NAME

xil_lookup_get_input_datatype, xil_lookup_get_num_entries, xil_lookup_get_offset, xil_lookup_get_output_datatype, xil_lookup_get_input_nbands, xil_lookup_get_output_nbands, xil_lookup_set_offset – operations on lookup tables

SYNOPSIS

#include <xil/xil.h>

XilDataType xil_lookup_get_input_datatype (XilLookup *lookup***);**

unsigned int xil_lookup_get_num_entries (XilLookup *lookup***);**

short xil_lookup_get_offset (XilLookup *lookup***);**

XilDataType xil_lookup_get_output_datatype (XilLookup *lookup***);**

unsigned int xil_lookup_get_input_nbands (XilLookup *lookup***);**

unsigned int xil_lookup_get_output_nbands (XilLookup *lookup***);**

void xil_lookup_set_offset (XilLookup *lookup***,**
short *offset***);**

DESCRIPTION

These routines read and set the values of lookup table attributes. Lookup tables are used in transforming data. Lookup tables used for single-band input images can have multiple output data per input value. Lookup tables allow an offset that describes the input value corresponding to the first table value.

Table data can represent any of the allowed image data types, but 1-bit data is stored in an unpacked format as the least significant bit in an 8-bit entry.

xil_lookup_get_input_datatype () gets the data type of the expected input to the lookup table.

xil_lookup_get_num_entries () gets the number of entries in the lookup table. This function cannot be used on combined lookup tables.

xil_lookup_get_offset () returns the offset value used to map the lookup table index to a pixel value of a particular data type. The offset value is added to a lookup table index to return a pixel value, and subtracted from a pixel value to return an index into the lookup table. This function cannot be used on combined lookup tables.

For example, if a lookup table has an offset of 16, then entry 0 in the lookup table maps to an actual value of 16, entry 1 maps to 17, and so on. Therefore, if you wanted to find the RGB value for pixel 36, you would take lookup table entry 20 (pixel value 36 minus offset value 16).

xil_lookup_get_output_datatype () gets the data type of the expected output from the lookup table.

xil_lookup_get_input_nbands () gets the number of bands expected in the input.

xil_lookup_get_output_nbands () gets the number of bands expected in the output.

xil_lookup_set_offset () sets the offset value to the one specified. This function cannot be used on combined lookup tables.

ERRORS

For a complete list of XIL error messages by number, consult Appendix B of the *XIL Programmer's Guide.*

EXAMPLES

Calculate the buffer size (in bytes) necessary to hold all the values in a lookup table:

```
XilLookup lookup_table;
unsigned int nbands;
XilDataType datatype;
unsigned int num_entries;
long buffer_size;

nbands = xil_lookup_get_output_nbands (lookup_table);
datatype = xil_lookup_get_output_datatype (lookup_table);
num_entries = xil_lookup_get_num_entries (lookup_table);

switch (datatype) {
  case XIL_BIT:
  case XIL_BYTE:
    buffer_size = nbands * num_entries * sizeof(Xil_unsigned8);
    break;
  case XIL_SHORT:
    buffer_size = nbands * num_entries * sizeof(Xil_signed16);
    break;
}
```

SEE ALSO

xil_lookup_create(3), **xil_lookup_create_combined**(3), **xil_lookup_create_copy**(3), **xil_lookup_destroy**(3), **xil_lookup_convert**(3), **xil_lookup_get_band_lookup**(3), **xil_lookup_set_values**(3).