

# BS Measurement Supports HSDPA

ML8720B, ML8720C

Area Tester

ML8740A, ML8740B

Area Scanner

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Anritsu Corporation  
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ML8720BC/8740AB-E-F-1

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## HSDPA Outline (High Speed Downlink Packet Access)

- 1. The HSDPA standard uses Release5. When Release5 replaced Release99/Release4, one transport channel and three physical channels described below were added.**
  - HS-DSCH: High Speed Downlink Shared Channel (transport channel on HS-PDSCH)
  - HS-PDSCH: High Speed Physical Downlink Shared Channel (Shared between QPSK/16QAM, multiple UEs)
  - HS-SCCH: Shared Control Physical Channel for HS-DSCH (modulation scheme, H-ARQ information)
  - HS-DPCCH: Dedicated Physical Control Channel (Notify of CQI to Uplink, Node-B)

\*H-ARQ: Hybrid Automatic Report reQuest  
\*CQI: Channel Quality Indicator
- 2. The modulation method or transmission rate changes drastically according to the radio-wave environment of the transmission path. The maximum transmission rate is 14.4 Mbps (non-guaranteed) using 16QAM.**
- 3. Backward compatibility with Release99/Release4 function ensures coexistence with Release 99 in the same carrier frequency.**

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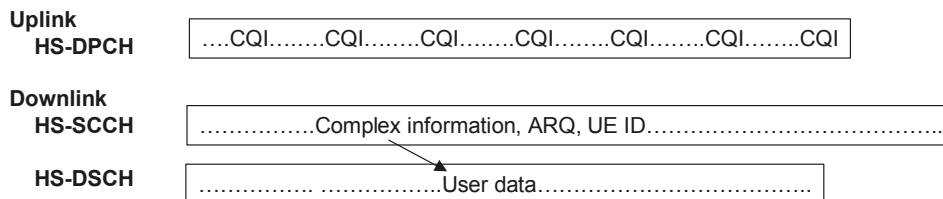
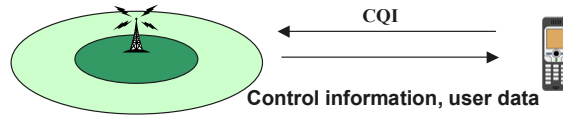
Slide 2

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## CQI (Channel Quality Indicator)

The modulation method and bit rate are determined (set) based on the CQI reported every 2 minutes by the UE to Node-B.

Note: Even when the transmission quality is good, the bit rate will not be higher when the capacity is low due to too many users, etc.



CQI is determined (set) based on the P-CPICH (Primary Common Pilot Channel) reception quality. (EFRI, which should achieve 30 BLER<10%, is indicated by a value from 1 to 30).

## Reception Channels Supported by ML8720/ML8740 Series

### 1. P-CPICH, S-CPICH

### 2. P-SCH, S-SCH

No change is made by replacement of Release99/Release4 with Release5, so existing measurements can be made using the ML8720/ML8740 series.

### 3. P-CCPCH (Receive in BCH demodulation)

No change is made by replacement of Release99/Release4 with Release5, so BCH/BCCH modulation is unaffected.

### 4. BCH, BCCH

Some part(s) of the SIB (System Information Block) is (are) changed by replacement of Release99/Release4 with Release5. (\*Adds information not related directly to HSDPA)

**Additional information-to-text conversion can also be performed by applying the Release5 definition file.** Moreover, SIB content using the same format as Release99 can be converted to text with the existing definition file even at Release5 SIB measurement.

## ML8720/ML8740 HSDPA Measurement Supports BS

Cell optimization is still indicated by measuring **the P-CPICH reception quality** even when Node-B supports HSDPA (same as UE). However, because HSDPA requires BLER minimization, the interference wave condition influencing the error rate must be fully understood. Therefore, both **the P-CPICH receive power RSCP and the Ec/No or SIR value** must be determined.

**Since the ML8720/ML8740 can measure SIR with high accuracy even when there is a lot of interference or fading, it is a useful tool for mapping high-speed communication zones.**

**Question:**

Is downlink channel measurement (HS-PDSCH, HS-SCCH) added by HSDPA necessary?

**Answer:**

HS-PDSCH is the data channel and is largely influenced by user conditions, so quantitative measurement cannot be made. HS-SCCH is the control channel and power measurement is the same as evaluation using P-CPICH output with a constant power.

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