Near-Lossless Compression

Powered by original computing algorithm “DMNA” based on mathematical methods

1 Abstract

TMC’s LossLess/NearLossLess is an encoder / decoder IP core using TMC original algorithm.
The logic gate count and internal memory capacity are optimized to reduce cost and power consumption.

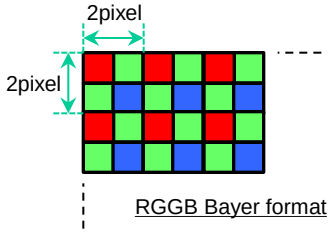
2 Features

*- High processing power 4K*2K*60frames/s -*

- High speed, compact and high quality
  The compression algorithm of TMC reduces the internal memory and logic gate count
  High speed compression & decompression
- Possible to select “LossLess” or “NearLossLess“ mode
- Programmable compression ratio in the NearLossLess mode
  Automatic control of the compressed data size
- Support huge screen size
  The maximum image size :65k x 65k pixels
- Support AXI bus interface
- Support AHB Host access interface

LossLess & NearLossLess
DMNA

3 Specifications



- Compression format
  TMC original
- Compression and decompression capability
  Encode:3pixels/clock , Decode:2pixels/clock
  (Example in ASIC)
  Encode: about 900Mpixels/sec@308MHz , Decode: about 600Mpixel/sec@308MHz
- Image size
  The image size is programmable in the range of width:768 to 65280pixel , height:6 to 65532pixel)
- Support a variety of image formats
  RGGB/GRBG/GBRG/BGGR Bayer Format (10/12/14/16 bit precision)
- Compression mode
  LossLess” or “NearLossLess 1/2, 1/3, 1/4“ mode
- Image data, compressed data interface
  AXI 128bit Bus Master
- Flexible design to respond to customer’s request
  Changing the necessary maximum image size, the bit precision of the input data, or interfaces of the IP
  Supporting some RAW format, partial decoding, or reducing the line memory in the under spec and so on

Note Specifications are subject to change without notice

Contact Information
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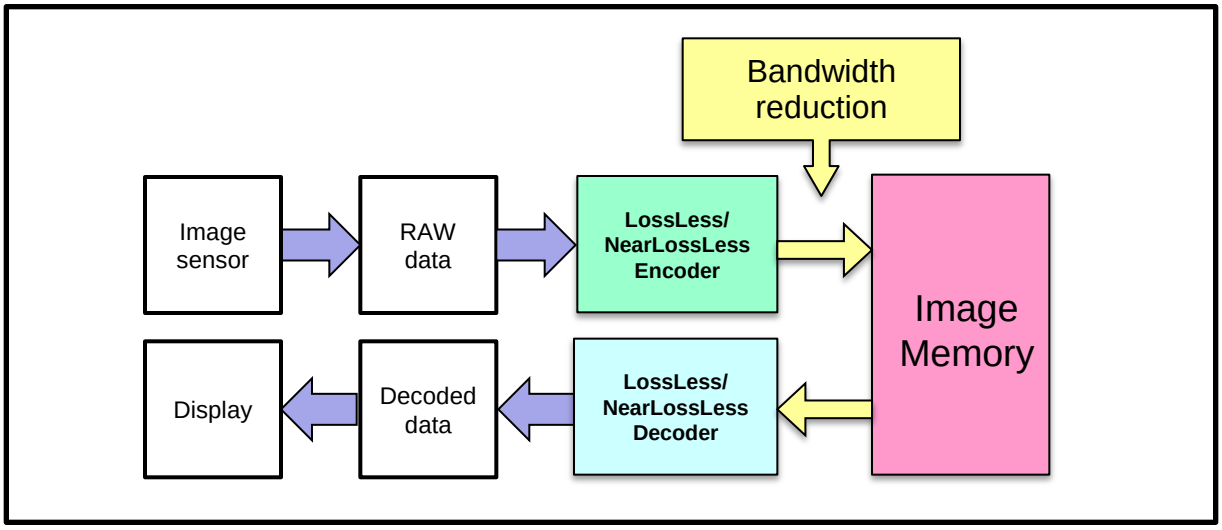
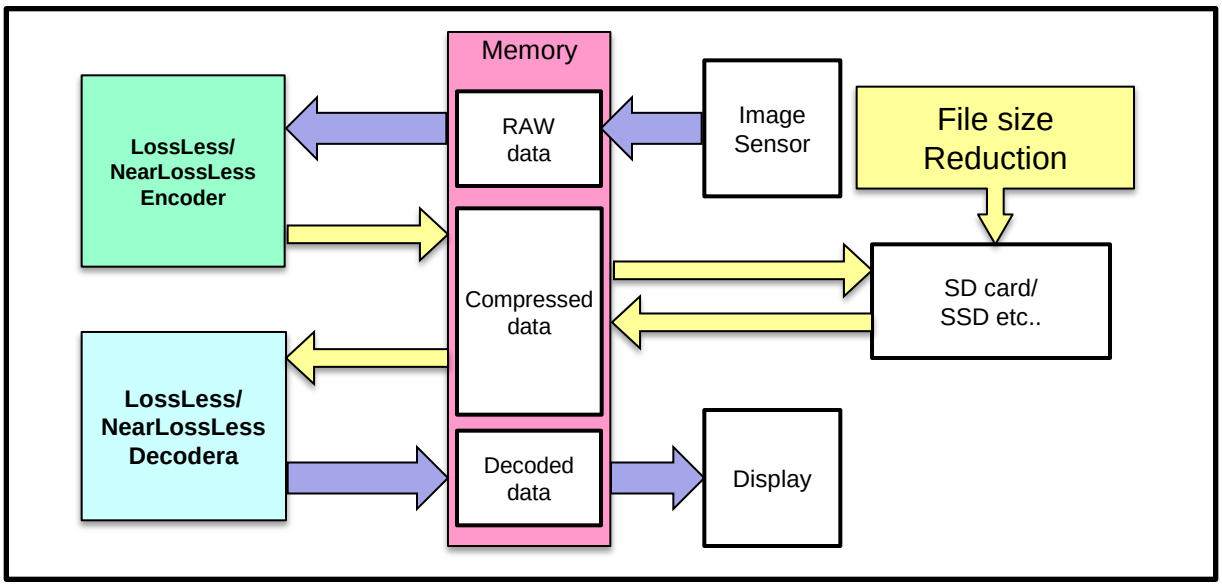
4 Applications



- Bandwidth reduction

"LossLess/NearLossLess Encoder/Decoder" reduces the bandwidth of memory in the image processing pipeline between RAW data and display data.



- File size reduction

"LossLess/NearLossLess Encoder/Decoder" efficiently reduces the RAW image data size and saves the storage media capacity.

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