NAME

xil_lookup_create_combined – create combined lookup tables

SYNOPSIS

#include <xil/xil.h>

XilLookup xil_lookup_create_combined (XilSystemState *State***,**
    XilLookup *lookup_list[]***,**
    unsigned int *num_lookups***)**

DESCRIPTION

xil_lookup_create_combined () creates a combined lookup table. A combined lookup table is used for transforming multiband data to multiband data. Compare this function with **xil_lookup_create**(3), which converts single-band data to single-band or multiband data.

Combined lookups are a combination of *n* single lookup tables, where *n* is the number of bands in the input image you want to convert. Each single lookup must be a 1-band to 1-band lookup table; the tables must all have the same data type, but each can use a different offset.

To create a lookup table for a multiband input image, you call **xil_lookup_create** (3) once for each band in the input image, then combine the single lookup tables into a *combined* lookup table by calling **xil_lookup_create_combined** ().

xil_lookup_create_combined () returns a handle to a data structure of type *XilLookup,* which is the combined lookup. The parameter *State* is a handle to the system-state data structure created when you initialize the XIL library, *lookup_list[]* is an array of type *XilLookup* that stores the single lookup tables created for each of the input image's bands, and *num_lookups* indicates how many lookup tables are stored in the *lookup_list[]* array.

ERRORS

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

EXAMPLES

Create a combined lookup table for converting a 24-bit color image to another 24-bit color image whose green band is accented but whose red and blue bands are subdued:

```
XilSystemState State;
XilLookup lookup_tables[3];
XilLookup combined_lookup_table;
Xil_unsigned8 red[256];          /* red component of lookup */
Xil_unsigned8 green[256];        /* green component of lookup */
Xil_unsigned8 blue[256];         /* blue  component of lookup */
int i;

for(i=0; i<256; i++) {
   green[i] = (i + 20) < 255 ? i + 20 : 255;
    blue[i] = red[i] = (i - 10) < 0 ? 0 : i - 10;
}
lookup_tables[0] = xil_lookup_create(State, XIL_BYTE, XIL_BYTE,
```

```
                                      1, 256, 0, red);
            lookup_tables[1] = xil_lookup_create(State, XIL_BYTE, XIL_BYTE,
                                      1, 256, 0, green);
            lookup_tables[2] = xil_lookup_create(State, XIL_BYTE, XIL_BYTE,
                                      1, 256, 0, blue);
            combined_lookup_table = xil_lookup_create_combined(State,
                                              lookup_tables, 3);
```

SEE ALSO

xil_lookup(3), **xil_lookup_create**(3), **xil_lookup_convert**(3), **xil_lookup_get_band_lookup**(3), **xil_lookup_get_input_nbands**(3), **xil_lookup_get_input_datatype**(3), **xil_lookup_get_num_entries**(3), **xil_lookup_get_offset**(3), **xil_lookup_get_output_datatype**(3), **xil_lookup_get_output_nbands**(3), **xil_lookup_get_colorcube**(3), **xil_lookup_set_offset**(3), **xil_lookup_get_colorcube_info**(3), **xil_lookup_set_values**(3).