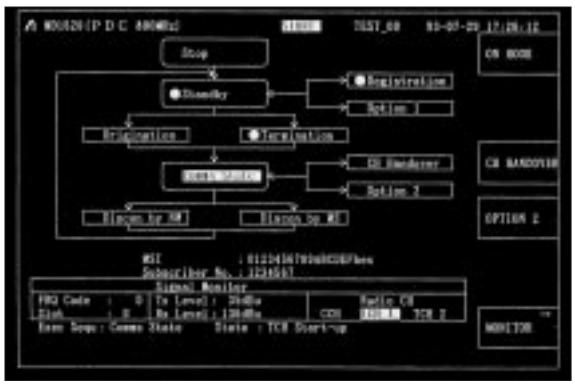
SIGNALING TESTER
MD1620B
PDC 800 MHz, PDC 1.5 GHz (Option 01)

CE GPIB

The MD1620B has all functions which are necessary for operation tests and function tests of mobile stations for PDC system for a 800 MHz band (1.5 GHz band: Option 01).
And has an air-interface based on RCR STD-27C and works as a simulator for the base station.
The MD1620B can test sequences, such as standby, location registration, call initiated/call present, channel handover, disconnection by the network end and disconnection by the mobile station.
And also, provides many measurement and test functions, such as time alignment and hand over time measuring function, real-time display of information reported from the mobile station during communications with the base station, and controls to the mobile station.
The MD1620B is the most suitable tester for connection tests at the last stage of production lines and for function tests at development stage.
With the MS8604A Digital Mobile Radio Transmitter Tester and the MG3670B/C, MG3671A/B, and MG3660A Digital Modulation Signal Generator, measuring systems for digital cellular systems can be easily constructed.

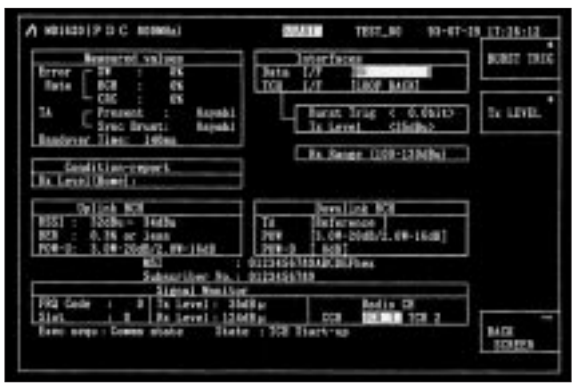
Features
- Can set parameters and sequences used for sequence tests
- Can test layer 3 semi normal sequences
- Can do real-time measurements of time alignment and handover time
- Can easily create digital cellular measuring systems
- Provides easy-to-use operation system by windows and menu selections

Measurement example
• By pressing a key once the sequence measurement starts
When pressing Start key once, the screen display changes to the sequence monitor screen, and the sequence test starts automatically. The test item under measurement is displayed in a reverse-display mode, and a position displayed in a reverse-mode moves as test is proceeding.
Each result of the test items is indicated with a mark "●" or "X".
For example, ● Registration is displayed when the location registration sequence is performed correctly, and X Registration, when errors are detected during the location registration sequence test.
When a series of the sequence tests are completed and all the items are displayed with marks "●", an operator can know at a look that a mobile station under test has passed the test.



Sequence monitor

• Real-time display of time alignment and handover time
The conditions of the mobile station under test are displayed in real-time on the monitor screen of the execution condition.
And also, the MD1620B can control time alignment (TA) and transmitting power (POW) to the mobile station.

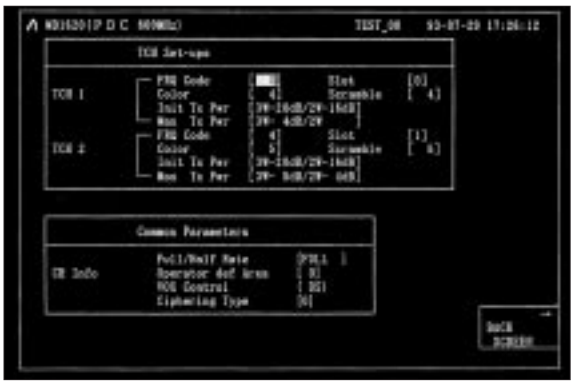


Execution condition monitor

- **Can freely set the parameters of the control channel and the traffic channels**

A control channel that the MD1620B sends out as a simulator of the base station, and broadcast information are set on the control channel setting screen. Also, a traffic channels are set on the traffic channel setting screen.
For channel handover during communications, the test is performed by switching the traffic channel 1 and the traffic channel 2 alternatively.

