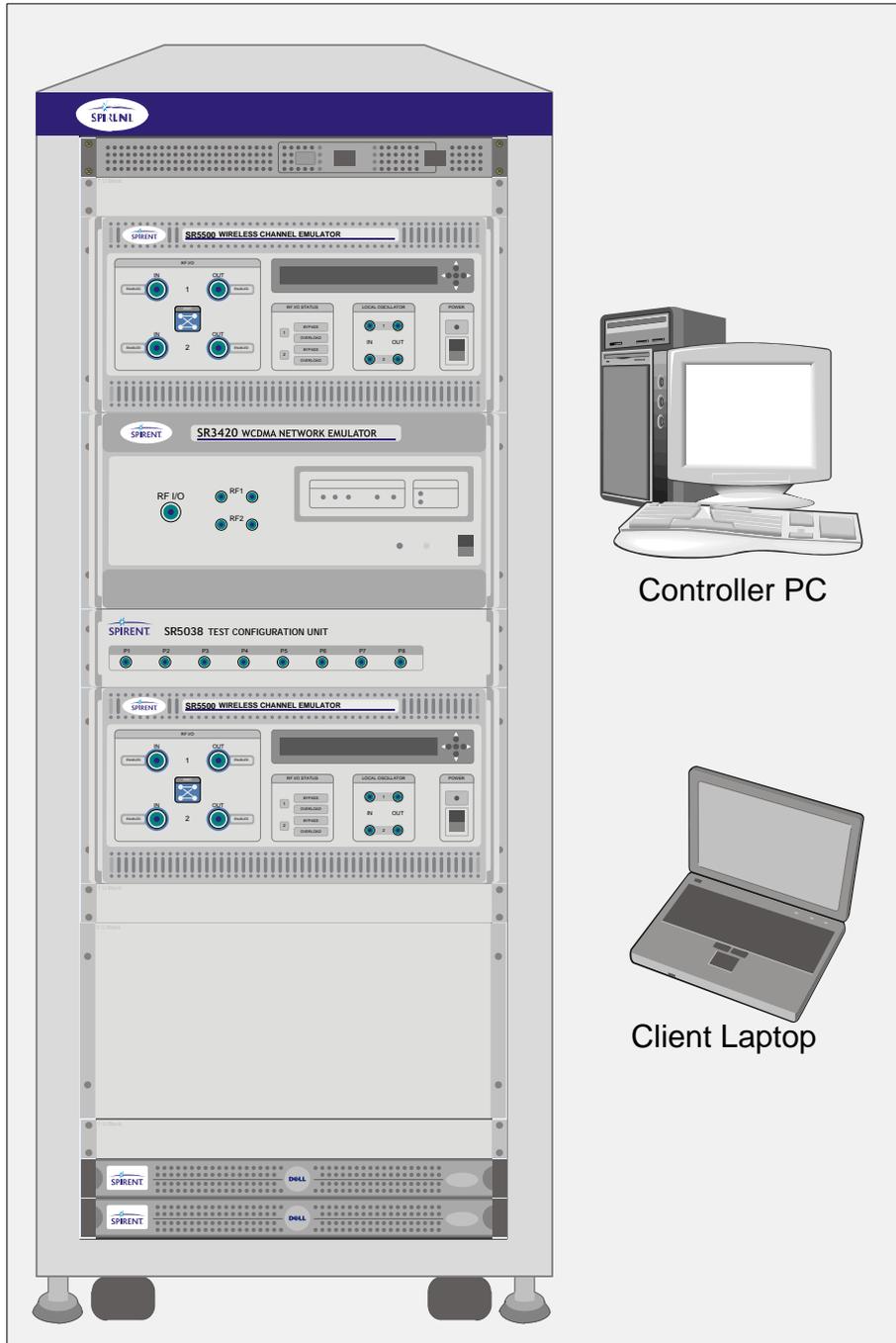


Figure 2-6: CS8 UMTS A304 Platform Instrument Diagram

2.1. Instrument Descriptions

2.1.1. User Equipment (UE)

The term “UE” denotes the User Equipment under Test. For UMTS, the UE is usually a handset or Data Card connected to a PC or laptop.

