

MX269012A

W-CDMA/HSPA Uplink Measurement Software

MS2690A/MS2691A/MS2692A

Signal Analyzer

MS2690A/MS2691A/MS2692A Signal Analyzer

MX269012A

W-CDMA/HSPA Uplink Measurement Software Product Introduction (Version 2.00)



Anritsu Corporation

W-CDMA/HSPA Uplink Measurement Software

The MX269012A W-CDMA/HSPA Uplink Measurement Software supports measurement of RF Tx characteristics of mobile terminals supporting W-CDMA/HSDPA/HSUPA/HSPA Evolution. Installation in the MS2690A/MS2691A/MS2692A Signal Analyzer with world-beating RF performance offers fast, high-accuracy measurement.

MX269012A W-CDMA/HSPA Uplink Measurement Software



Install

MS269xA Signal Analyzer



Specifications(1/2)

Easy RF Tests of 3GPP TS34.121 (Release 8)-compliant W-CDMA/HSDPA/HSUPA/HSPA Evolution Mobile Terminals

3GPP TS34.121 Transmitter characteristics		Software	SPA
5.2	Maximum Output Power	Yes	
5.2A	Maximum Output Power with HS-DPCCH	Yes	
5.2AA	Maximum Output Power with HS-DPCCH	Yes	
5.2B	Maximum Output Power with HS-DPCCH and E-DCH	Yes	
5.2C	UE Relative Code Domain Power Accuracy	No	
5.2D	UE Relative Code Domain Power Accuracy for HS-DPCCH and E-DCH	Yes	
5.3	Frequency Error	Yes	
5.4.1	Open Loop Power Control in the Uplink		Yes
5.4.2	Inner Loop Power Control in the Uplink		Yes
5.4.3	Minimum Output Power		Yes
5.4.4	Out-of-synchronization Handling of Output Power		Yes
5.5.1	Transmit OFF Power		Yes
5.5.2	Transmit ON/OFF Time Mask		Yes
5.6	Change of TFC	No	
5.7	Power Setting in Uplink Compressed Mode	No	
5.7A	HS-DPCCH Power Control		Yes

Specifications(2/2)

3GPP TS34.121 Transmitter characteristics		Software	SPA
5.8	Occupied Bandwidth (OBW)	Yes	
5.9	Spectrum Emission Mask	Yes	
5.9A	Spectrum Emission Mask with HS-DPCCH	Yes	
5.1	Adjacent Channel Leakage Power	Yes	
5.10A	Adjacent Channel Leakage Power Ratio with HS-DPCCH	Yes	
5.10B	Adjacent Channel Leakage Power Ratio with E-DCH	Yes	
5.11	Spurious Emission		Yes
5.12	Transmit Intermodulation		Yes
5.13.1	Error Vector Magnitude (EVM)	Yes	
5.13.1A	Error Vector Magnitude with HS-DPCCH	No	
5.13.1AA	Error Vector Magnitude and Phase Discontinuity with HS-DPCCH	No	
5.13.2	Peak Code Domain Error	Yes	
5.13.2A	Relative Code Domain Error with HS-DPCCH	Yes	
5.13.2B	Relative Code Domain Error with HS-DPCCH and E-DCH	Yes	
5.13.3	UE Phase Discontinuity	No	
5.13.4	PRACH Preamble Quality	No	

Features

- **Easy analysis of Tx characteristics of W-CDMA/HSDPA/HSUPA/HSPA Evolution mobile terminals**
- **4PAM modulation signal analysis for HSPA Evolution**
- **Low residual EVM of $\leq 1.0\%$ required for HSPA Evolution development (true value: about 0.3% at 4PAM) and excellent Total level accuracy of ± 0.6 dB**

Measurement Functions (1/2)

Supports fast and high-accuracy measurements, such as modulation analysis and Tx power required for development of W-CDMA/HSDPA/HSUPA/HSPA Evolution mobile terminals.

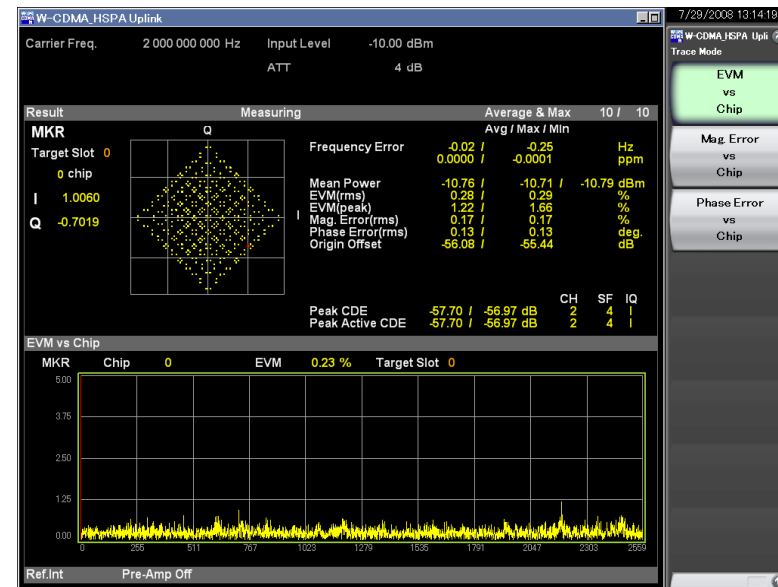
Modulation Analysis

Text Display

- ◆ Frequency error
- ◆ Average power
- ◆ Vector error/Amplitude error/Phase error
- ◆ Zero offset

