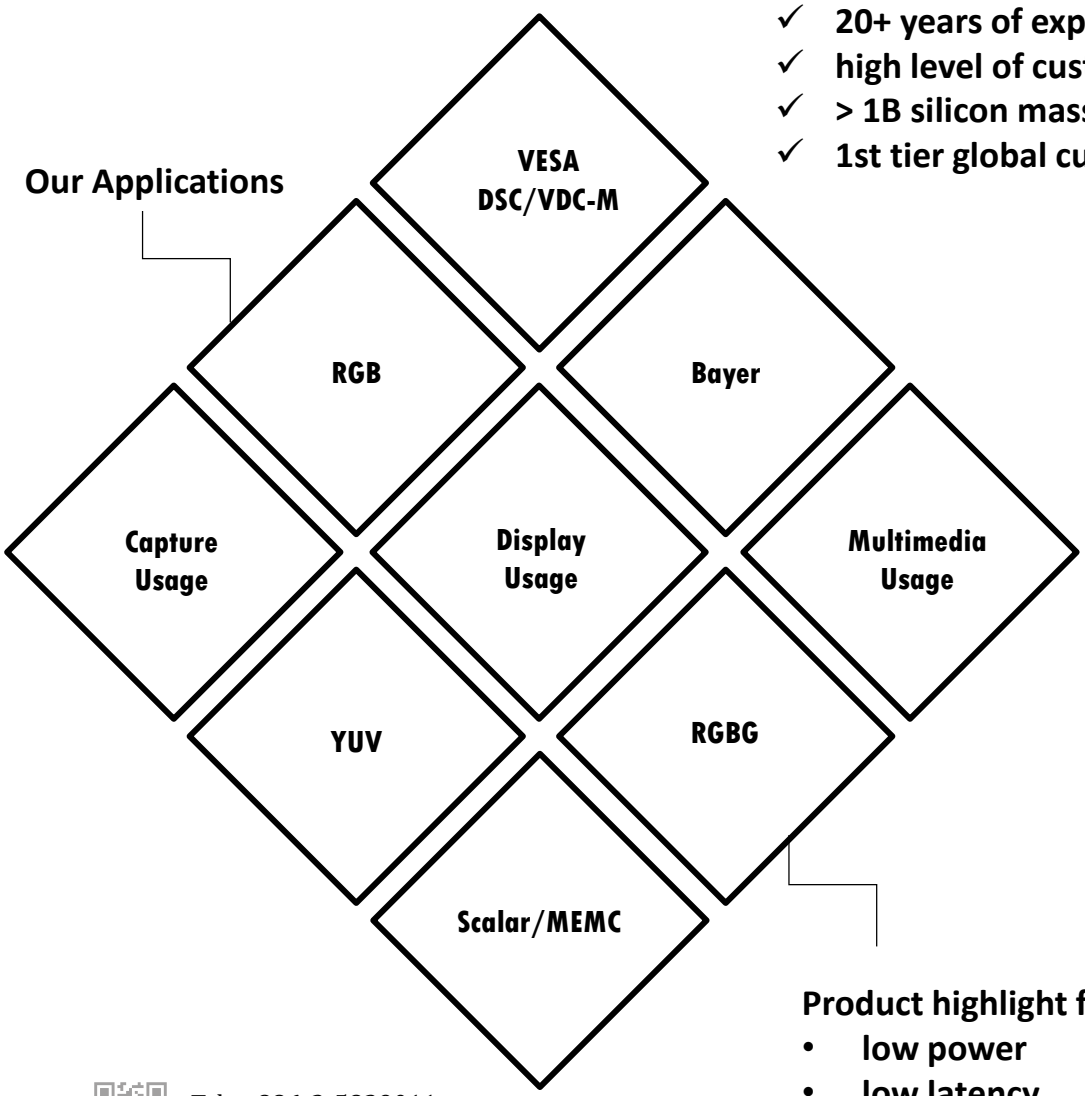
Taiwan Imaging Tek Corp.
TITC 沛錦科技

TITC

Image Compression IP specialist

- ✓ 20+ years of experience
- ✓ high level of customization
- ✓ > 1B silicon mass produced
- ✓ 1st tier global customers