2.1.2. SR5500 Wireless Channel Emulator

The SR5500 allows you to assess the capacity of a mobile device to mitigate multi-path effects by emulating the delay, fast and slow fading, and path-loss characteristics of RF mobile communication channels. The SR5500M TestKit software interface drives the emulator, which operates through the Test Manager Graphical User Interface.

2.1.3. SR3420 WCDMA Network Emulator

The Spirent SR3420 is a scalable WCDMA Network Emulator. The SR3420 instrument coupled with the AirAccess WCDMA-HS control software provides emulation of all network components required to establish mobile data calls. It includes IP-connectivity through the Ethernet for optional connectivity to external data servers.

2.1.4. E2010S LTE Network Emulator

The Spirent E2010S is a scalable LTE Network Emulator. The E2010S instrument coupled with the CS8 Interactive Tester control software provides emulation of all network components. These components are required to establish mobile data calls and include IP-connectivity through Ethernet for optional connectivity to external data servers.

2.1.5. SR3620 Enhanced Packet Core (EPC) Emulator

The Enhanced Packet Core (EPC) Emulator is a rack-mounted 1U PC that provides real-time Core Network emulation of 3G/4G wireless systems. The primary function of the emulator is to provide real-time user plane traffic (UDP/FTP/HTTP) routing to and from the UE and Application Server.

2.1.6. SR3920 V2 Application Server PC

This Application Server is the replacement for the SR3920 and uses the Windows Server 2008 operating system. The SR3920 V2 is a rack-mounted 1U PC that facilitates FTP/UDP/HTTP and alternating/bi-directional transfer capability to the Data Client PC. To provide this feature, a Spirent Data Client Application runs on the server remotely managed by the Spirent Data Client application located on the Controller PC.

2.1.7. Client PC

The Client PC is a laptop that runs Microsoft Windows XP or Windows 7 OS. It facilitates FTP/UDP/HTTP and alternating/bi-directional transfer capability from the UE-side. A Spirent Data Client Application runs on the Data Client PC. It is remotely managed by the Data Client Controller located on the Controller PC. The Data Client PC also provides connectivity to support UE remote control for test automation.

2.1.8. Ethernet Router

The Ethernet Router allows Ethernet communication with all instruments in the system. If connected to an existing network, it also provides a private network that isolates the instruments from external access. The router can operate with or without a connection to a corporate LAN or WAN.

Included in all configurations.

2.1.9. High-Speed Ethernet Switch

The High-Speed Ethernet Switch allows Ethernet communications with all instruments in systems that support 4G technologies. In such systems, the Router (refer to Section 2.1.8) is not used for Ethernet communications between the instruments in the system.

2.1.10. Controller PC

The Controller PC runs Microsoft Windows XP which hosts the Test Manager and TestDrive Software Executive. The Controller PC also hosts the AirAccess WCDMA-HS software, that configures and operates the SR3420 and the SR5500 TestKit software. The SR5500 software configures and operates the SR5500/SR5500M.

Included in all configurations.

