

SAMSUNG

Samsung *FASTLEADER* WCDMA

Wideband Code Division Multiple Access



Samsung *FASTLEADER* WCDMA**Innovation and Services**

In the era of ballooned expenses, increased competition, and crushed margins, Samsung lends a strong hand to let you relax to take in the fresh opportunities in the WCDMA market. More than that!

Samsung, a technology leader and solutions innovator offers an opportunity to increase the revenue, reduce the cost, revive the profit margin, and to make you a leader!

Samsung is a world recognized leader in Code Division Multiple Access technology and in multimedia CDMA terminals, there is no one but Samsung at the helm! And in CDMA network systems, Samsung leads the global commercial network launches starting with world first CDMA, up to the recent CDMA2000 1X EV-DO.

Samsung extends this leadership in CDMA to Wideband-CDMA to offer the 3G operator worldwide to lead their own destiny in their own market.

Samsung's success proves our ability to work with the operator to deliver innovative services to the operator's needs. An example can be given that Samsung was able to alter MSC product to allow a highly marketable feature that now claims a top spot in services delivered with one of Samsung's key customers. To our knowledge, many global vendors do not accommodate such change to offer advantageous services to their customers. Samsung is conscious of 3G operator's feature service needs and is willing to innovate to deliver the edge that our operator customers seek to lead the market. While some Samsung innovations are to increase the revenue and others to reduce the cost, it is the operators' bottom line that we aim to grow. Samsung works to increase the longevity of investment made in the network equipment. Bring us the constraints and let's discuss how best we can accommodate the needs and protect your investment while delivering the best possible solutions to you and your customers.

Step into 3G with Samsung **FASTLEADER**



SAMSUNG **FASTLEADER** in WCDMA

Samsung provides world-class products, solutions and expertise
Experience and expertise in mobile solutions business - Samsung holds it all.
From infrastructure to mobile handsets, Samsung will lead the WCDMA market.



End-to-end Solution including 3G Terminals

As technology leader, Samsung offers the full suite of advanced future-proofed WCDMA products, and Samsung innovates continuously to provide the market edge that our operator customers need. It is well recognized in the world of 3G, the availability of 3G handsets rule as the predominant success factor. While many vendors now have shook off the terminals from their own shops to a third party, this could create a situation where the network is deployed and ready but it cannot be launched due to lack of right featured terminals for the market. Samsung is not only the leader of technology and innovations, but in latest report, Samsung provided more multimedia enabled terminals with camera feature than any other and Samsung recorded the second highest gross for handset sales. Furthermore, Samsung is the market leader for CDMA phones and the quality of handsets prove Samsung's technology leadership. If the key to success in 3G network services is in service differentiation, then would you not want to partner with Samsung who is capable of accommodating the differentiation needs and provide the full solution from the WCDMA network to multimedia services and to deliver it to your customers through the new WCDMA handset? Contact Samsung for a WCDMA discussion today.

Expertise and Global Experience

Samsung is neither a new comer nor a slumbering dinosaur in Telecommunications. Unlike other simpler technologies, telecommunications require a length of time to build a track record and get recognized as a global player. Samsung has been in the telecommunications for over two and a half decades to build the leadership history. During the length of time, in addition to the strong product portfolio, Samsung has built up the core expertise in global network installation, optimization, launch, maintenance, and upgrades that only a few can attempt to match in the world. In the markets where Samsung has been given a wide breath of total control, Samsung's network out competes the competition in the performance, coverage, and capacity performances.

This is your opportunity! Take this invitation to build your WCDMA network to become the leader, offering the best services, and best performances, while enjoying one of the best reliability in the market with Samsung network expertise.