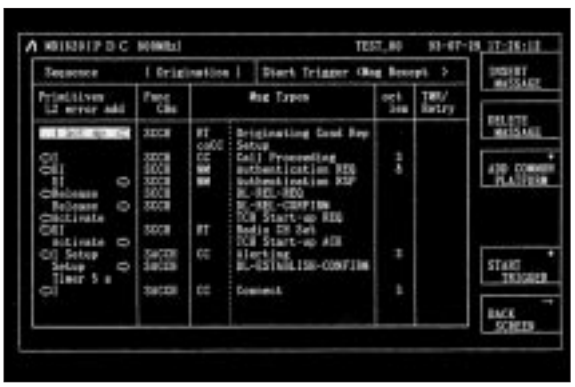
Control channel setting



Traffic channel setting

- **Can freely set layer 3 sequences**

Sequences used for location registration, call initiated/call present, channel handover, disconnection by the mobile station and disconnection by the network end can be freely changed. Also, information elements including in each message can be freely set.
Moreover, can set arbitrary sequences to Option 01 and Option 02, and be used for testing of RT sequence during communications, and semi-normal sequence.



Sequence setting

Specifications

Tx	Frequency range	810 to 826 MHz, 1477 to 1501 MHz (Option 01)
	Frequency setting interval	25 kHz steps
	Number of carriers	2
	Transmission level range	13 to 83 dBμV*1/carrier
	Transmission level accuracy	±2 dB (24 to 83 dBμV) at 25° ±5°C
Rx	Frequency range	940 to 956 MHz, 1429 to 1453 MHz (Option 01)
	Frequency setting interval	25 kHz steps
	Number of carrier	1
	Receiving level range	77 to 149 dBμV*1
	Receiving error rate	BER ≤1 x 10^{-6} at 77 dBμV
Reference oscillator	Frequency	10 MHz
	Stability	Aging rate: 2 x 10^{-8}/day, 2 x 10^{-7}/year Temperature characteristic: ±5 x 10^{-8} (relative to 25°C)
	External reference input signal	10 MHz, 2 to 5 Vp-p
External control		GPIB: SH1, SR1, DC1, C0, AH1, RL1, DT0, T5, PP0, L4 RS232C bit rate: 600, 1200, 2400, 4800 bps
Floppy		3.5-inch floppy disk, MS-DOS*2 format 2DD format: 720 KB (when formatted) 2HD format: 1.2 MB (when formatted)
Power		85 to 132 Vac, 47.5 to 63 Hz, ≤230 VA
Temperature range		0° to 50°C (5° to 45°C when using a floppy)
Dimensions and mass		426 (W) x 221.5 (H) x 451 (D) mm, ≤20 kg
EMC*3		EN55011: 1991, Group 1, Class A EN50082-1: 1992
Safety		EN61010-1: 1993 (Installation Category II, Pollution Degree II)

*1: 0 dB μV = –113 dBm
*2: MS-DOS is a registered trademark of Microsoft Corporation.
*3: Electromagnetic compatibility

Ordering information

Please specify model/order number, name and quantity when ordering.

Model/Order No.	Name	
	Main frame	
MD1620B	Signaling Tester	
	Standard accessories	
J0576B	Coaxial cord, N-P • 5D-2W • N-P, 1 m:	2 pcs
F0012	Fuse, 3.15A:	2 pcs
J0017F	Power cord, 2.5 m:	1 pc
Z0244A	System disc (3.5-inch):	1 pc
Z0244B	System disc for back-up (3.5-inch):	1 pc
Z0244C	Software disc for test (3.5-inch):	1 pc
W0685AE	MD1620B operation manual:	1 copy
	Options	
MD1620B-01	PDC 1.5 GHz	
MD1620B-13	Trace function	
	Optional accessories	
CU10NA3S-C	Circulator (810 to 956 MHz, TDK)	
CU111A3N-C	Circulator (1429 to 1513 MHz, TDK)	
J0007	GPIB cable, 1 m	
J0008	GPIB cable, 2 m	
J0324	RS232C cable, 3 m	
B0329D	Cover	
B0331D	Front handle (2 pcs/set)	
B0332	Joint plate (4 pcs/set)	
B0333D	Rack mount kit	
B0334D	Carrying case (with a cover and casters)	

Notes:
- The MD1620B is developed according to RCR STD-27C. However, test sequences for Appendix 1 (authentication and encryption) is not provided.
- When connecting the MD1620B to a MS with a cable or antennas, a circulator optionally provided is necessary.
- Optional trace function stored on a system disk can be used only with the MD1620B having the same serial number as the number indicated on the system disk.