MG3671A/B

Digital Modulation Signal Generator

Operation Manual

Seventh Edition

Read this manual before using the equipment.
Keep this manual with the equipment.

Measuring Instruments Division
Measurement Group

ANRITSU CORPORATION

NOV.
1999

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Safety Symbols

To prevent the risk of personal injury or loss related to equipment malfunction, Anritsu Corporation uses the following safety symbols to indicate safety-related information. Insure that you clearly understand the meanings of the symbols BEFORE using the equipment.

Symbols used in manual

DANGER	This indicates a very dangerous procedure that could result in serious injury or death if not performed properly.
WARNING	This indicates a hazardous procedure that could result in serious injury or death if not performed properly.
CAUTION	This indicates a hazardous procedure or danger that could result in light-to-severe injury, or loss related to equipment malfunction, if proper precautions are not taken.

Safety Symbols Used on Equipment and in Manual

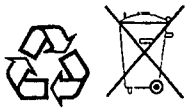
(Some or all of the following five symbols may not be used on all Anritsu equipment. In addition, there may be other labels attached to products which are not shown in the diagrams in this manual.) The following safety symbols are used inside or on the equipment near operation locations to provide information about safety items and operation precautions. Insure that you clearly understand the meanings of the symbols and take the necessary precautions BEFORE using the equipment.

This indicates a prohibited operation. The prohibited operation is indicated symbolically in or near the barred circle.

This indicates an obligatory safety precaution. The obligatory operation is indicated symbolically in or near the circle.

This indicates warning or caution. The contents are indicated symbolically in or near the triangle.

This indicates a note. The contents are described in the box.



These indicate that the marked part should be recycled.

MG3671A/B Digital Modulation Signal Generator
Operation Manual

March 1995 (First Edition)
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Printed in japan

For Safety

or

Repair

WARNING⚠

Falling Over

WARNING

1. Always refer to the operation manual when working near locations at which the alert mark shown on the left is attached. If the operation, etc., is performed without heeding the advice in the operation manual, there is a risk of personal injury. In addition, the equipment performance may be reduced.
   Moreover, this alert mark is sometimes used with other marks and descriptions indicating other dangers.
2. When supplying power to this equipment, connect the accessory 3-pin power cord to a 3-pin grounded power outlet. If a grounded 3-pin outlet is not available, before supplying power to the equipment, use a conversion adapter and ground the green wire, or connect the frame ground on the rear panel of the equipment to ground. If power is supplied without grounding the equipment, there is a risk of receiving a severe or fatal electric shock.
3. This equipment cannot be repaired by the user. DO NOT attempt to open the cabinet or to disassemble internal parts. Only Anritsu-trained service personnel or staff from your sales representative with a knowledge of electrical fire and shock hazards should service this equipment. There are high-voltage parts in this equipment presenting a risk of severe injury or fatal electric shock to untrained personnel. In addition, there is a risk of damage to precision parts.
4. This equipment should be used in the correct position. If the cabinet is turned on its side, etc., it will be unstable and may be damaged if it falls over as a result of receiving a slight mechanical shock.

For Safety

CAUTION

Changing Fuse

CAUTION ⚠

1. Before changing the fuses, ALWAYS remove the power cord from the poweroutlet and replace the blown fuses. Always use new fuses of the type and rating specified on the fuse marking on the rear panel of the cabinet.

   T□□□ A indicates a time-lag fuse.
   □□□A or F□□□ A indicate a normal fusing type fuse.

   There is risk of receiving a fatal electric shock if the fuses are replaced with the power cord connected.

2. Keep the power supply and cooling fan free of dust.

   Cleaning

   - Clean the power inlet regularly. If dust accumulates around the power pins, there is a risk of fire.
   - Keep the cooling fan clean so that the ventilation holes are not obstructed. If the ventilation is obstructed, the cabinet may overheat and catch fire.

