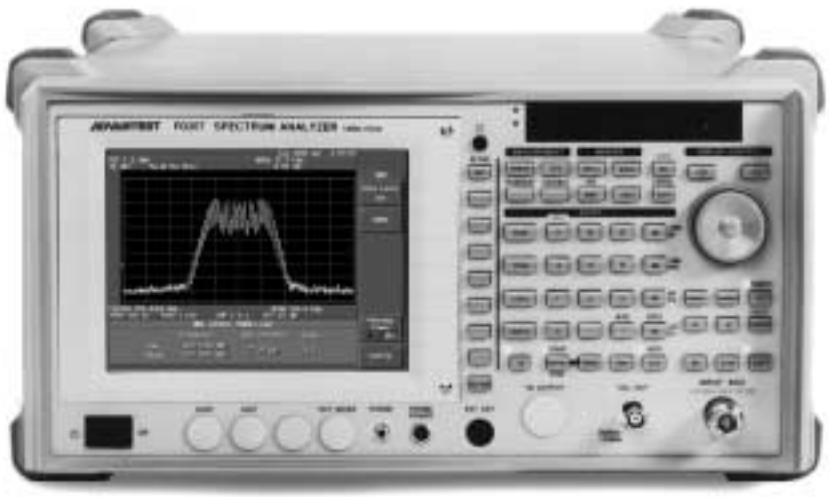
Technology Support on the Leading Edge

ADVANTEST

ADVANTEST CORPORATION

Spectrum Analyzer R3267/3273
AMPS/JTACS/NTACS Analysis Software Option(OPT.73)

For AMPS/JTACS/NTACS Transmission Test



Spectrum Analyzer R3267/3273

■ Overview

The AMPS/JTACS/NTACS analysis software option (OPT.73) makes R3267/3273 possible to measure the AMPS/JTACS /NTACS transmission test items.

This option contributes to both base station/mobile station with a single unit. In addition, modulation signal analysis such as FM Deviation and ACP, OBW, Power (standard items) measurement are possible. (Operation of OPT.73 require Digital Modulation Analysis Option (OPT.01).)

■ Target systems

AMPS/JTACS/NTACS - UPLINK/DOWNLINK

■ Features

- Dual mode analysis
  - Spectrum analyzer mode

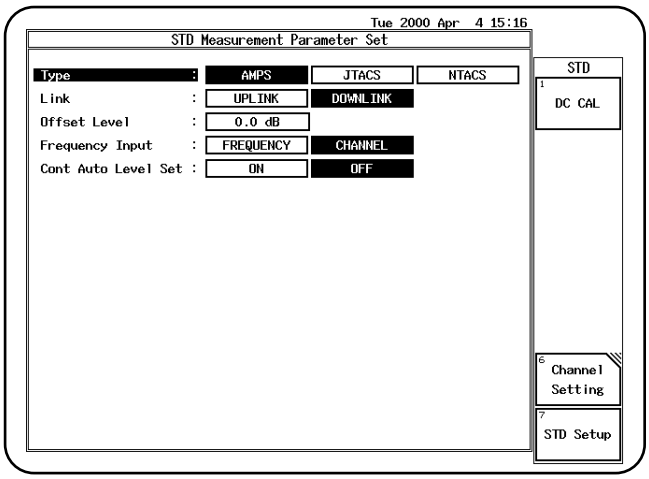
    (R3267 100Hz to 8GHz
    R3273 100Hz to 26.5GHz)
  - AMPS/JTACS/NTACS Tx tester mode
- Standard items measurement such as ACP, OBW and FM Deviation.
- Automatic setting of AMPS/JTACS/NTACS parameters
- Simple operation with conversational key menu.
- PASS/FAIL judgement function is provided

