



HUAWEI MATE70 PRO+ CIS&UFS ANALYSIS

VERSION (修订版本)

Version	Data	Updata
V1	2025/01/21	initial release(Beta)
V2	2025/02/21 22:02	Finish SC580xs/M70PP
V3	2025/02/22 3:00	Finish 1.5mp red maple

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Mate70Pro+ 主摄分析

SC580XS 分析

鉴定Mate70Pro+ 主摄

Mate70Pro+红枫原色镜头分析

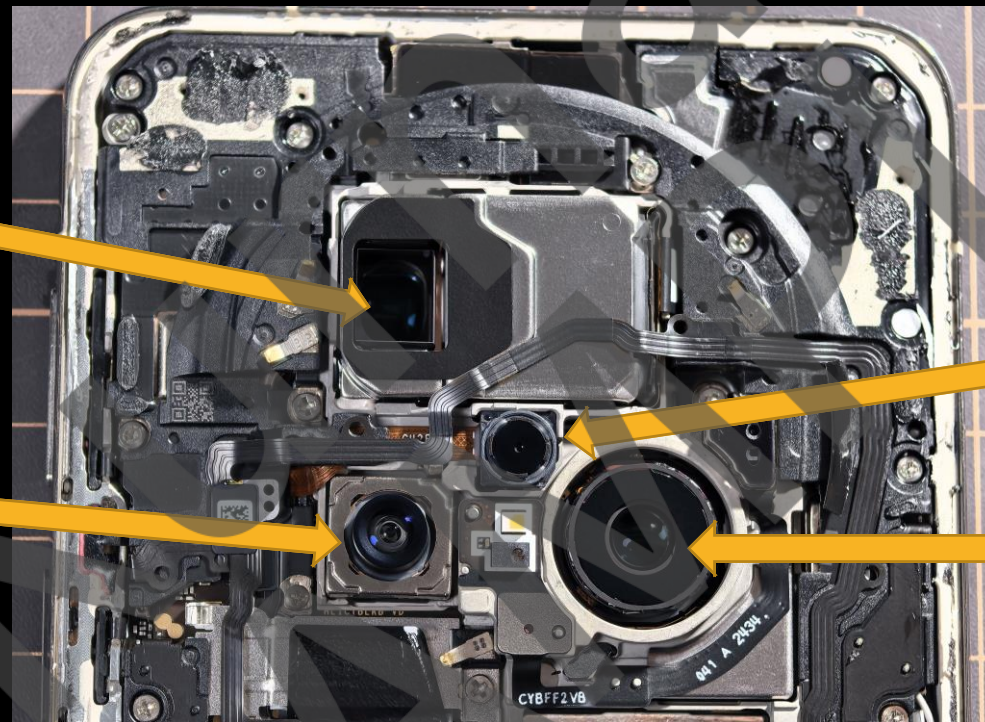
NAND(UFS)分析

LPDDR 分析

Kirin9020 分析（见另一份）

长焦:48mp F2.1 RYYB,OIS

超广角:40mp F2.2 RYYB



本次分析

红枫:1.5mp

主摄:50mp F1.4-4,RYYB, OIS

MATE70PRO+ 主摄

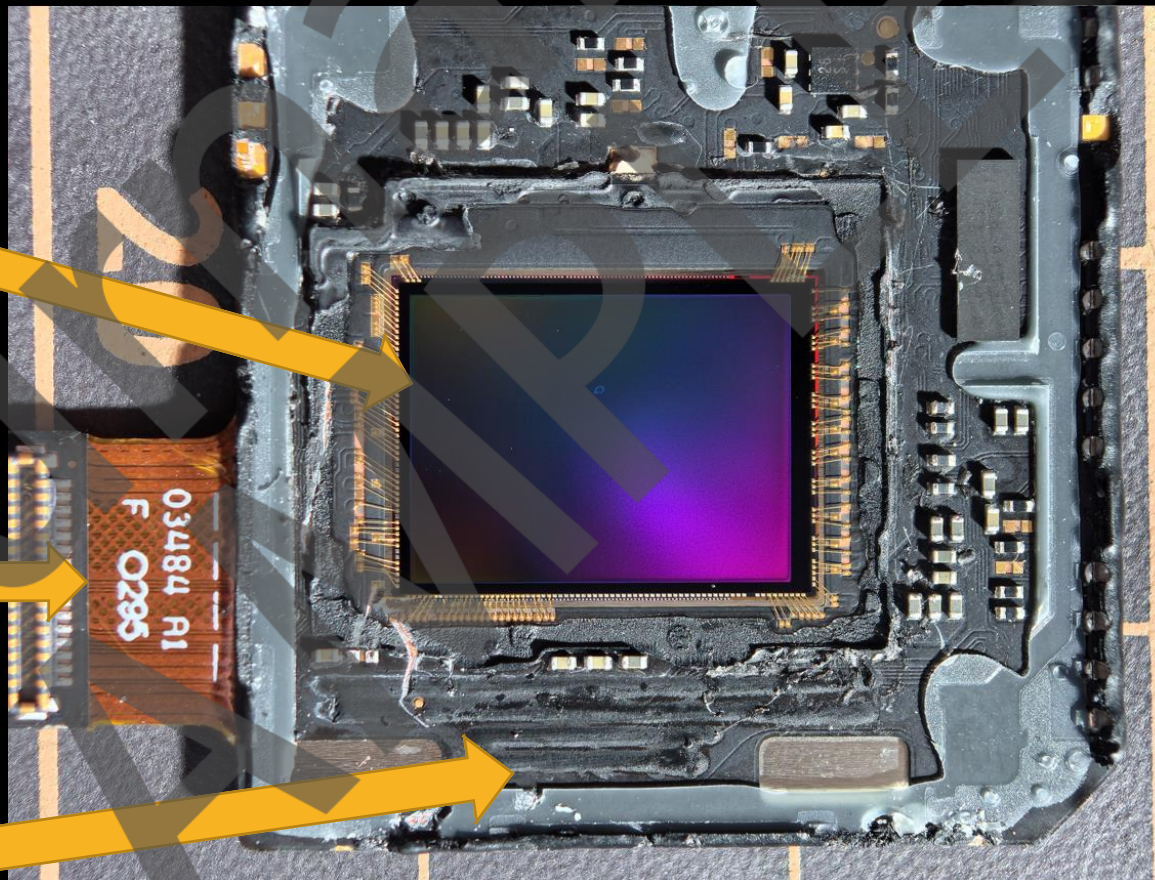
正文

MATE70PRO+ CIS(MAIN)

Cmos Die
50mp RYYB

FPC Mark
03484 A1
F O295

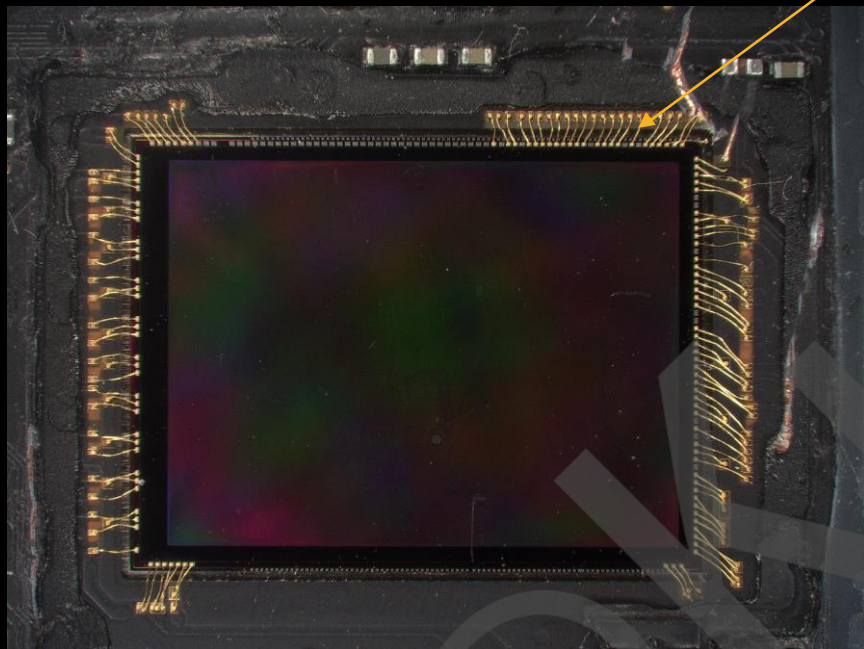
Cmos substrate & PCB



MATE70PRO+ CIS(MAIN)

Bonding Line(Gold)

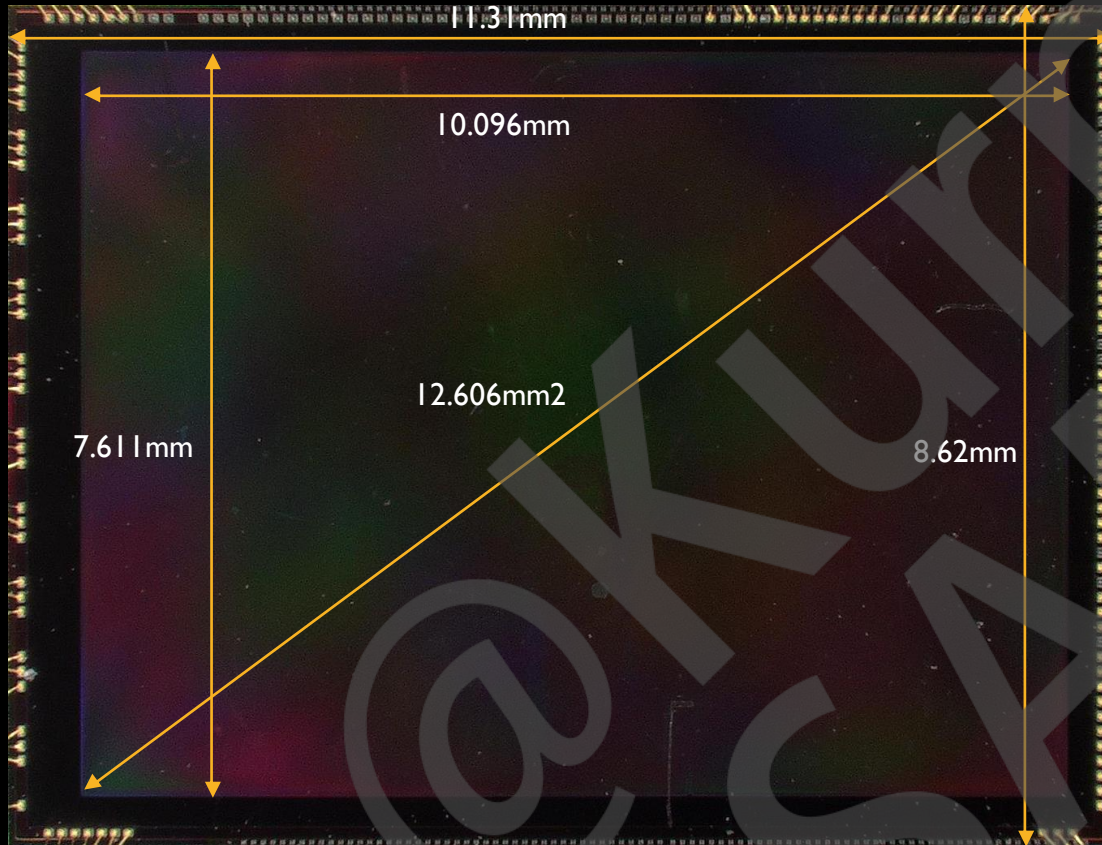
Bonding Pad



Bonding Pad number: 166

Bonding Pad in use: 117

MATE70PRO+ CIS(MAIN)



Full diesize :

97.49mm²
(11.31x8.62)

Pixel area:

76.84mm²
(10.096x7.611)

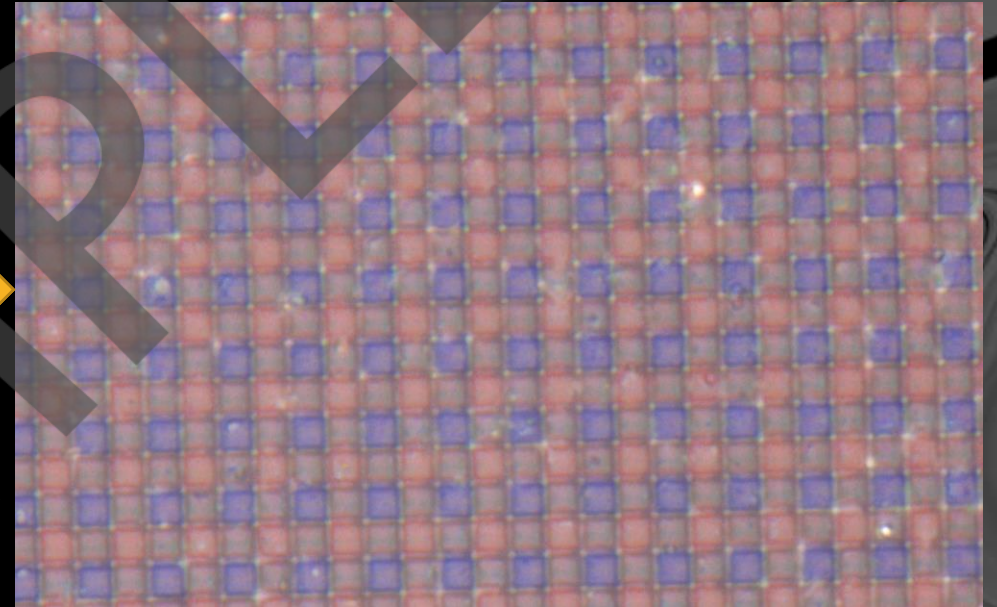
Diagonal line size:

12.606mm
(Nearly 1/1.27)

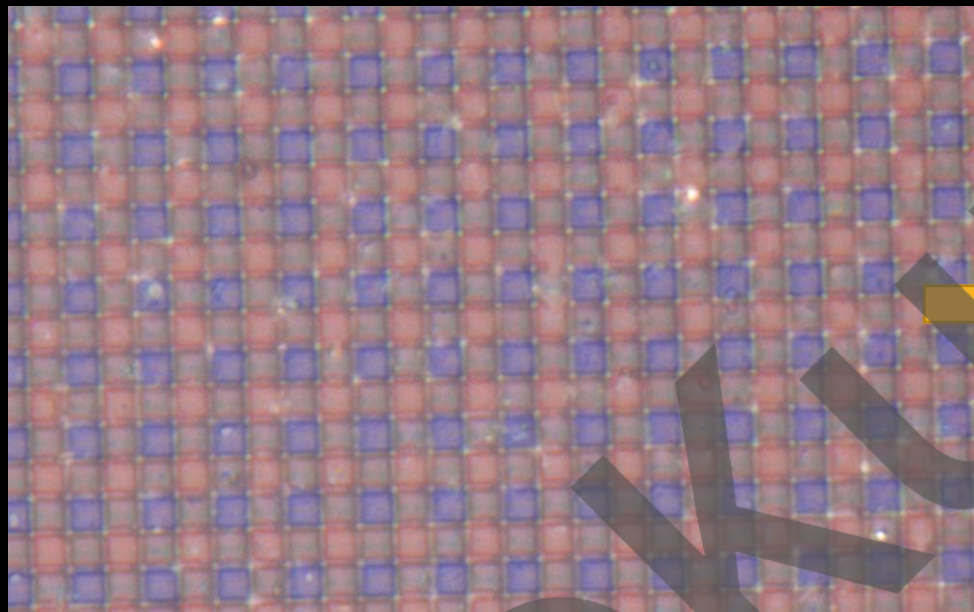
MATE70PRO+ CIS(MAIN)



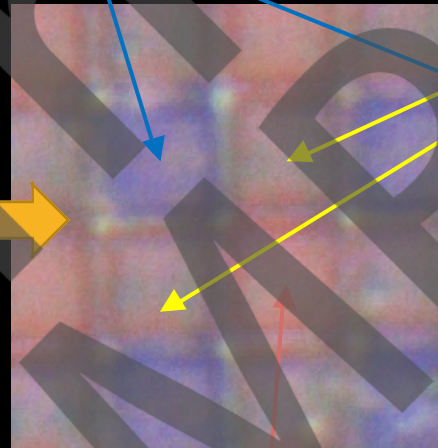
1000x in microscope



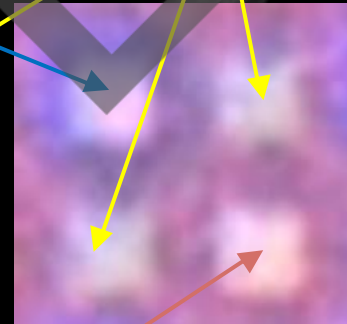
MATE70PRO+ CIS(MAIN)



Blue



Yellow

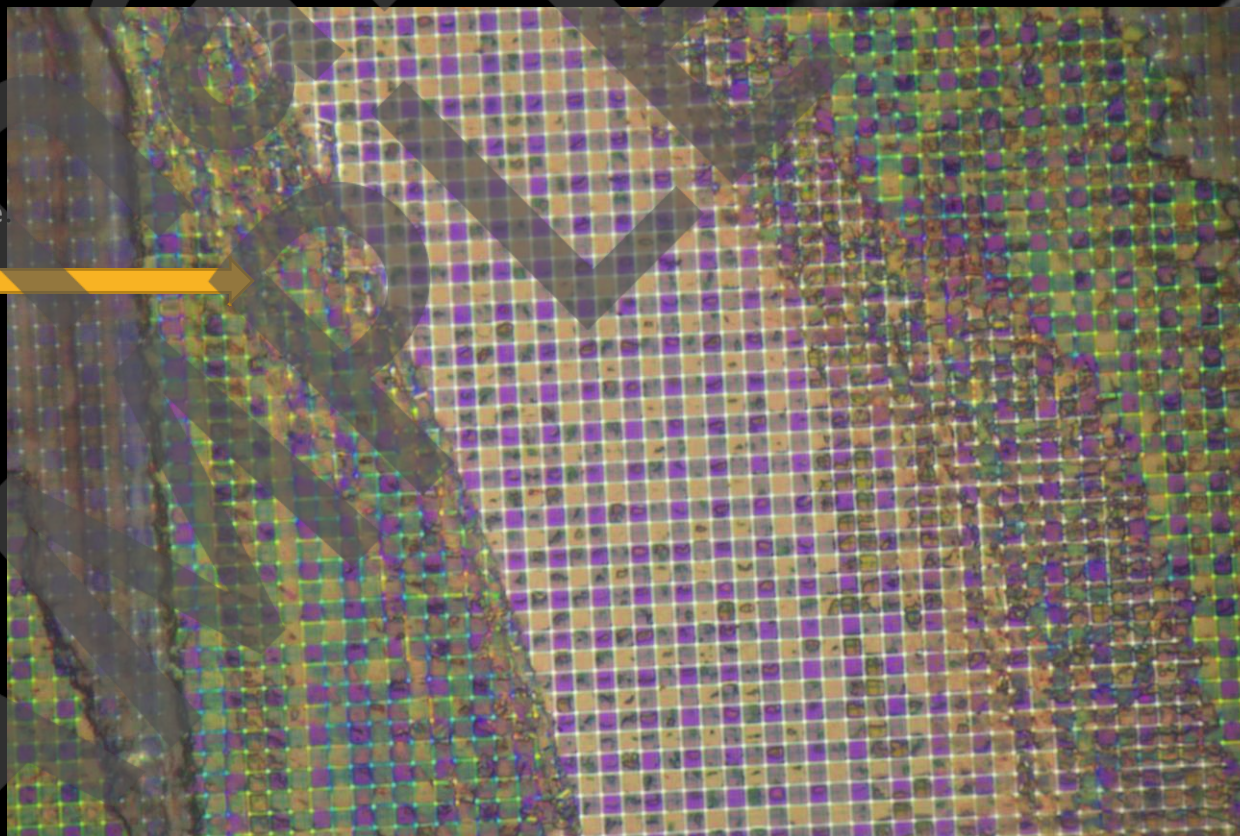


Red

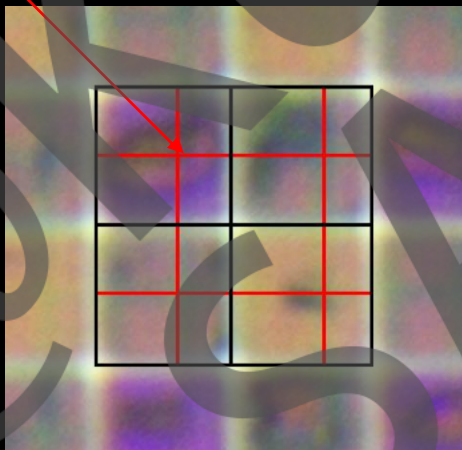
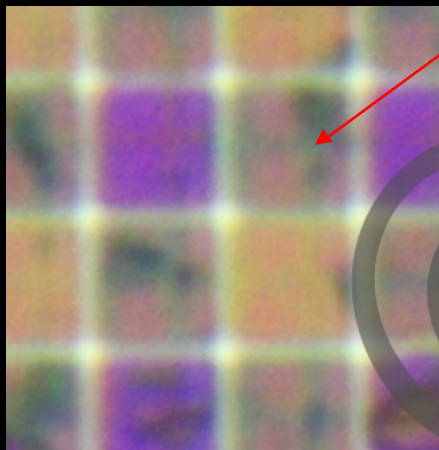
MATE70PRO+ CIS(MAIN)



Scrape off part of the OCL with a knife

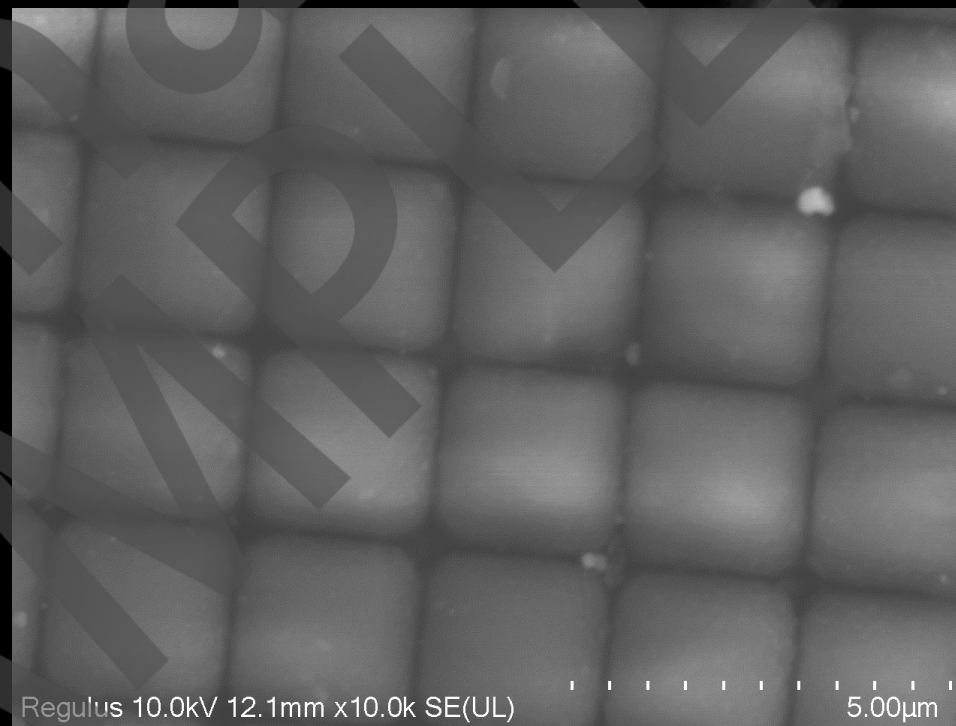


Some cut in pixel area

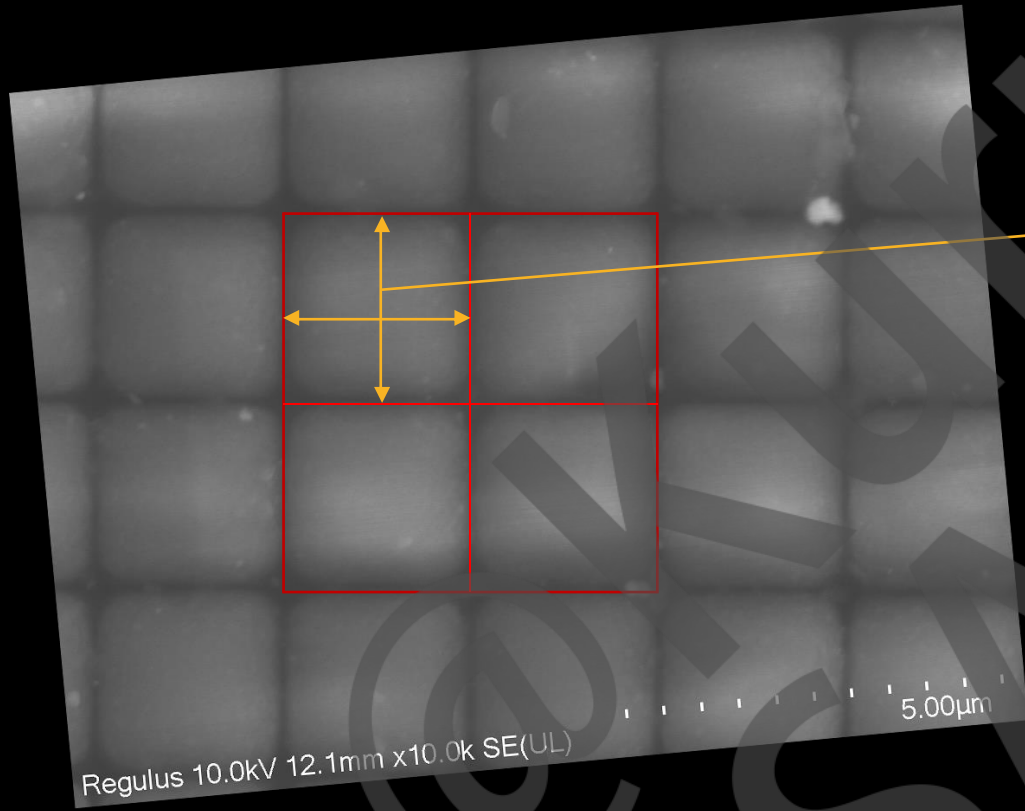


MATE70PRO+ CIS(MAIN)

