

INSTRUCTION MANUAL  
FOR  
MODEL NDH-518 MEMORY UNIT  
取扱説明書



*Japan Radio Co., Ltd.*

Before operating memory unit, please read this instruction manual thoroughly so that you can use the unit correctly and keep this handy for future reference.

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The model NDH-518 memory unit, combined with Model NRD-515 receiver, can memorize the receiving frequencies of the maximum 96 channels (24 channels × 4). Hence it can be graded up to the great extent and can perform increasingly a high-level operation.

## 1. RATINGS

|                               |   |
|-------------------------------|---|
| Number of frequency memories: | 96 channels (24 channels × 4)                         |
| Channel display:              | 2 digits LED display and push-button switch           |
| Input/output data:            | 22 bits by BCD code                                   |
| Writing of frequency:         | Using the frequency designating knobs of the receiver |
| Display of memory frequency:  | 6 digits LED display of the receiver                  |
| Power source:                 | Supplied from the receiver                            |
| Dimensions:                   | 340mm(W) × 50mm(H) × 200mm(D)                         |
| Weight:                       | Approx. 3.5kg   |

## 2. PREPARATION FOR OPERATION

### 2.1 Connection to the Receiver

Connect the cable on the rear panel of the memory unit to the **MEMORY INPUT** connector on the rear panel of the receiver. And also, connect the earth **E** terminal of the memory unit and the earth **E** terminal of the receiver with the earth lead.

Note: Make sure to turn off the power switch of the receiver before connecting the cable.

### 2.2 Insertion of Back-up Batteries

The frequencies once memorized are lost when the power switch of the receiver is turned off. In case it is desired to store the data for a long period of time, insert batteries into the battery holder of the memory unit.

Batteries can be inserted by the following steps. Loosen and remove four screws on the upper side of the memory unit. Remove the upper cover by drawing it backward. The battery holder can be found inside. Insert batteries in correct polarity. Since batteries are not supplied, please get batteries by yourself. Use three pieces of alkaline batteries, AM-3 (1.5 V). Manganese batteries are also usable, but if such batteries are used for a long period, they will give damage on the leak of liquid or corrosion.

## 3. OPERATION

### 3.1 Selection of Channels

Select and press one of the group channel push-buttons A to D. Then, set the rotary knob for 24 channels to the desired channel position. It is possible to set 96 channels by the above operations. Channel Nos. from 1 to 24 are displayed by LED.

### 3.2 Memory Operation

- Set the **PRESET/MANUAL** switch on the right side of the panel to **MANUAL**.
- Turn on the power switch of the receiver and set the receiver to the desired receiving frequency, and also set the **CHANNEL** button and rotary knob of the memory unit to the desired channel.
- Then, push the **MEMORY** button of the memory unit, and the frequency data are immediately memorized in the set channel.
- Change the channel and frequency and make the unit memorize new frequency data in the same way.

- (e) The memorized frequency can be confirmed in accordance with the procedures explained in the clause 3.3. (It is recommended for the convenience of the operation to record correspondence between the channels and the memorized frequencies on the supplied cards. Two sheets of card are provided.

### 3.3 Receiving Method Using Memory

- (a) Push the **PRESET/MANUAL** switch on the right side of the panel to set it to **PRESET**. The green LED indicating the **PRESET** operation lights up.
- (b) Select and set the desired channel by means of the **CHANNEL** button and rotary knob. The memorized frequency is displayed on the receiver display and the receiver is immediately set to the receiving condition.
- (c) The memory receiving is impossible under the **MANUAL** condition. Set the receiving frequency by the dial of the receiver.

Note: In case the unmemorized channel is designated, the display on the receiver becomes incorrect and simultaneously the sound doesn't come out due to the operation of the MUTE circuit.

### 3.4 Change of Memory Frequency

- (a) Set the **PRESET/MANUAL** switch to **MANUAL**.
- (b) Select the channel to be changed and set the receiver to the desired frequency.
- (c) Push the **MEMORY** button, and the new frequency data are memorized.
- (d) The memory receiving can be realized by setting the **PRESET/MANUAL** switch to **PRESET**.