■ Measurement items

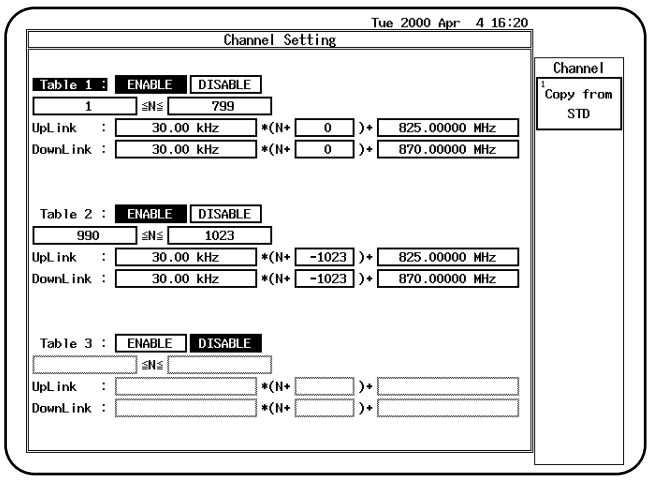
- **Power**
- **OBW**
- **ACP**
- **Carrier Frequency Error**
- **FM Deviation**
- **Spurious Emission**
- **Fund. Freq. and Level of FM Demodulated Signal**
- **Distortion and Harmonics of FM Demodulated Signal**