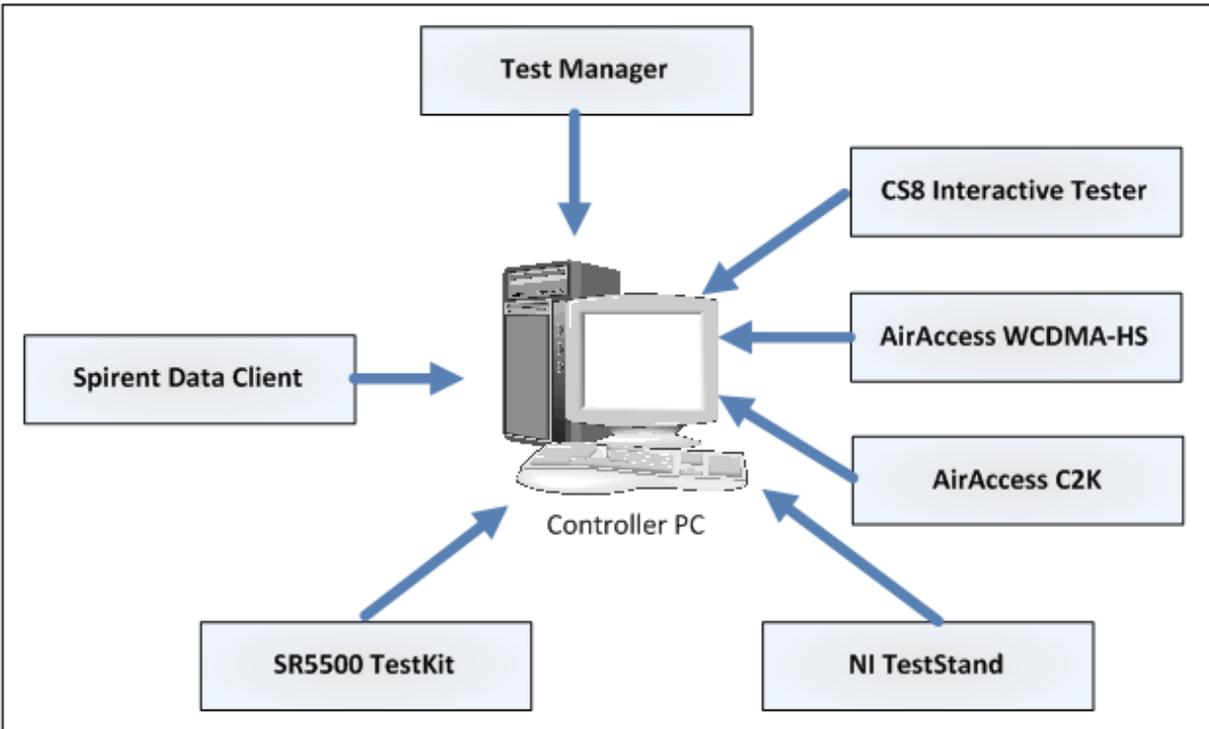


Figure 2-7: Controller PC Software Components

2.2. Software Component Descriptions

The software components installed on the Controller PC are described in the following sections.

2.2.1. Test Manager

Test Manager is the Spirent Test Executive that serves as the front-end to Test Management and Control. This is the only interactive software component needed to accomplish most general testing tasks. For more information, refer to the *Test Manager User Manual*.

2.2.2. NI TestStand

Test Manager makes use of the National Instrument *TestStand* software as a back-end for managing tests. *TestStand* is an industry-standard test management environment that facilitates test automation and validation. Test Manager is designed to work seamlessly with *TestStand*. This increases the flexibility of interactive testing and gives an additional layer of test configurability.

2.2.3. AirAccess WCDMA-HS

The AirAccess WCDMA-HS is a HSDPA/R99 software interface layer that allows you to configure and control the SR3420 instrument. While essentially standalone software, the AirAccess WCDMA-HS application runs in the background while general testing requirements are met at the Test Manager front-end.

2.2.4. AirAccess C2K

The AirAccess C2K is a CDMA/EV-DO software interface layer that allows you to configure and control the SR3452/SR3462 instruments. While essentially standalone software, the AirAccess C2K application runs in the background while general testing requirements are met at the Test Manager front-end.

NOTE: Air Access C2K usage is not supported in the current release.

2.2.5. CS8 Interactive Tester

The CS8 Interactive Tester is a 3GPP software interface layer that allows you to configure and control the E2010S instrument. While essentially standalone software, the CS8 Interactive Tester LTE application runs in the background while general testing requirements are met at the Test Manager front-end.

2.2.6. SR5500 TestKit

The SR5500 TestKit is a Spirent software application that manages the configuration and control of the SR5500M Wireless Channel Emulator. While essentially standalone software, the SR5500 Test Kit application runs in the background while general testing requirements are met at the Test Manager front-end.