SEM Photo Hitachi Su8200

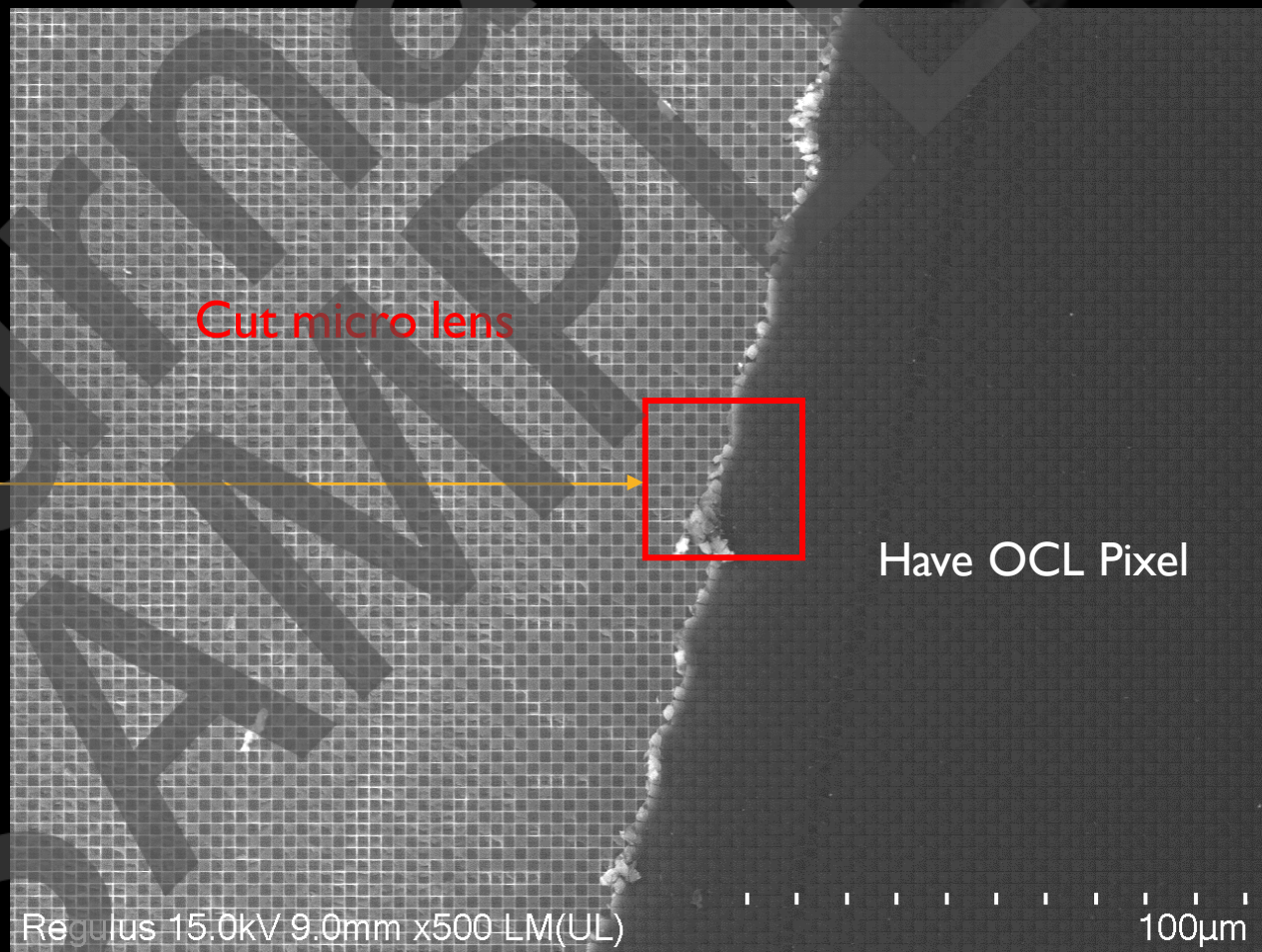
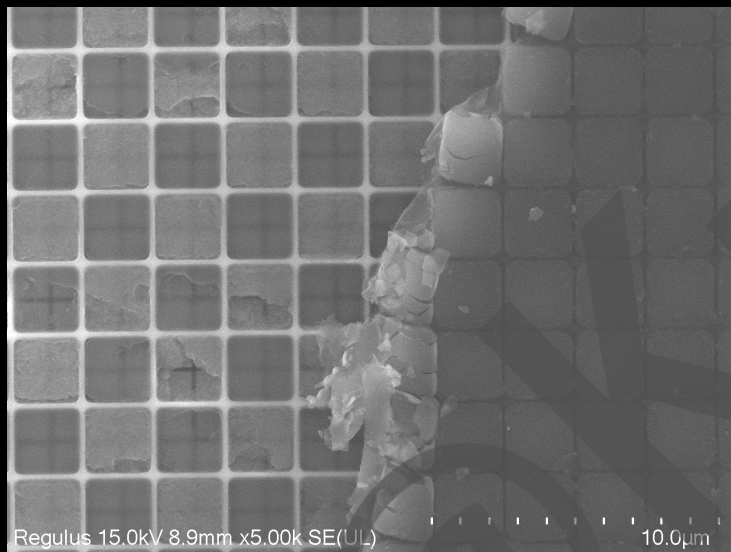


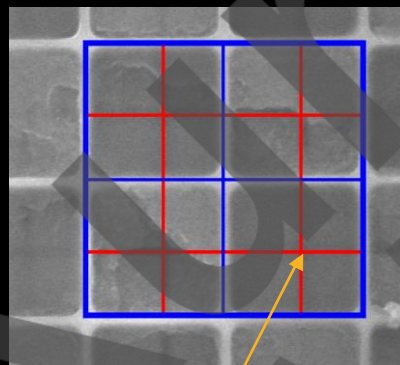
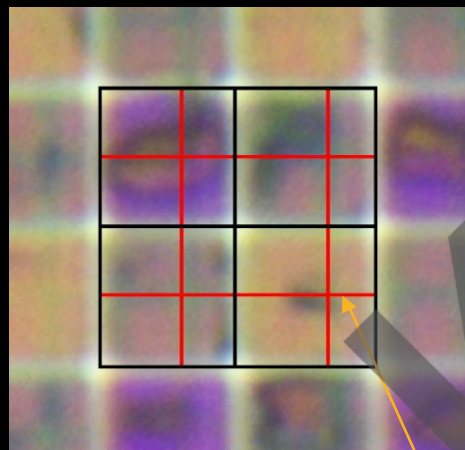
MATE70PRO+ CIS(MAIN)



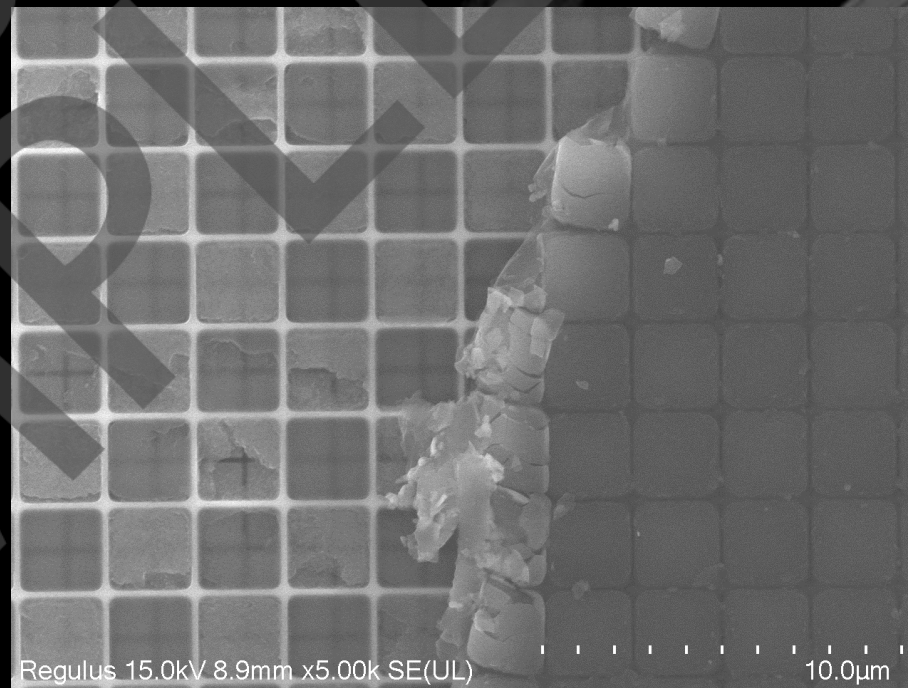
Pixel side length: 2.471µm

MATE70PRO+ CIS(MAIN)

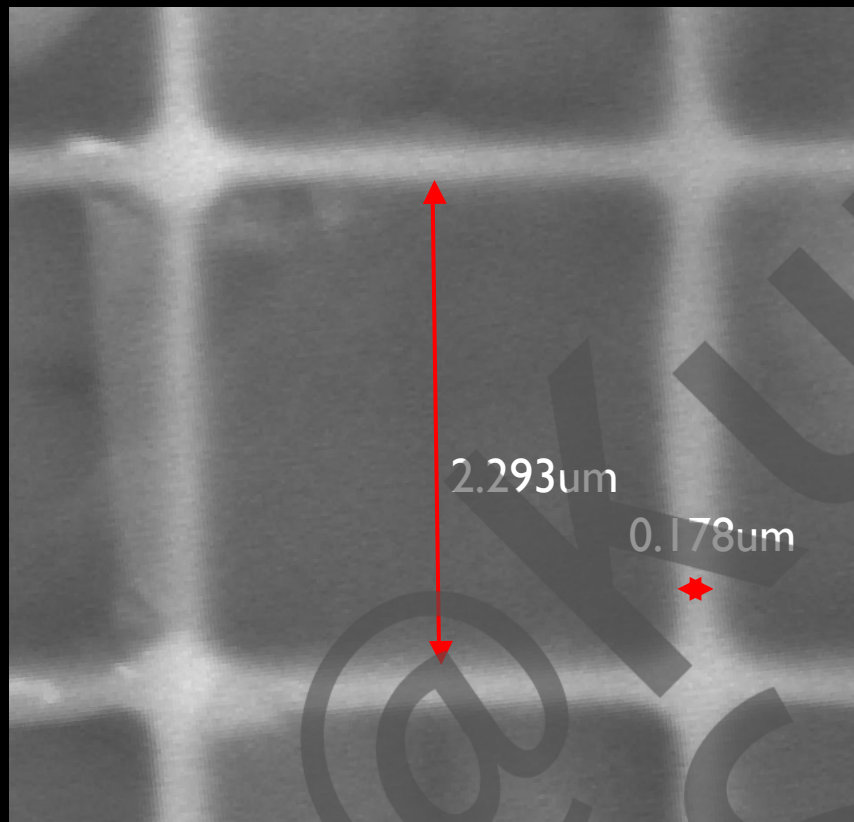




Cut line?

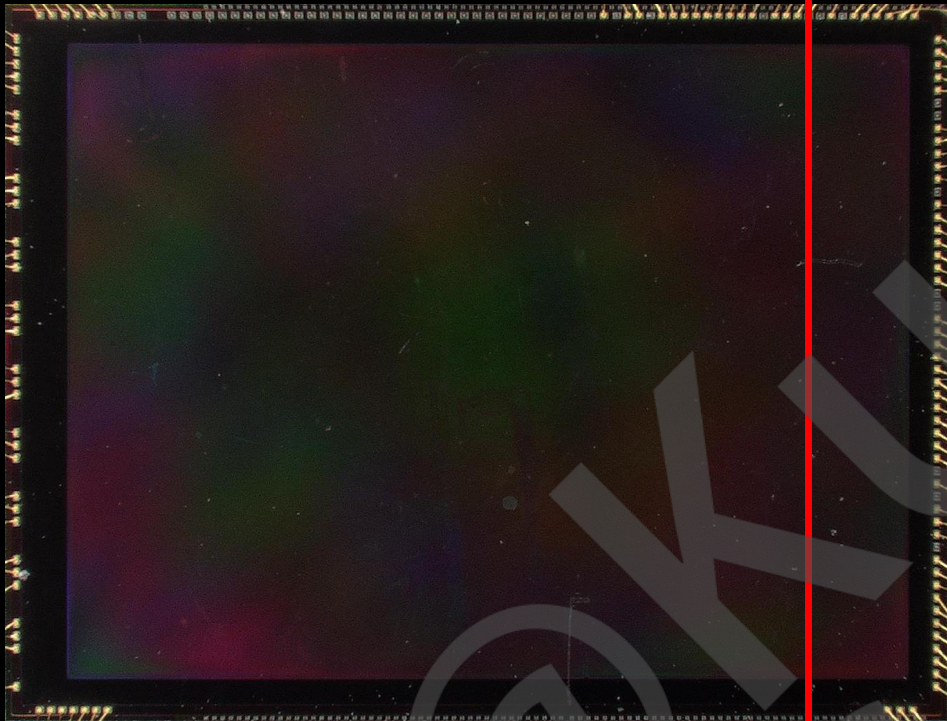


MATE70PRO+ CIS(MAIN)

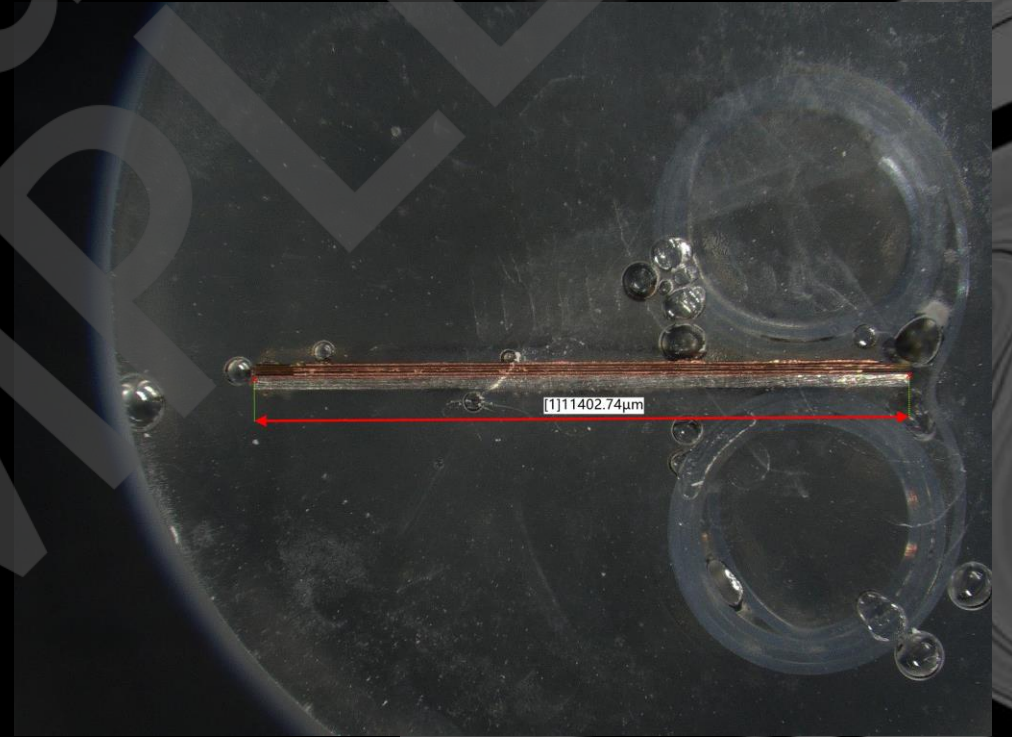


Trap size: 2.293um
Trap well size: 0.178um

MATE70PRO+ CIS(MAIN)



Package in X Cut

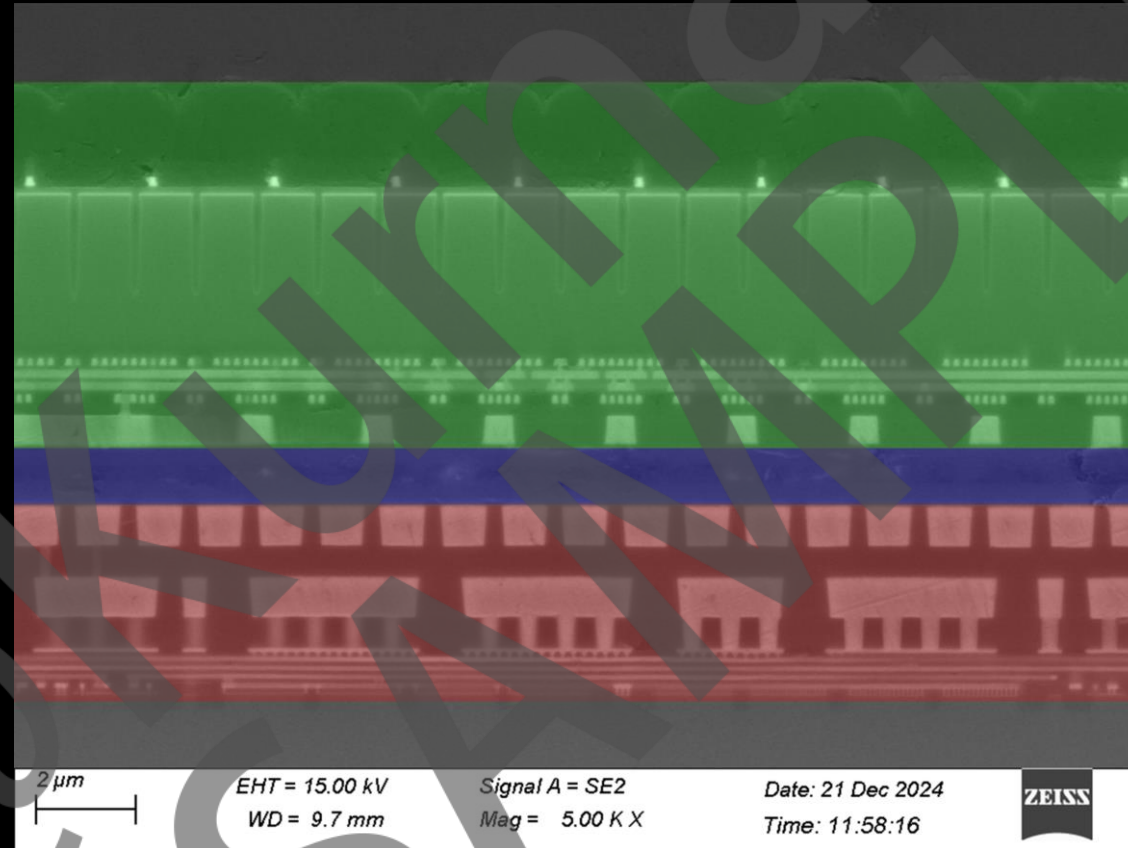


MATE70PRO+ CIS(MAIN)



MATE70PRO+ CIS(MAIN)

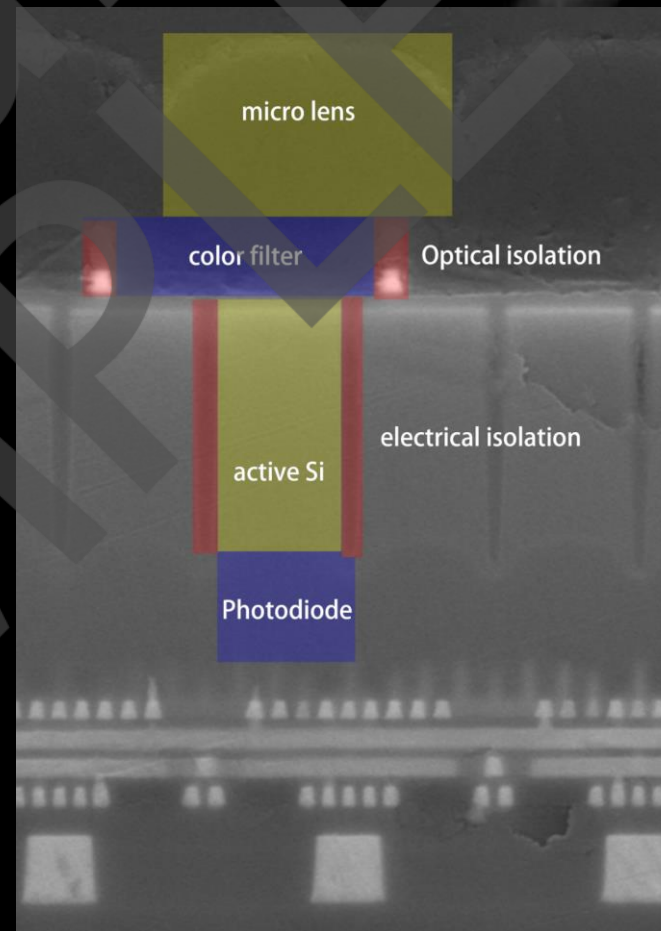
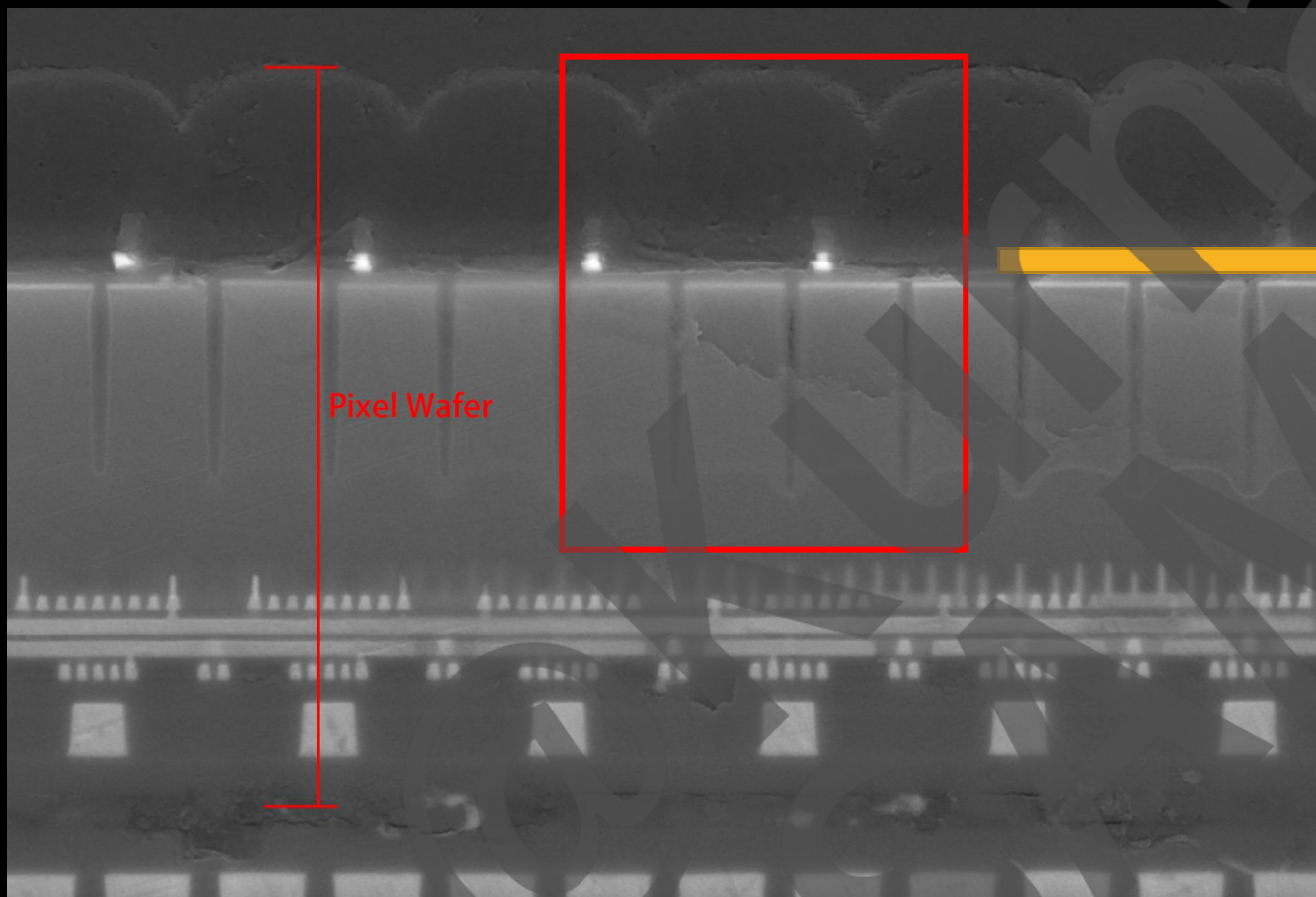
Total Height: 12.741 μm
Pixel wafer Height: 7.853 μm
Logic wafer Height: 4.905 μm



Pixel Wafer

Logic Wafer

MATE70PRO+ CIS(MAIN)



1 μ m

EHT = 15.00 kV
WD = 9.7 mm

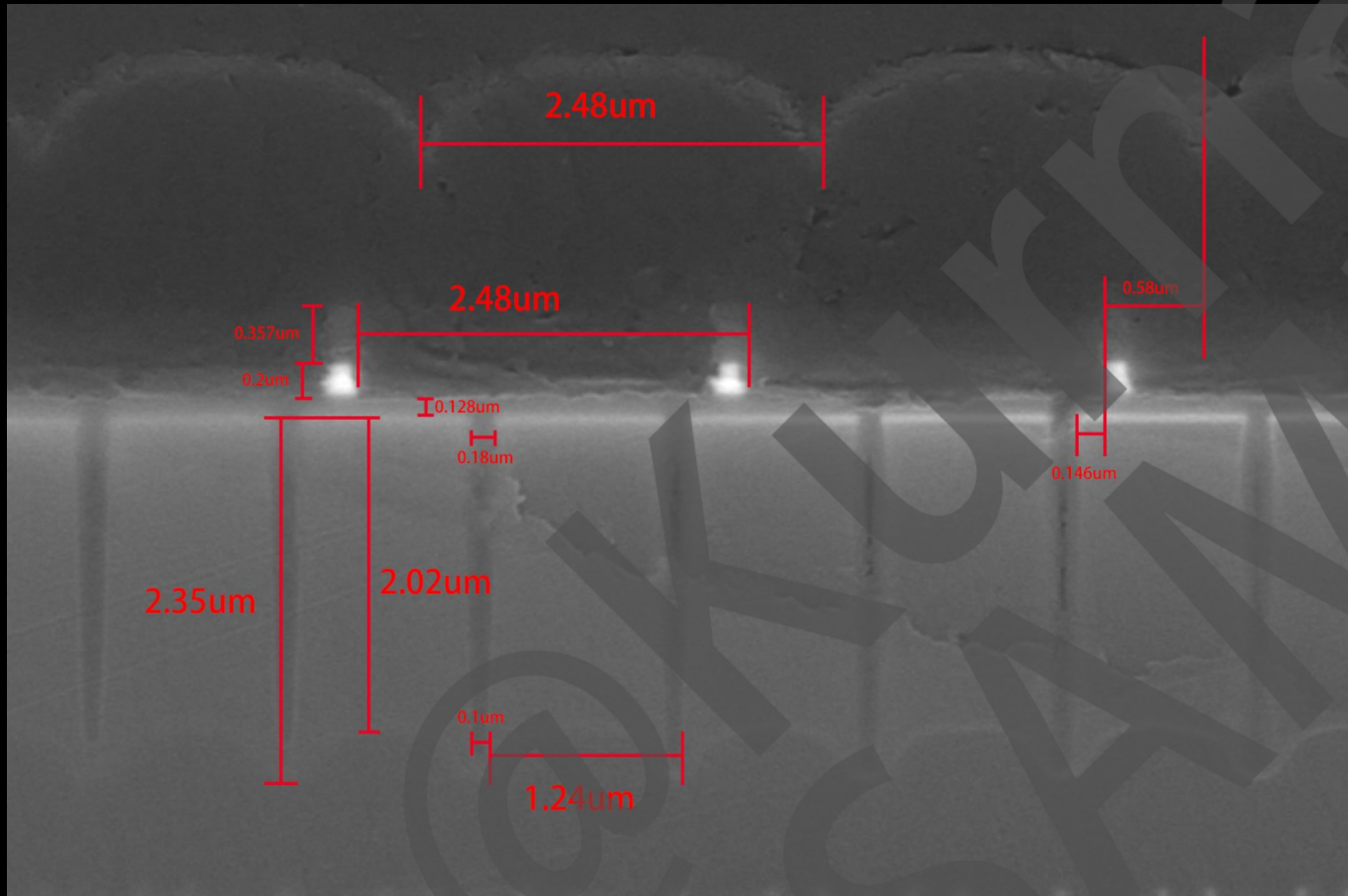
Signal A = SE2
Mag: 8.08 K X

Date: 21 Dec 2024
Time: 11:58:58

ZEISS

Optical Layers

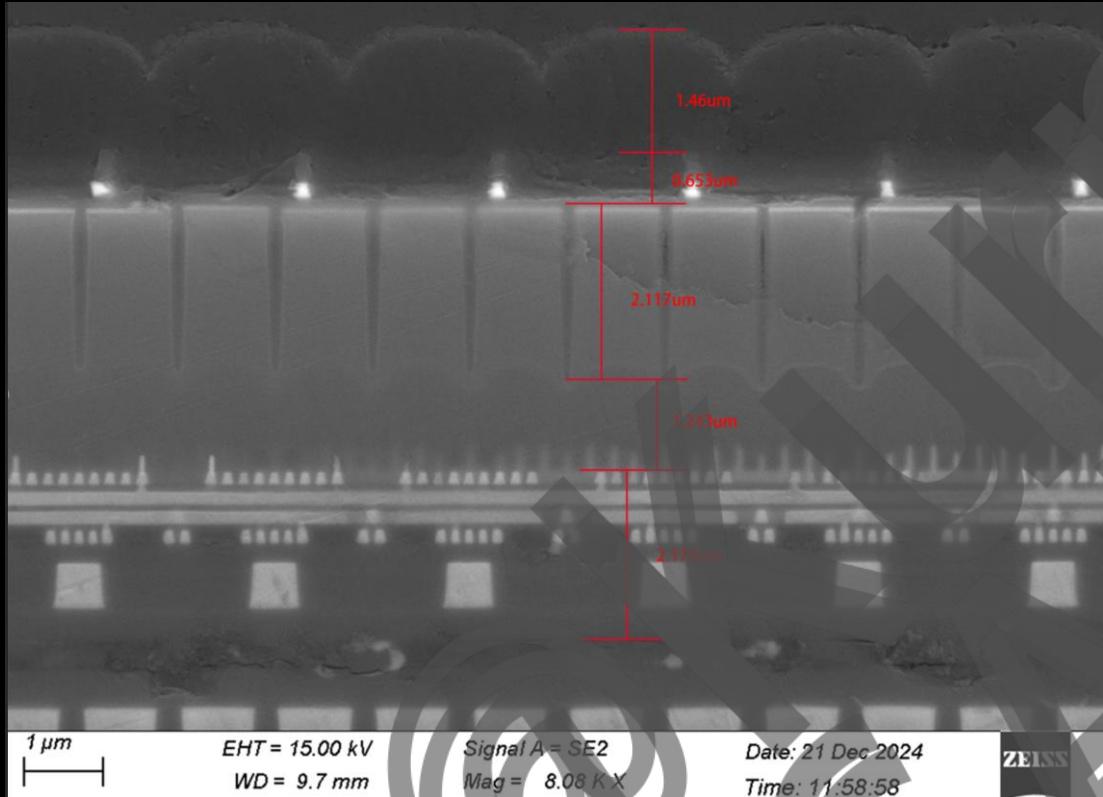
MATE70PRO+ CIS(MAIN)