Graph Display

- ◆ Peak code domain error
- ◆ Constellation
- ◆ Vector error/Amplitude error
/Phase error vs. Chip



Measurement Functions (2/2)

Code Domain

Text Display

- ◆ Average power
- ◆ Vector error/Amplitude error
- ◆ Code power

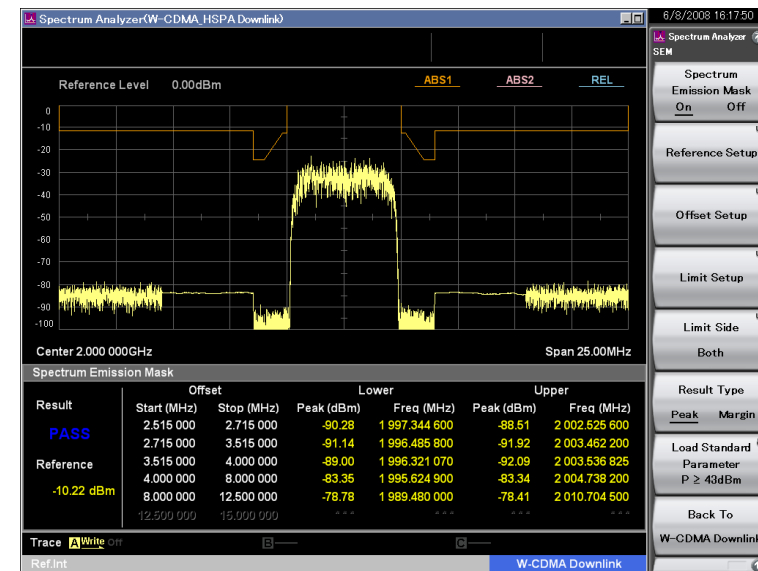
Graph Display

- ◆ Code domain/Code domain error
- ◆ Constellation
- ◆ Vector error/Amplitude error/Code power vs. Symbol



Spectrum

- ◆ Adjacent channel leakage power
- ◆ Channel power
- ◆ Occupied bandwidth
- ◆ Spectrum emission mask

