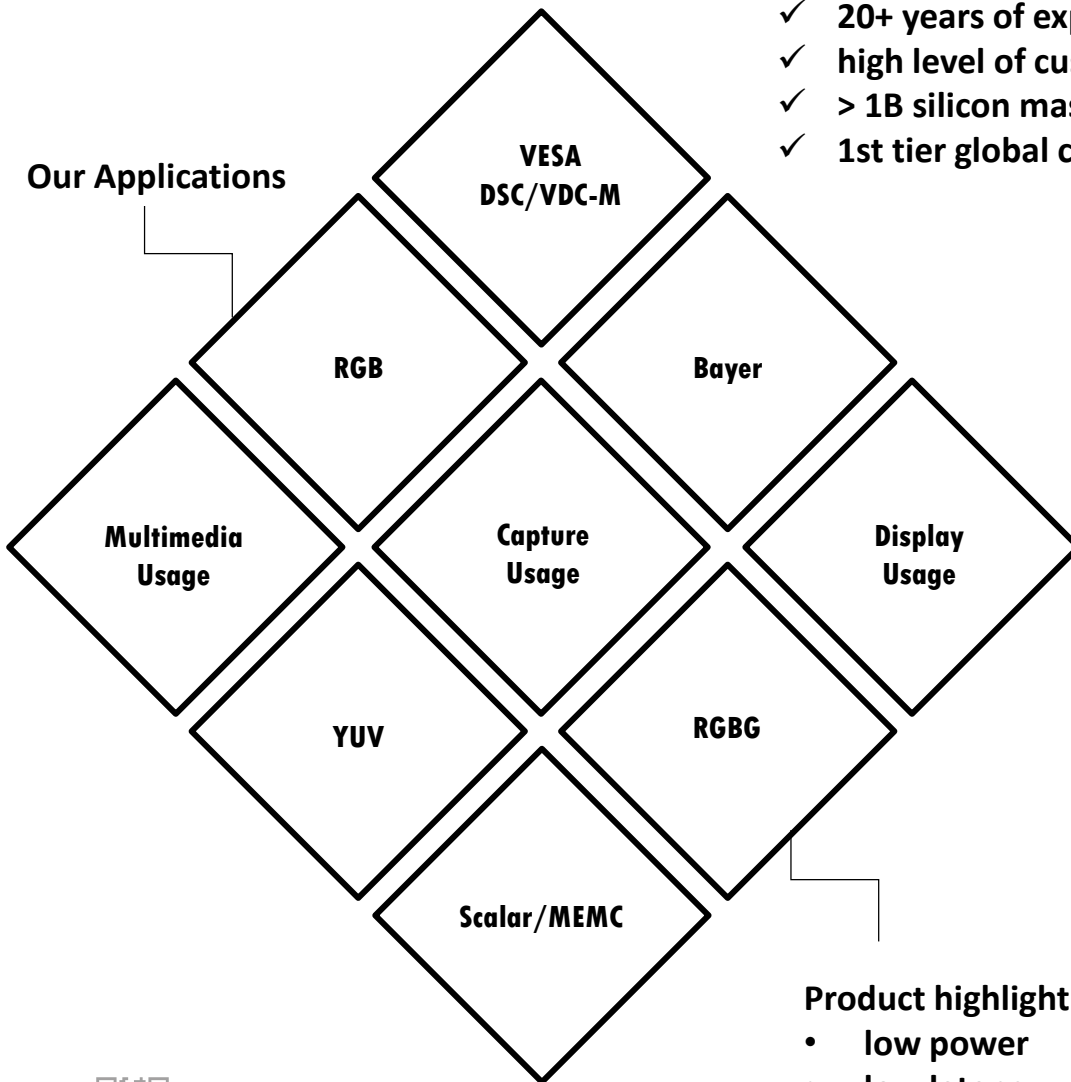# TITC

Image Compression IP specialist

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

Our Applications

VESA DSC/VDC-M

RGB

Bayer

Multimedia Usage

Capture Usage

Display Usage

YUV

RGBG

Scalar/MEMC

Product highlight features:
- **low power**
- **low latency**
- **small area**

Tel: +886-3-5839011
☺ www.titc-usa.com

TITC N-Series IP
Feature-map for AI

N-series IPs are collection of propietary algorithm which are used for real-time compress/decompress featuremap data.These IPs/algorithm are designed for neural network(AI) device, which facilitate temporal storage efficiency of featuremap data.AI edge devices and end products embedded NPU may benefit from N-series IPs.

N-series IPs are featured by lossless/lossy bi-direction support, tiny hardware resources, friendly IP integration, and flexible access/store compressed bitstream.Feature support/algorithm are tailored for neural network architecture via TITC engineer team.

Classification
model: mobilenet v2
dataset: ILSVRC2012/50-pics

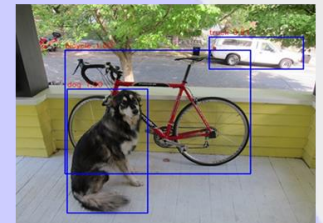<lossy compression>
*TITC/1.78X: ave.err=0.251%
<lossless compression>
*TITC: ave.rat=1.90X

Object Detection
model: tiny-yolo v2
dataset: VOC2007/4952-pics

<lossy compression>
*no compr. : mAP=48.05
*TITC/1.78X: mAP=46.88
<lossless compression>
*TITC: ave.rat=2.36X

➢ TITC AI Inference Device IP

Usage / Series		capture / N-series
IP Name		featuremap v1
Data	Type	featuremap
	Bit-Depth	8-bit
Compression	Type	Lossy/Lossless
	Ratio(Lossy)	1.14~2X
	Unit	H4V4
Performance	Throughput	16-pix (per T)
Note		* lossless is encouraged * compression unit/ratio(lossy) can be customized

Flash / Storage

CIS

NN Inference (DLA)

DRAM / Memory

R / YUV / F
N ser.