Mate70P+ Pixel Wafer

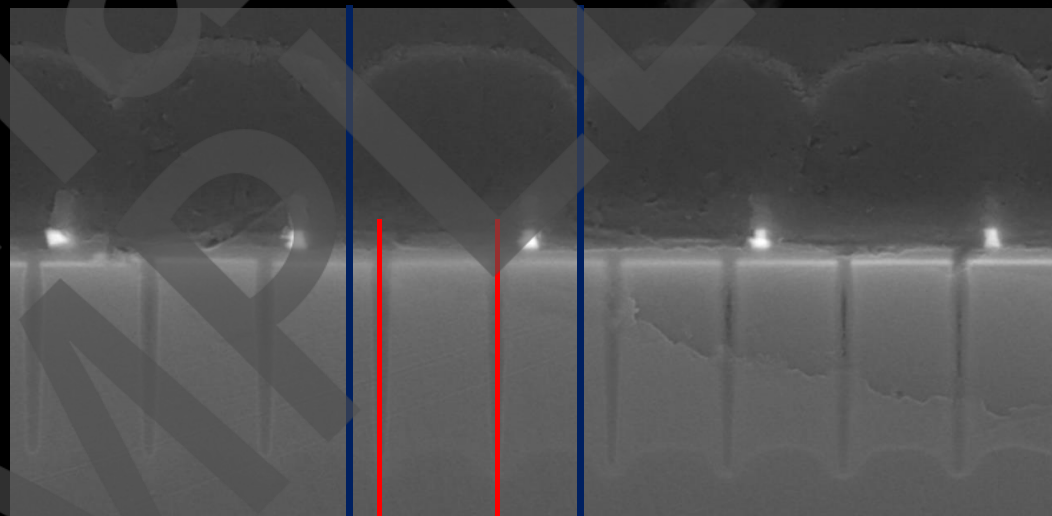
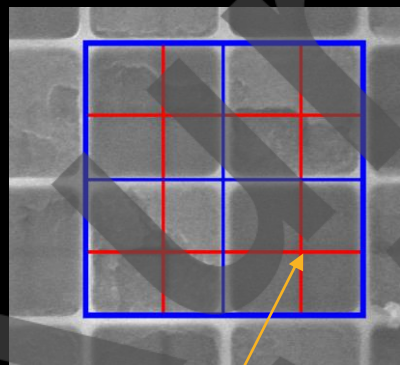
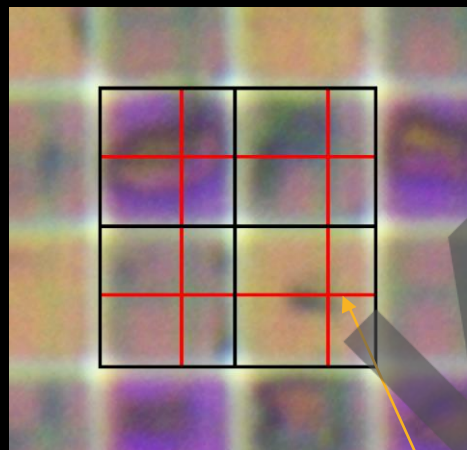
Micro Lens size:	2.48um
Color Filter size:	2.48um
Photodiode size:	1.24um
Optical isolation deep:	0.357um+0.2um
Electrical isolation deep:	2.35um/2.02um
Electrical isolation top width:	0.18um
Electrical isolation down width:	0.1um
Micro lens- Color filter pitch:	0.58um
Optical - electrical pitch:	0.146um

MATE70PRO+ CIS(MAIN)



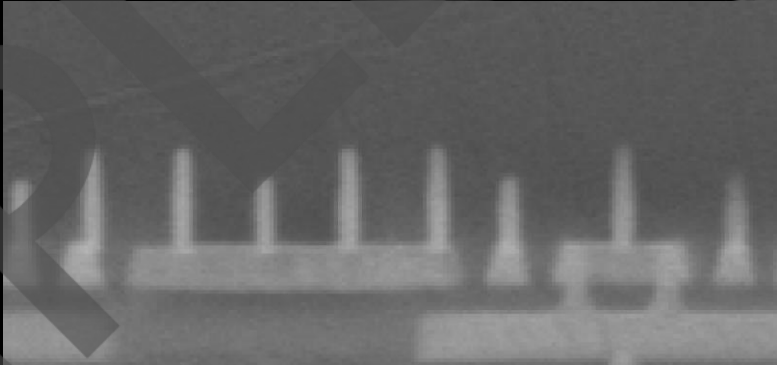
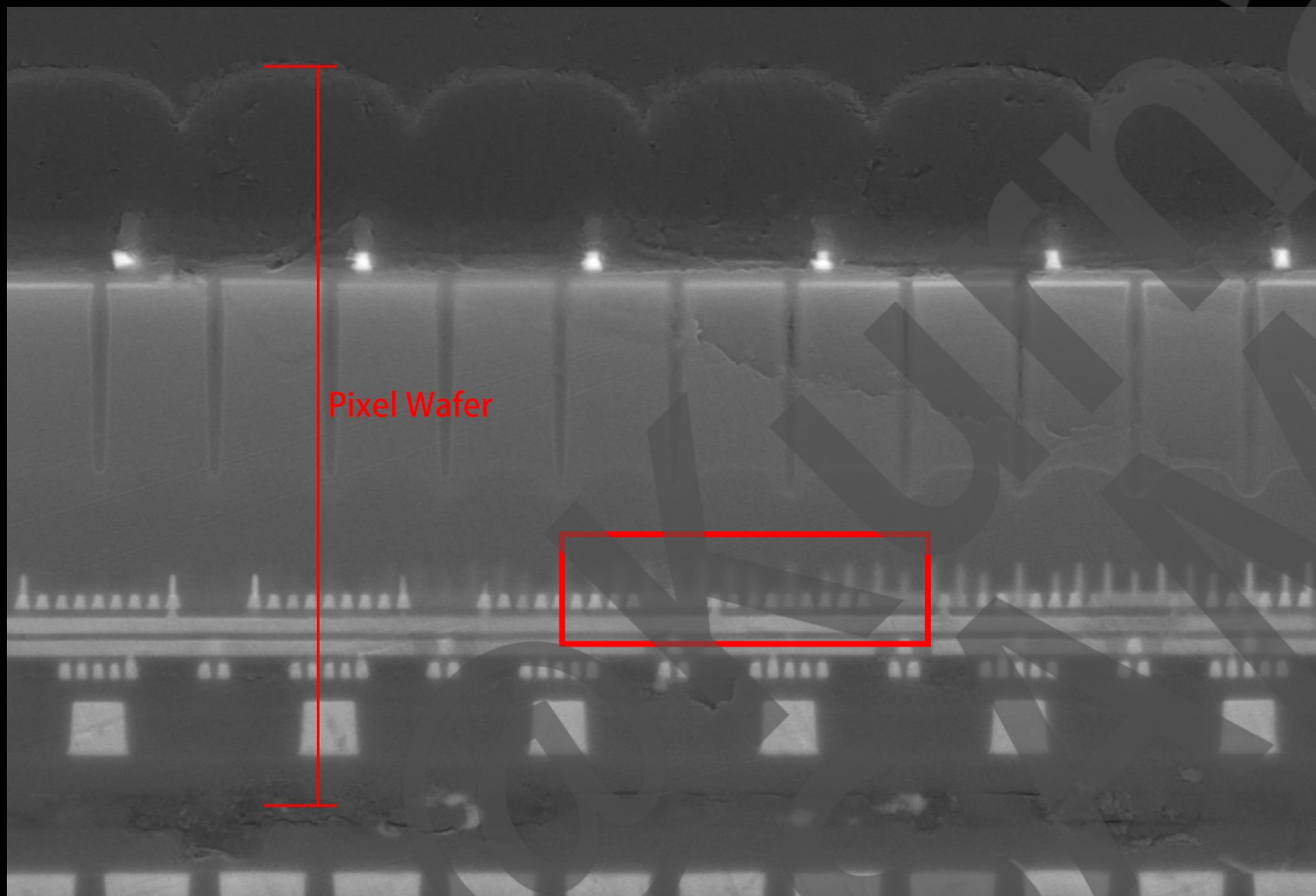
Micro lens Height: 1.46 μm
Color filter Height: 0.653 μm
Electrical isolation Depth: 2.117 μm
Photodiode top to MI distance: 1.243 μm
Metal I to bond distance: 2.178 μm

Mate70P+ Pixel Wafer



Cut line?

MATE70PRO+ CIS(MAIN)

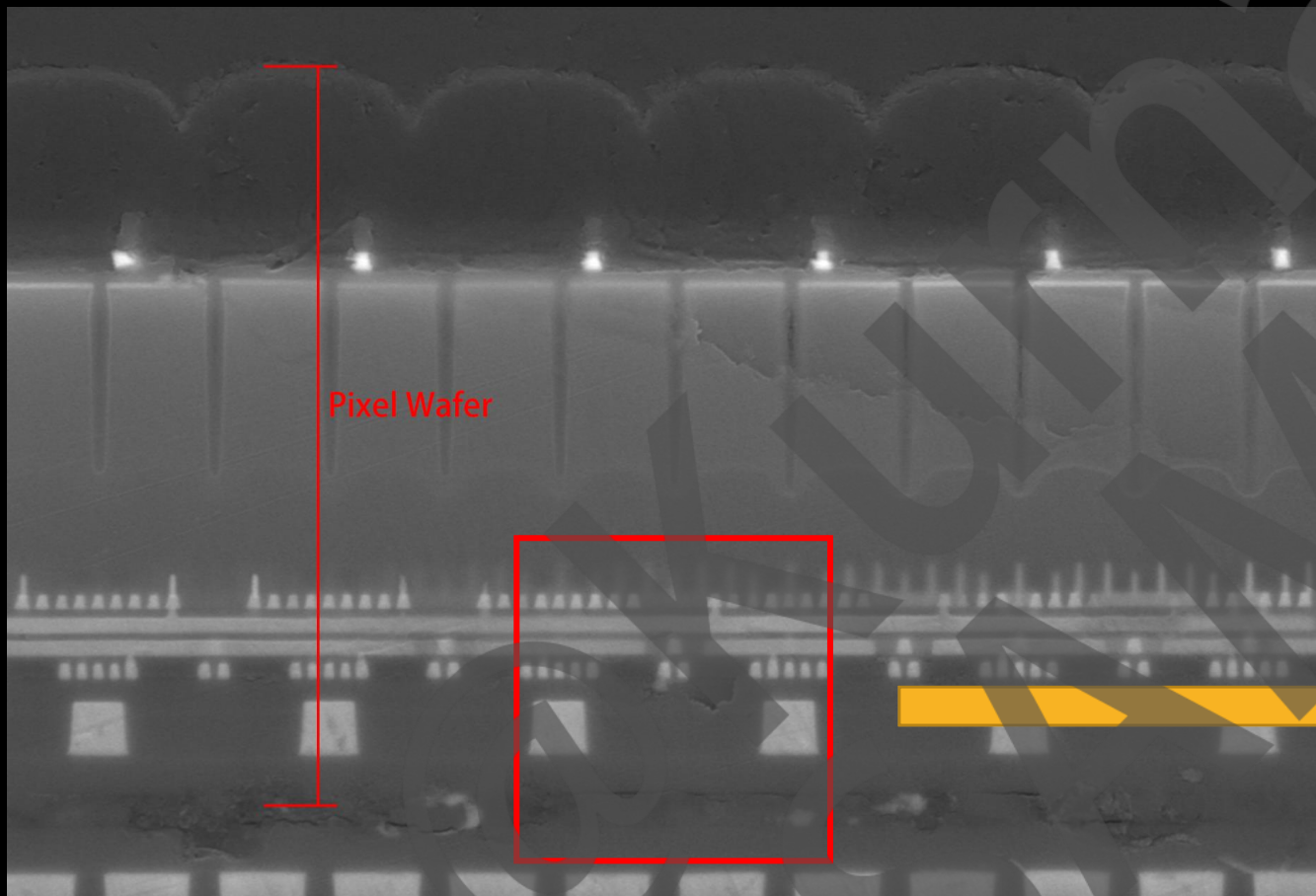


Like VTG?

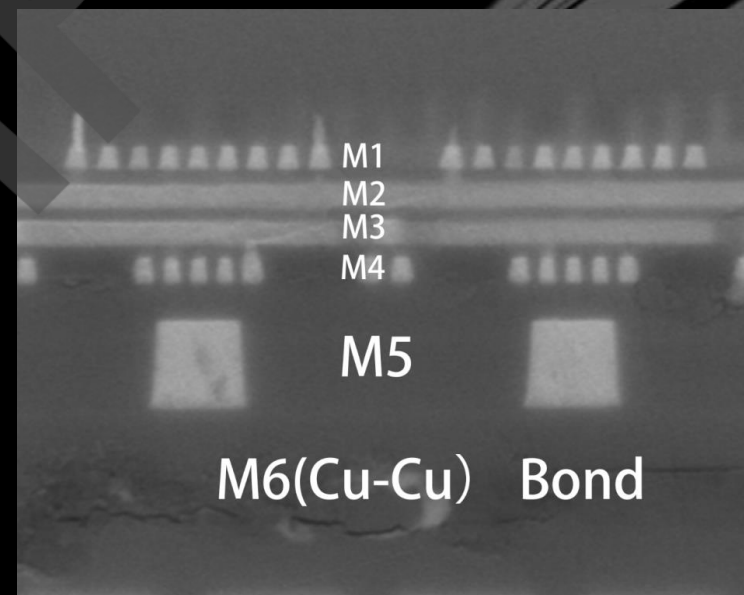
1 μm | EHT = 15.00 kV | Signal A = SE2 | Date: 21 Dec 2024 | ZEISS
WD = 9.7 mm | Mag: 8.08 K X | Time: 11:58:58

Optical Layers

MATE70PRO+ CIS(MAIN)

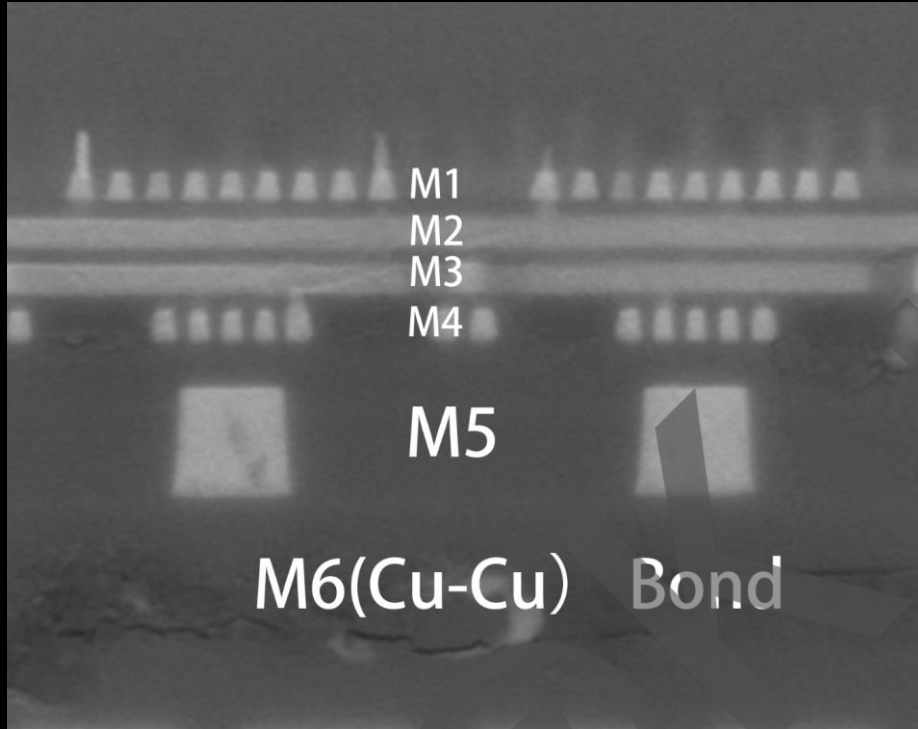


Metal Layers in Pixel Wafer: **6 layers**



1 μ m
EHT = 15.00 kV
WD = 9.7 mm
Signal A = SE2
Mag = 8.08 K X
Date: 21 Dec 2024
Time: 11:58:58
ZEISS

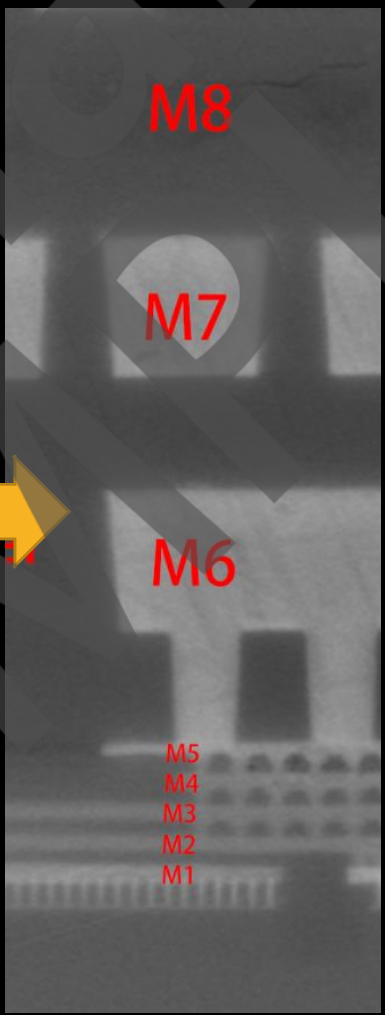
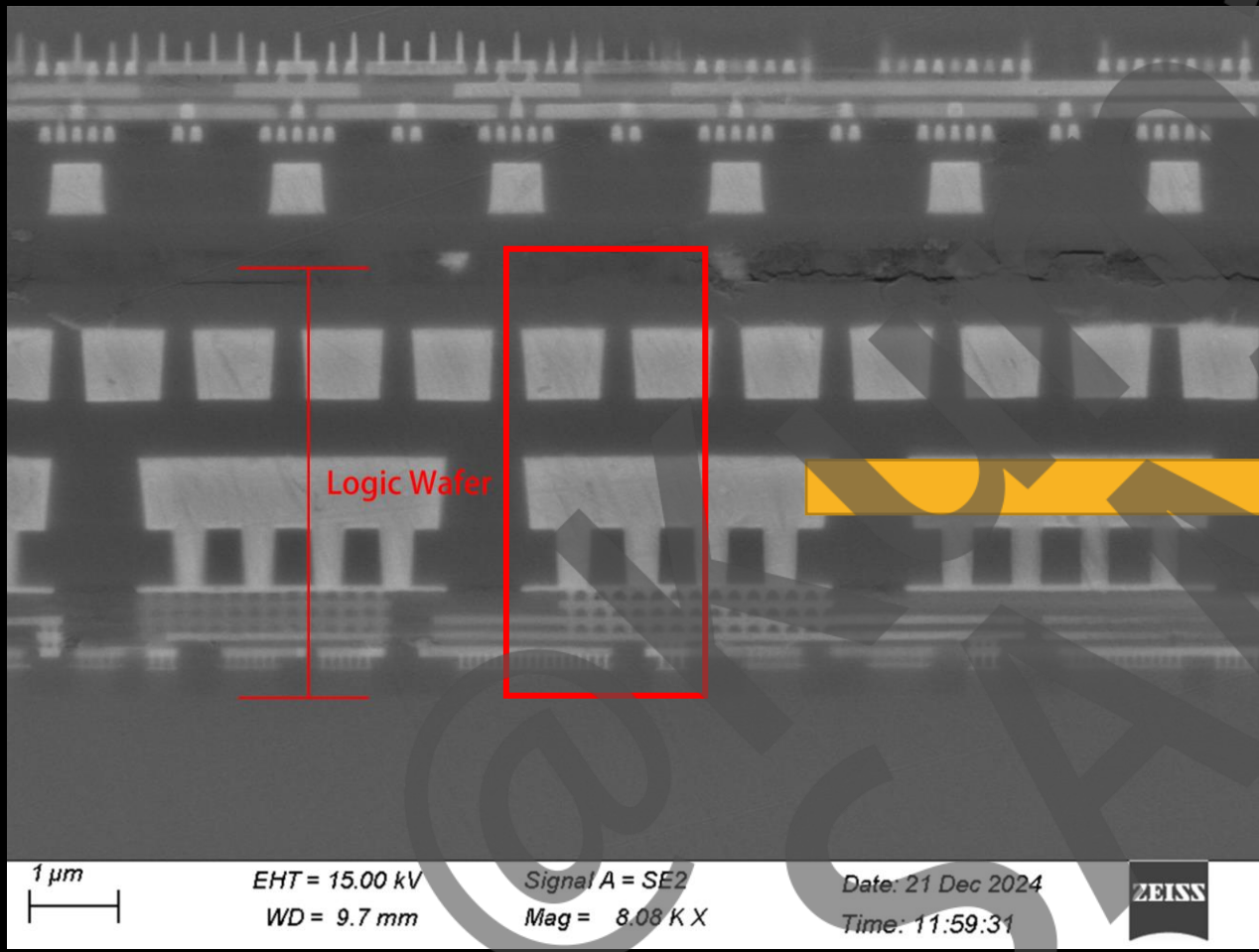
MATE70PRO+ CIS(MAIN)



	(Just) Thickness	Pitch
M1	162nm	198.6nm
M2	162nm	x
M3	162nm	x
M4	162nm	177nm
M5	561nm	2470nm
M6	351nm	x

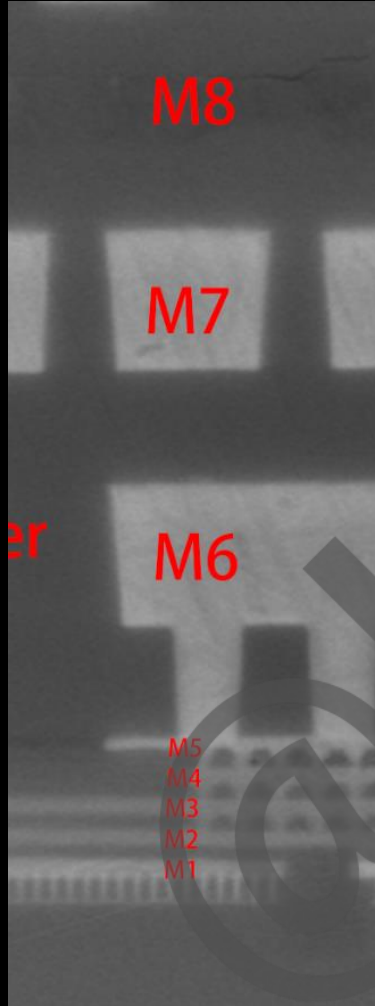
Mate70pro+ CIS Pixel Metal Data

MATE70PRO+ CIS(MAIN)



Logic wafer have 8 Metal Layers

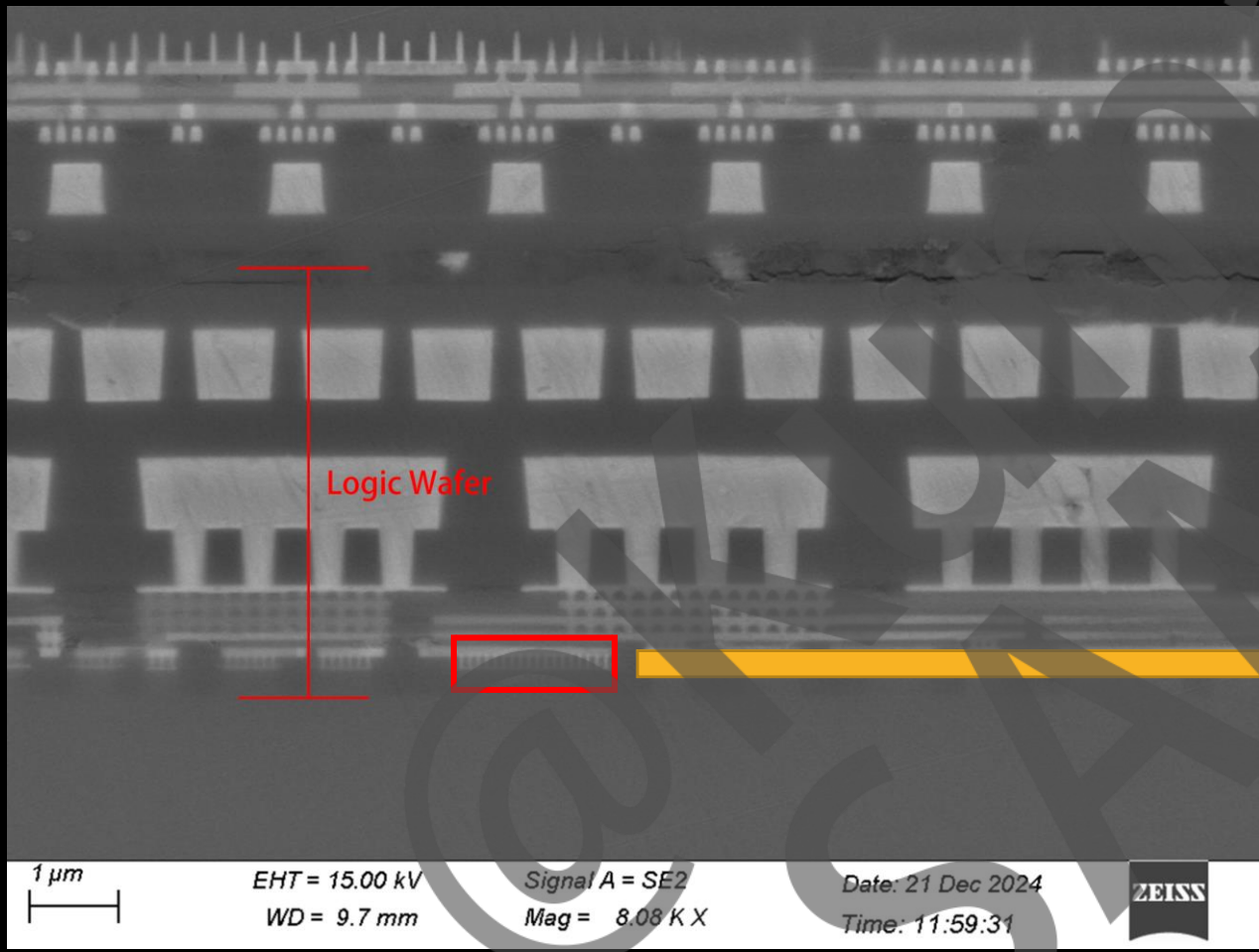
MATE70PRO+ CIS(MAIN)