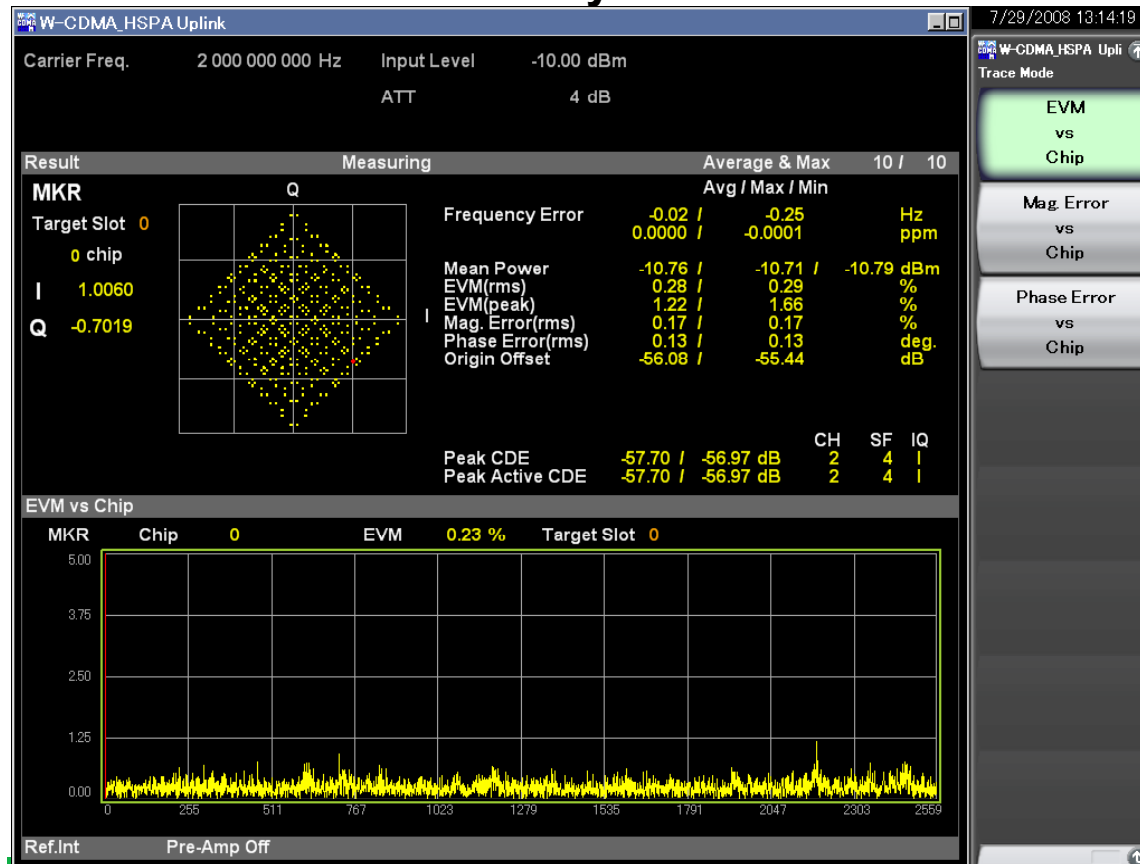


Measurement Function–Modulation Analysis (1/3)

Supports modulation analysis of W-CDMA/HSDPA/HSUPA/HSPA Evolution uplink signals.

Efficient evaluation of DUT characteristic because max. and average values for frequency error, vector error, etc., measurements displayed simultaneously for 15 slots max.

Modulation Analysis Screen



Text Display

- ◆ Frequency error
- ◆ Average power
- ◆ Vector error/Amplitude error /Phase error
- ◆ Zero offset

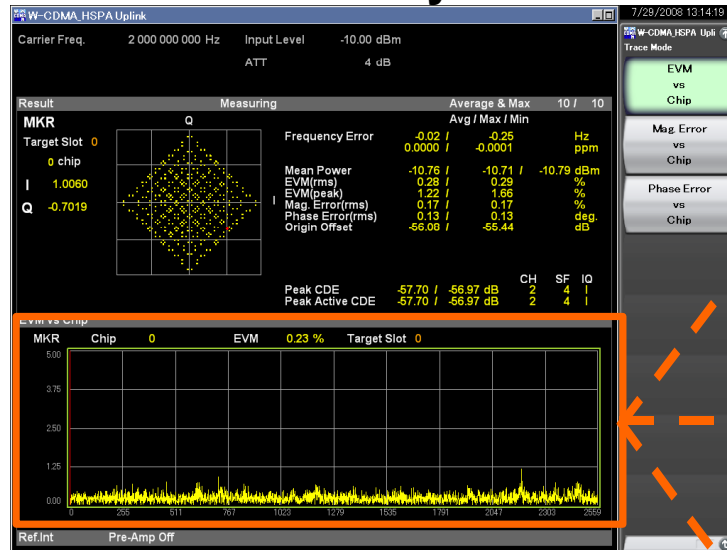
Graph Display

- ◆ Peak code domain error
- ◆ Constellation
- ◆ Vector error/Amplitude error /Phase error vs. Chip

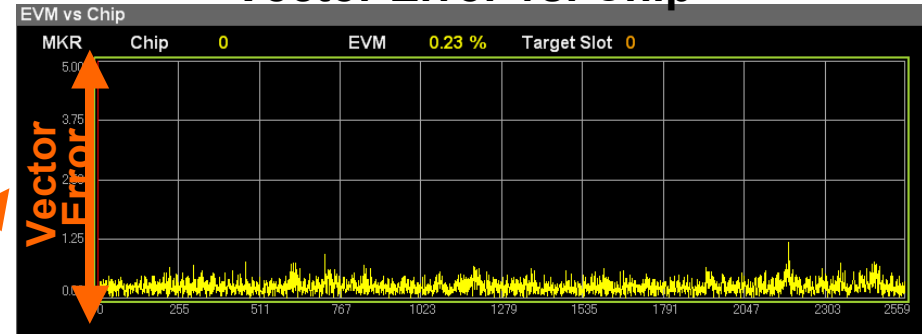
Measurement Function–Modulation Analysis (2/3)

Each of vector error, amplitude error, and phase error can be displayed on the vertical axis. The time-dependent (chip unit) signal degradation can be found instantaneously.