### 3.5 Battery Replacing

In the usual operating condition, the power source of the memory unit is supplied from the receiver. When the power of the receiver is off, an alternative power is supplied from the back-up batteries to maintain the frequency data in the memory. The current consumption is very small because CMOS IC is employed, but batteries should be replaced after the use for a year. Refer to the clause 2.2, "Insertion of Back-up Batteries."

Note: Batteries should be replaced in such a condition where the power switch of the receiver is turned on. If batteries are replaced under the condition where the power switch of the receiver is turned off, the memorized frequency data will entirely be lost.

## 4. DESCRIPTION OF CIRCUITS

The block diagram and connecting diagram of this unit are respectively shown in Fig. 1 and Appendix 1.

This equipment is composed of a memory circuit, a channel designation circuit, a channel display circuit, a power source voltage detecting circuit and a stabilizing power supply circuit.

The memory circuit is composed of six CMOS RAMs of 256W × 4-bit. The 3 state buffers are connected to the output terminal of the memory unit for the transfer of frequency data between the receiver and the memory unit. The channel can be designated by specifying the address of the RAMs by the channel switches. Simultaneously, this information is sent to the channel display circuit. The power source voltage detecting circuit controls the chip enable terminal of the RAMs in order to protect the memorized frequency data from being lost when the power switch is turned ON/OFF or when the power source voltage is reduced by some reasons.

## 5. MAINTENANCE AND CHECK

The memory unit is composed of a single PC board including no adjusting point.  
If you have any questions or troubles, contact your dealer.  
Be sure to replace batteries regularly, if the back-up batteries are used.

