

PIC24FJ256GA705 FAMILY

4.2.5 EXTENDED DATA SPACE (EDS)

The Extended Data Space (EDS) allows PIC24F devices to address a much larger range of data than would otherwise be possible with a 16-bit address range. EDS includes any additional internal data memory not directly accessible by the lower 32-Kbyte data address space and any external memory through EPMP.

In addition, EDS also allows read access to the program memory space. This feature is called Program Space Visibility (PSV) and is discussed in detail in [Section 4.3.3 “Reading Data from Program Memory Using EDS”](#).

[Figure 4-3](#) displays the entire EDS space. The EDS is organized as pages, called EDS pages, with one page equal to the size of the EDS window (32 Kbytes). A particular EDS page is selected through the Data Space Read Page register (DSRPAG) or the Data Space Write Page register (DSWPAG). For PSV, only the DSRPAG register is used. The combination of the DSRPAG register value and the 16-bit wide data address forms a 24-bit Effective Address (EA).

The data addressing range of the PIC24FJ256GA705 family devices depends on the version of the Enhanced Parallel Master Port implemented on a particular device; this is, in turn, a function of device pin count. [Table 4-12](#) lists the total memory accessible by each of the devices in this family. For more details on accessing external memory using EPMP, refer to “[Enhanced Parallel Master Port \(EPMP\)](#)” (www.microchip.com/DS39730) in the “*dsPIC33/PIC24 Family Reference Manual*”.

TABLE 4-12: TOTAL ACCESSIBLE DATA MEMORY

Family	Internal RAM	External RAM Access Using EPMP
PIC24FJXXXGA70X	16K	1K

Note: Accessing Page 0 in the EDS window will generate an address error trap as Page 0 is the base data memory (data locations, 0800h to 7FFFh, in the lower Data Space).

FIGURE 4-3: EXTENDED DATA SPACE