	(Just) Thickness	Pitch
M1	83nm	x
M2	83nm	x
M3	83nm	x
M4	83nm	x
M5	83nm	x
M6	802nm	x
M7	793nm	1236nm
M8	348nm	x

Mate70pro+ CIS LogicMetal Data

MATE70PRO+ CIS(MAIN)



Via Pitch 96nm

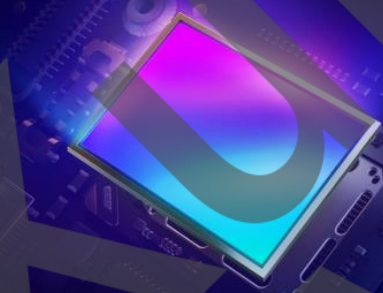


MATE70PRO+ CIS(MAIN)

Some People says this Cis is Smartsens Sc580xs

思特威50MP手机应用
图像传感器新品

SC580XS



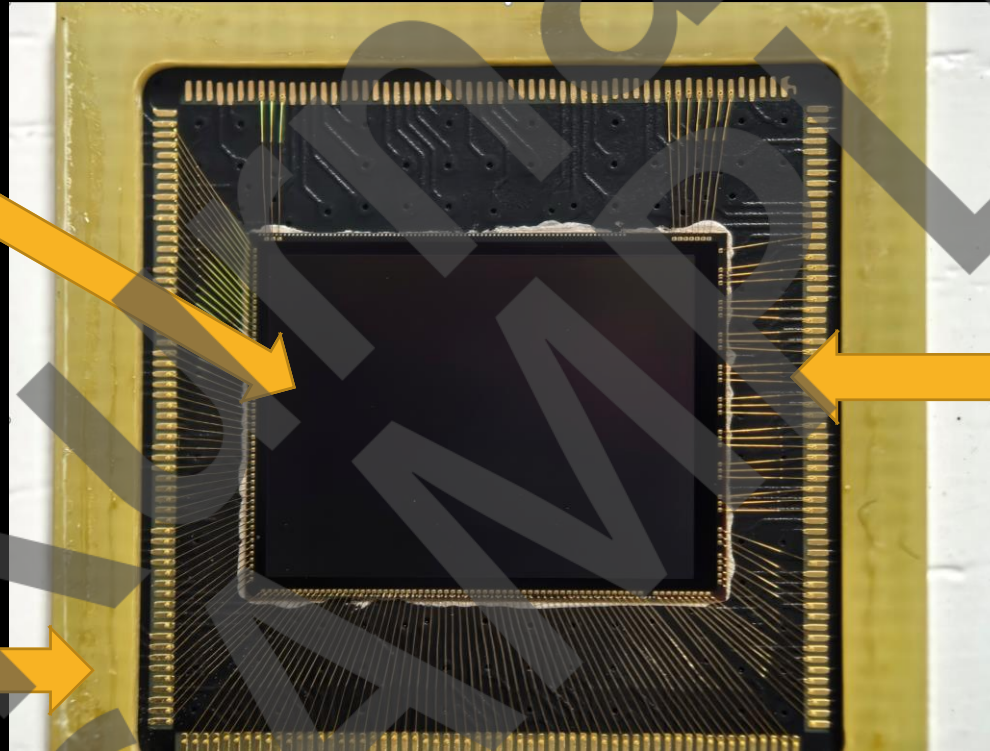
How to make sure that?
Buy it!

SMARTSENS SC580XS

正文

SMARTSENS SC580XS

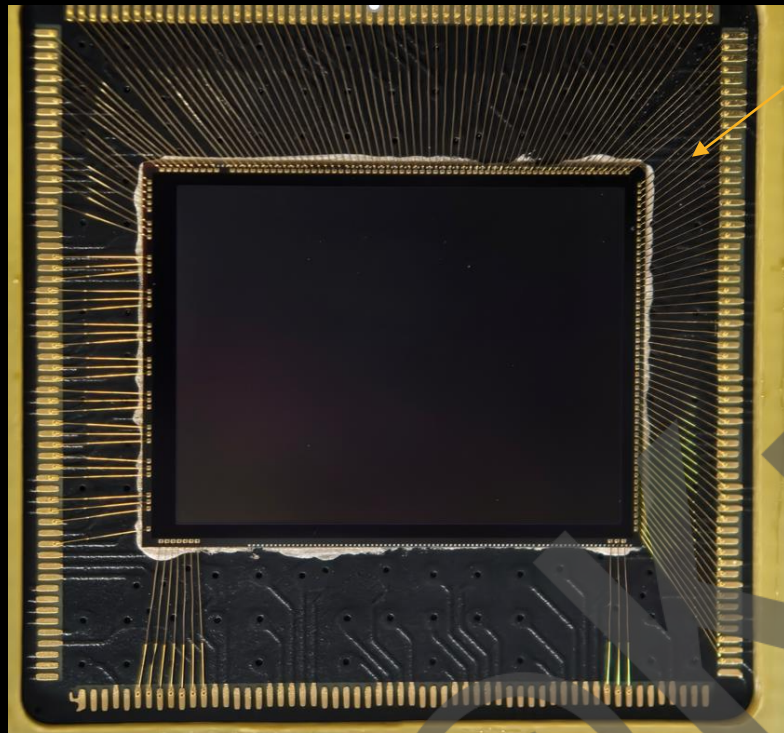
Cmos Die
50mp



Bonding Out

Cmos substrate & PCB

SMARTSENS SC580XS



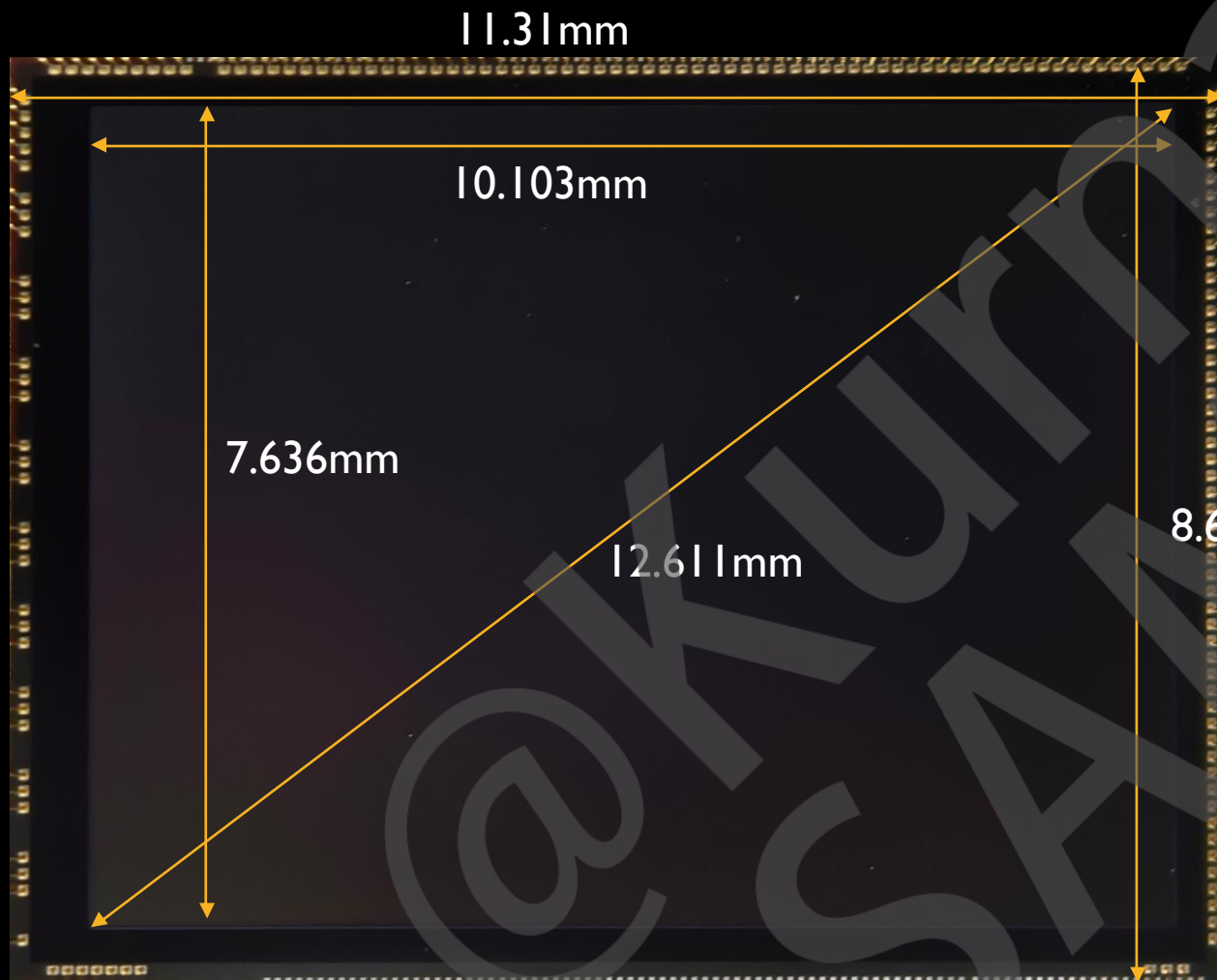
Bonding Line(Gold)

Bonding Pad



Bonding Pad number: 166
Bonding Pad in use: 166

SMARTSENS SC580XS



Full die size :

97.49mm²
(11.31x8.62)

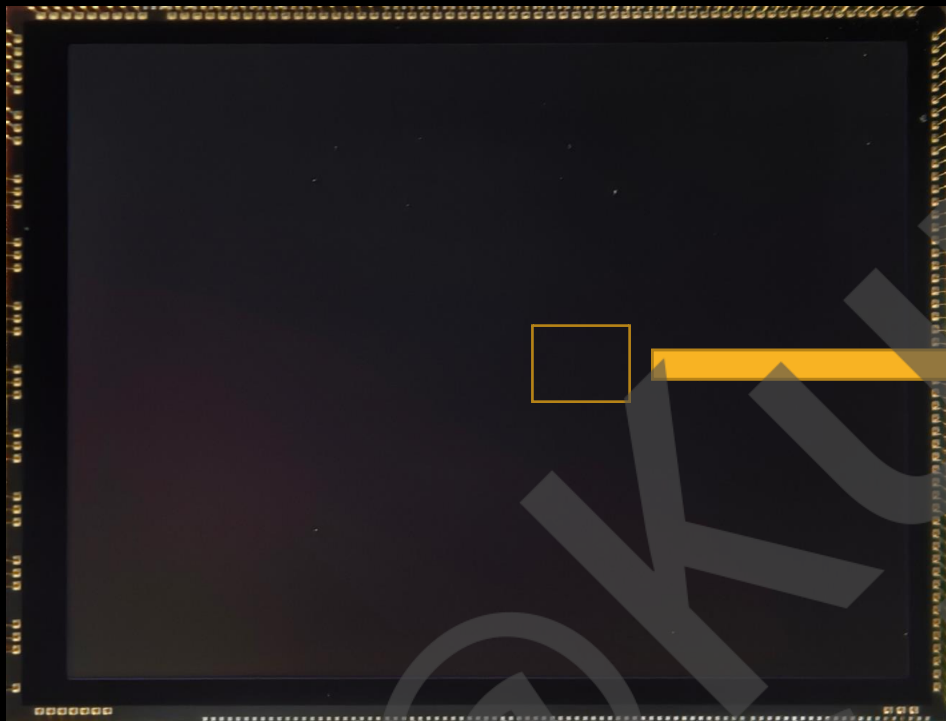
Pixel area:

77.15mm²
(10.103*7.636)

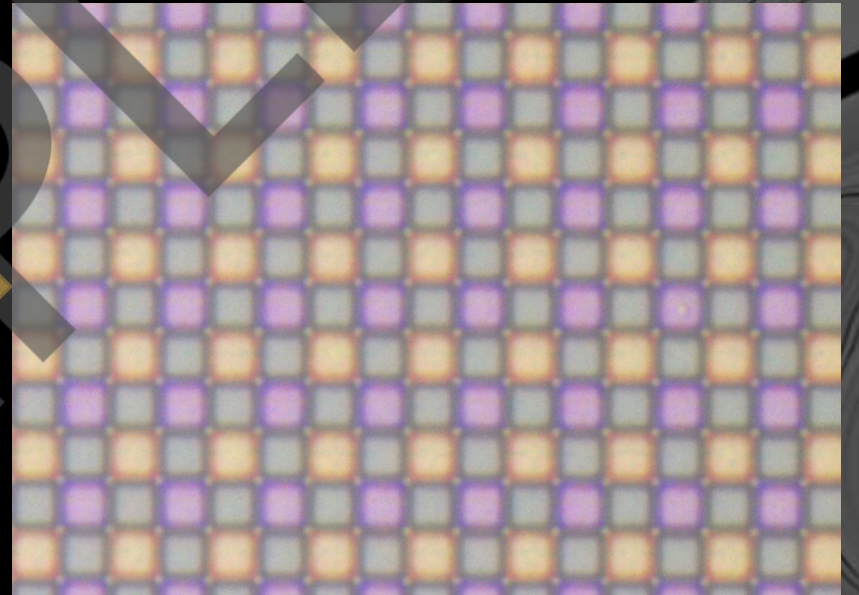
Diagonal line size:

12.611mm
(Nearly 1/1.27)

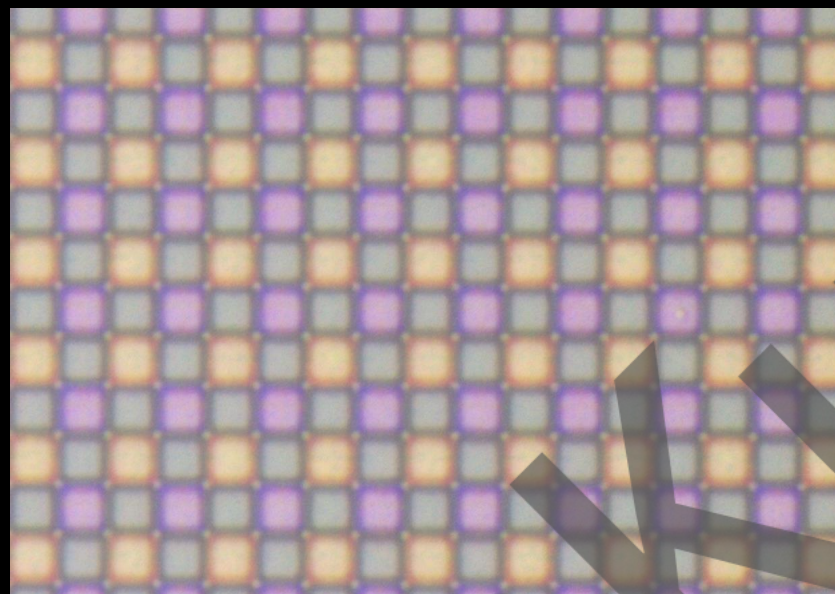
SMARTSENS SC580XS



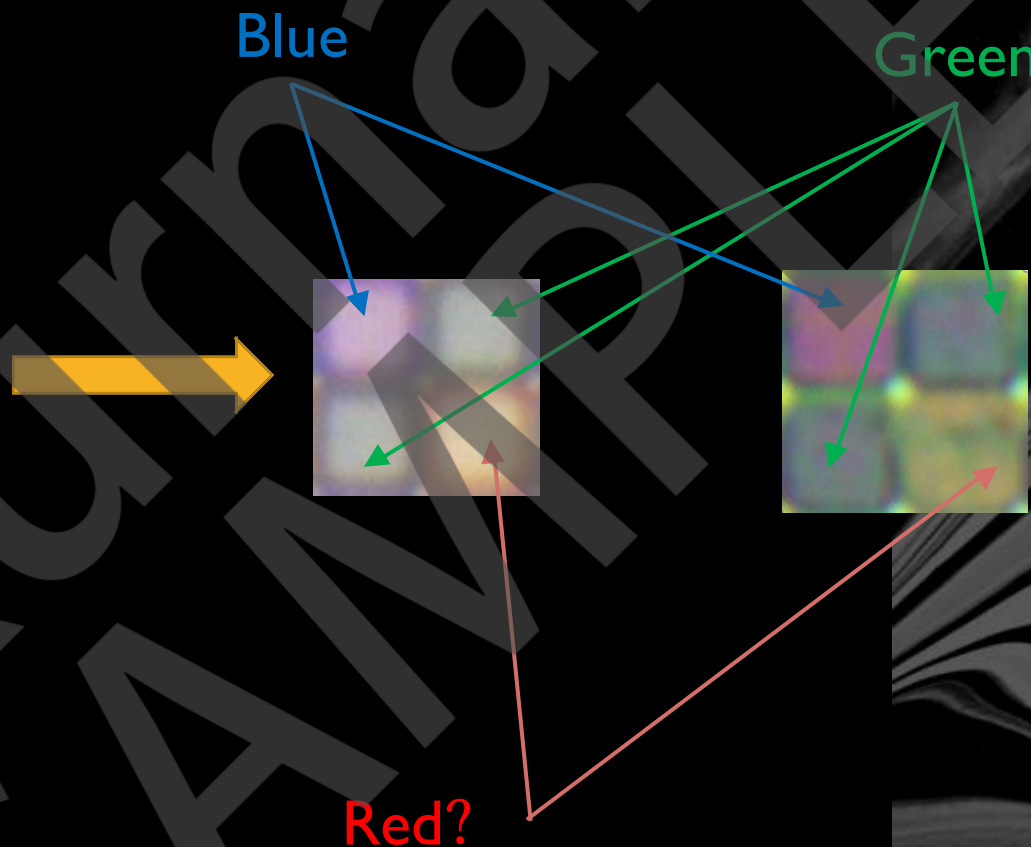
1000x in microscope



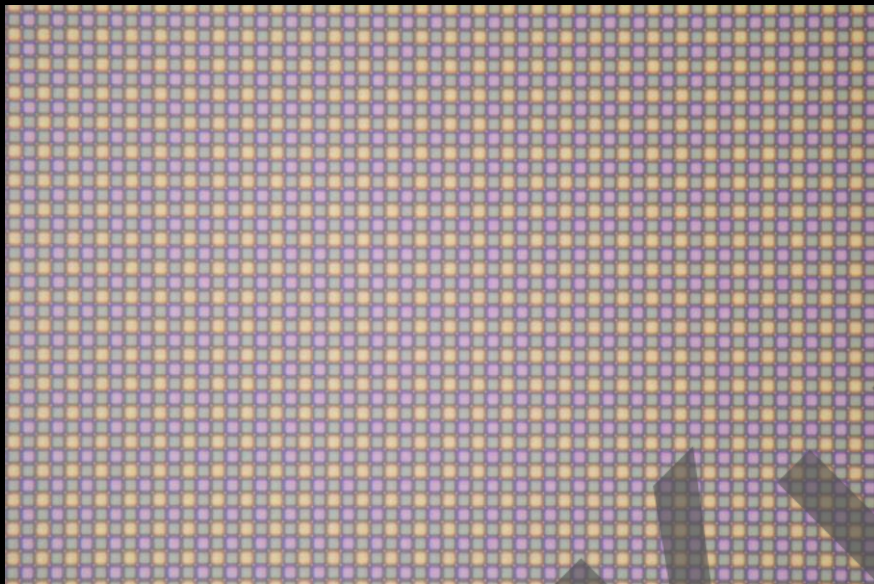
SMARTSENS SC580XS



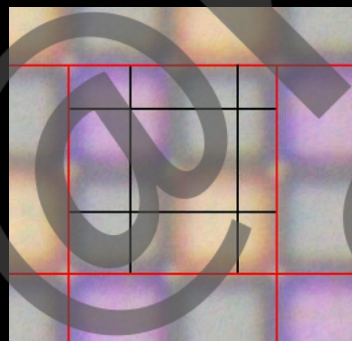
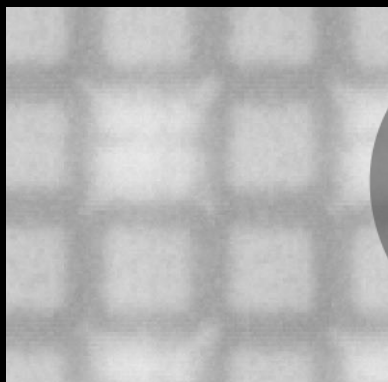
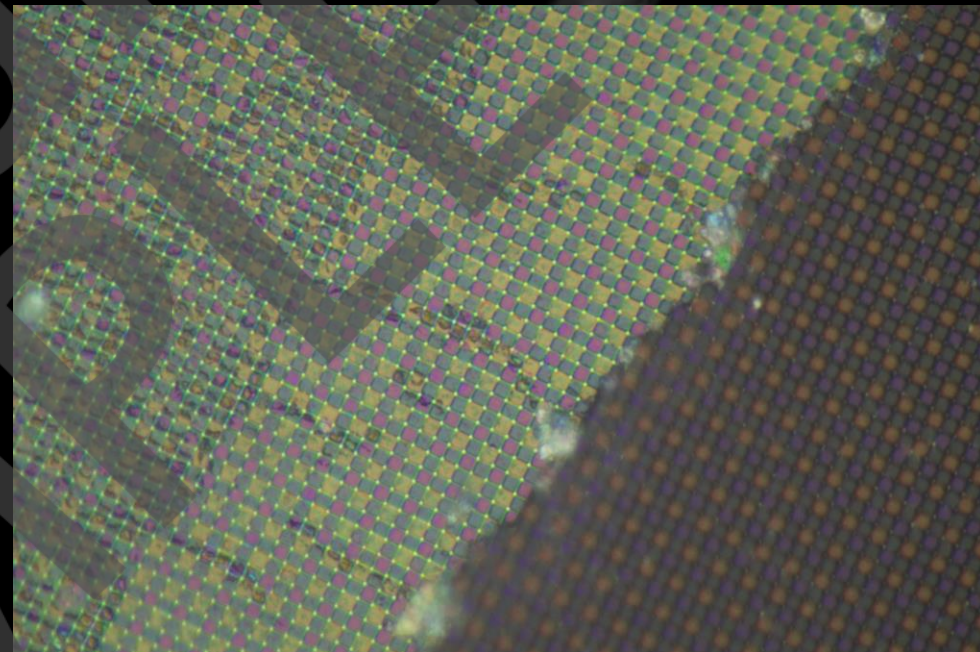
Maybe is **RGGB?**



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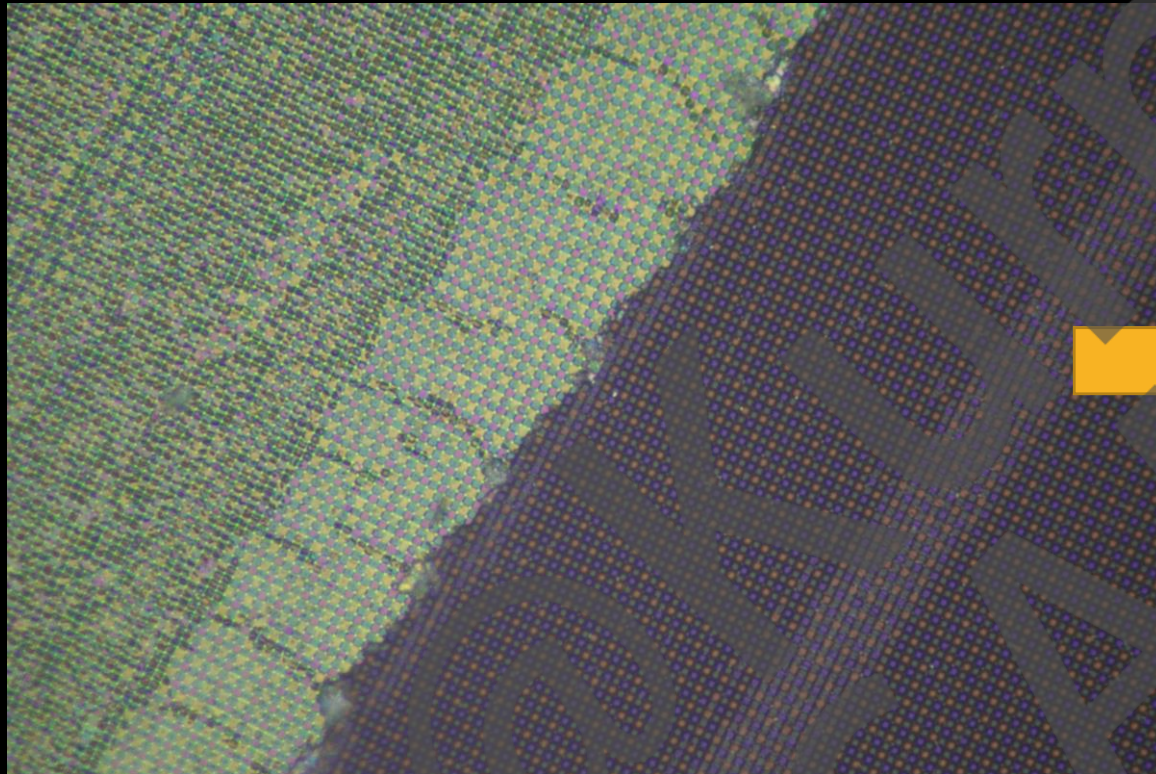


Scrape off part of the OCL with a knife

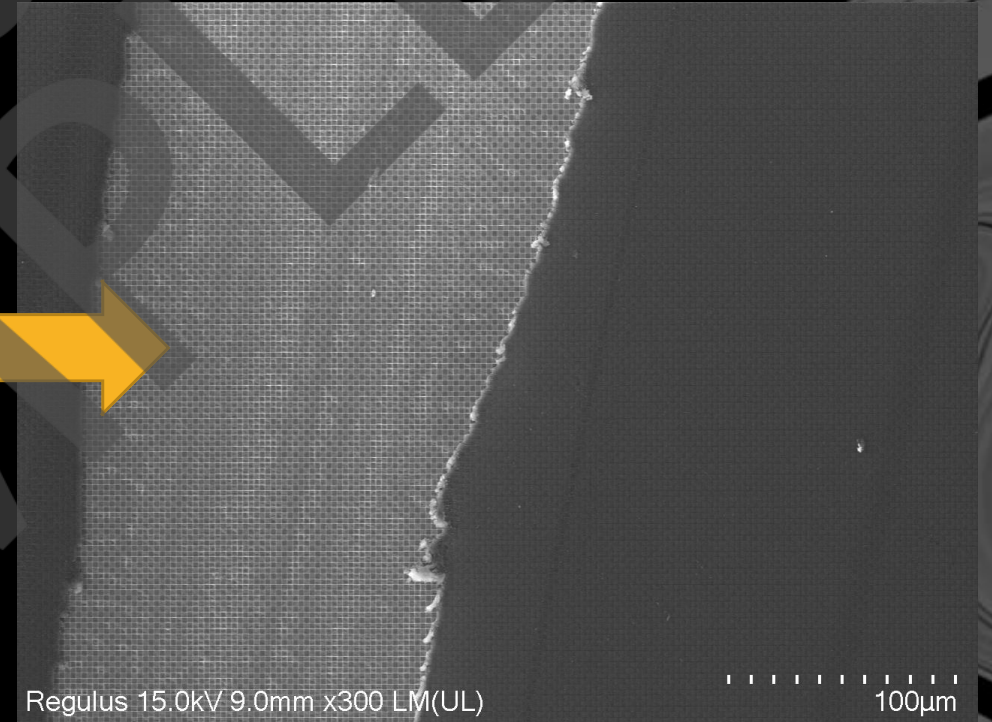


Cut line?