3. Use two or more people to lift and move this equipment, or use a trolley. There is a risk of back injury, if this equipment is lifted by one person.

Equipment Certificate

Anritsu Corporation certifies that this equipment was tested before shipment using calibrated measuring instruments with direct traceability to public testing organizations recognized by national research laboratories including the Electrotechnical Laboratory, the National Research Laboratory of Metrology and the Communications Research Laboratory, and was found to meet the published specifications.

Anritsu Warranty

Anritsu Corporation will repair this equipment free-of-charge if a malfunction occurs within 1 year after shipment due to a manufacturing fault, provided that this warranty is rendered void under any or all of the following conditions.

- The fault is outside the scope of the warranty conditions described in the operation manual.
- The fault is due to misoperation, misuse, or unauthorized modification or repair of the equipment by the customer.
- The fault is due to severe usage clearly exceeding normal usage.
- The fault is due to improper or insufficient maintenance by the customer.
- The fault is due to natural disaster including fire, flooding and earthquake, etc.
- The fault is due to use of non-specified peripheral equipment, peripheral parts, consumables, etc.
- The fault is due to use of a non-specified power supply or in a non-specified installation location.

In addition, this warranty is valid only for the original equipment purchaser. It is not transferable if the equipment is resold.

Anritsu Corporation will not accept liability for equipment faults due to unforeseen and unusual circumstances, nor for faults due to mishandling by the customer.

Anritsu Corporation Contact

If this equipment develops a fault, contact Anritsu Corporation or its representatives at the address in this manual.

'IBM' is a registered trademark of the IBM Corporation.
'HP' is a registered trademark of the Hewlett-Packard Company.
'NEC' is a registered trademark of the NEC Corporation.

MEMORY BACK-UP BATTERY REPLACEMENT

The power for memory back-up is supplied by a Poly-carbomonofluoride Lithium Battery. This battery should only be replaced by a battery of the same type; since replacement can only be made by Anritsu, contact the nearest Anritsu representative when replacement is required.

STORAGE MEDIUM

This equipment stores data and programs using backed - up memories. Data and programs may be lost due to improper use or failure.

ANRITSU CANNOT COMPENSATE FOR ANY MEMORY LOSS.

Please pay careful attention to the following points.

(Backed-up memory)

- Isolate the memory from static electricity.

Note: *The battery life is about 7 years. Early battery replacement is recommended.*

DISPOSAL

The MG3671A/B contains semiconductors containing arsenic compounds, a mercurial timer, and fluorinated graphite lithium batteries. When disposing of the MG3671A/B, be sure to handle it according to the regional regulations.

Precautions on Extension Units

(1) Always use the following combination when the π/4DQPSK modulation unit and burst function unit are used in combination. For any other combinations, performance is not guaranteed.
- Combination of MG0301A and MG0303A
- Combination of the modulation unit (MG0301B/C, MG0305A, MG0307A, or MG0311A) and the burst unit (MG0303B)

(2) Since the MG3671A cannot be used with the MG0310A CDMA Modulation Unit, the format-upgrade by Option 25 is required for the MG3671A to use the MG0310A.

(3) When the MG0302A is used in combination with the MG0303B, version up is required for certain MG0302A. Be sure to check necessity of version up before operation using the following procedure.

Step	Procedure

1 Turn power of the MG3671A/B off.

2 Install MG0302A to the MG3671A/B. For the installation procedure, refer to Section 2 of the MG0302A Operation Manual. Even if other modulation and burst function units are kept installed simultaneously, there is no trouble.

3 Turn power of the MG3671A/B on.

4 Press the 【 F6: etc 】 key.

5 Press the 【 F5: Setup/Parameter Memory 】 key.

6 Press the 【 F3: Interface Setup 】 key.

7 Check the GMSK modulation unit name indicated and take the necessary action, if needed.

(1) No version up is required when indication is as shown below:

Unit □

MG0302A
GMSK

(2) Version up is required when indication is as shown below. So, contact an Anritsu office or its representative in your area.