Modulation Analysis Screen



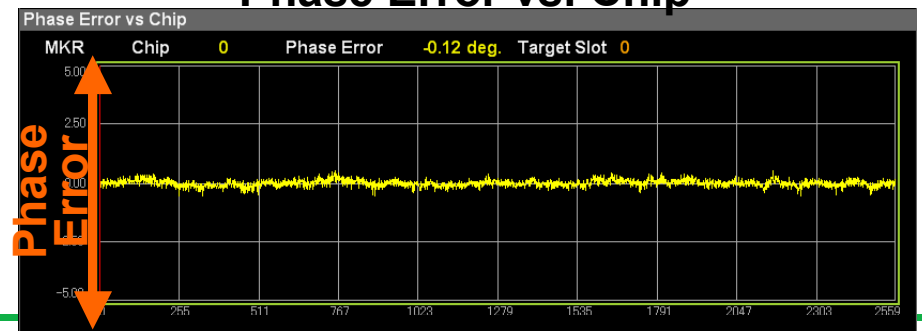
Vector Error vs. Chip



Amplitude Error vs. Chip



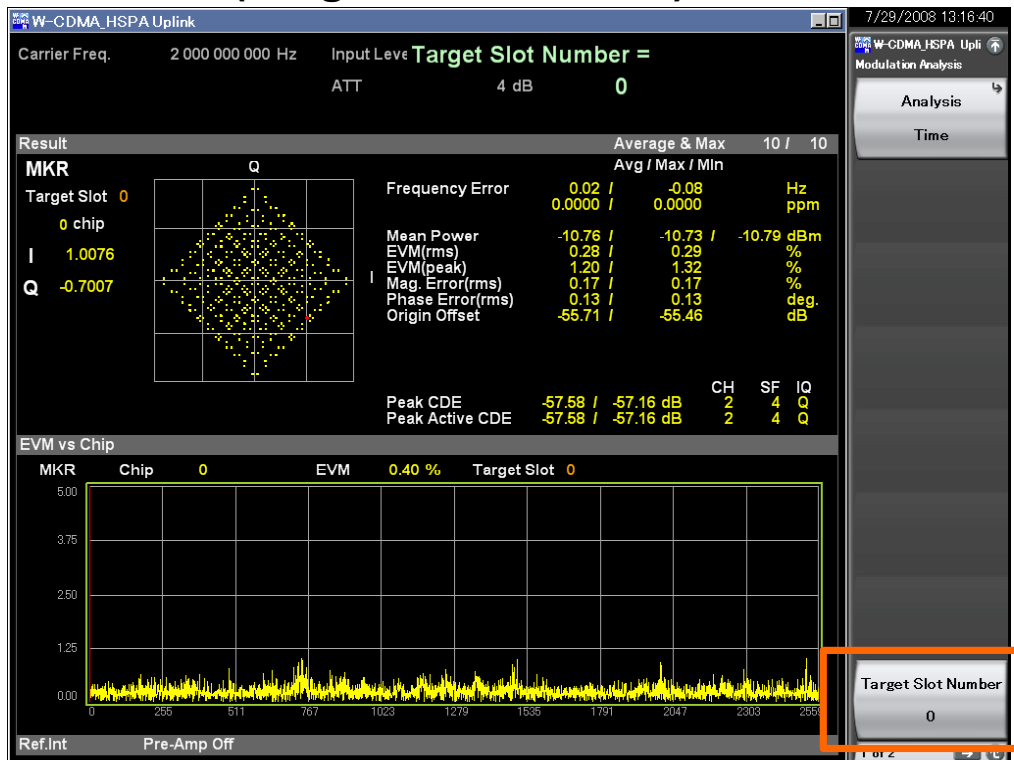
Phase Error vs. Chip



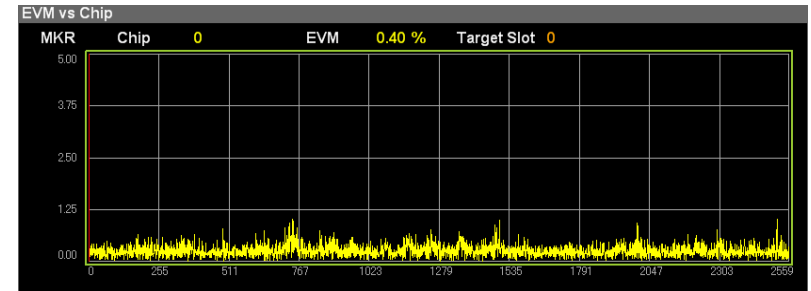
Measurement Function–Modulation Analysis (3/3)

The graph (Vector Error/Amplitude Error/Phase Error vs. Chip) for the slot specified at Target Slot Number can be displayed. Signals for 15 slots max. are captured and then the change in each slot can be observed later.

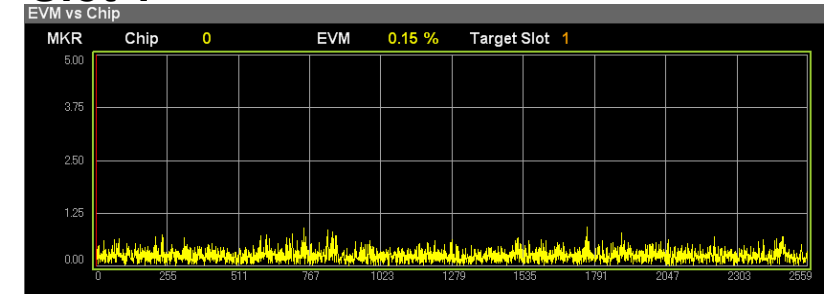
Modulation Analysis Screen
(Target Slot Number)