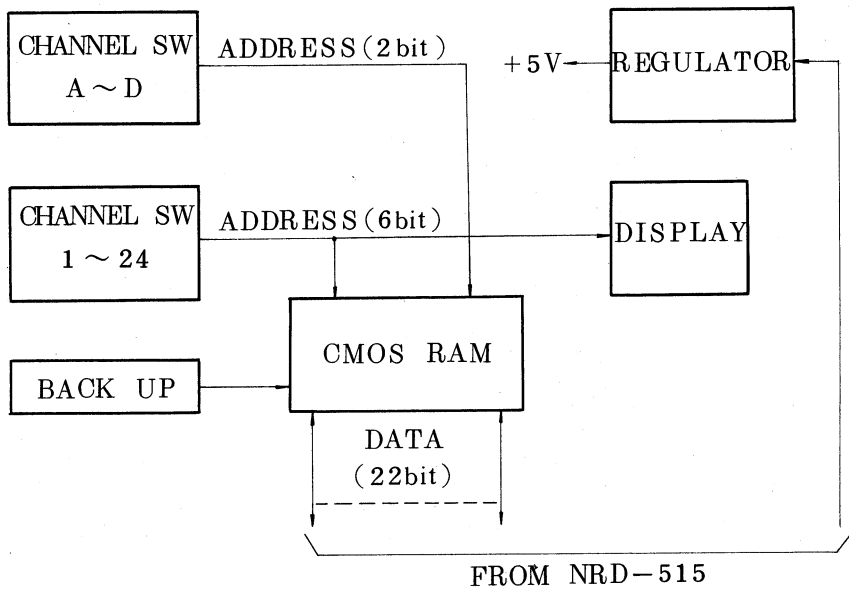
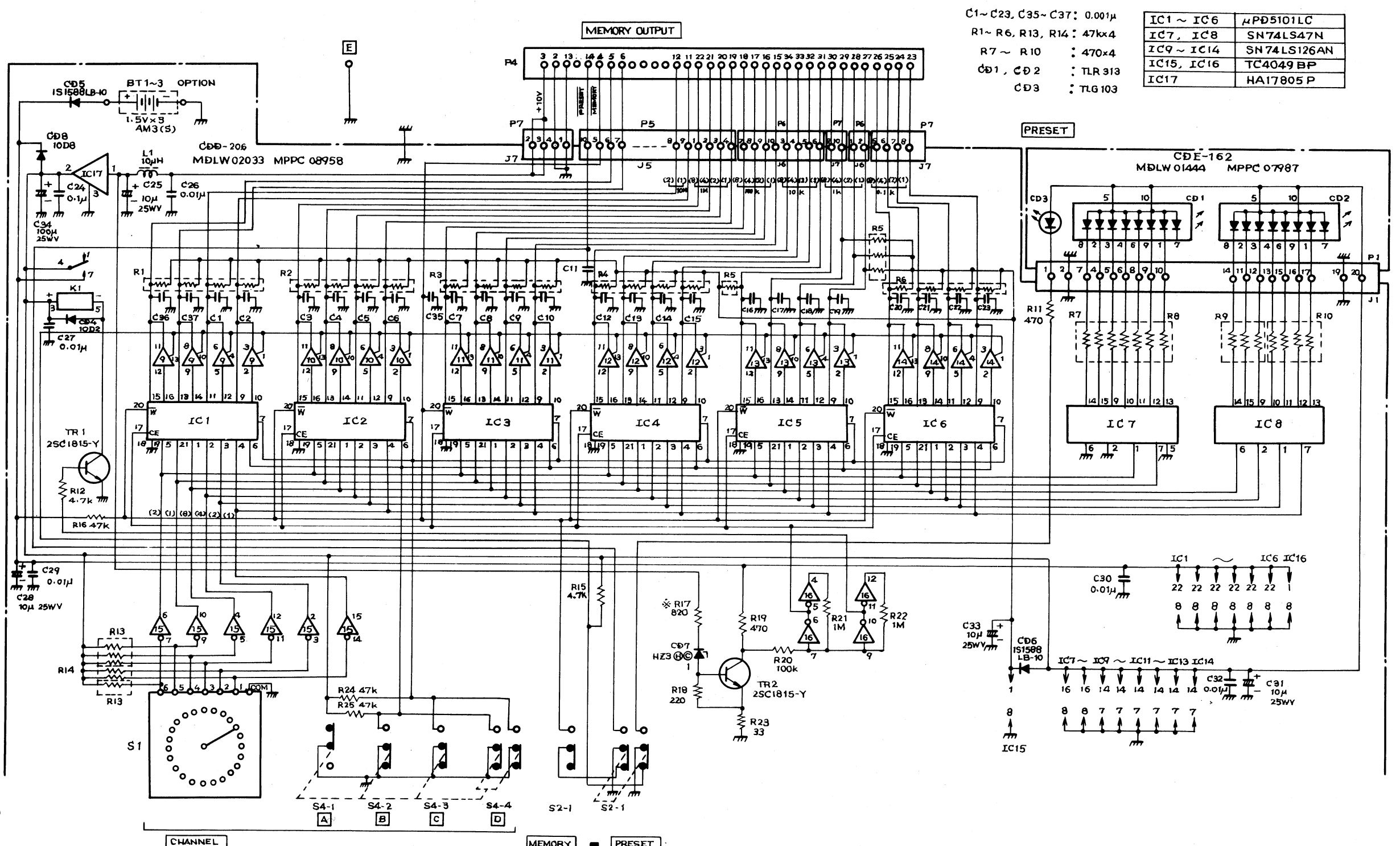


Fig. 1 Block diagram of NDH-518 Memory Unit

図 1 NDH-518 メモリユニット系統図



C1~C23, C35~C37: 0.001μ  
 R1~R6, R13, R14: 47kx4  
 R7~R10: 470x4  
 CD1, CD2: TLR 313  
 CD3: TLR 103

|            |             |
|------------|-------------|
| IC1 ~ IC6  | μPD5101LC   |
| IC7, IC8   | SN74LS47N   |
| IC9 ~ IC14 | SN74LS126AN |
| IC15, IC16 | TC4049BP    |
| IC17       | HA17805P    |

注 1) 特記外の抵抗は全てΩおよび1/4Wを示し容量はpFを示す。  
 2) \*印は調整用部品を示す。  
 NOTES 1. UNLESS OTHERWISE INDICATED RESISTANCES ARE IN OHMS CAPACITANCES ARE IN MICRO-MICRO FRADS.  
 2. \* VALUES SELECTED IN MANUFACTURE.

付図 1  
 NDH-518  
 メモリユニット接続図  
 MEMORY UNIT SCHEMATIC DIAGRAM  
 APPENDIX 1  
 1/1

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