Our Applications



Product highlight features:

- low power
- low latency
- small area

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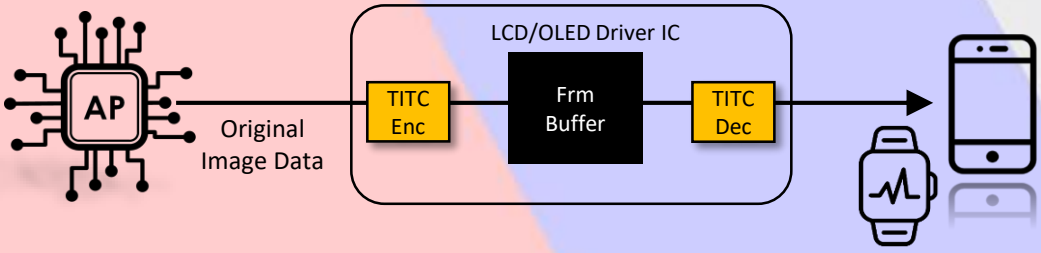
TITC F-Series IP
TITC RGB/RGBG for Frame Buffer

Lower level APs (Application Processor) in smart phones may not support VESA DSC to reduce transmission bandwidth between AP and DDIC (Display Driver IC). DDI sometimes need to support both lower and higher level APs with the same embedded SRAM footprint. Proprietary compression and decompression functions are asked to added in DDIC.

TITC provided huge mass production proven compression and decompression IP to solve this headache. IPs support range from H2V2 2x, H8V2 3x, to H4V4 4x, with the capability of partial update. Special color format like RGBG in AMOLED panel also can be supported by customization. You can rest assured that it is the best solution because of world wide brand name's qualification.



➢ TITC F-Series IP

Usage / Series		display / F-series			
IP Name		FBC-2	FBC-3	FBC-4	FBC-SPR
Data	Type	RGB	RGB	RGB	Pentile
	Bit-Depth	8-bit	8/10-bit	8-bit	8bit
Compression	Type	Lossy	Lossy	Lossy	Lossy
	Ratio(Lossy)	2X	3X(8bit)/3.75X(10bit)	4X	2X
	Unit	H2V2 / H4V1	H8V2	H4V4	H8V1
Performance	Throughput	4-pix (per T)	8-pix (per T)	8-pix (per T)	8-comp. (per T)
Note		* super MP(>300M) * widely adopted by LCD phone/ OLED watch	* super MP(>300M) * widely adopted by OLED phone		* RGB 3X effective

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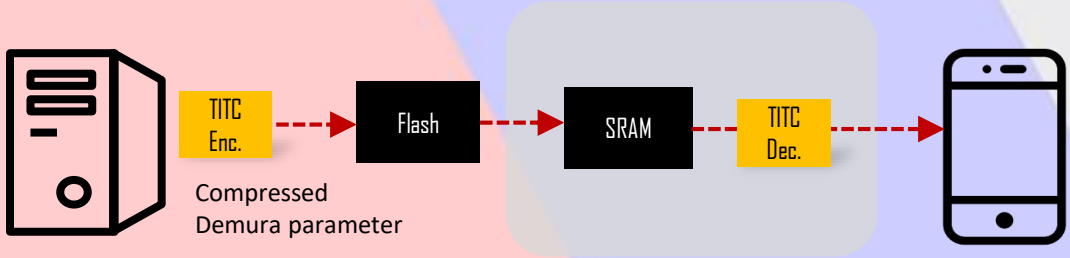
TITC D-Series IP
Demura parameter for Flash

TITC proprietary De-Mura Compression IP is comprised of the Software Encoder and the Hardware Decoder. The compression IP can be configured according to different parameters such as Flash size (e.g. compressed data size is configurable from 16Mbits to 8Mbits), and bin-sizes (i.e. pixel downsample size like 2by2, 4by4, and others).