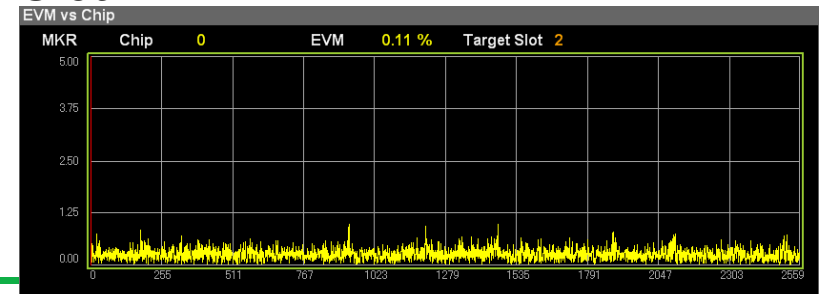
Slot 0



Slot 1



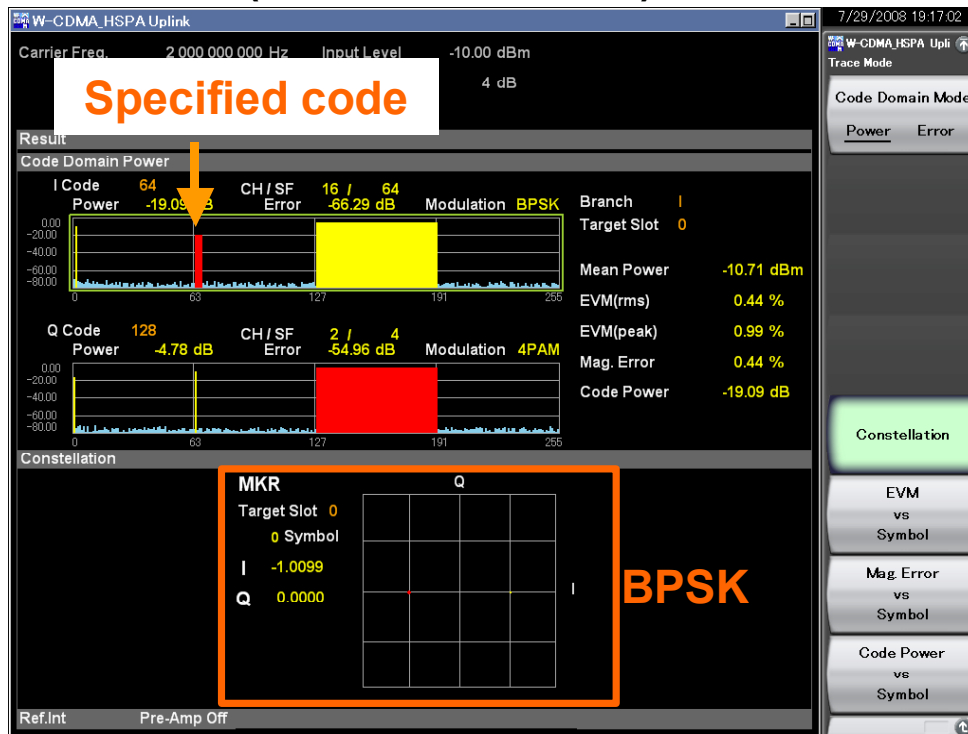
Slot 2



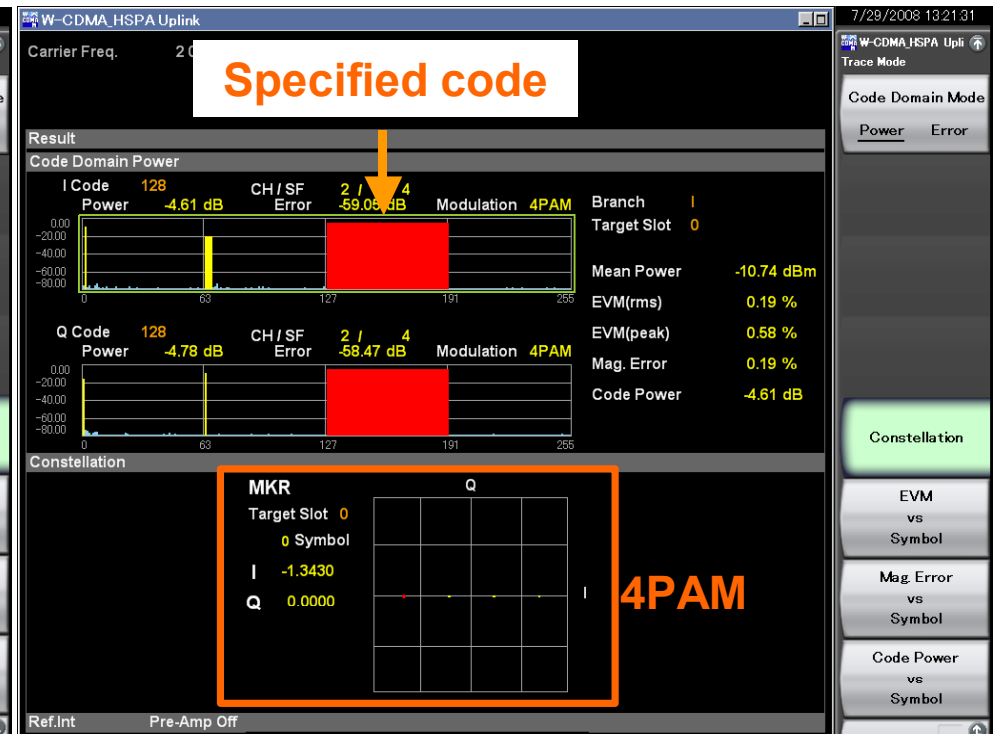
Measurement Function–Code Domain (1/3)

Numeric results (vector error, amplitude error and code power) and constellation for specified code are displayed. Code-dependent signal degradation can be found instantly.