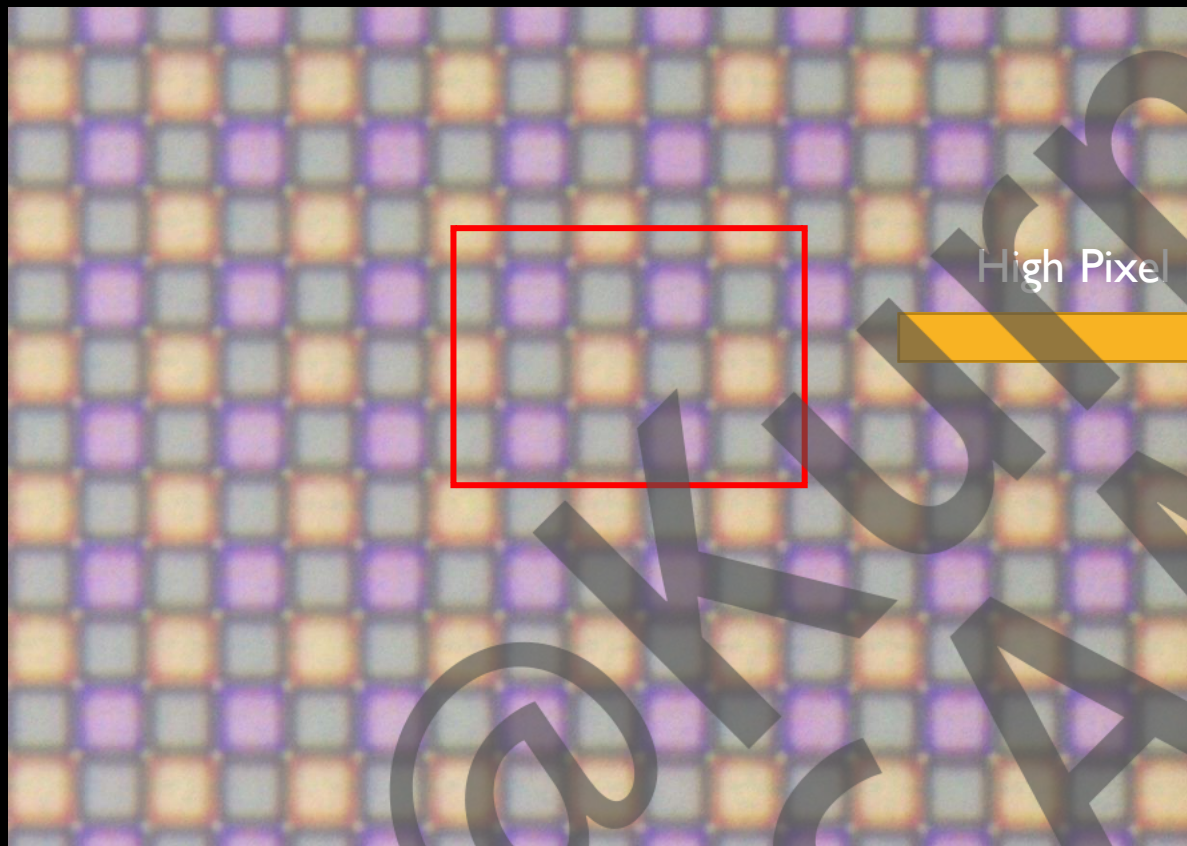
SMARTSENS SC580XS



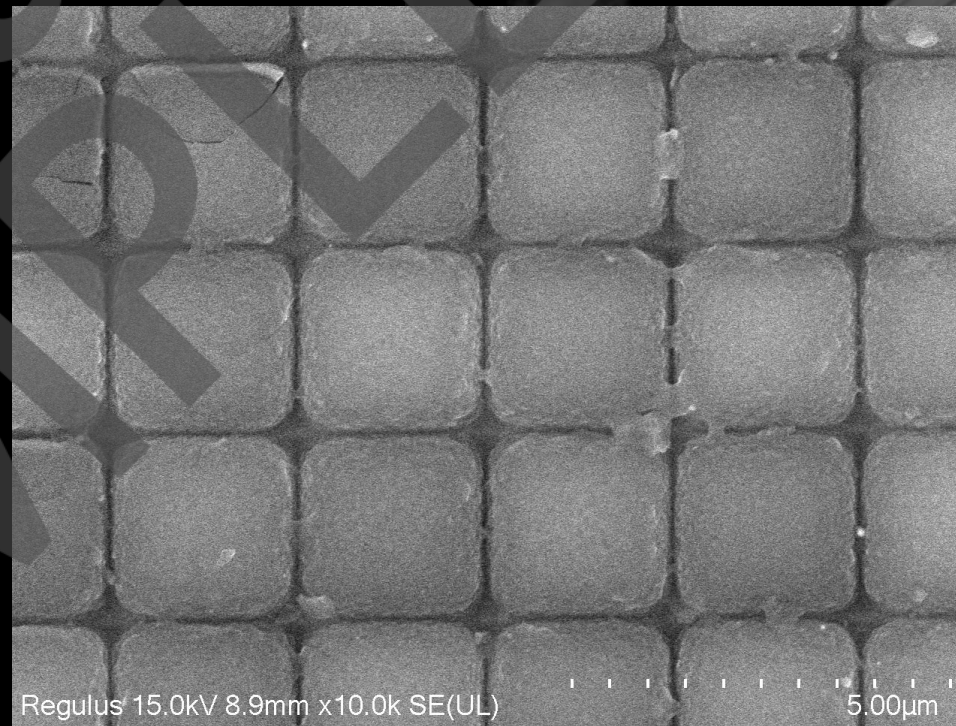
Use SEM



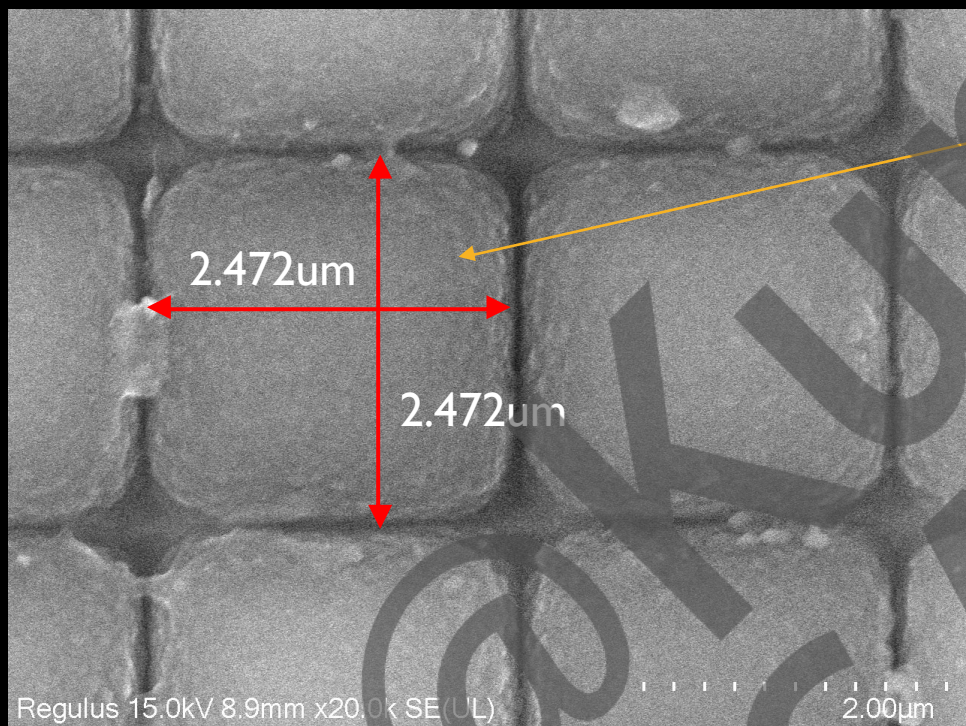
SMARTSENS SC580XS



High Pixel in SEM

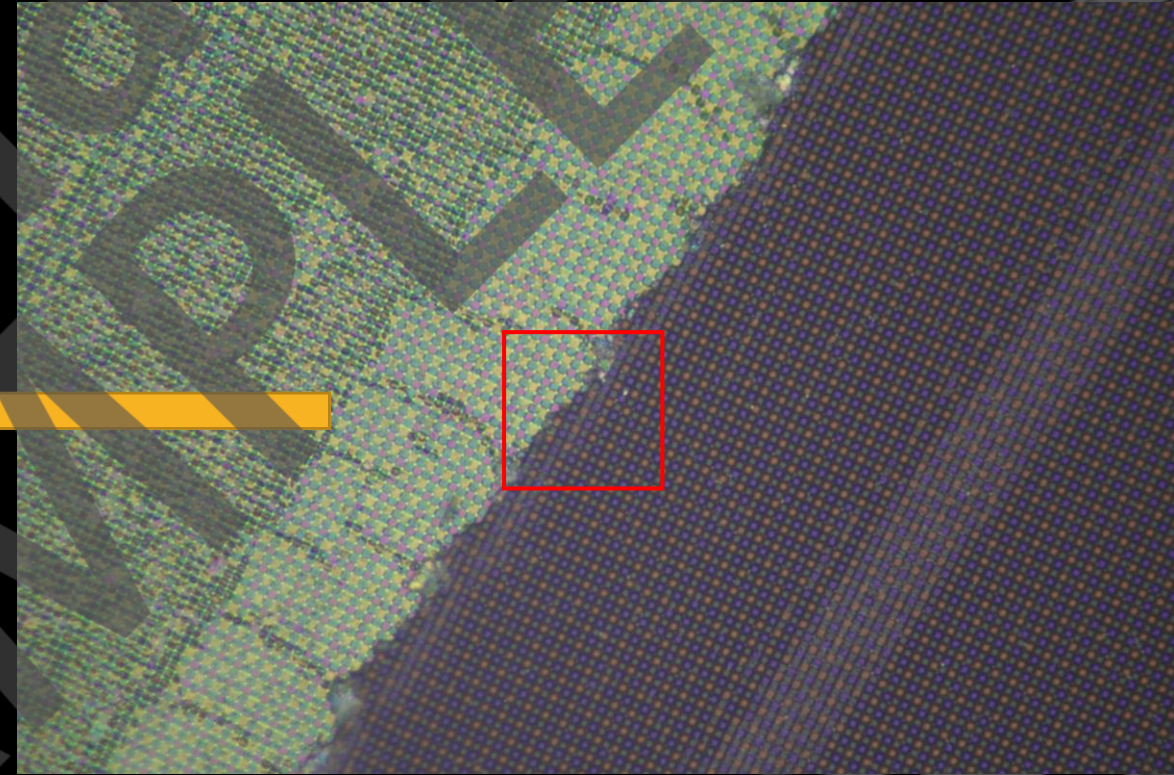
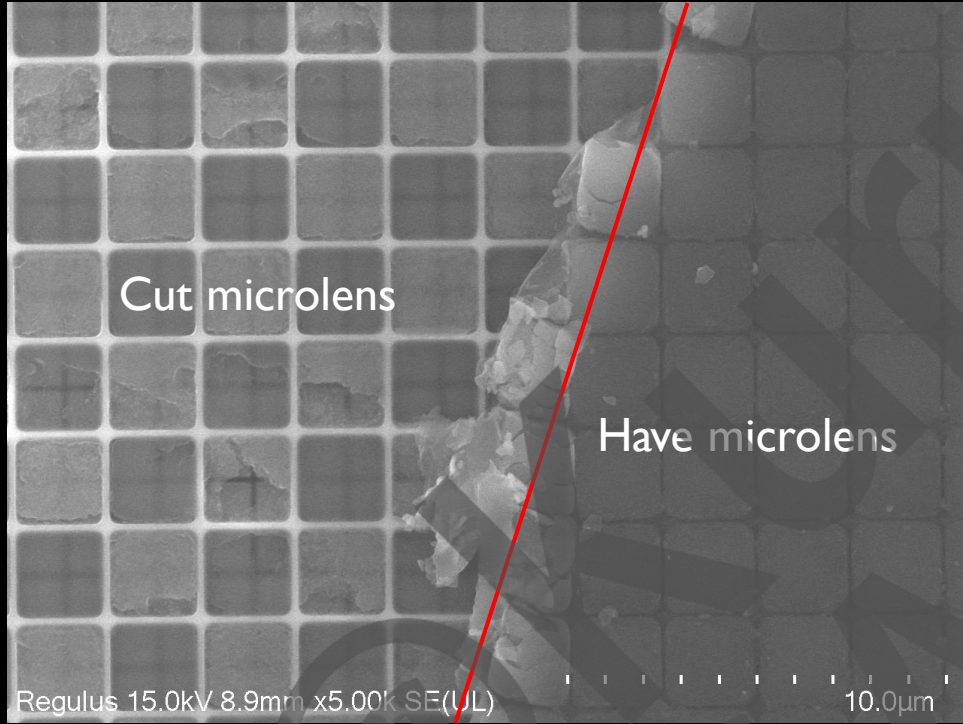