Display Example

STD parameter setup menu

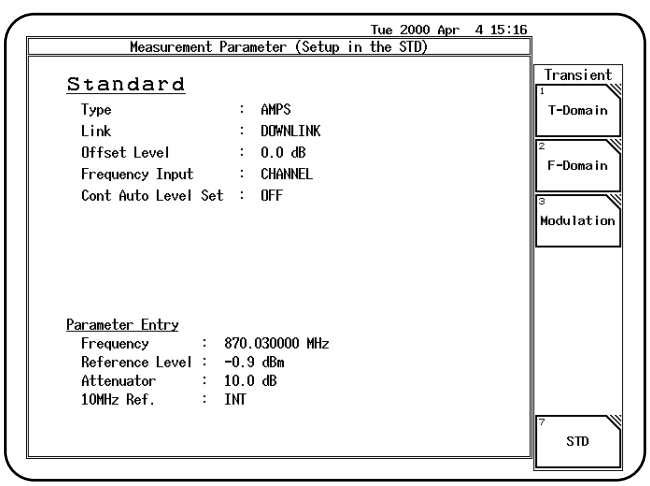


Channel setup menu

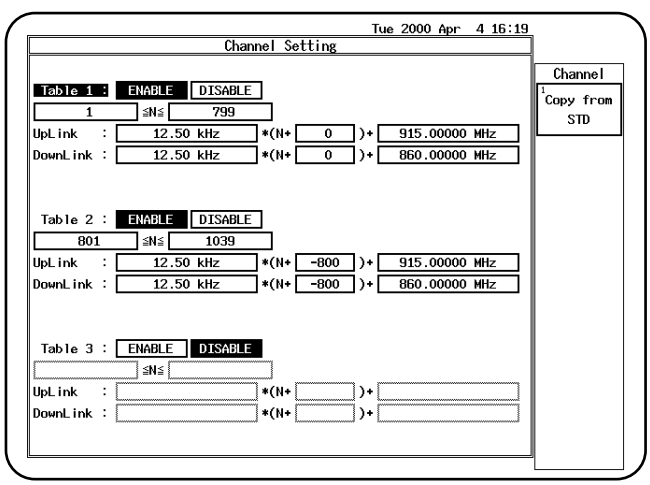


<AMPS>

Tx Tester Mode menu

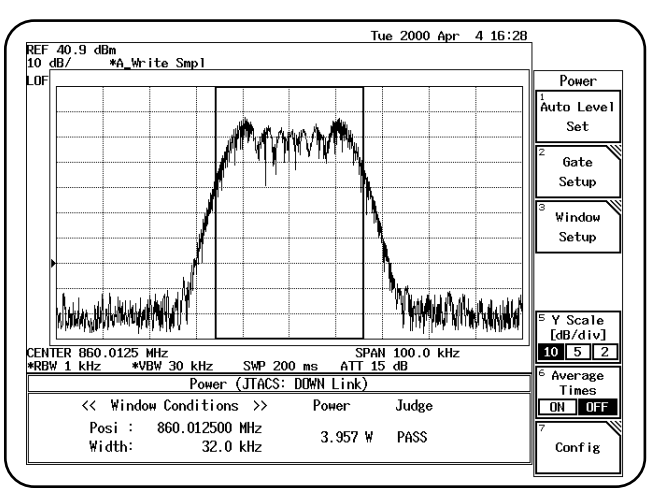


Channel setup menu

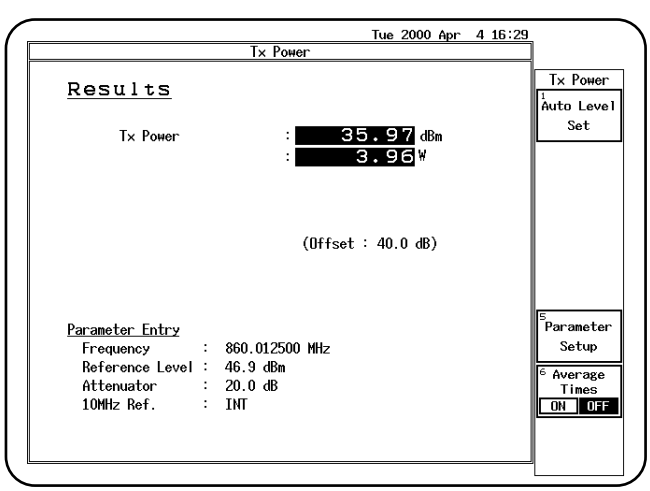


<JTACS>

F-Domain Power

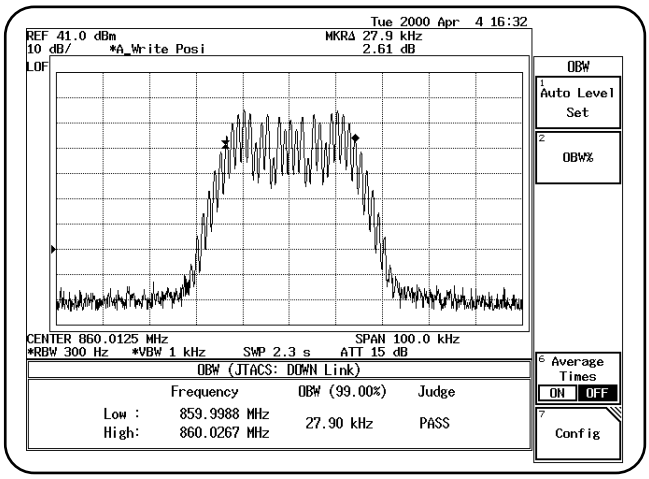


Tx Power

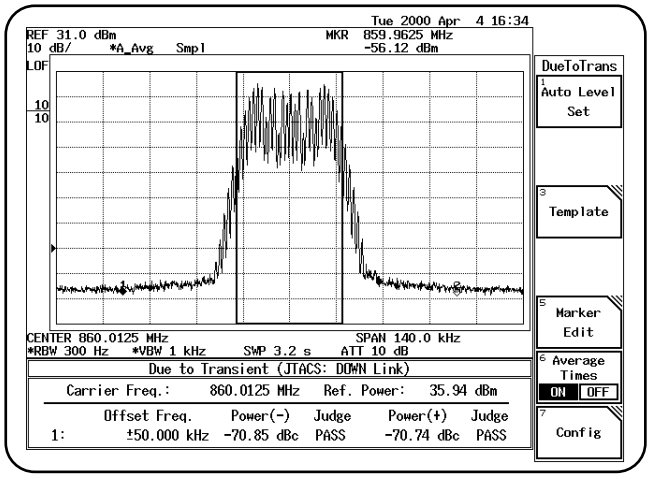


AMPS/JTACS/NTACS Analysis Software Option (OPT.73)