Code Domain (Constellation)
(Code Number: 64)



Code Domain (Constellation)
(Code Number: 128)



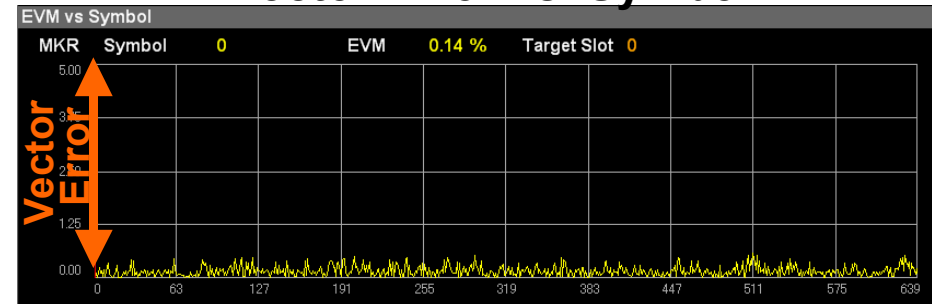
Measurement Function–Code Domain (2/3)

Each of vector error, amplitude error, phase error, and code error can be displayed on the vertical axis. Time-dependent (chip unit) signal degradation for a specific code can be found instantly.

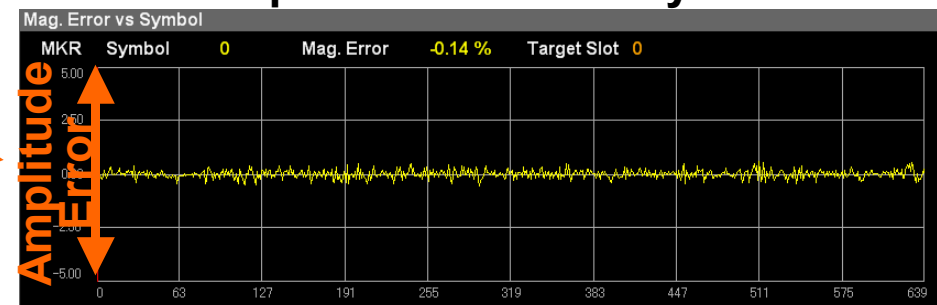
Code Domain Screen



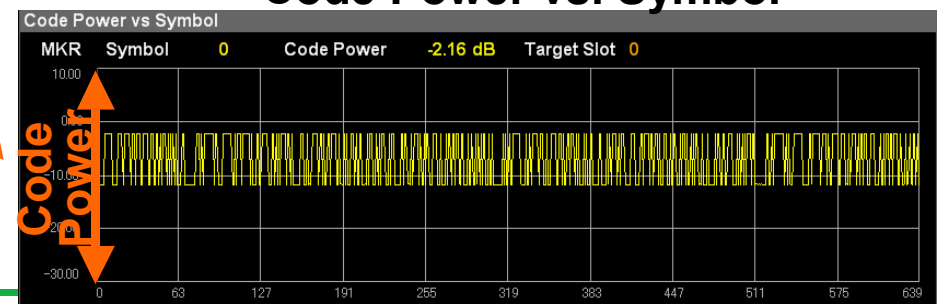
Vector Error vs. Symbol



Amplitude Error vs. Symbol



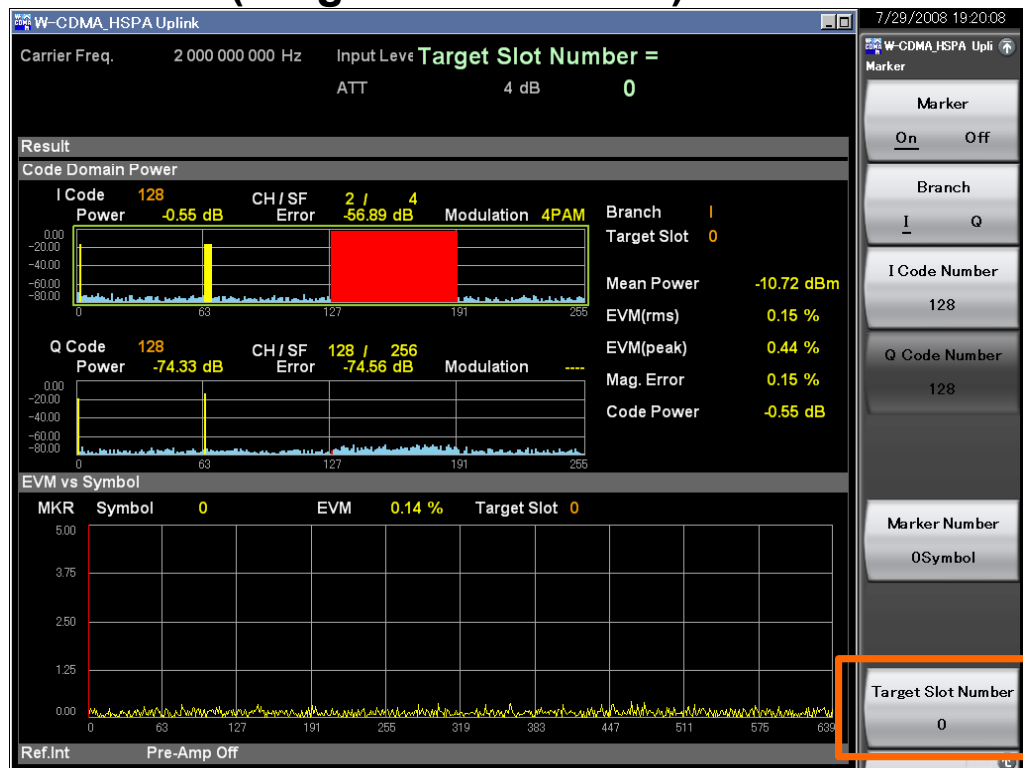
Code Power vs. Symbol



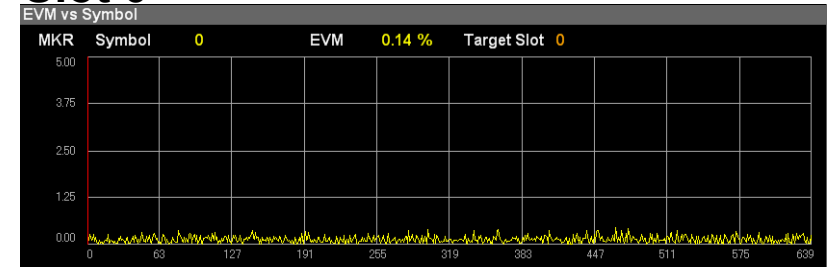
Measurement Function–Code Domain (3/3)