Unit □

GMSK

Note: *For checking the current combination of the extension units, operate steps 1 and 3 through 6 above.*
For π/4DQPSK modulation unit: Judge as model A if no model (MG0301B or MG0301C) is indicated.
For burst function unit: A model (MG0303A or MG0303B) is indicated.

CE Marking

Anritsu affix the CE Conformity Marking on the following product (s) accordance with the Council Directive 93/68/EEC to indicate that they conform with the EMC directive of the European Union (EU).

CE Conformity Marking

CE

1. Product Name/Model Name

Product Name: Digital Modulation Signal Generator and Expansion Units

Model Name: MG3671A/B and MG03××□

2. Applied Directive

EMC: Council Directive 89/336/EEC

Safety: Council Directive 73/23/EEC

3. Applied Standards

EMC:

Electromagnetic radiation:

EN55011 (ISM, Group 1, Class A equipment)

Immunity:

EN50082-1

		Performance criteria*
IEC801-2 (ESD)	4 kVCD, 8 kVAD	B
IEC801-3 (Rad.)	3 V/m	A
IEC801-4 (EFT)	1 kV	B

*: Performance criteria

A: No performance degradation or function loss

B: Self-recovered temporary degradation of performance or temporary loss of function

Harmonic current emissions:

EN61000-3-2 (Class A equipment)

Safety: EN61010-1 (Installation Category Ⅱ, Pollution Degree 2)

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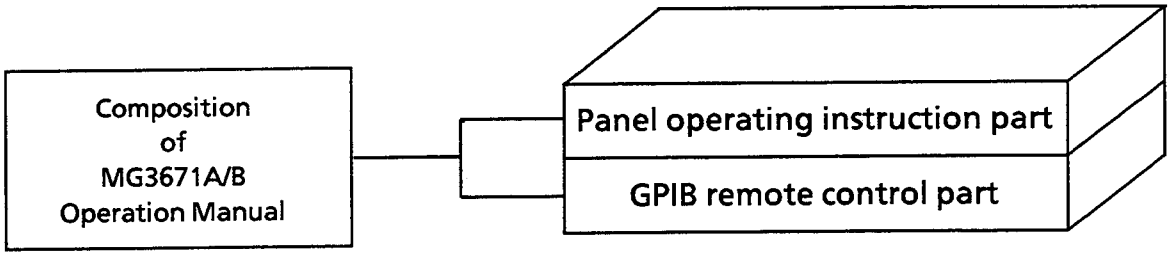
ABOUT THIS MANUAL

(1) Composition of MG3671A/B Operation Manual

The MG3671A/B Digital Modulation Signal Generator operation manual of the standard type is composed of the following two parts. Use them properly according to the usage purpose.



Panel operating instruction part: Panel Operating Instructions: Provides information on the MG3671A/B outline, preparation before use, panel description, basic operation, performance tests, calibration, storage / transportation, and quick reference for screen transition and error messages.

GPIB remote control part: Provides information on the MG3671A/B remote control which conforms with IEEE488.2 standards. To assist creating GPIB programs, this manual gives examples of N_{88} BASIC language programs that run on the NEC PC9800 series of personal computers.

The operation manuals of the MG0301C, the MG0302A etc. modulation units which can be used with the MG3671A/B are prepared and sold separately. The operations of the MG0303B (Burst Function Unit) are explained in each the MG0301C/MG0302A operation manual description related to the burst function.

(2) GPIB Basic Guide (sold separately)

The GPIB Basic Guide is sold separately in addition to the above GPIB operation manual. It is composed of two parts: GPIB Basic Knowledge, and GPIB Control statements in the ANRITSU PACKET V BASIC.

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MG3671A/B

Digital Modulation Signal Generator

Operation Manual

(Panel Operating Instructions)

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