

APPLICATION NOTE

MG3681A

Digital Modulation Signal Generator

ANRITSU CORPORATION

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MG3681A Digital Modulation Signal Generator

Application Note

W-CDMA experiment equipment for base station construction



Anritsu Co.
April 2004 Ver 1.0

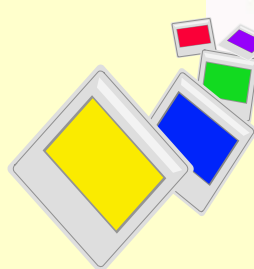
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Purpose

The optimum cell arrangement and the antenna parameters must be set in building a base station.

- **Verification of downlink**

- » The experiment which simulated actual communication service by general signal generator MG3681A simulating a base station can verify the following.
 - Identifying radio wave propagation loss, interference, and weak electric field strength area in downlink
 - Inter-Cell Soft Handover test and pinpointing the area points
 - Analyzing the level fluctuation in fading propagation, the delay profile characteristic, BLER, and the number of effective paths at handover

- **Verification of uplink**

- » The experiment which simulated actual communication service by general signal generator MG3681A simulating a user equipment can verify the following.
 - The receiving diversity characteristic test in a base station
 - Analyzing the necessity or non-necessity for attachment of LNA directly under the antenna

Outline

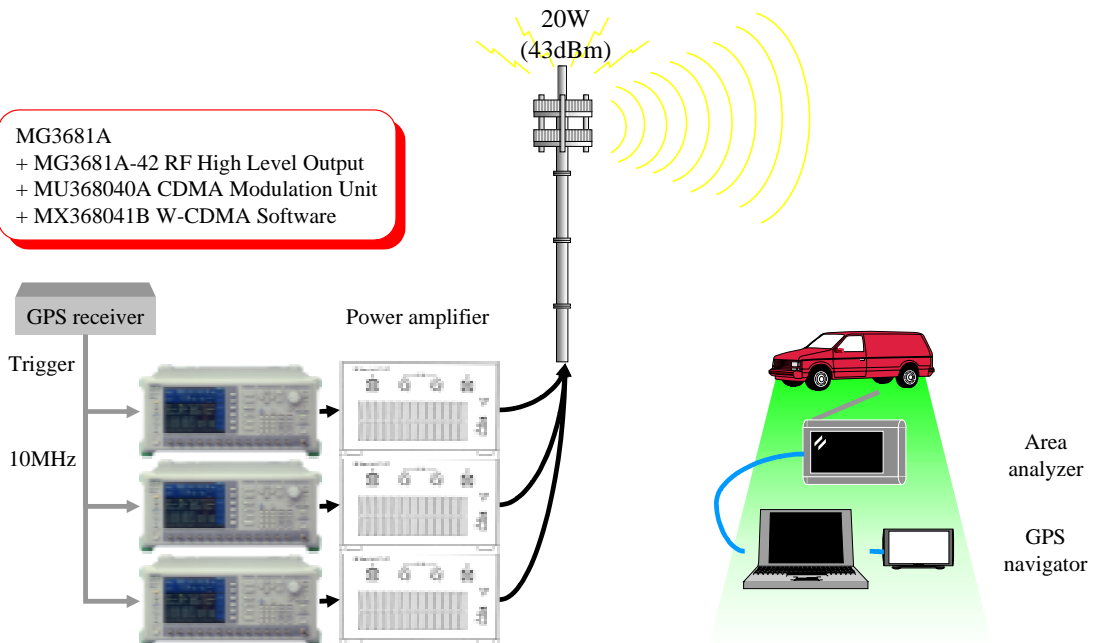
- **Verification of downlink**

- » Power amplifier (JRC makes) is connected to MG3681A (RF output), and it considers as 20W transmitter.
- » Three transmitters simulate the base station of a different cell.
 - The timing of three MG3681A is synchronized.
 - SCH timing differs mutually.
 - Scrambling code: same
 - Cell: 0, 1, 2
- » Output signal formats are custom-made patterns based on DL RMC.
 - Ch. 1: P-CCPCH + P/S-SCH
 - Ch. 4: DPCH (RMC 12.2 k, 64 k, 144 k, 384 kbps)
 - Ch. 5: PICH
 - Ch. 6: CPICH
 - Add Ch.: 63 DPCH (63 OCNS) * referred Test Model 1 (64 DPCH)
- » CPICH power and DPCH BLER are measured by a in-car UE area analyzer.