FASTLEADER Be 3G Leader in your market

Armed with leadership in the technology, innovation, and global network expertise, Samsung is the time-to-market leader, a **FASTLEADER**. Did you know that in 1996, Samsung launched the first commercial CDMA network in history of wireless communication? And again in 2000, Samsung repeated the world first in the world commercial service launch of the CDMA2000 1X network, which now serves over 21million subscribers. And most recently in 2002, Samsung commercially launched the CDMA2000 1X EV-DO (Evolution - Data Only) with 2.4Mbps service for the first time in the world. For the next act, Samsung is poised to launch commercial service of Wideband CDMA with full R4 compliancy ready for the R5 HSDPA upgrade when the market is ready. Samsung has the product, implementation expertise, services, plus terminals to differentiate in the market, and leads the technology. If being the 3G market leader with WCDMA is your vision, call Samsung **FASTLEADER**, the technology innovator, the time-to-market leader.

New services with Samsung **FASTLEADER**

All of what could be imagined through mobile phone - Samsung's **FASTLEADER** makes it come true. As more customers access to abundant services with mobility, larger portion of revenue creation is close to reality. With Samsung, all these will be available with lower CAPEX and higher efficiency.



New Generation, New Services

Keep in touch with your affinity wherever you are

Imagine your business trip, you are hundreds of miles away from home, you miss your loved ones dearly. A simple conversation on a mobile phone does not bring you to close the gap you feel to your satisfaction. With Samsung **FASTLEADER**, a whole new set of exciting services bring you to closer touch with your loved ones through multimedia messaging or video telephony that makes you one with your loved ones. The new mobile multimedia services will excite you with the rich variety of services including news, music, video, and even traffic information to satisfy your wishes to catch up with the up-to-date information. Samsung **FASTLEADER** solution is your key to these exhilarating multimedia services.

Need to receive a file but away from your desk? No need to worry!

The new mobile services will leave you breathless in excitement. The rich variety of services like real time news and streaming video, on-demand download of files along with all other files and media that will satisfy your needs and wants. You left your office and found that you need a set of data ahead of the meeting you are headed for. Simply access to the mobile internet service with your mobile handset and reach out for the file you want. After that you can relax with your favorite music or sports video file till your meeting. Samsung **FASTLEADER** solution is your key to these relaxing multimedia services.

An urgent meeting with your client and want to find a short cut to reach the meeting place?

You have an appointment where you are to present your new findings and solutions - you need an alternate route to get there on time. A whole new navigation service using the Location Based Services is available to enable users to find the best way to the destination. The services such as Location Based Service and GPS, are available using Samsung **FASTLEADER** solution and you can avoid the traffic jams wherever you go.

The strength of Samsung **FASTLEADER** WCDMA solution

- R4 solution; ready for HSDPA upgrade
- Modularity offering scalability
- Large capacity packet switching network system
- Own WCDMA modem chip
- Wideband-CDMA developed out of CDMA leadership

Full WCDMA Product Portfolio

Product information



Samsung offers the true leadership product portfolio for WCDMA!

- ▶ **Circuit Switched Core Network (CSCN)**
 - MSC Server
 - MGW
- ▶ **Packet Switched Core Network (PSCN)**
 - GGSN
 - SGSN MIP
 - SGSN TP
- ▶ **UMTS Terrestrial Radio Access Network (UTRAN)**
 - RNC
 - Node B

Key Advantages:

Independent scalability

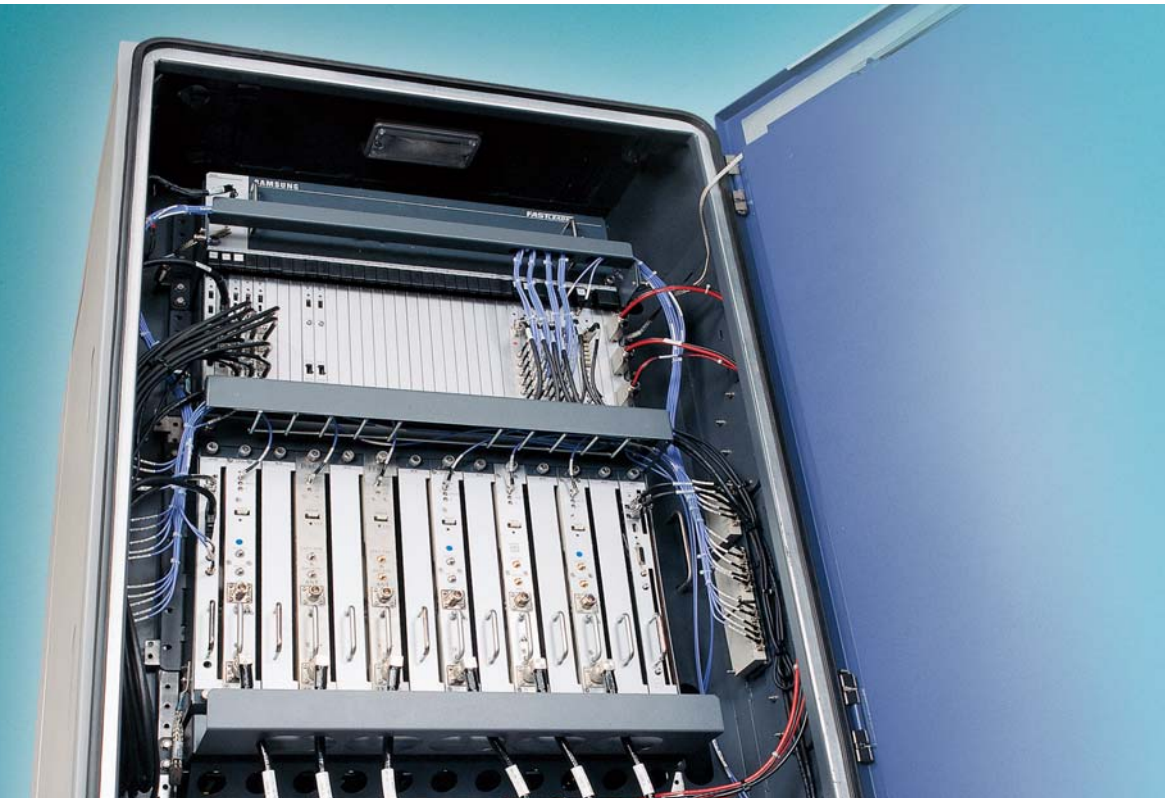
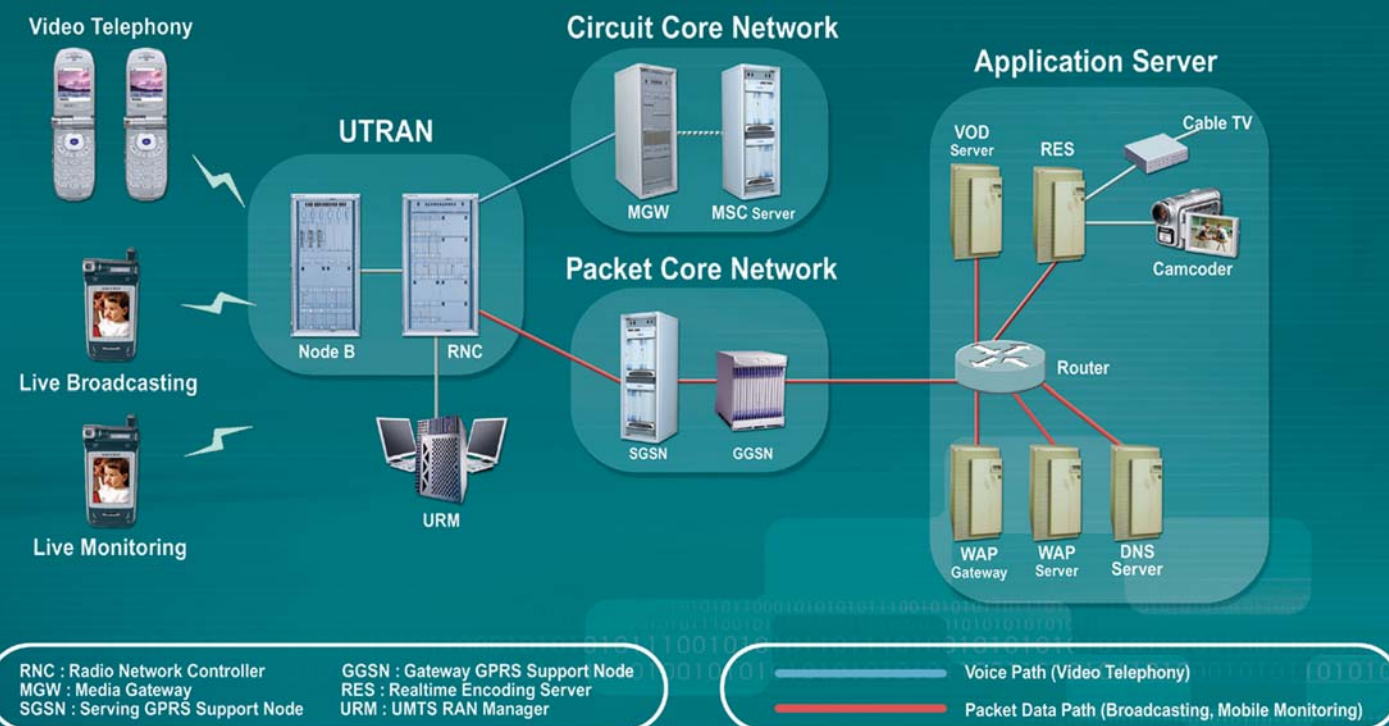
R4 compliancy → Bridging the legacy to the future