SMARTSENS SC580XS

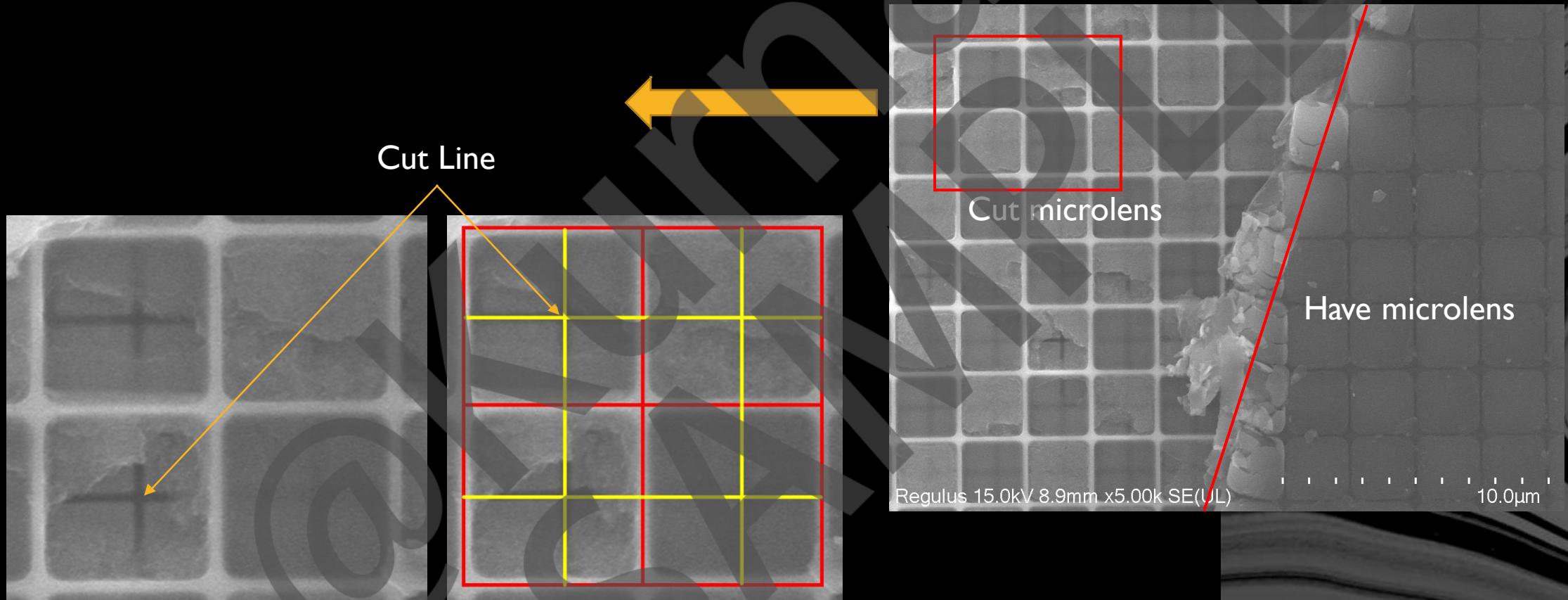


Pixel side length : 2.472um

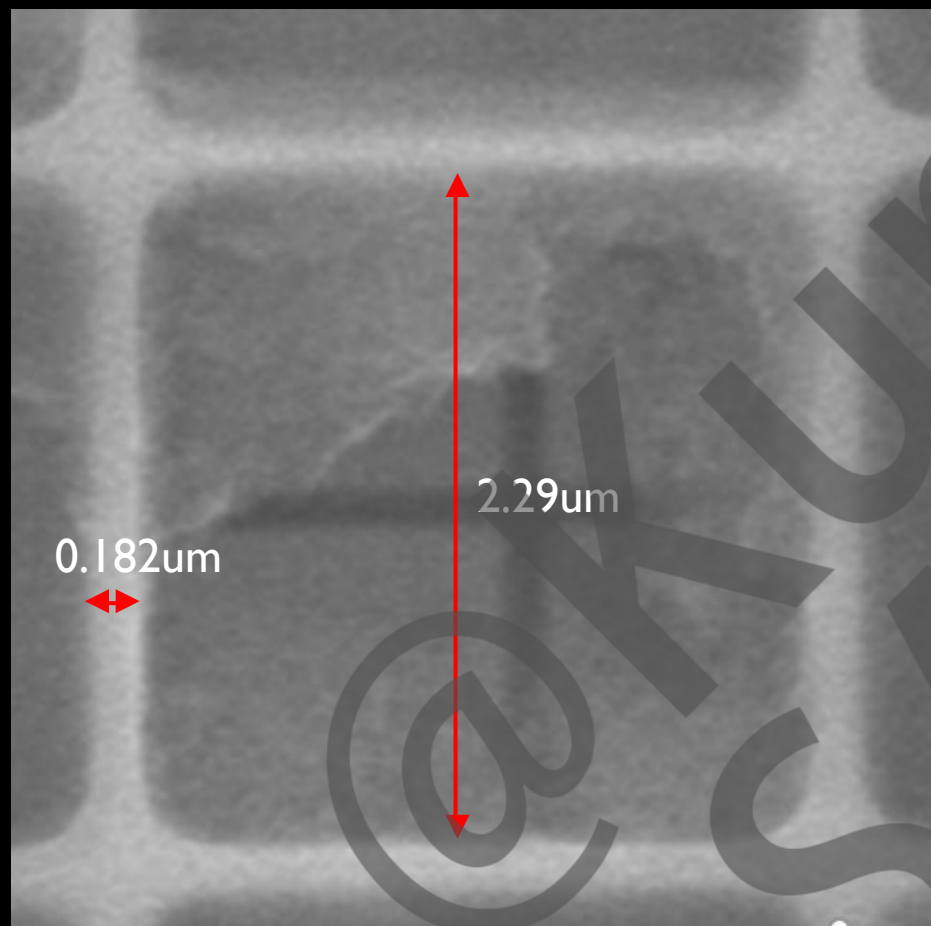
SMARTSENS SC580XS



SMARTSENS SC580XS

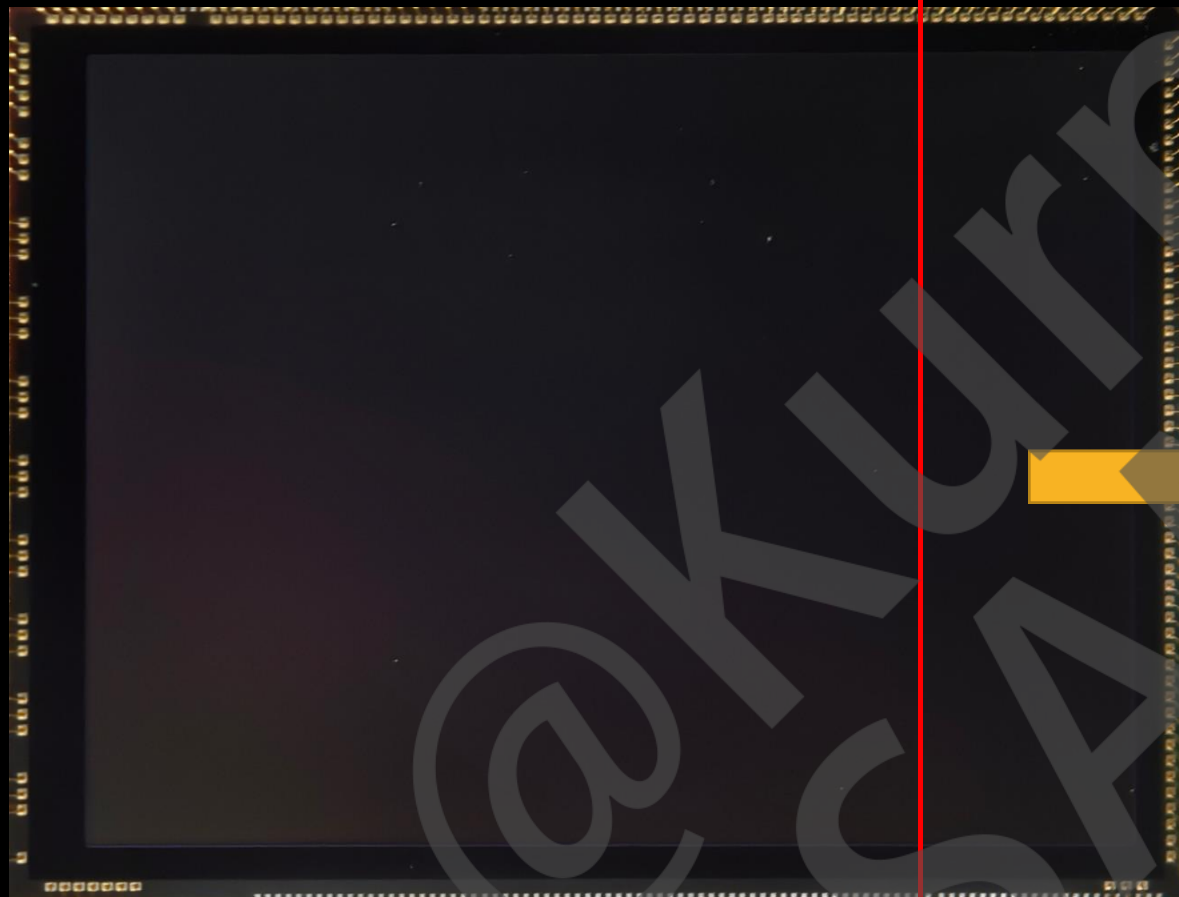


SMARTSENS SC580XS

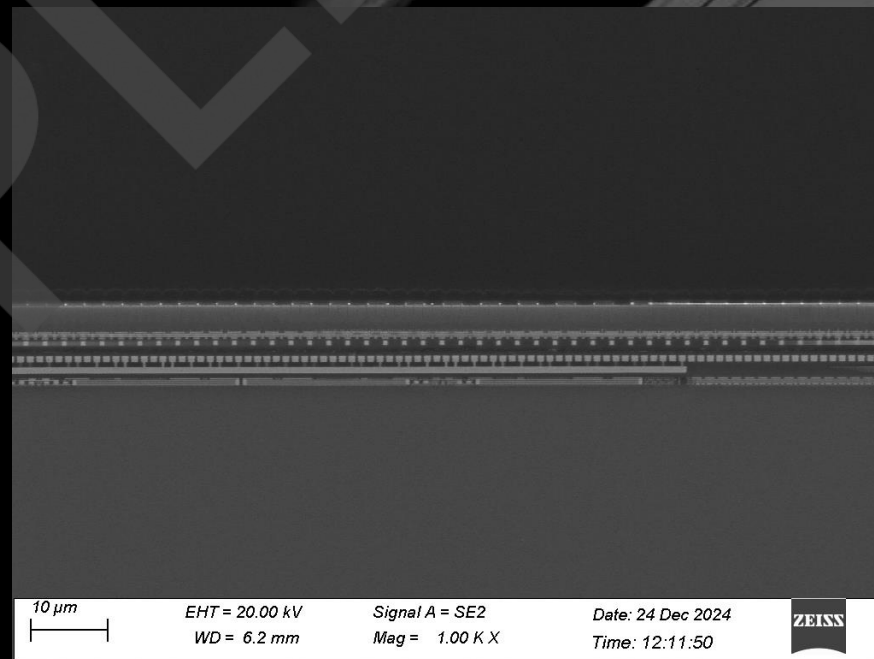


Trap size: 2.29um
Trap well size: 0.182um

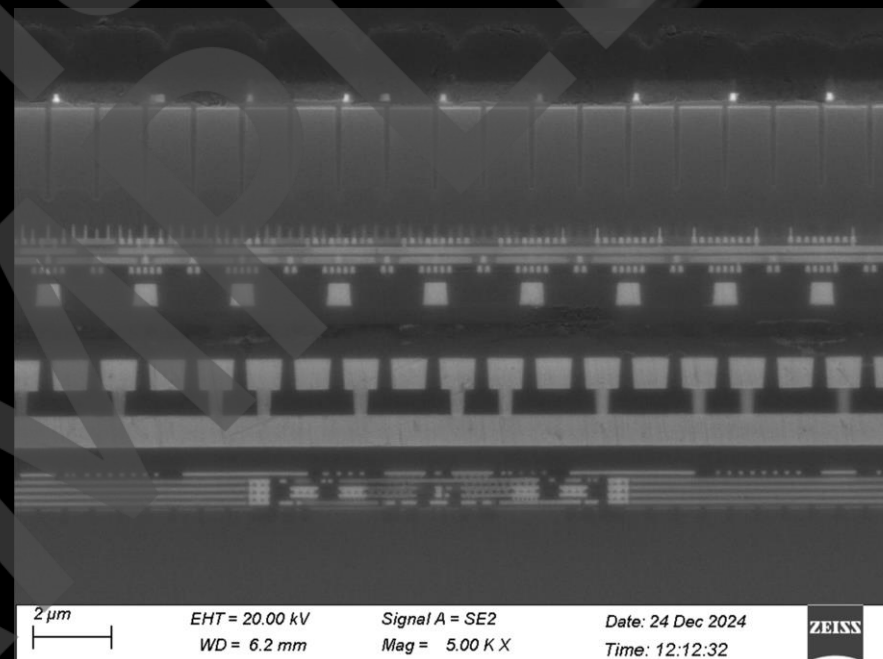
SMARTSENS SC580XS



Package in X Cut

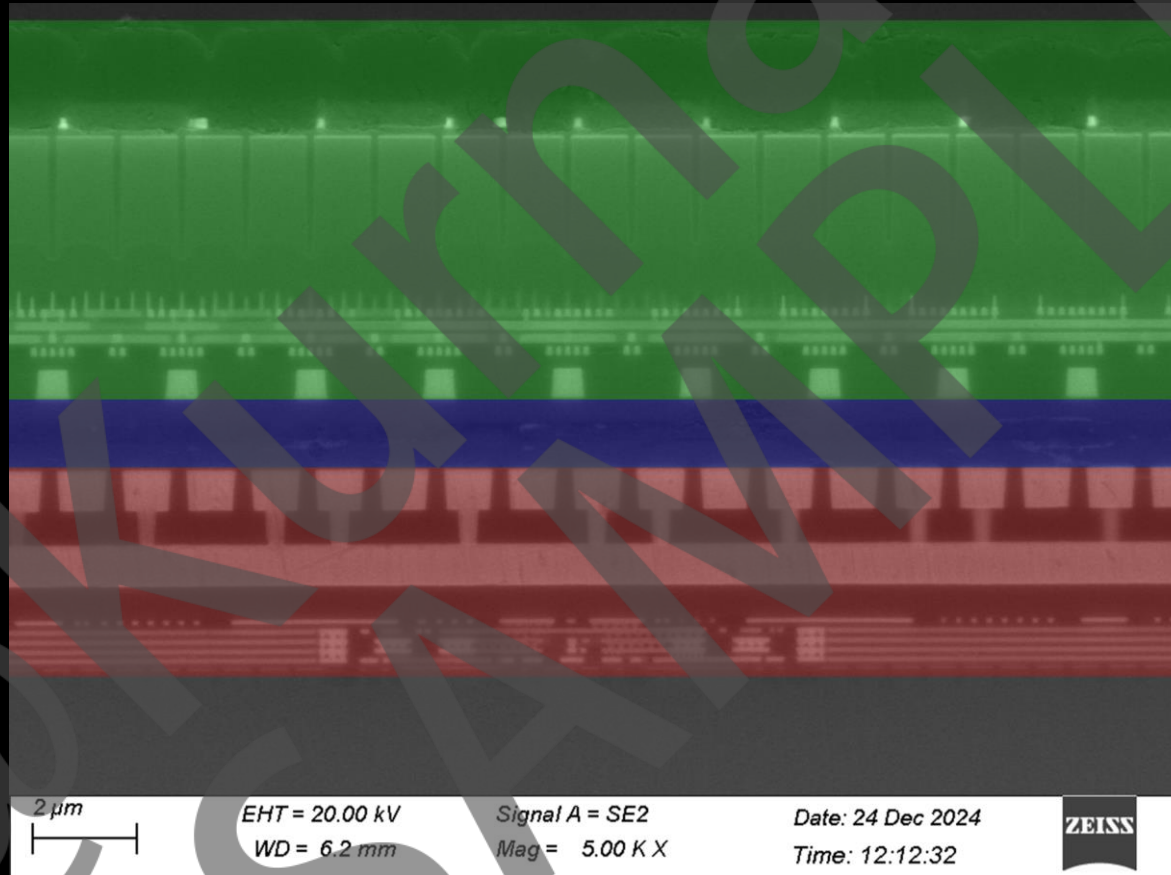


SMARTSENS SC580XS



SMARTSENS SC580XS

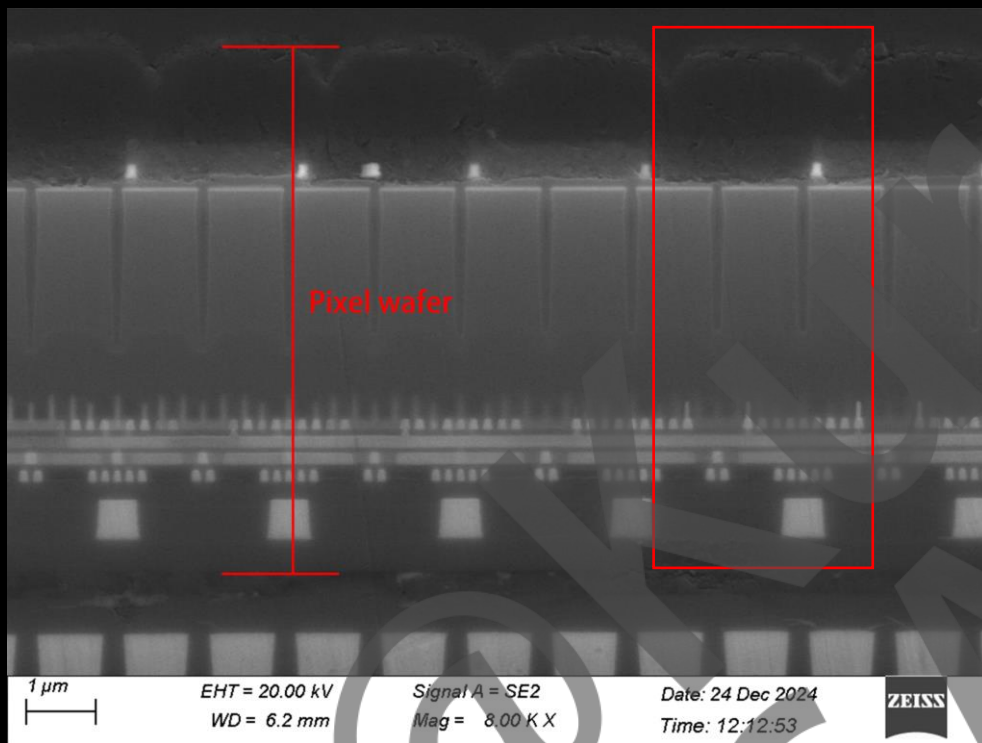
Total Height: 12.744um
Pixel wafer Height: 7.831um
Logic wafer Height: 4.913um



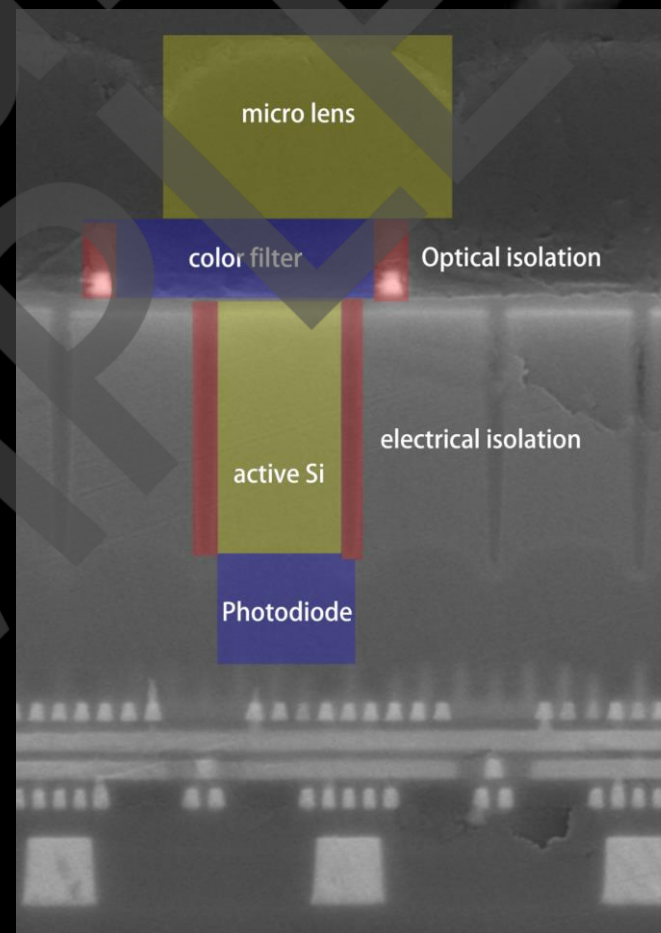
Pixel Wafer

Logic Wafer

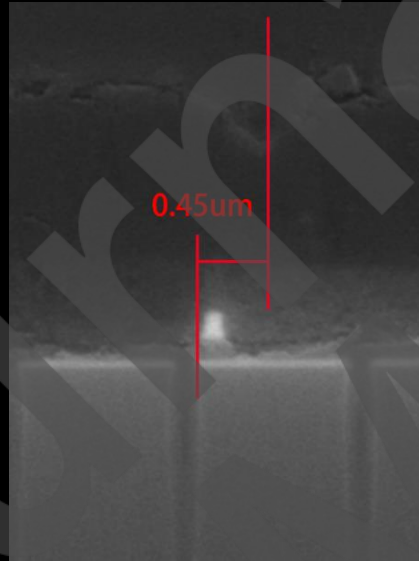
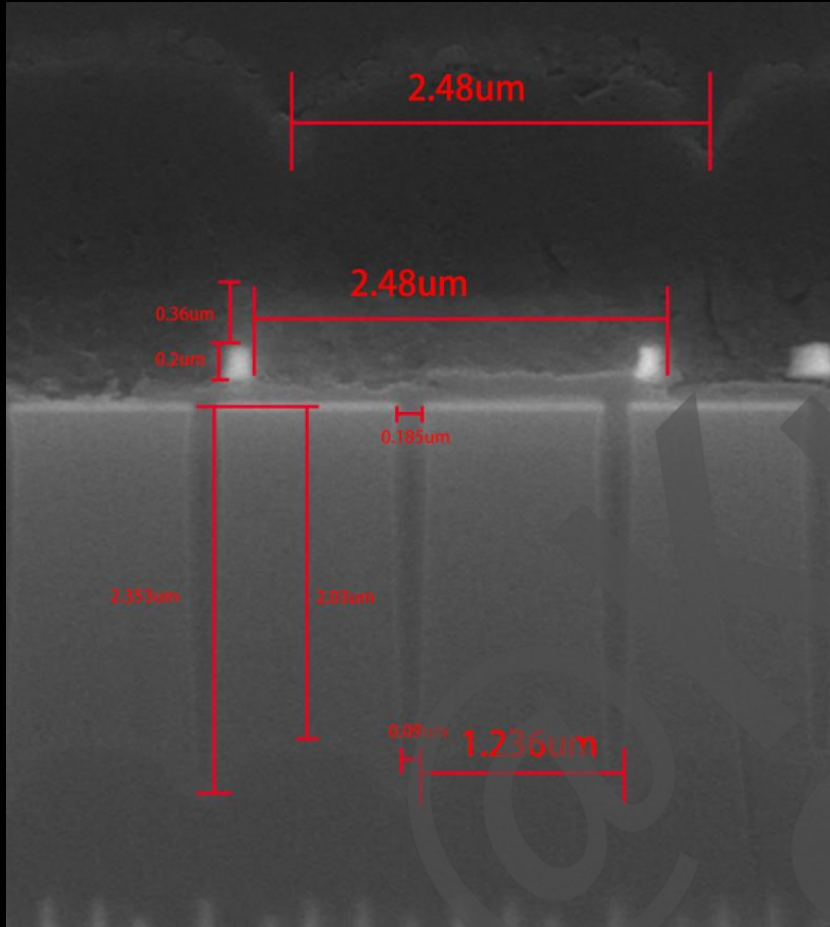
SMARTSENS SC580XS



Pixel Wafer

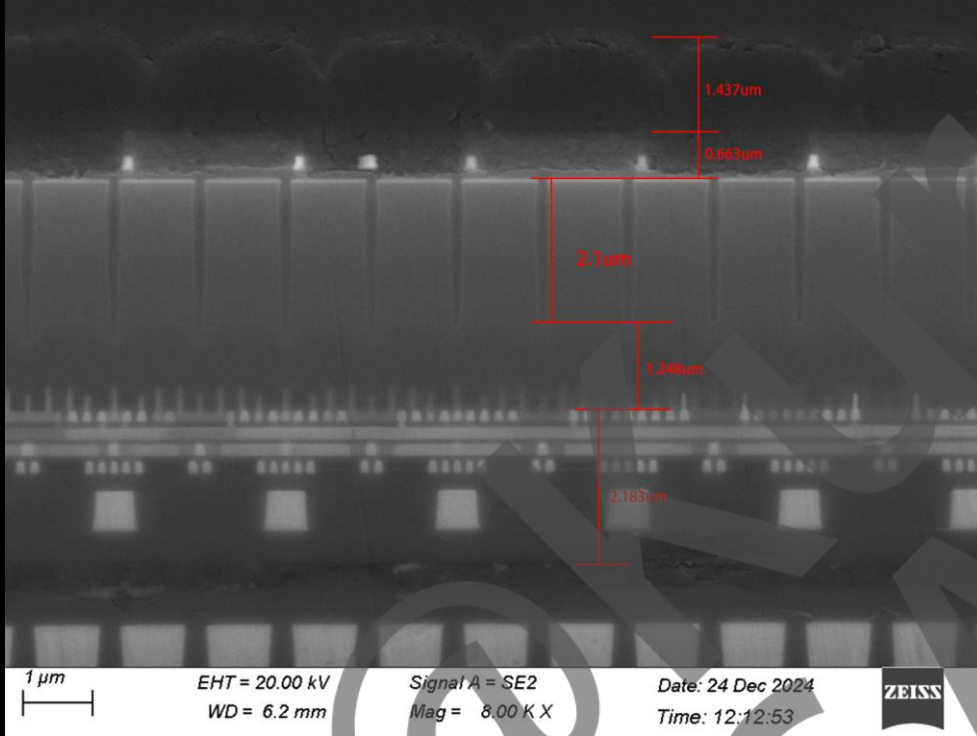


SMARTSENS SC580XS



Micro Lens size:	2.48um
Color Filter size:	2.48um
Photodiode size:	1.236um
Optical isolation deep:	0.36um+0.2um
Electrical isolation deep:	2.353um/2.03um
Electrical isolation top width:	0.185um
Electrical isolation down width:	0.09um
Micro lens- Color filter pitch:	0.45um
Optical - electrical pitch:	0?

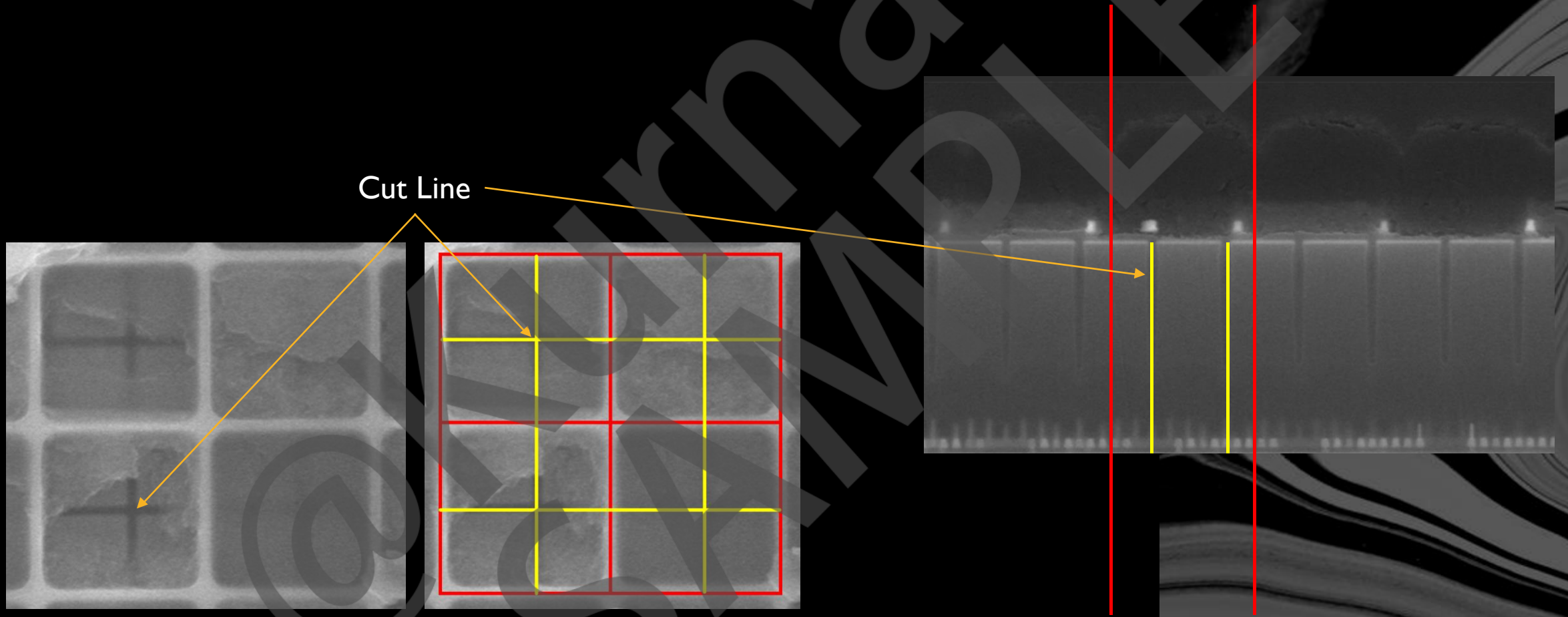
SMARTSENS SC580XS



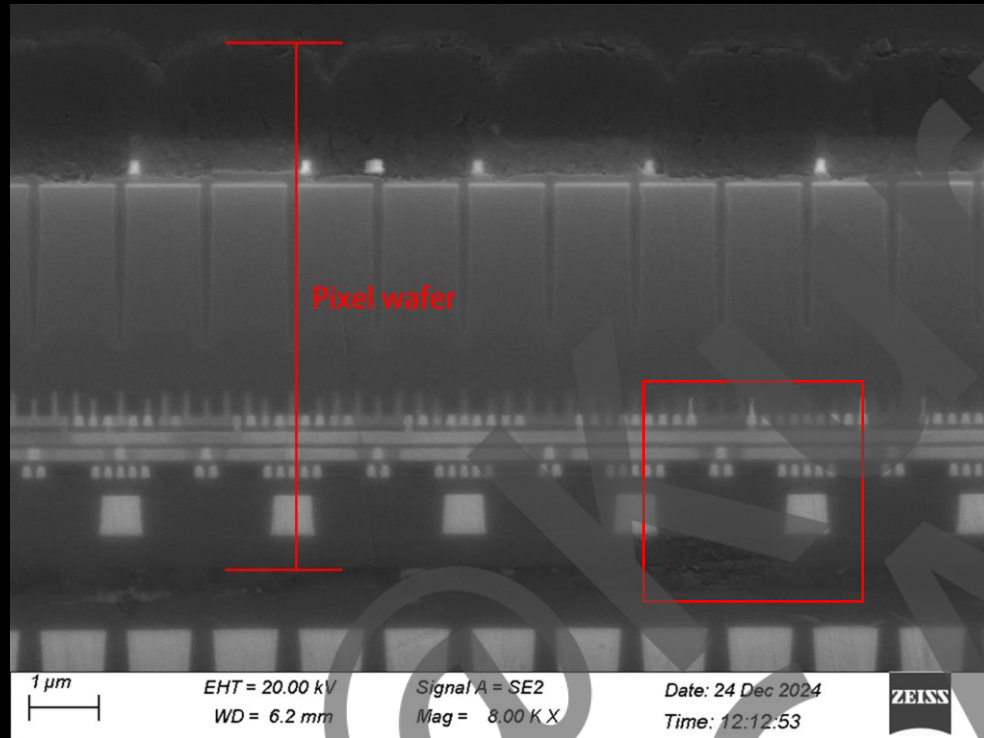
Pixel Wafer

Micro lens Height: 1.437 μm
Color filter Height: 0.663 μm
Electrical isolation Depth: 2.1 μm
Photodiode top to MI distance: 1.248 μm
Metal I to bond distance: 2.183 μm

SMARTSENS SC580XS



SMARTSENS SC580XS



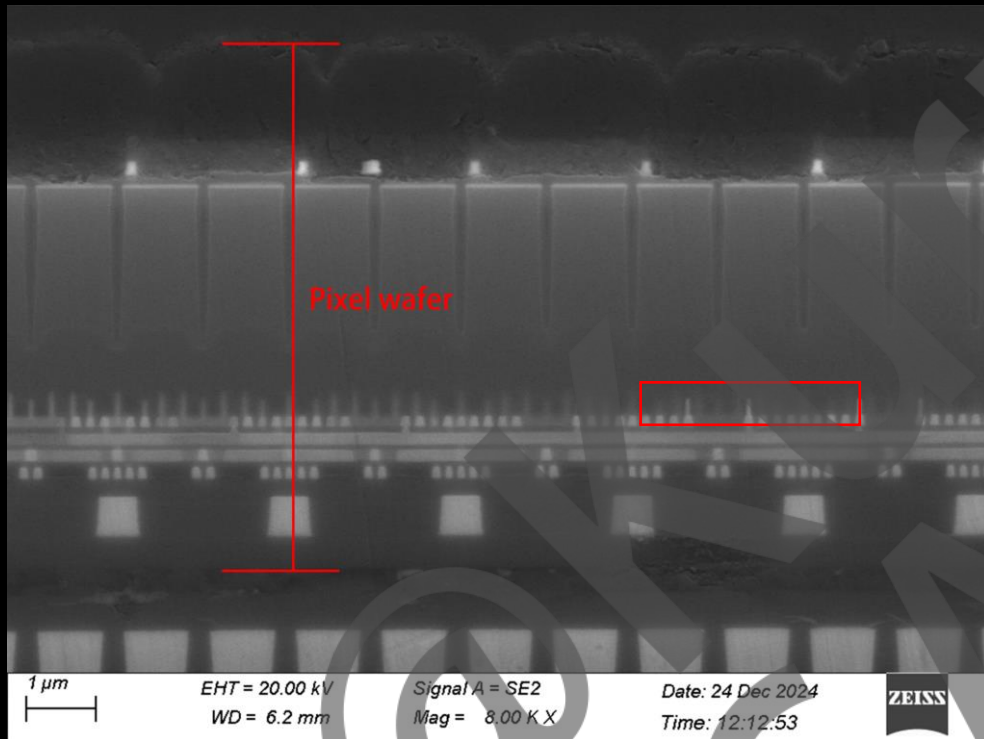
Pixel Wafer

Metal Layers in Pixel Wafer: **6 layers**

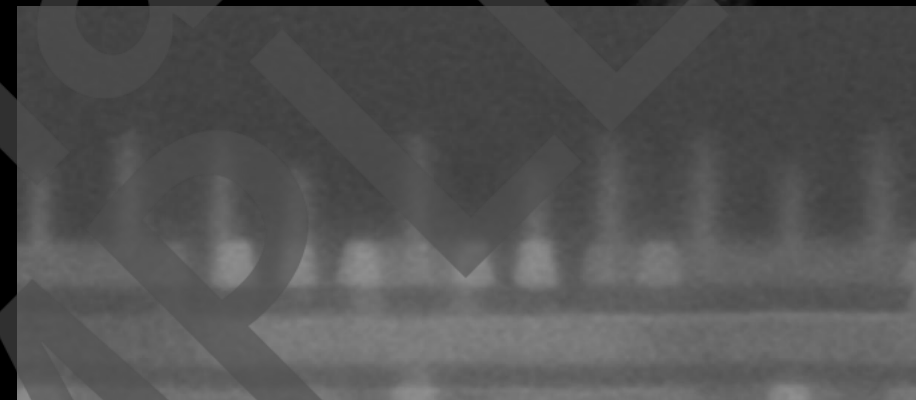
M1
M2
M3
M4
M5

M6(Cu-Cu) Bond

SMARTSENS SC580XS



Pixel Wafer



Like VTG?

SMARTSENS SC580XS

M1

M2

M3

M4

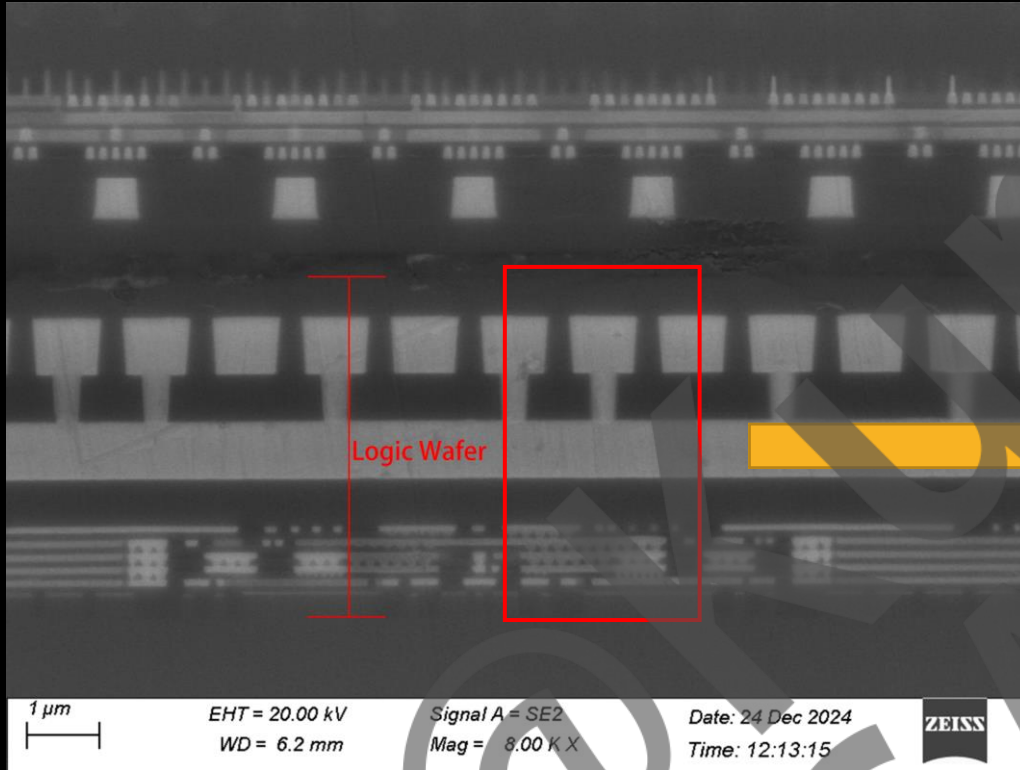
M5

M6(Cu-Cu) Bond

	(Just) Thickness	Pitch
M1	165nm	198nm
M2	165nm	x
M3	165nm	x
M4	165nm	175nm
M5	561nm	2465nm
M6 ()	351nm	x

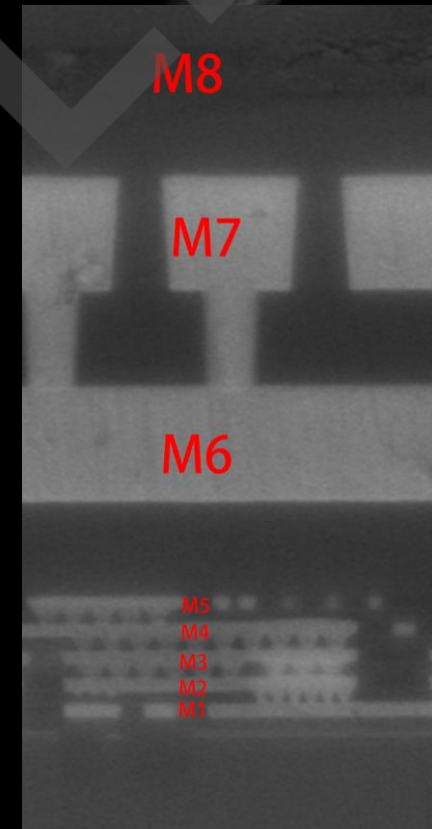
SC580XS Metal data

SMARTSENS SC580XS

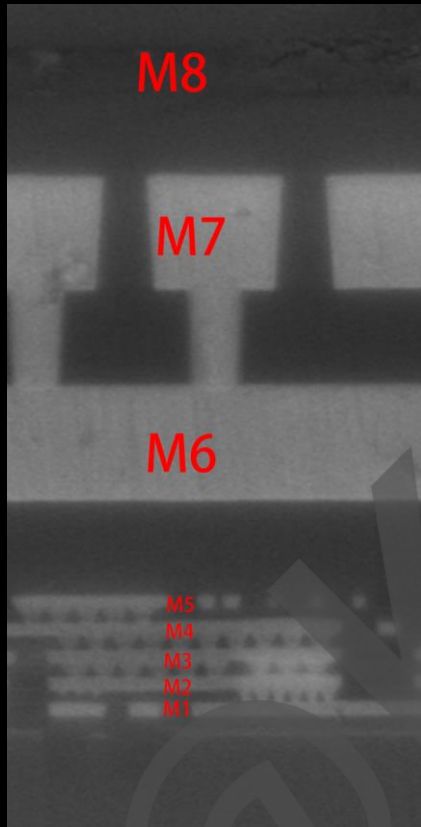


SC580XS Logic Wafer

Logic Wafer have 8 Metal Layers



SMARTSENS SC580XS



SC580XS Logic Wafer

	(Just) Thickness	Pitch
M1	82nm	x
M2	82nm	x
M3	82nm	x
M4	82nm	x
M5	82nm	x
M6	800nm	x
M7	800nm	1240nm
M8 ()	351nm	x



IDENTIFICATION

IDENTIFICATION

Why I think Mate70pro+ use the Smartsens Sc580xs?