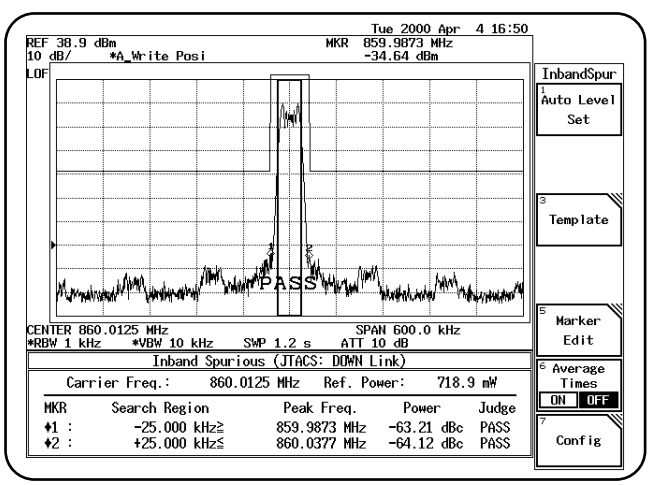
OBW



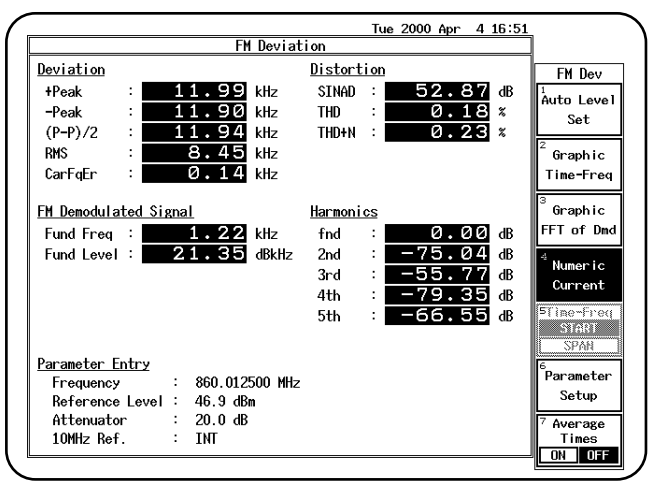
ACP



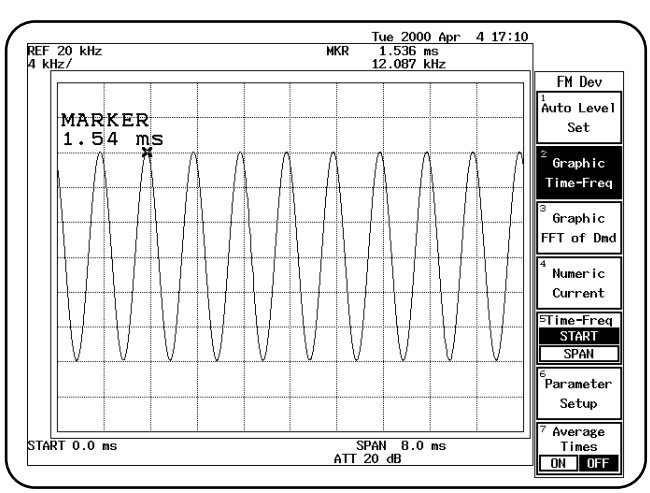
In-Band Spurious



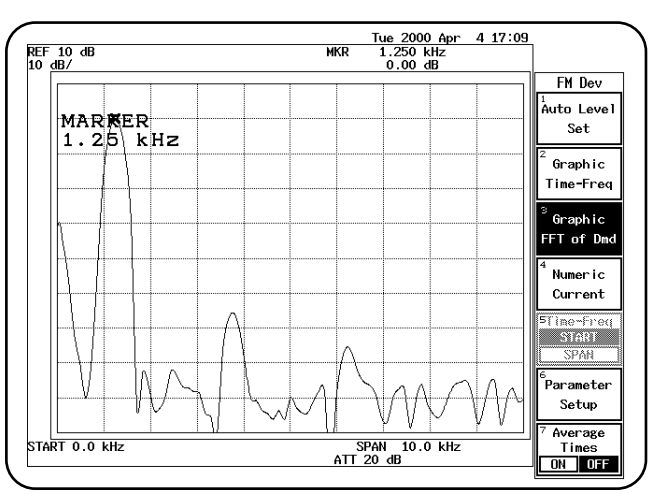
FM Deviation



Graphic (Time-Freq.)