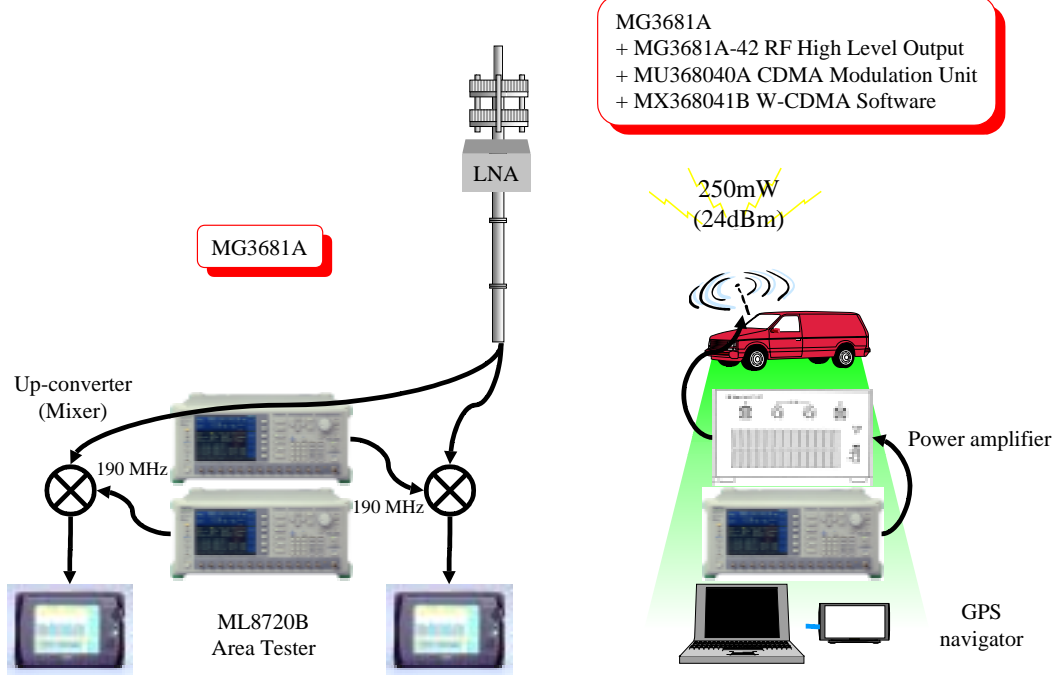
Outline

- **Verification of uplink**
 - » Power amplifier (JRC makes) is connected to MG3681A (RF output), and it considers as 250mW transmitter.
 - » A transmitter simulates a in-car user equipment.
 - » Output signal formats are DL RMC. (Frequency is Uplink.)
 - Ch. 1: P-CCPCH + P/S-SCH
 - Ch. 4: DPCH (RMC 12.2 k, 64 k, 144 k, 384 kbps)
 - Ch. 5: PICH
 - Ch. 6: CPICH
 - » Two area testers ML8720B simulate the base station of the receiving diversity antennas.
 - They are connects to the up-converter toward downlink frequency.
 - » CPICH power is measured by ML8720B.

Configuration (Verification of downlink)



Configuration (Verification of uplink)



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Appearance of equipment



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Appearance of equipment



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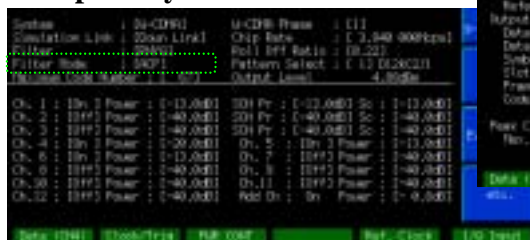
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MG3681A setup

- **Setting External Start trigger**
 - » Captures/Synchronizes the Trigger only once

- **ACP priority filter**



- **Connect with GPS receiver**

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Thank you.

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Specifications are subject to change without notice.

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