CIS Package

Diesize/Pixel area size

Chip Pad

In Front

Pixel size

In Profile

Pixel Wafer

Logic Wafer

IDENTIFICATION (CIS PACKAGE)

Mate70Pro+ CIS



SC580XS



On chip pad these two chip are **same number**

Different just the pad by **used**

Bonding Pad number: 166
Bonding Pad in use: 117

same

Bonding Pad number: 166
Bonding Pad in use: 166

IDENTIFICATION (CIS PACKAGE)

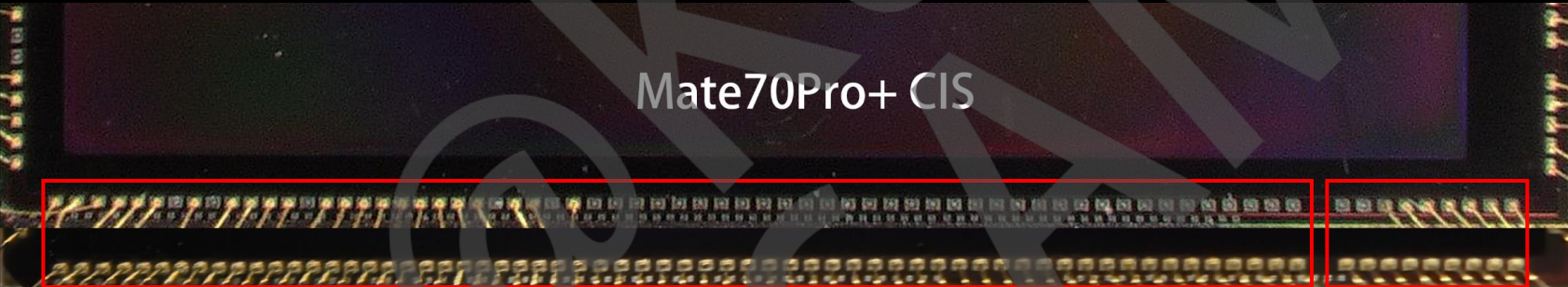
SC580XS



Up pad area

Pad number and pad Location
All same

Mate70Pro+ CIS

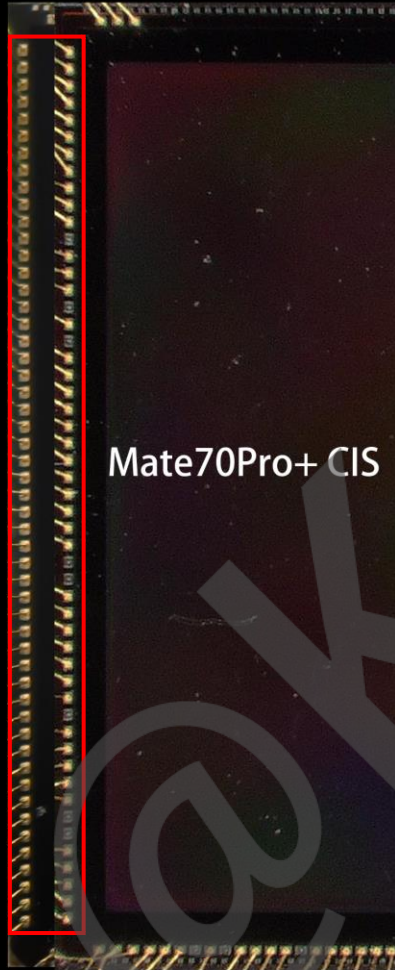


Down pad area

SC580XS

IDENTIFICATION (CIS PACKAGE)

SC580XS



Mate70Pro+ CIS

Left Pad area



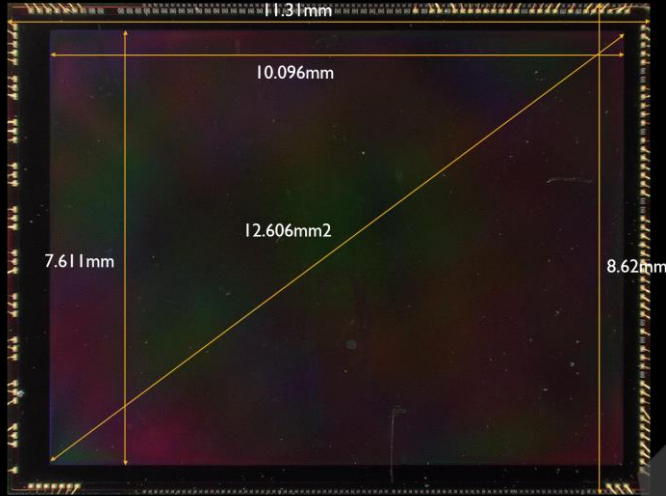
Mate70Pro+ CIS

Right Pad area

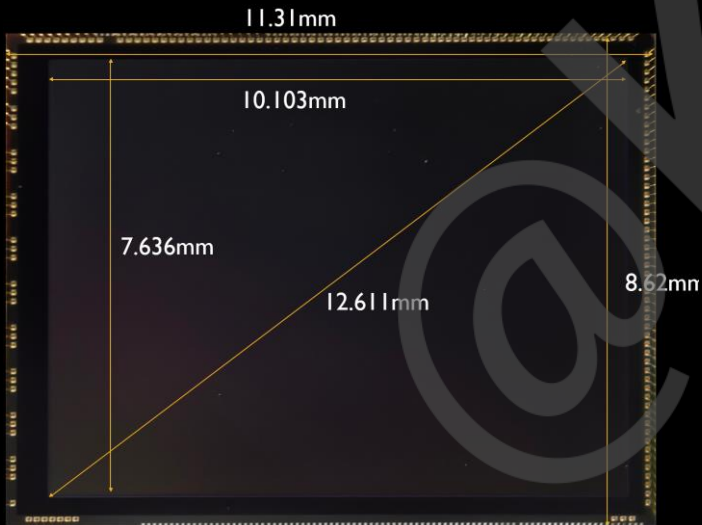
SC580XS

Pad number and pad Location
All same

IDENTIFICATION (CIS PACKAGE)



Mate70 Pro+ Cmos



SC580XS

	SC580XS	M70P+ cmos	
Pad number	166/166	166/117	same
Full diesize	11.31x8.62 97.49mm ²	11.31x8.62 97.49mm ²	same
Pixel area	10.103x7.63 6 77.15mm ²	10.096x7.611 76.84mm ²	same
Diagonal line size:	12.611mm (1/1.27)	12.606mm (1/1.27)	same

For package

I think these two cmos have the **same** package/die

IDENTIFICATION

Why I think Mate70pro+ use the Smartsens Sc580xs?

CIS Package

Diesize/Pixel area size

Chip Pad

In Front

Pixel size

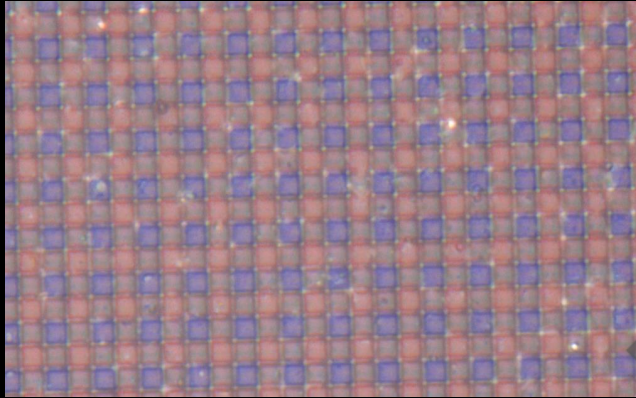
In Profile

Pixel Wafer

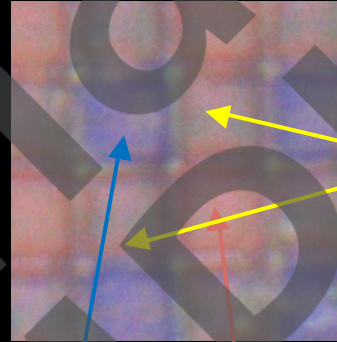
Logic Wafer

IDENTIFICATION (IN FRONT)

Mate70Pro+



Use RYYB

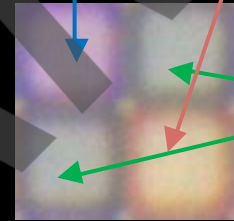
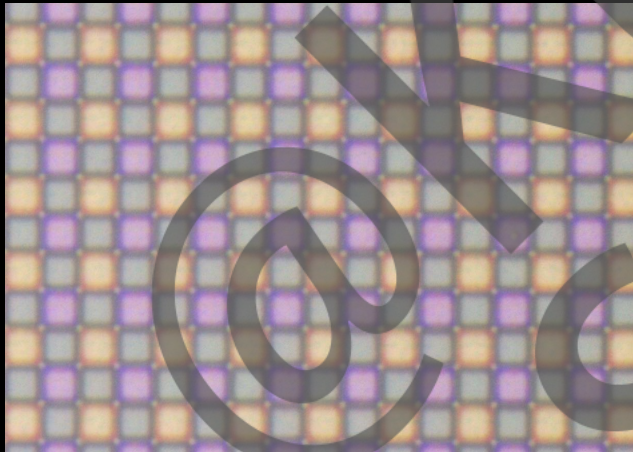


Yellow

Blue

Red

SC580XS

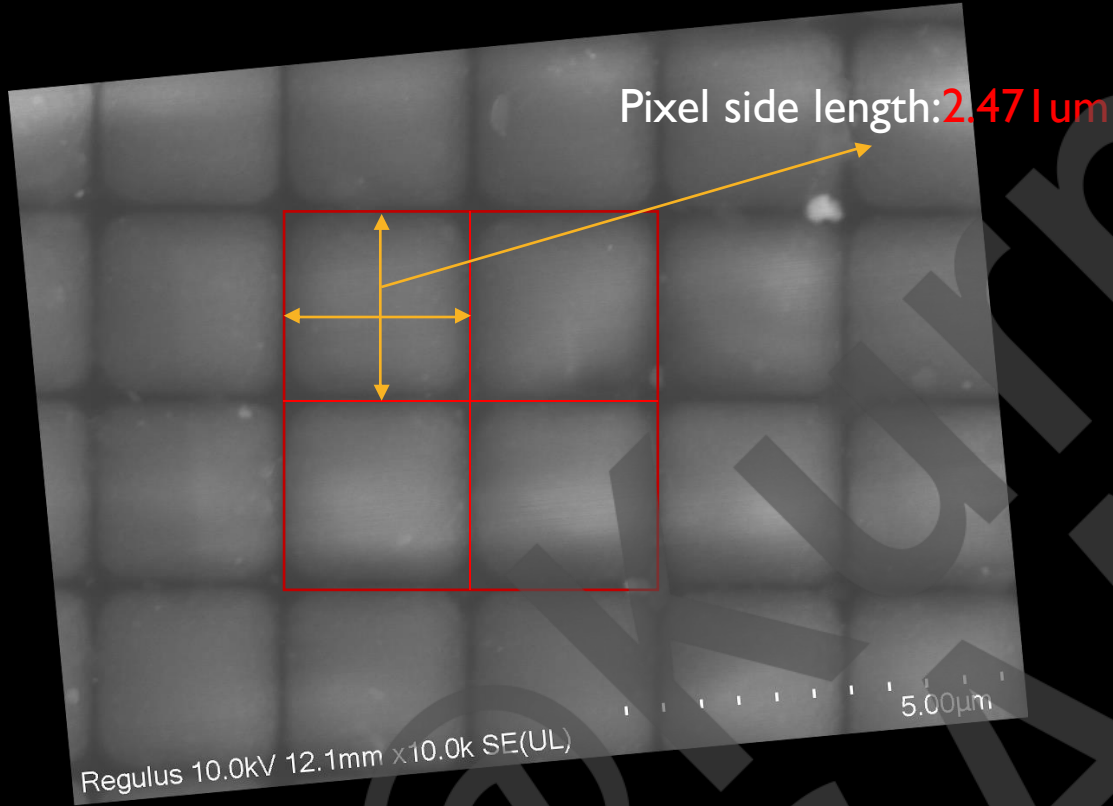


Green

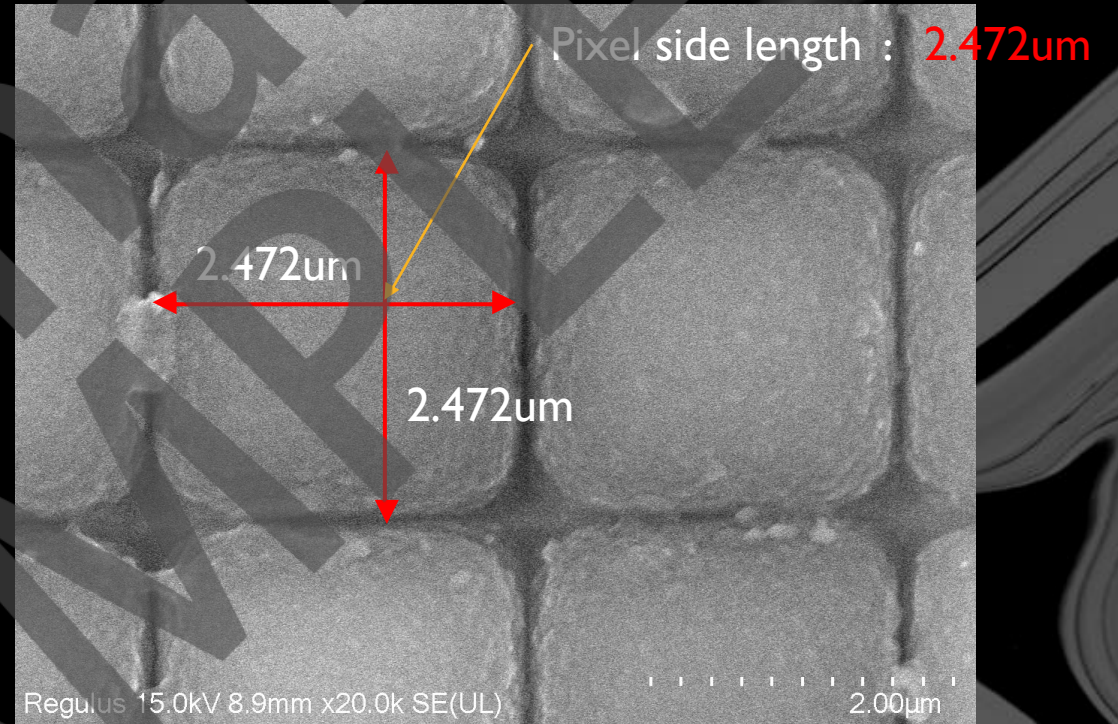
Maybe is RGGB?

In color filter
These are different
Mate70Pro+ use RYYB
SC580XS use RGGB

IDENTIFICATION(IN FRONT SEM)



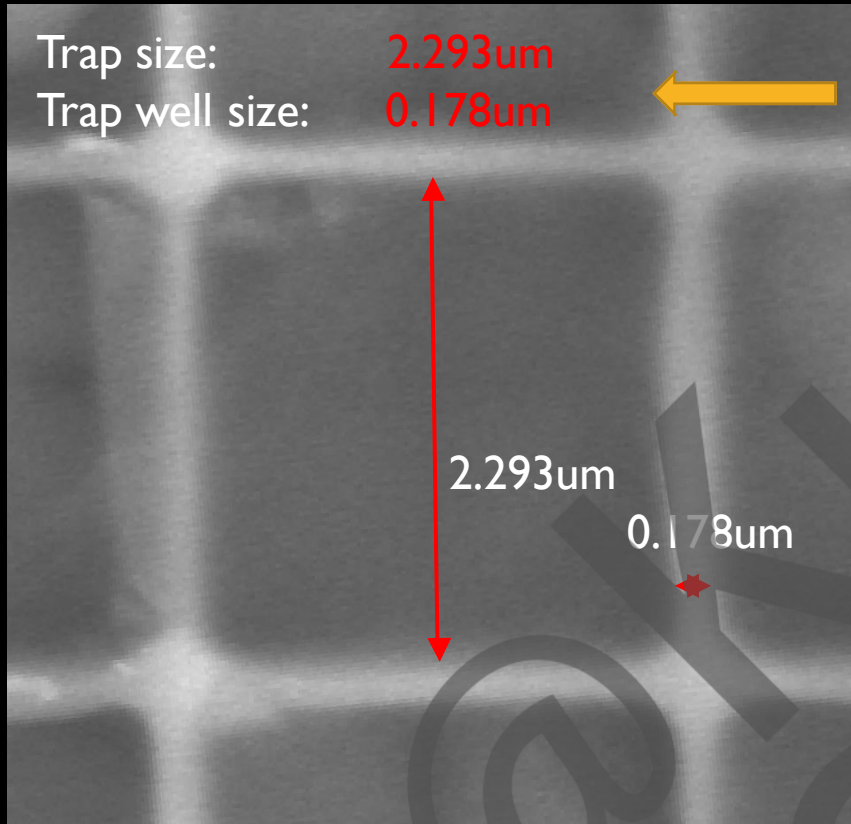
Mate70pro+ CIS



Smartsens Sc580xs

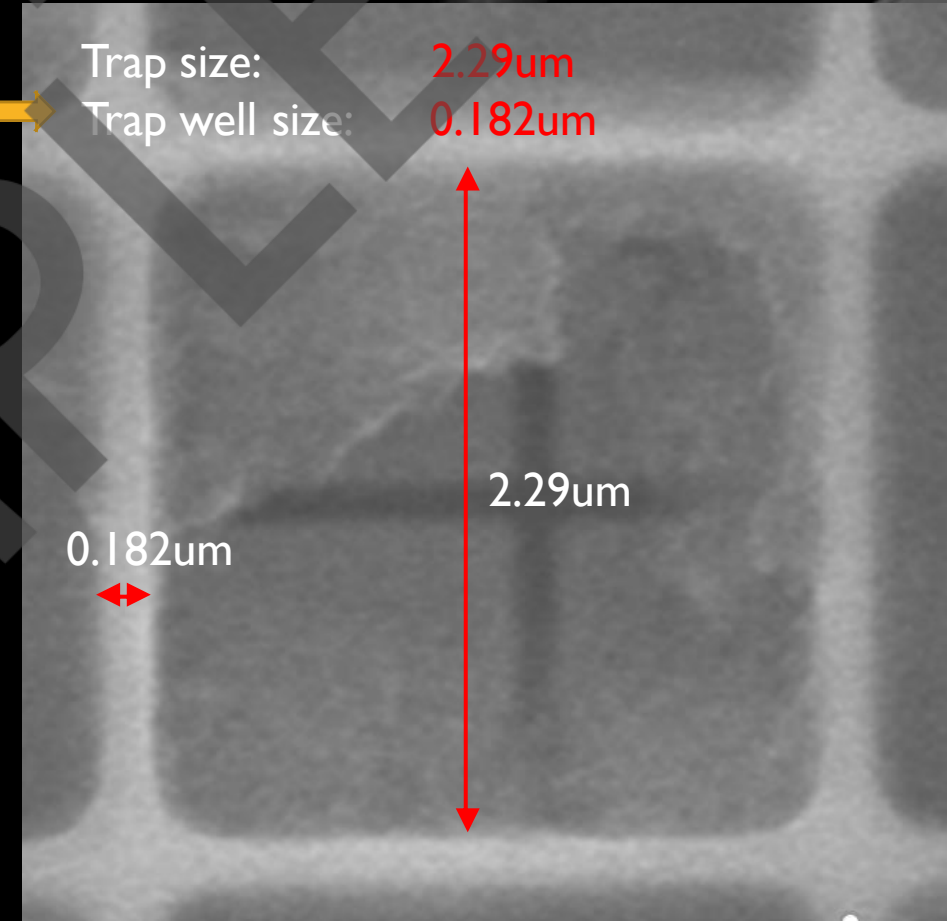
Pixel Size is the same as 2.47um

IDENTIFICATION(IN FRONT SEM)



Mate70Pro+ CIS

The Trap and Trap well size
Are the **same** on both sides



Smartsens Sc580xs CIS

IDENTIFICATION

Why I think Mate70pro+ use the Smartsens Sc580xs?

CIS Package

Diesize/Pixel area size

Chip Pad

In Front

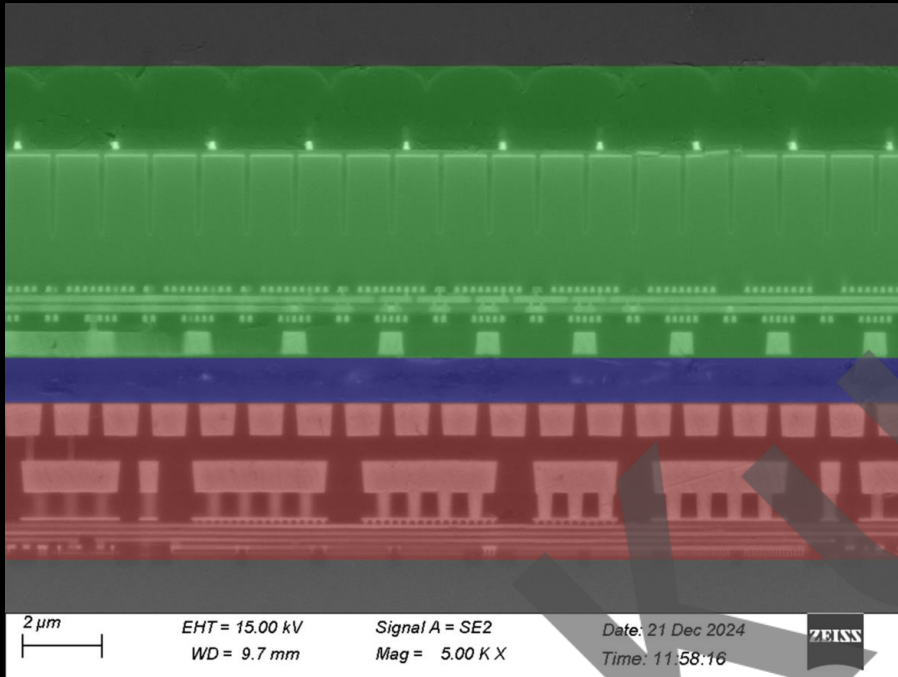
Pixel size

In Profile

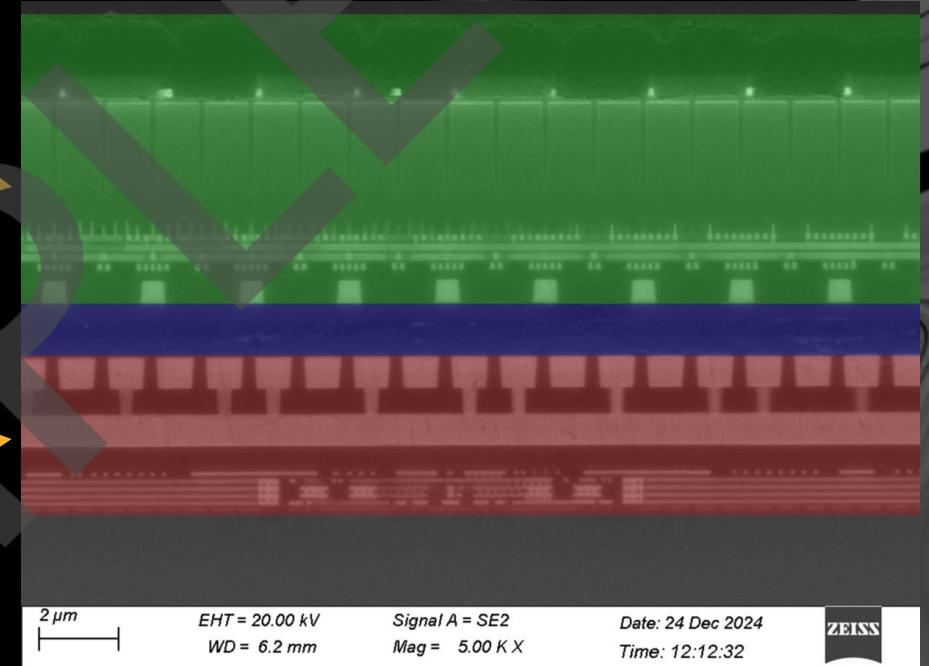
Pixel Wafer

Logic Wafer

IDENTIFICATION (IN PROFILE)



Mate70Pro+ CIS

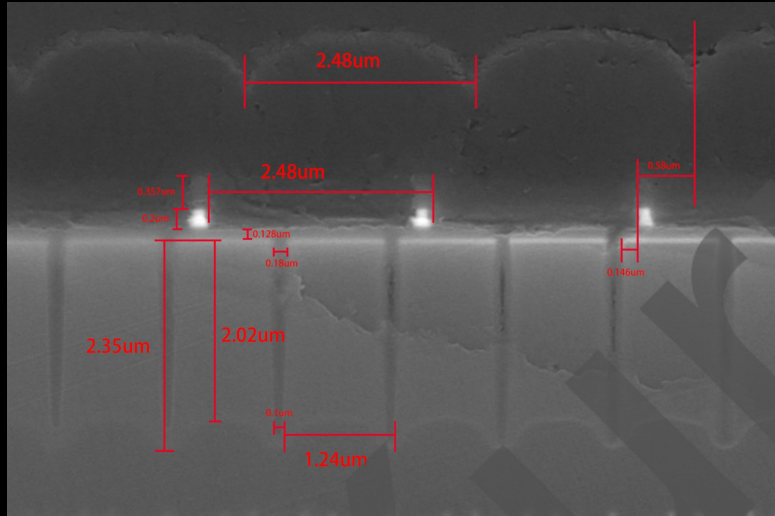


Smartsens Sc580xs CIS

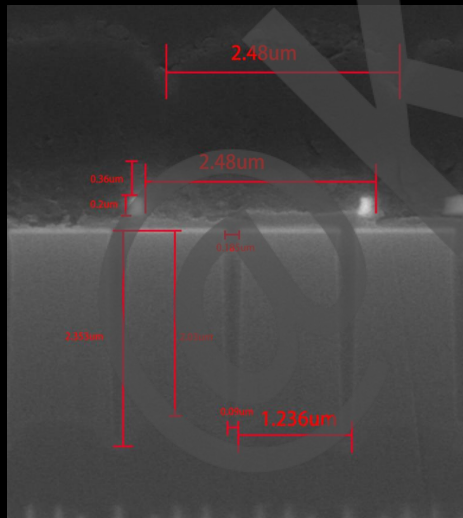
	M70P+	SC580XS	
Total height	12.741um	12.744um	Same
Pixel wafer height	7.853um	7.831um	Same
Logic wafer height	4.905um	4.913um	Same