The graph (Vector Error/Amplitude Error/Code Power vs. Symbol) for the slot specified at Target Slot Number can be displayed. Signals for 15 slots max. are captured and then the change in each slot can be observed later.

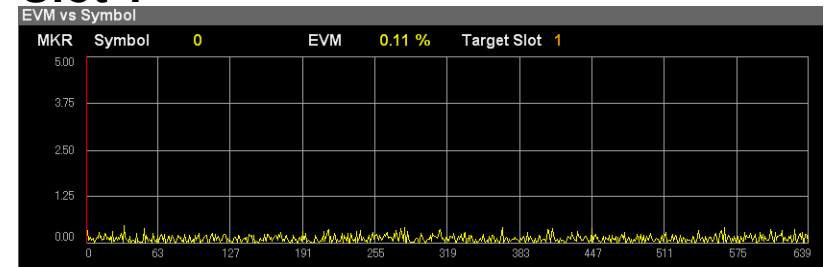
Code Domain Screen
(Target Slot Number)



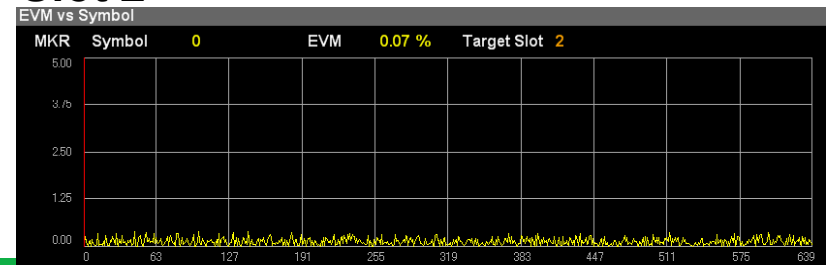
Slot 0



Slot 1



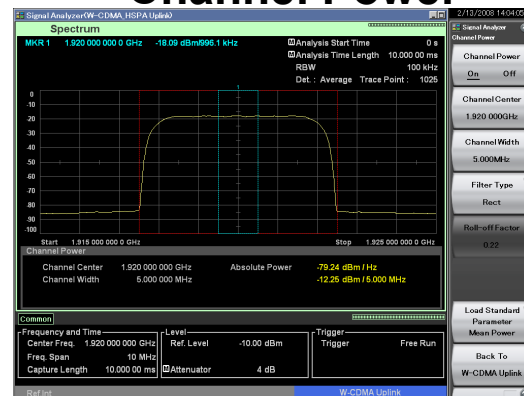
Slot 2



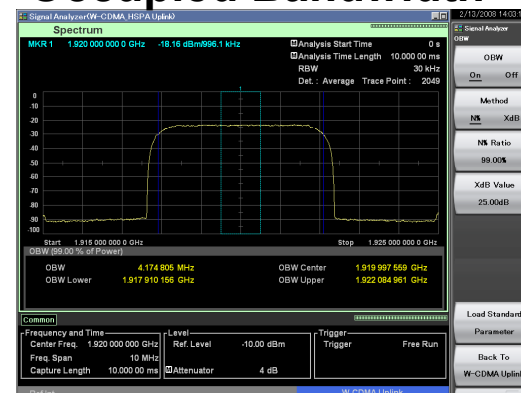
Measurement Function–Spectrum

The W-CDMA/HSDPA/HSUPA/HSPA Evolution signal spectrum (ACLR, channel power, occupied bandwidth, and spectrum emission mask) can be measured with one touch of a button using the MS269xA series spectrum analyzer/signal analyzer function with excellent level accuracy and wide dynamic range.