Refer to the *SR5500M User Manual* for additional information on custom configurations for the SR5500M.

2.2.7. Spirent Data Client

The Spirent Data Client is a Spirent software application that manages FTP/UDP/HTTP data transfer between the Data Client PC and the Application Server PC. The Data Client Controller initiates all data throughput transfers, and delegates the transfer task to the Data Client and Application Server PC. The Test Manager manages the Data Client Controller application.

3. General Specifications

3.1. CS8-LTE UMTS-FADE (C342)

Operating Temperature: 15 – 29 °C (Ambient Temperature)

Dimensions (H x W x D): 57 x 23 x 37 inches (144.78 x 58.42 x 93.98 cm)

Power Consumption (Typical): 1300 to 1350 Watts Continuous

3.2. CS8-LTEUMTS-FADE (C344)

Operating Temperature: 15 – 29 °C (Ambient Temperature)

Dimensions (H x W x D): 57 x 23 x 37 inches (144.78 x 58.42 x 93.98 cm)

Power Consumption (Typical): 1550 to 1600 Watts Continuous

3.3. CS8-LTE-Prot

Operating Temperature: 15 – 29 °C (Ambient Temperature)

Power Consumption (Typical): 700 to 900 Watts max

3.4. CS8-UMTS-A50

Operating Temperature: 15 – 29 °C (Ambient Temperature)

Power Consumption (Typical): 300 to 350 Watts Continuous

3.5. CS8-UMTS-A100

Operating Temperature: 15 – 29 °C (Ambient Temperature)

Dimensions (H x W x D): 57 x 23 x 37 inches (144.78 x 58.42 x 93.98 cm)

Power Consumption (Typical): 1300 to 1350 Watts Continuous

3.6. CS8-UMTS-A304

Operating Temperature: 15 – 29 °C (Ambient Temperature)

Dimensions (H x W x D): 57 x 23 x 37 inches (144.78 x 58.42 x 93.98 cm)

Power Consumption (Typical): 1550 to 1600 Watts Continuous

3.7. LTE Supported Operating Bands

Operating Band	DL Frequencies (MHz)	UL Frequencies (MHz)
1	2110-2170	1920-1980
2	1930-1990	1850-1910
3	1805-1880	1710-1785
4	2110 - 2155	1710 - 1755
5	869-894	824-849
7	2620-2690	2500-2570
10	2110-2170	1710-1770
12	728-746	698-716
13	777 - 787	746 - 756
14	758-768	788-798
17	704 - 716	734 - 746
20	791-821	832-862
24	1525-1559	1626.5-1660.5
25	1930-1995	1850-1915
26	859-894	814-849

NOTE: For detailed information on specifications, refer to the appropriate user manual for your module.

3.8. UMTS Supported Operating Bands

Operating Band	DL Frequencies (MHz)	UL Frequencies (MHz)
I	2110 – 2170	1920 – 1980
II	1930 – 1990	1850 – 1910
III*	1805 – 1880	1710 – 1785
IV	2110 – 2155	1710 – 1755
V	869 – 894	824 – 849
VI	875 – 885	830 – 840
VIII	925 – 960	880 – 915
IX	1844.9 – 1879.9	1749.9 – 1784.9
XI*	1475.9 – 1500.9	1427.9 – 1452.9
*Frequency Bands only supported in the Data Throughput, Call Reliability, and Development Library Test Packs (including GPS Service Interaction).		

4. Frequently Asked Questions

4.1. How Do I Calibrate the Platform?

This platform uses default calibration files for the current release. Calibration routines will be available in the next release.

4.2. Is there Anti-Virus Software Enabled for the System?

Yes.

Microsoft Security Essential (previously McAfee) is installed on the Controller PC with the Virus Scan option enabled. We recommend that you manually update the virus definition file with periodic full system scans. However, we cannot guarantee the fidelity of any session results while the system scan is active. We suggest you initiate these scans during off-peak execution of the system.