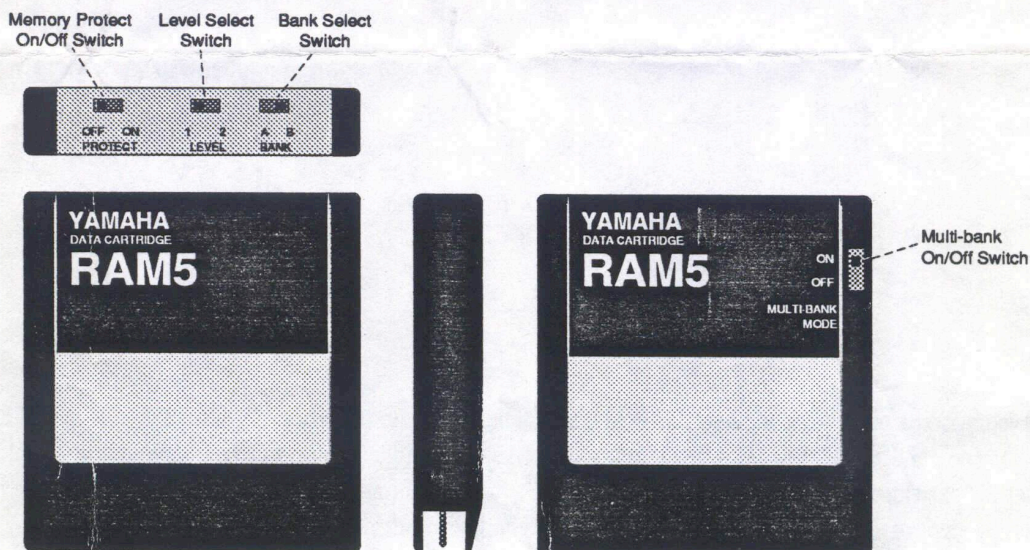# YAMAHA DATA CARTRIDGE RAM 5

Physical Layout

The following diagram shows the location of the four operating switches on the RAM5 cartridge.

Features and Specifications

- Enhanced Memory Capabilities — Quadruple the memory storage of the Yamaha RAM4 cartridge
- Works with all Yamaha products that can use the RAM4 cartridge
- Two different modes of bank selection: switches or bank select parameters
- Multi-Bank Mode enhances performance abilities of some Yamaha products
- 10 Year Battery Life
- New electronic design for memory protect switch

The Yamaha RAM5 cartridge is a multiple bank cartridge that can store 4 banks of cartridge data. This means that one RAM5 cartridge can hold as much data as four RAM4 cartridges. Any Yamaha product that uses the RAM4 cartridge can also use the RAM5 cartridge. Each bank must be formatted separately to accommodate the desired type of data. See your Yamaha Owner's Manual or The RAM5 Data Cartridge Supplemental Booklet for instructions on formatting data cartridges.

PRECAUTIONS:

- *Do not touch the gold connections of the cartridge*
- *Keep static electricity away from the cartridge*
- *Do not expose the cartridge to extreme conditions such as excessive sunlight, heat, or humidity*
- *Keep the cartridge clean and dust free*

Choosing the Operating Mode

When using the RAM5 cartridge, you must first decide whether your equipment can take advantage of the cartridge's Multi-Bank mode. If your equipment has a bank select parameter, either Single-Bank mode or Multi-Bank mode can be used. For other Yamaha products, the cartridge must be in Single-Bank mode (Multi-Bank mode turned off). In Single-Bank mode, you can choose one of four banks using the BANK and LEVEL switches. In Multi-Bank mode, you can choose the current bank with the equipment's bank select parameter.

The following table will help you determine which Yamaha equipment can operate in Multi-Bank mode.

RAM5 Multi-Bank Compatibility

Product	Multi-Bank Mode	Uses Multiple Banks Simultaneously
DX7 II FD, D, S	ON or OFF	yes: DX7-2, FKS-Y, MTT-Y
PF2000	ON or OFF	yes: DX7-2, FKS-Y, MTT-Y
TX802	ON or OFF	yes: DX7-2, FKS-Y, MTT-Y
DX11	ON or OFF	no
RX5, RX7	OFF	no
DMP7	OFF	no

Once you have chosen a mode, use the MULTI-BANK MODE switch on the front of the cartridge to select it (use a pen or similar object). The MULTI-BANK MODE switch of the RAM5 cartridge should **not** be changed while you have valuable data stored on the cartridge. The data may appear to be OK after switching, but some of the data may not be correct. The recommended procedure is to format all four banks after switching modes.

Single-Bank Mode (MULTI-BANK MODE OFF)

Single-Bank mode is used with Yamaha instruments that do not have bank select parameters (like the RX5 and RX7). When the RAM5 cartridge is in Single-Bank mode it behaves like four separate RAM4 cartridges. The BANK and LEVEL switches (on top of the RAM5 cartridge) are used to manually select one of the 4 banks: 1A, 1B, 2A, or 2B.

Multi-Bank Mode (MULTI-BANK MODE ON)

In Multi-Bank mode, the active bank is determined by the bank select parameter(s) of the product that the cartridge is plugged into. The BANK and LEVEL switches on the cartridge have no effect in this mode.

Yamaha instruments with more than one bank select parameter can access more than one bank at a time. The DX7 II series, for example, has separate bank select parameters for each bank format it uses (DX7-2, FKS-Y, MTT-Y). The DX7 II can get voice/performance data from one bank, fractional data from another bank, and microtuning data from a third bank, allowing a cartridge performance to be played using cartridge microtunings and fractionally scaled cartridge voices.

☞ **Caution:** In Multi-Bank mode do not use the STORE button on the DX7 II to store data to the RAM5. Instead, always save entire banks to the RAM5. Attempting to store individual voices will always store to memory #1.

Protect Switch

The PROTECT switch is provided as a safeguard against accidentally changing important cartridge data. With PROTECT ON, cartridge data cannot be changed. If you wish to format a cartridge bank or store new data, you must turn the switch OFF. A new, advanced electronic design for the PROTECT switch, known as "Positive Protect," provides additional assurance that your data will be stored safely.