Eliminating unnecessary operations minimize CAPEX & OPEX → TrFO & TFO

UTRAN is ready for easy upgrade to R5 HSDPA & advanced antenna technology

Circuit Switched Core Network (CSCN)

- ▶ **MSC Server**
 - Load balancing
 - Independent scalability
 - Soft switch architecture
 - Transcoder free operation
 - Tandem free operation
 - MSC to handle the signaling and control for optimized WCDMA network needs
- ▶ **MGW**
 - Large capacity
 - Independent scalability
 - Simple bearer traffic optimized
 - Common architecture designed to be versatile: TGW, WGW, etc.



Packet Switched Core Network (PSCN)

- ▶ **Gateway GPRS Serving Node (GGSN)**
 - Huge capacity
 - Bearer traffic to and from SGSN and internet or to other PLMN
 - Individual subscriber management through interface to HLR
 - Common bearer packet traffic engine for both GGSN & SGSN TP
- ▶ **Serving GPRS Serving Node (SGSN)**
 - Samsung WCDMA separated SGSN into two for independent scalability
 - Interface with RNC through IuPS
 - ▷ **SGSN MIP**
 - Handles IuPS interface between UTRAN and GGSN
 - Optimized control of all packet signaling
 - Telco grade reliability
 - GTP tunneling to GGSN
 - ▷ **SGSN TP**
 - High capacity and Telco reliability
 - Handles all payload traffic between RNC and GGSN

Advanced Node B with Samsung's own modem chip technology based on a history of successful CDMA modem technology

- ▶ **UMTS Terrestrial Radio Access Network (UTRAN)**
 - ▷ **Supports inter-operation with other vendor's CN**
 - ▷ **Radio Network Controller (RNC)**
 - Control WCDMA UTRAN resources
 - Manage subscriber traffic of up to 128 Node B
 - Flexible modular distributed architecture
 - High reliability and fault tolerance
 - Handles handoffs of voice, data, and multimedia subscriber between Node B's
 - ▷ **Node B**
 - Ready for R5 HSDPA upgrade
 - High channel capacity cards
 - Own WCDMA modem chips



* Information is subject to change

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