Channel Power



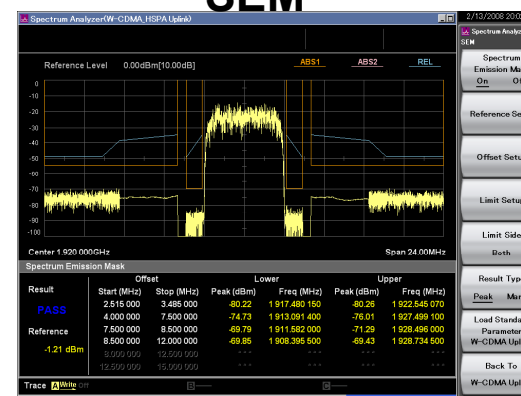
Occupied Bandwidth



ACLR



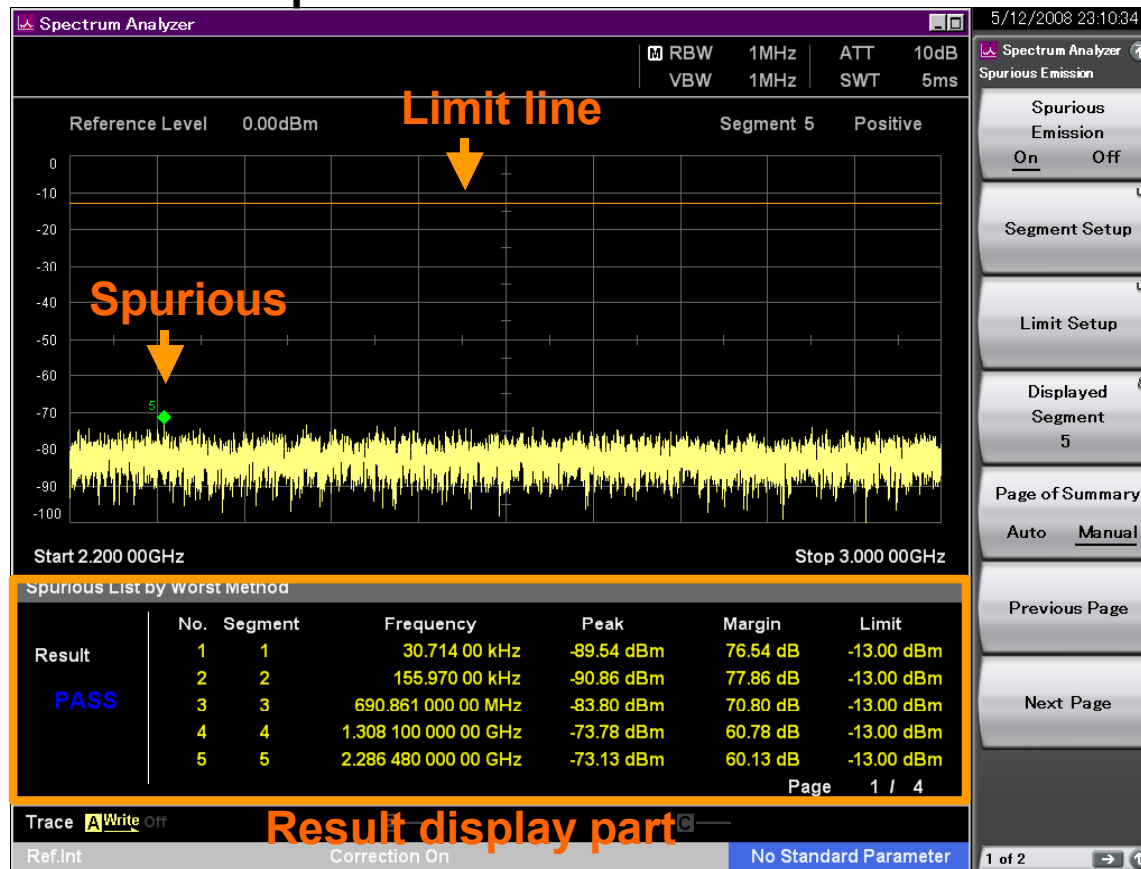
SEM



MS269xA Main Frame Measurement Function– Spurious Emission Measurement

The peak frequency and level in each segment and the standard margin are displayed; parts exceeding the limit line are indicated in red. Limit line and measurement methods for 20 segments max. can be set.

Spurious Emission Measurement



Note

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