# Lumagen Tech Tip 1
Memories and Output Modes

Introduction
The Lumagen Vision video processor has four memories for each input and eight output configuration memories. The SD input memories only have one resolution sub-memory (480/576). The HD memories have four resolution sub-memories (480/576, 720. 1080, OTHER). These memories are used to store setup data for video sources and video displays. The output mode setting controls how the input memory resolutions are linked to the output memories and controls the automatic 60 Hz / 50 Hz input switch. To change the output configuration, press "Menu, OUT, MODE, Ok, (SAME, INDEP, AUTO IND)".

Same Output Mode (default)
Here is an example of a single SD input (See Fig. 1). Each input has four input memories, MEMA through MEMD, which are dedicated to that input. There are eight output configuration memories that are shared by all inputs. A SD input can handle 480i (NTSC) or 576i (PAL). In the default "Same" Output Mode setting, MEMA through MEMD for all inputs use output configuration 0.

Fig 1. SD Input – "Same" Output Mode (default)
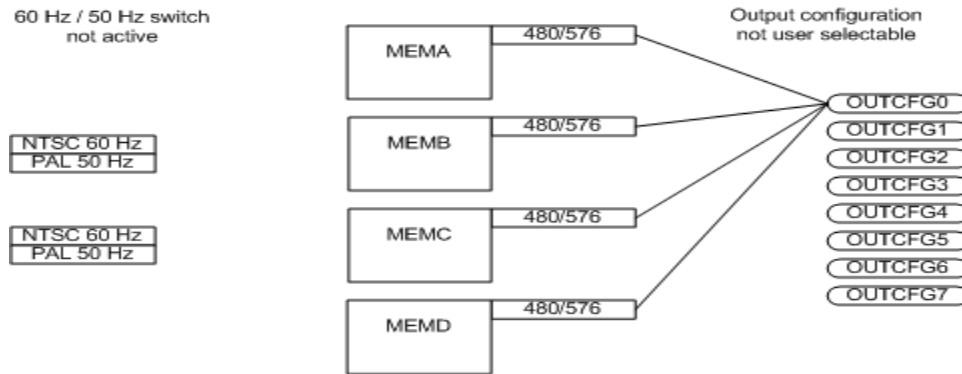
Here is an example of a single HD input (See Fig. 2). Each input has four input memories, MEMA through MEMD, which are dedicated to that input. There are eight output configuration memories that are shared by all inputs. A HD input can handle up to 1080p30 (HDTV). In the default "Same" Output Mode setting, MEMA through MEMD for all inputs use output configuration 0.

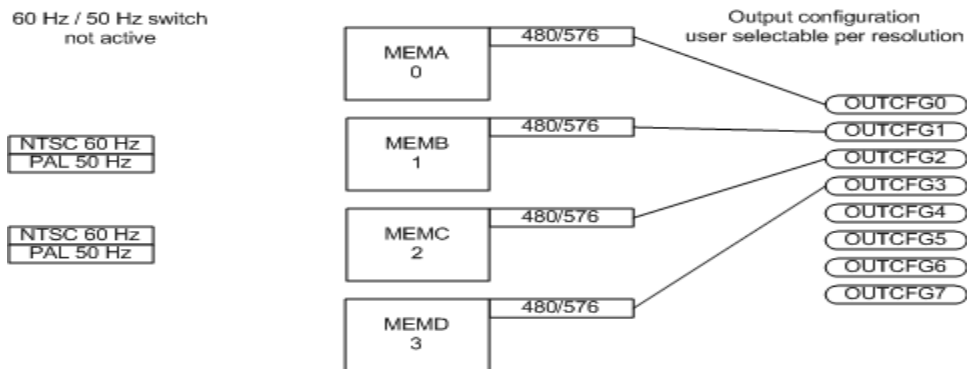Fig 2. HD Input – "Same" Output Mode (default)
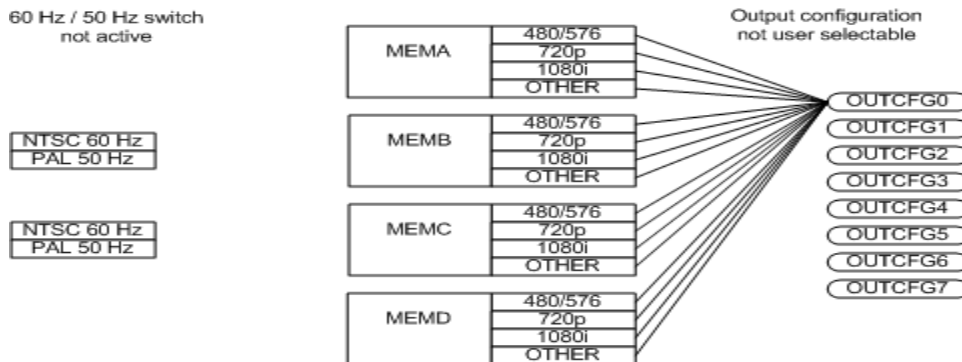
Independent Output Mode