The software encoder can incorporate customer's De-Mura table format (downsampled or non-downsampled).We provide customized service to stitch customer's De-Mura data, and preprocessing with our data compression IP seemlessly. The hardware decoder can adapt to customer's requirement on throughputs. We provide multi instance architecture to meet high throughput needs. Furthermore, TITC proprietary Compression IP has already been validated by large OLED/LCD panel makers and licensed by IC Fabless customers.



➢ TITC DeMura IP

Usage / Series		display / D-series	
IP Name		Demura v1	Demura v2
Data	Type	RGB/RGBG (Demura paremeter)	RGB/RGBG (Demura paremeter)
	Bit-Depth	8-bit	8/10-bit
Compression	Type	Lossy	Lossy
	Ratio(Lossy)	3~3.8X	compr. as 16 or 8MB
	Unit	frame	frame
Performance	Throughput	4-pix/12-comp (per T)	8-comp (per T)
Note		* enc: software /dec: RTL	* enc: software /dec: RTL

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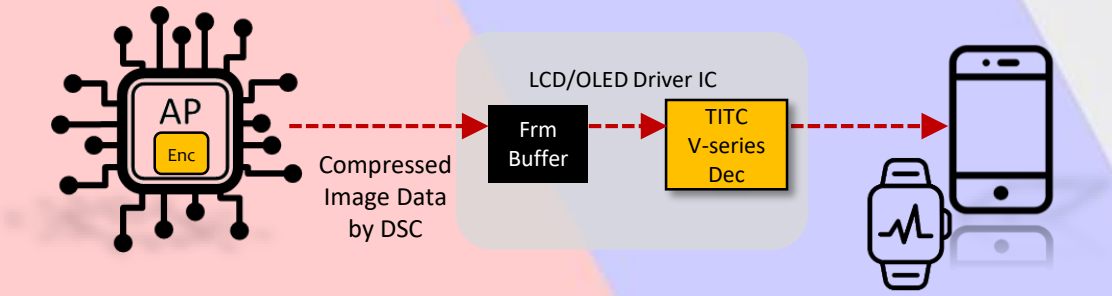
TITC V-Series IP
VESA DSC/VDC-M

VESA DSC (Display Stream Compression) and VDC-M (VESA Display Stream Compression-M) are standard which is used for compressing and decompressing image display streams. It is designed for real-time systems, with real-time compression, transmission, decompression, and display. These standard IP could be used in many applications and save the transmission cost, such as between a mobile application processor and display panel, between a computer graphics and display monitor, and so on.

TITC provides VESA DSC decoder hardware IPs which is compatible to DSC V1.1 and V1.2a, and a VDC-M decoder hardware IP. Specially, TITC provides 6P/T versions DSC decoder, which could be used for 1 slice setting. These IP are configurable in display resolution (Up to 4K, UHD+, and 8K), bits per video component (8 and 10 bits), video output formats(RGB, YCbCr444, YUV422, and YUV420), and multiple slice per line setting (1, 2, or 4). TITC also provides customized service to shrink the IP area when no need to support the whole configuration.



➢ TITC VESA IP

Usage / Series		standard/display / V-series	
IP Name		DSC v1.2a (Dec)	VDCM v1.2 (Dec)
Data	Type	RGB/YUV422/YUV420	RGB/YUV422/YUV420
	Bit-Depth	8/10-bit	8/10-bit
Compression	Type	Lossy	Lossy
	Ratio(Lossy)	up to 4X(8bit) / 5X(10bit)	up to 5X(8bit) / 6X(10bit)
	Unit	multi-slice(1/2/4)	multi-slice(1/2/4)
Performance	Throughput	3/6-pix (per T)	4-pix (per T)
Note		* available customizing for v1.1	* available customizing for v1.1.0

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