

Thank you for purchasing this **Hansen Hobbies 256K Memory Module (HHMOD256K)**! This device is designed to expand the usable memory in your **Futaba** radio by 256 Kilobits (4 times the size of the **Futaba** brand **CAMPac 64K Data Storage Module**). It also has a service menu enabler that gives you access to the hidden service menus in your radio. It is guaranteed to work in any radio that will accept the **Futaba 64K CAMPac**. This includes, but is not limited to, the **8U Series / FF8 (+33x4 models)**, the **9C Series / FF9 (+24x4 models)**, the **9Z Series** (up to **16x4** models, depending on the number of flight conditions used - see your **9Z** manual for a detailed chart), and the **10C Series** (+**16x4** models). Because the **HHMOD256K** retains its memory when removed from the radio, you can use as many as you want for infinite storage. In addition to reading the instructions below, please consult the **CAMPac** section of your radio manual for further information.



Theory of Operation:

The Futaba radios are designed to recognize **16K** and **64K** memory modules only - they cannot communicate with memory any larger than **64K**. Our module gets around this by emulating the operation of a single **64K CAMPac**, and only using **64K** of its **256K** storage space at one time. The **HHMOD256K** memory is split up into four banks of **64K**, which are user selectable via the pushbutton on the top of the module. The big advantage of having four separate banks is that they can each be configured separately for use in four different types of radios (**8U**, **9C**, **9CS**, and **9Z** for example), making it very useful to anyone with more than one radio.

Installation Instructions:

Turn off your radio. Locate the memory module slot on your radio and remove the dust cap. Insert your **HHMOD256K** with the circuit components (the side that doesn't have "256K MEMORY MODULE" text on it) facing the alignment groove inside the slot (note: due to its design, it is extremely difficult to insert the **HHMOD256K** module the wrong way). Make sure that the 7 receptacle pins on the module line up with the 7 pins inside the slot - so that is not shifted one pin to the left or right. Take care not to install the module incorrectly, as this could result in damage to the **HHMOD256K** and/or your transmitter. The dust cap will fit right back over the top of the module.



If you're using the 256k for multiple radios and are constantly exchanging it among radios, it might help to add a pull-tab to the module for easier extraction. This can be done by placing a small strip of tape over the back of the circuit board (the side with all the text) and folding it over onto itself, leaving a tab that sticks out of the **CAMPac** bay. You can now pull the module out by its tab, which will easily fold under the dust cap when not in use.

Also note that since the **HHMOD256K** is the exact same size as the **Futaba CAMPac**, you can place it inside of a plastic **CAMPac** housing if you have one (use the case from your **16K/64K CAMPac**, perhaps). Be careful not to pry on the module's 7-pin connector when removing. You will need to add access to the pushbutton somehow.

LED (light emitting diode) Status Display:

The **HHMOD256K** has five LED's that display the status of the module. The **Green LED's** labeled **1-4** indicate the selected bank or service menu mode, and the **Red LED** labeled "B" shows when the module is busy performing operations. When the radio is powered on, the **HHMOD256K** performs a memory integrity test and turns on the **Green LED(s)** to indicate currently selected bank or service menu mode. A failed memory test results in a slow blinking **Red LED** (please contact us if this happens).



HHMOD256K Status LED's

Selecting Memory Banks:

To avoid accidentally switching banks during radio operation, bank changes can only be made while the **HHMOD256K** is in **Setup Mode**. To enter **Setup Mode**, turn on the radio while holding down the pushbutton - the **Red LED** will remain solid on to indicate that you're in **Setup Mode**. Note that in **Setup Mode** the **HHMOD256K** will not communicate with the radio (as though it were not even there), so you may get a **Model Select Error** from the radio if you had one of the models stored on the **HHMOD256K** selected; give the radio a moment and it will exit the error and default to Model 1.

Once in **Setup Mode** you can use the pushbutton to switch between banks, and the **Green LED's** will indicate what bank you have selected. With four selectable banks, 3 service menu modes, and an inactive mode, there are 8 different options:

	Inactive Mode. Memory module is completely invisible to the radio and is essentially turned off.
	Memory Bank 1 selected. Only Bank 1 is visible to the radio and appears as a normal 64K CAMPac.
	Memory Bank 2 selected. Only Bank 2 is visible to the radio and appears as a normal 64K CAMPac.
	Memory Bank 3 selected. Only Bank 3 is visible to the radio and appears as a normal 64K CAMPac.
	Memory Bank 4 selected. Only Bank 4 is visible to the radio and appears as a normal 64K CAMPac.
	Service Menu Mode 1. Radio will boot into a hidden service menu. Use for 8U and 9C series radios.
	Service Menu Mode 2. Radio will boot into a hidden service menu. Use for 8U and 9C series radios.
	Service Menu Mode 3. Radio will boot into a hidden service menu. Use for 8U, 9C, and 9Z series radios.

After making a selection in **Setup Mode** turn the radio off and back on and the **HHMOD256K** will start up with your bank or menu selection.

Initializing a Memory Bank:

When you turn on your radio with one of the Banks selected you'll be prompted to initialize the Bank. Press the "+", "Mode", or "Yes" key (for the **8U**, **9C/10C** or **9Z**, respectively) - instructions for this are also included in your radio manual. The radio will take a couple minutes to initialize the Bank. When the radio is finished initializing the Bank, you will have a number of additional models select from in your radio menu!

Accessing the Hidden Service Menus:

To make radio checkups easier for **Futaba** technicians hidden service menus are built into all of their radios. These menus let you view various data about the radio such as the radio series and type, firmware version, total hours of operation, and more. There are also routines for checking switch and button operation, plus there are options for modifying your radio, such as selecting different switch types, or performing a full reset. Detailed information about the radio service menus is available on our web site. The service menu enabler is provided to help you get the most out of your radio but be advised that **Hansen Hobbies** cannot accept any liability for modifications performed with this device, so do so at your own risk.

Notes:

Be conscious of what you're doing when switching banks and swapping the **HHMOD256K** among different radios. For example, if you configure **Bank 1** for an **8U** radio, then put the **HHMOD256K** into a **9C** with **Bank 1** selected, the **9C** will ask to initialize the module. If you confirm this operation then the **9C** will overwrite the existing memory, erasing all **8U** model data in **Bank 1**. A safe method would be to enter **Setup Mode** with the **8U**, select **Bank 2** (or whatever bank you want to use for the **9C**), turn the **8U** off and install the **HHMOD256K** in the **9C** - now when you turn on the **9C** you'll be in the correct bank. Another option is to enter **Setup Mode** using the **9C** and select **Bank 2**, then turn the radio off and back on. Anytime the radio asks to initialize something, you should look to see what bank you're in and make sure that you do indeed want to initialize.

Have fun, and fly safe!