In Independent Output Mode you can select how the input resolution sub-memories are linked to the output memories. When you switch from "Same" to "Independent" output mode, the data in the output configuration 0 memory is copied to all of the other output configuration memories and all of the input resolution sub-memories are linked to output configuration 0.
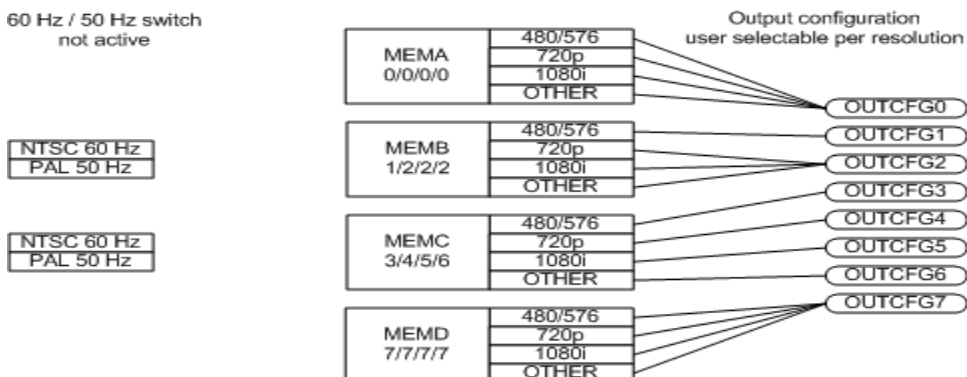
To change the linkage for the input resolution sub-memories, choose independent output mode, select an input and press one of the memory buttons. Then press "Menu, IN, OUTSEL, Ok". You can set the link for each resolution sub-memory on that input and that memory button to one of the eight shared output configuration memories. Repeat this procedure for other memory buttons and inputs (See Fig. 3).

Fig 3. SD Input – "Independent" Output Mode

The procedure for changing the linkage for the input resolution sub-memories is the same for SD inputs and HD inputs. The only difference is that SD inputs have one resolution sub-memory (480/576) and HD inputs have four resolution sub-memories (480/576, 720. 1080, OTHER). The input resolution sub-memories can be linked, in any combination, to the eight output configuration memories (See Fig. 4).

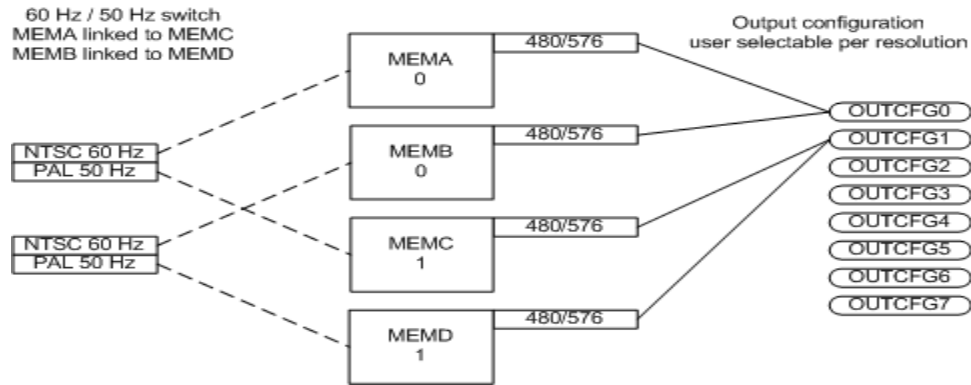Fig 4. HD Input – "Independent" Output Mode

Auto Independent Output Mode

In Independent Output Mode you can select how the input resolution sub-memories are linked to the output memories and there is an automatic 60 Hz / 50 Hz switch for the input mode. This allows you to automatically choose a different output configuration when a NTSC 60 Hz source is connected to the Lumagen or when a PAL 50 Hz source is connected. In this output mode MEMA is paired with MEMC and MEMB is paired with MEMD. This feature is mainly used in countries that have PAL television.

To change the linkage for the input resolution sub-memories, choose auto independent output mode, select an input and press one of the memory buttons. Use memory button MEMA or MEMB for 60 Hz input modes and the paired memory button MEMC or MEMD for 50 Hz input modes. Then press "Menu, IN, OUTSEL, Ok". You can set the link for each resolution sub-memory on that input and that memory button to one of the eight shared output configuration memories. Repeat this procedure for other memory buttons and inputs (See Fig. 5).

Fig 5. SD Input – "Auto Independent" Output Mode

For a HD input, use the same procedure to change the linkage between input resolution sub-memories and the eight output configuration memories (See Fig. 6).

Fig 6. HD Input – "Auto Independent" Output Mode