

LTE TDD/ TD-SCDMA Application Test

MD8475A Signalling Tester

China Mobile—World's Largest Carrier with 700 Million Subscribers

The world's largest telecoms carrier, China Mobile, reached almost 700 million subscribers in August 2012 as shown in the table below:

Subscriber Total:	693,077,000
2G subscribers:	620,937,000
3G subscribers:	72,140,000

China Mobile's 3G systems use TD-SCDMA technology, while its current 2G subscribers on GSM are a huge potential reserve for switching to TD-SCDMA in the future.

On the other hand, China Mobile is planning to launch LTE TDD services in 2013 and it seems likely that there will be a sudden increase in LTE terminal test needs as both 2G GSM and 3G TD-SCDMA users switch to LTE. The downlink speed of 3G TD-SCDMA is 2.8 Mbps, whereas LTE TDD offers subscribers a downlink throughput of 87 Mbps, supporting an environment offering smartphone users a very enjoyable user experience. This LTE TDD technology has already been rolled out as LTE-FDD in larger cities N. America and Europe as well as in various Asian countries and the next build-out stage will greatly expand the cell coverage areas.

In this market background, China Mobile, the world's largest mobile carrier with a huge share in China, will require smartphones supporting all five GSM, W-CDMA, TD-SCDMA, LTE FDD and LTE TDD communications technologies.

Testing Multi-technology Smartphones

Need for cell handover and fallback tests

Smartphones must maintain the mobility of mobile phones combined with an excellent user experience. In other words, not only must they have good connections to LTE cells in metropolitan areas as the roll out of LTE TDD services starts, but they must also be able to fallback and connect easily and transparently with TD-SCDMA and GSM cells still providing the majority of cell coverage outside urban areas. Naturally, unless this cell handover can be achieved smoothly without the smartphone user's knowledge, the user experience cannot be improved. Smooth transparent handover between cells requires problem-free verification testing using combinations of all the available communications standards. Additionally, tests must be run not just in the smartphone Idle State, but also in a variety of complex cases, such as cell handover during both circuit switching and packet switching.



Need for throughput performance tests

The LTE TDD technology is closely related to time division multiplexing methods like TD-SCDMA, offering very fast downlink Throughput Performance of 87 Mbps. These very high speeds support smartphone web browsing, video streaming, file downloads, cloud data services using voice recognition technologies, etc., at speeds approaching desktop PCs, greatly enhancing the smartphone experience and usability.

Consequently, stable Throughput Performance is a key evaluation index when using these types of smartphone applications.



Need for quantitative battery consumption test

As well as the voice function, smartphones have digital camera functions, maps and GPS functions, as well as always-on connections to social network services. The Natural User Interface-based GUI operation offers users a superior and stress-free operation environment, so users naturally spend many more hours using their smartphones than earlier feature phones, but conversely, this causes users anxiety about battery life. Vendors use quantitative battery power consumption tests to optimize their smartphone designs and allay users' fears over battery life.

All-in-One Test Platform

The Anritsu MD8475A is an all-in-one platform supporting the above-described test environments using a scenario-free GUI-based test environment called SmartStudio for high-efficiency smartphone design verification and testing. All cell handover test bearers are supported along with a built-in server for testing each application. In particular, the SIP server required for IMS tests is built-in as standard.



Ordering Information

Specify the model/order number, name, and quantity when ordering.

Contact our sales representative for other options.

Model	Name
- Main frame -	
MD8475A	Signalling Tester
MD8475A-001	2nd RF
MX847502A	Multi-cell Software
- Options -	
MX847570A	SmartStudio
MX847570A-040	TD-SCDMA Option
MX847570A-055	LTE TDD Option
MX847570A-020	GSM Option