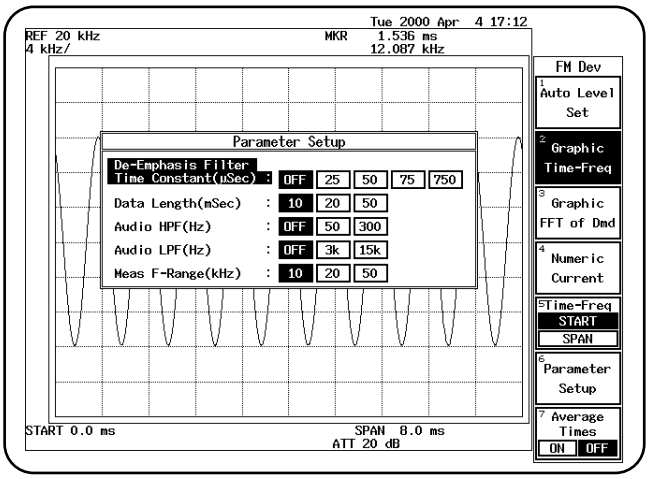


Graphic (FFT of Dmd.)

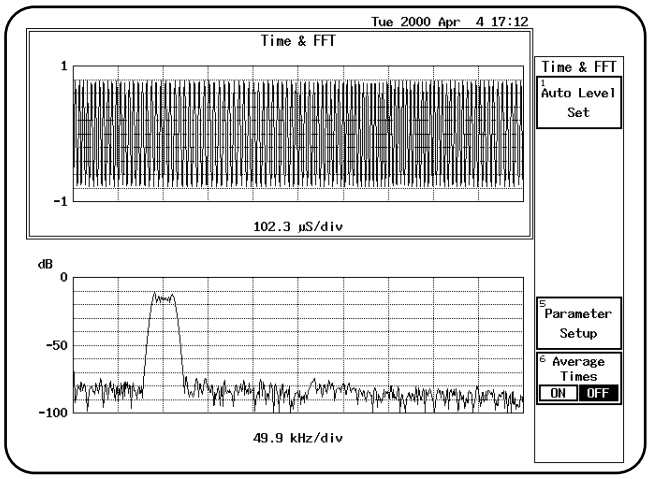


AMPS/JTACS/NTACS Analysis Software Option (OPT.73)

FM Deviation Parameter Setup



Time & FFT



Specifications

Items	Specifications
Measurement range	Up to 50kHz
FM deviation measurement accuracy	±5% or less
Measurement frquensy range	10kHz/20kHz/50kHz
De-Emphasis Filter time constant	OFF/25/50/75/750µsec
Audio measurement	Measure THD, SINAD,THD+N and Harmonics using FFT of the FM demosulated signal.
Audio L.P.F	OFF/3kHz/15kHz
Audio H.P.F	OFF/50Hz/300Hz

Technical Information

● About the Measurement Result

Results are calculated from the following formula.

+Peak: Maximum frequency of the FM demodulated signal.

-Peak: Minimum frequency of the FM demodulated signal.

(P-P)/2: Mean value of absolute values of +Peak and -Peak.

RMS: Root Mean Square of the FM demodulated signal.

CarFqEr: Carrier frequency error.

$$CarFqEr = \frac{1}{N}\sum_{i=0}^{N-1} fm[i]$$

fm[i]:FM demodulated signal

SINAD: Signal Noise And Distortion

SINAD[dB]=20log [(S+N+D)/(N+D)]

THD: Total Harmonic Distortion (Distortion Ratio)

THD(%)=D/S × 100

THD+N: Total Harmonic Distortion and Noise

THD+N(%) = (D+N)/S × 100

S =RMS of the fundamental wave element

D=RMS of the harmonic element

N=RMS of the noise element

Harmonics: Displays up to the fifth harmonic level of the FM demodulated signal. The level of the fundamental wave is normalized to 0 dB.

● About De-Emphasis Filter Time Constant

The Time constant and its main usage followings.

Time constant	3dB point (Hz)	Main usage
25	6366	FM broadcast (using Dolby-B reduction)
50	3183	FM broadcast (JIS)
75	2122	FM broadcast (FCC old standard), satellite broadcast
750	212.2	MIRS

Technology Support on the Leading Edge

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