IDENTIFICATION (IN PROFILE) (PIXEL WAFER)

Mate70P+



SC580XS

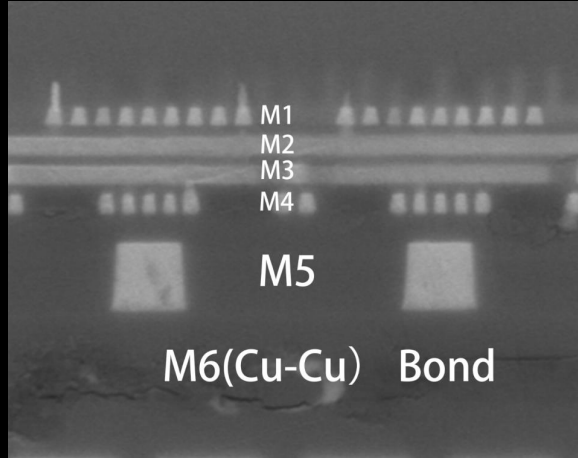


	M70P+	SC580XS	
Micro Lens size	2.48um	2.48um	Same
Color Filter size	2.48um	2.48um	Same
Photodiode size	1.24um	1.236um	Same
Optical isolation deep	0.357+0.2	0.36+0.2	Same
Electrical isolation deep	2.35/2.02	2.353/2.03	Same

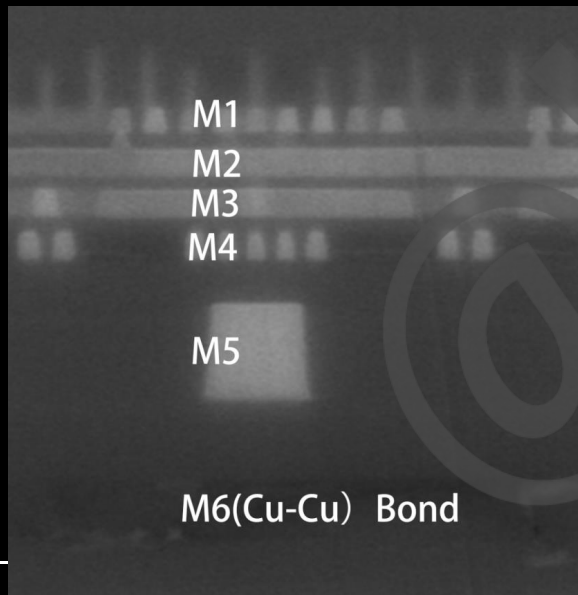
For the Pixel wafer-Pixel layers
These are the **same** things in the data



IDENTIFICATION (IN PROFILE) (PIXEL METAL LAYERS)



Mate70pro+ CIS Pixel Metal layers



SC580XS Pixel Metal layers

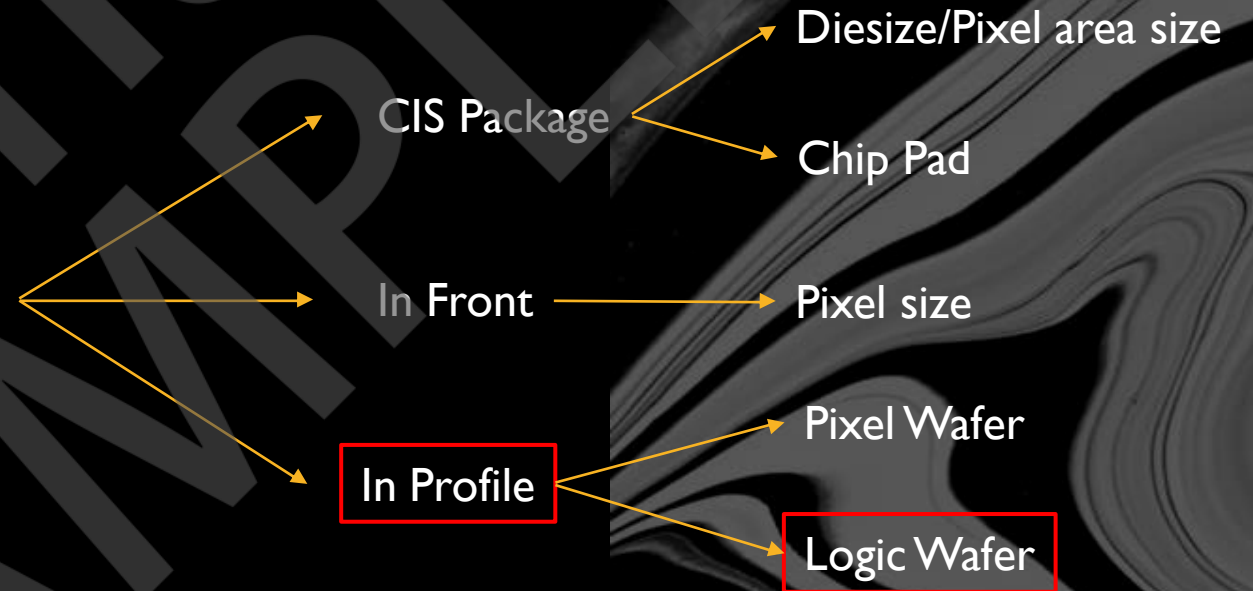
Both 6 Metal Layers

	(Just)Thickness		Pitch	
	M70P+	SC580XS	M70P+	SC580XS
M1	162nm	165nm	198.6nm	198nm
M2	162nm	165nm	x	x
M3	162nm	165nm	x	x
M4	162nm	165nm	177nm	175nm
M5	561nm	561nm	2470nm	2465nm
M6	351nm	351nm	x	x

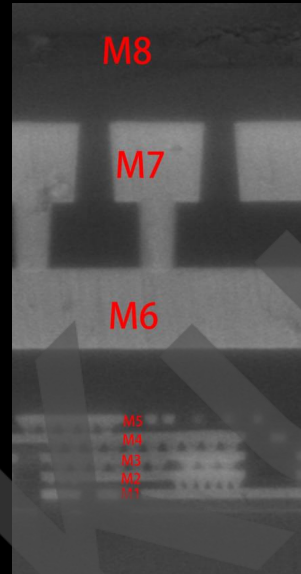
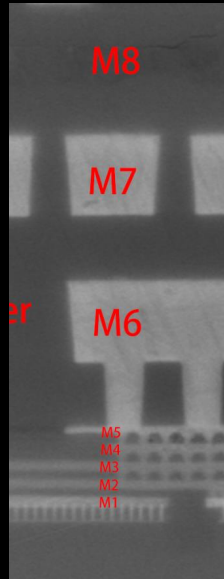
Although there are some mapping errors, The number/spacing/thickness of metal layers in both products are the **same**

IDENTIFICATION

Why I think Mate70pro+ use the Smartsens Sc580xs?



IDENTIFICATION



Both
8 Metal Layers

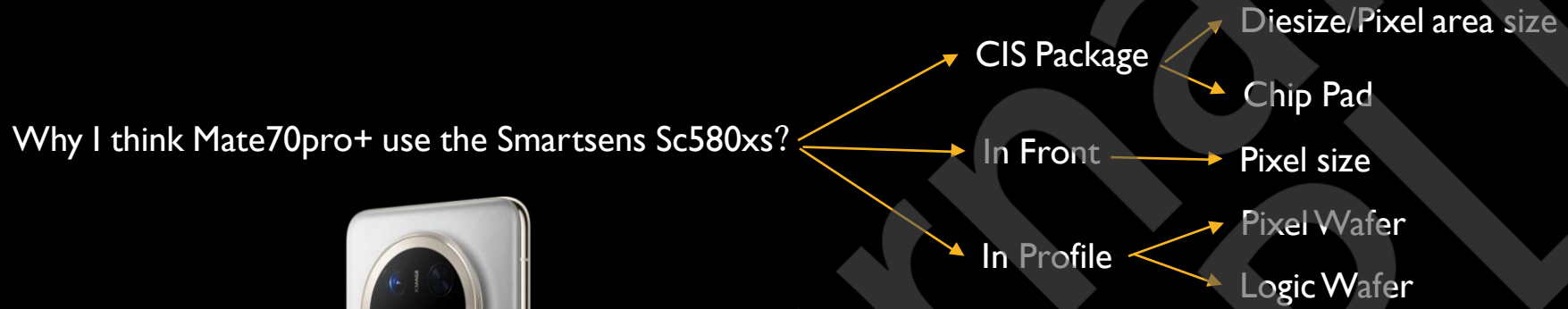
Mate70pro+ CIS
Logic Metal layers

SC580XS
Logic Metal layers

	(Just) Thickness		Pitch	
	M70P+	SC580XS	M70P+	SC580XS
M1	83nm	82nm	x	x
M2	83nm	82nm	x	x
M3	83nm	82nm	x	x
M4	83nm	82nm	x	x
M5	83nm	82nm	x	x
M6	802nm	800nm	x	x
M7	793nm	800nm	1236nm	1240nm
M8	348nm	351nm	x	x

Although there are some mapping errors,
The number/spacing/thickness of metal layers
in both products are the **same**

IDENTIFICATION END



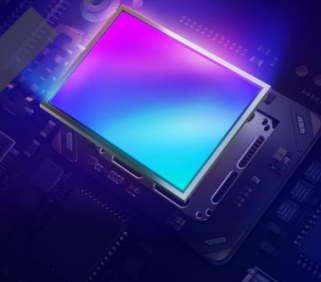
So that, despite some mapping errors,
I still believe that : the **Huawei Mate 70 Pro +** uses the **same Sc580xs** as **Smartsens**
They only change is the color filter on its surface,
which is customized from **RGGB** to **RYYB**

IDENTIFICATION END

	SC580XS data
Package	COB/RW
structure	BSI/WoW()
Pixel area	1/1.27
Pixel size	1.24um/2.48um
Pixel mode	4 in 1
Pixel number	50MP/12.5MP
Pixel wafer Metal layers	6
Logic wafer Metal layers	8

思特威50MP手机应用
图像传感器新品

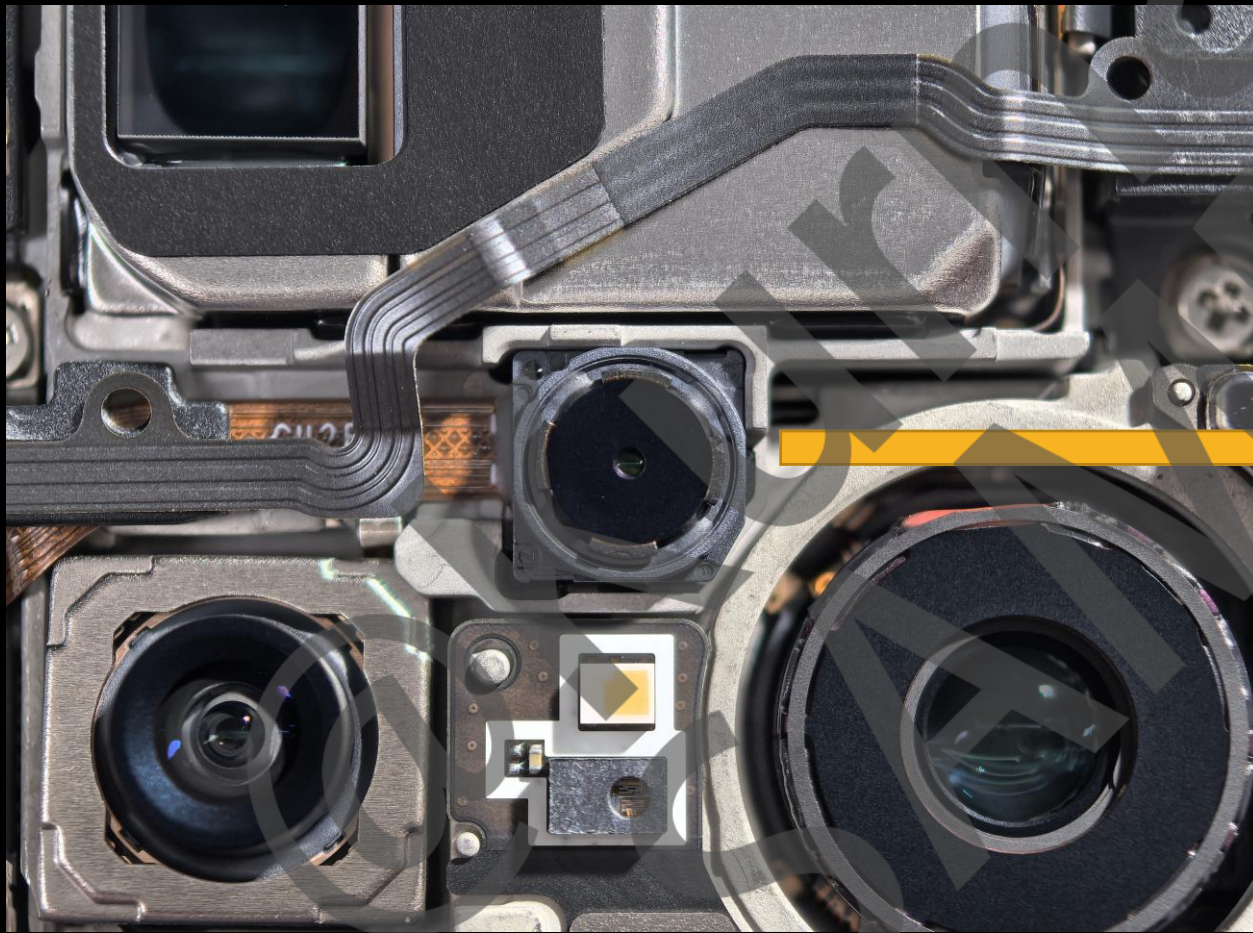
SC580XS



This analyze SC580XS get data

1.5MP RED MAPLE COLOR CIS

1.5MP RED MAPLE COLOR CIS



1.5MP red maple color cis



红枫原色影像
还原真实色彩

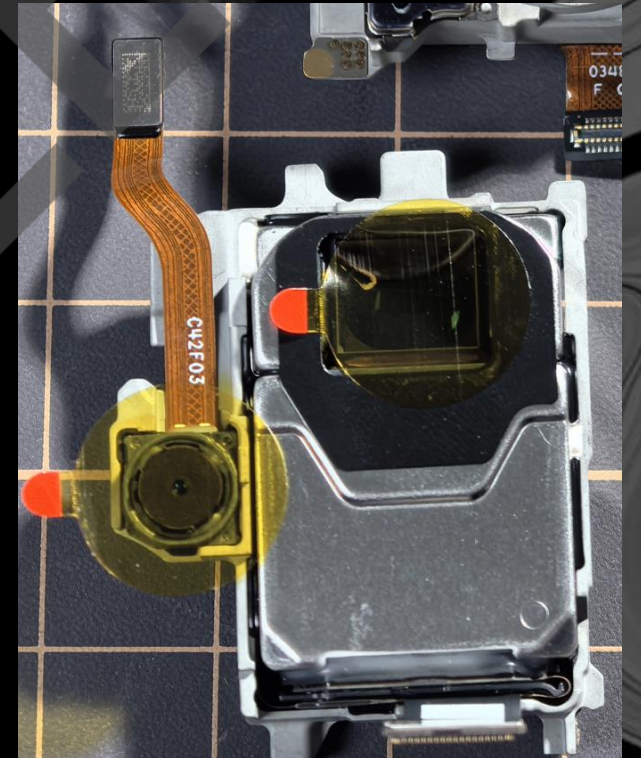
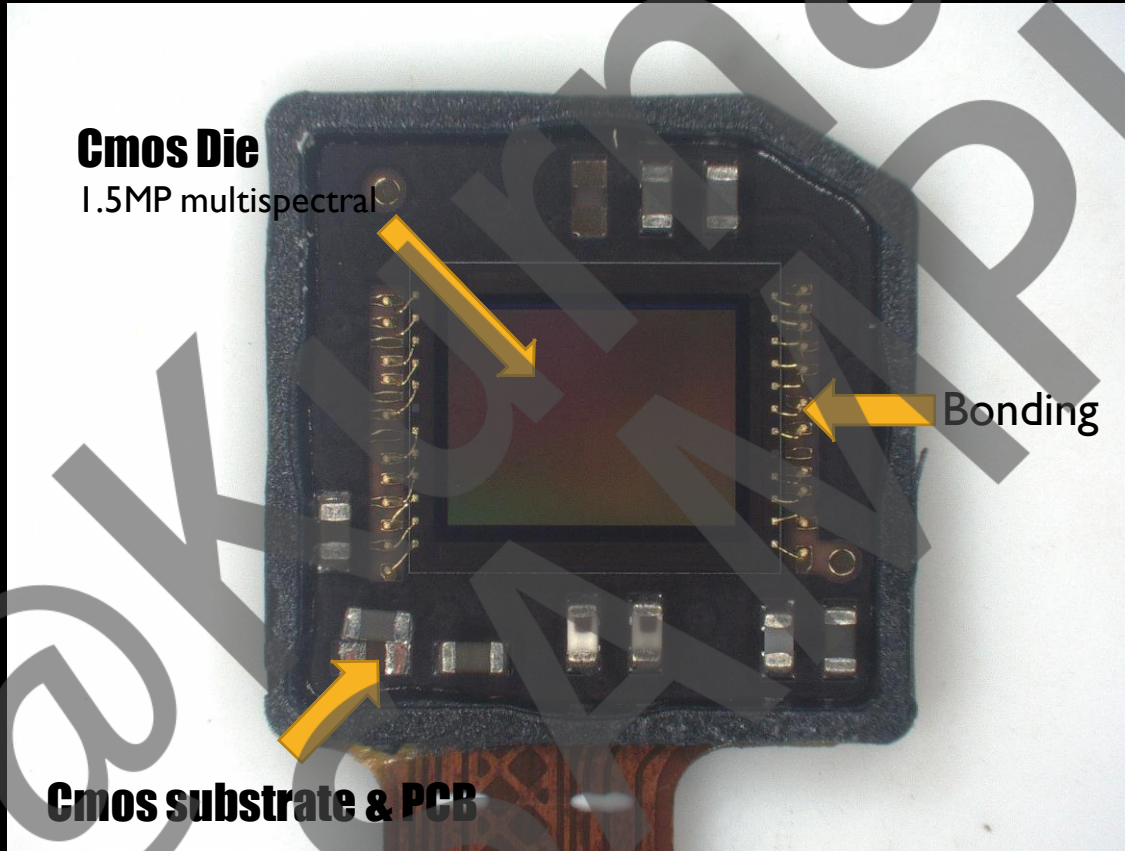
1.5MP RED MAPLE COLOR CIS

Pad number: 24

Pad in use: 22

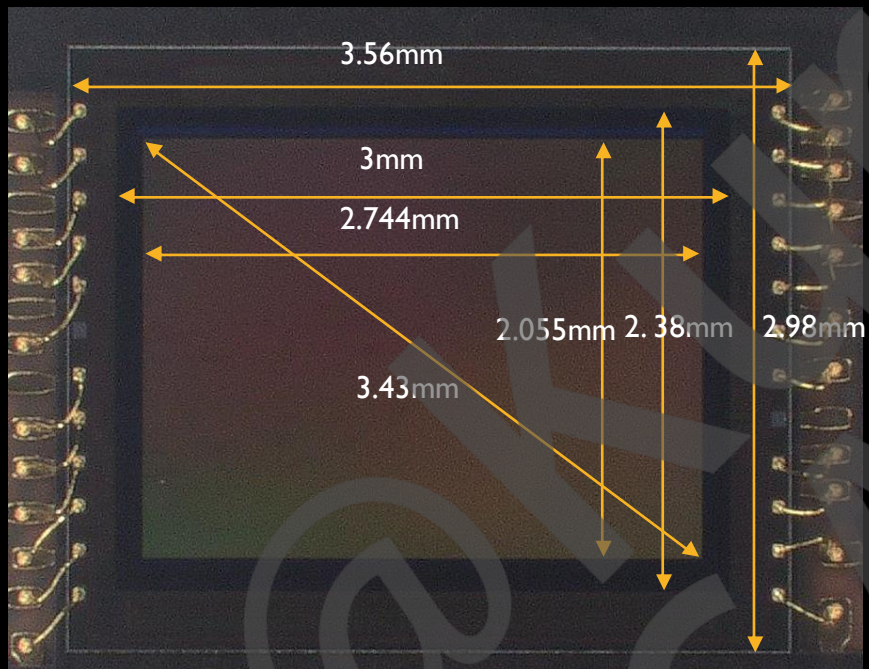
Sub pad number: 26

Sub pad in use: 22



Mark:C42F03

1.5MP RED MAPLE COLOR CIS



Full Diesize:

10.61mm²

(3.56mmx2.98mm)

Pixel area:

6.53mm²

(2.744mmx2.38mm)

Diagonal line size:

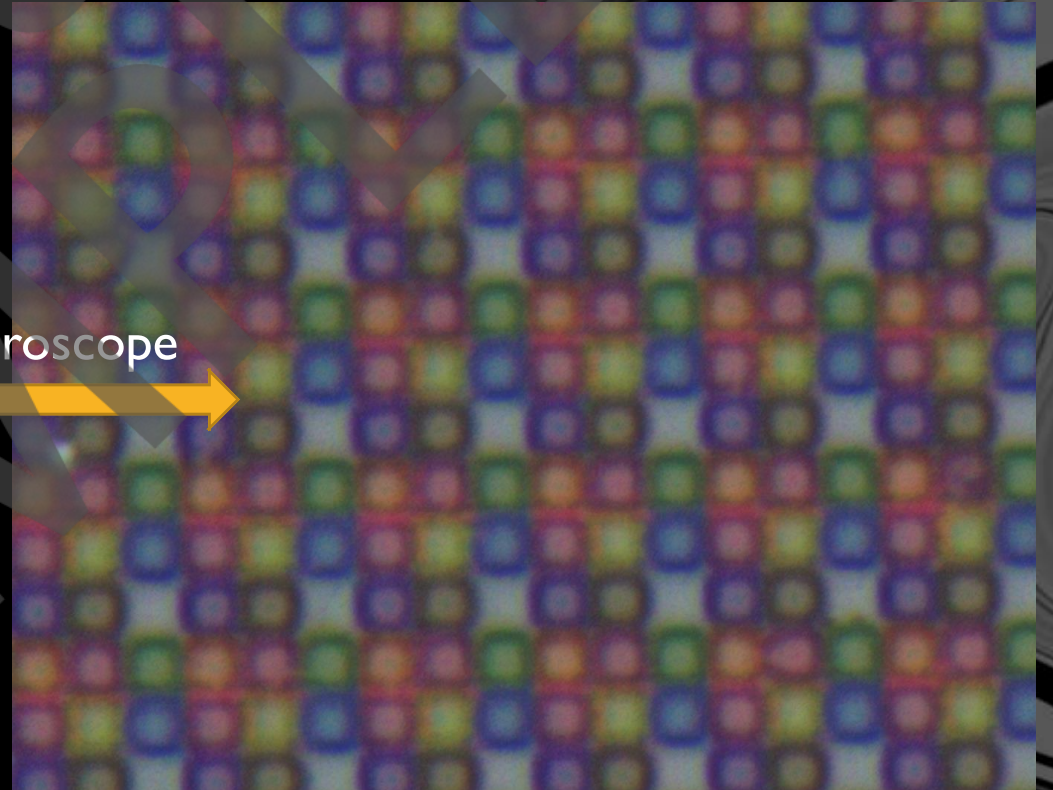
3.43mm

(Nearly 1/4.67)

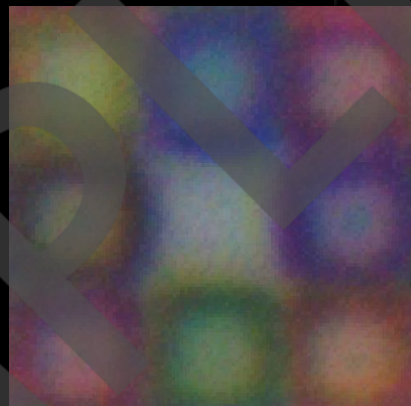
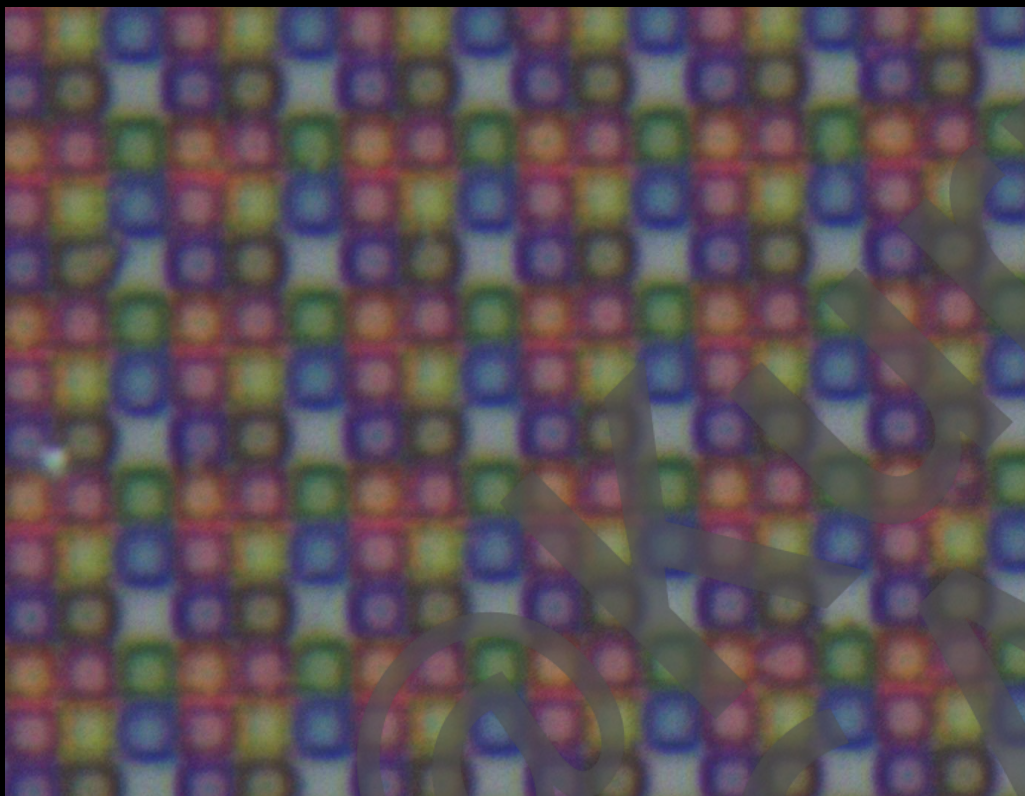
1.5MP RED MAPLE COLOR CIS



1000x in microscope



1.5MP RED MAPLE COLOR CIS



yellow Blue Red
Brown Clear Purple
Red Green Orange



Maybe?

1.5MP RED MAPLE COLOR CIS



yellow Blue Red
Brown Clear Purple
Red Green Orange

Why they have a Non OCL Pixel?

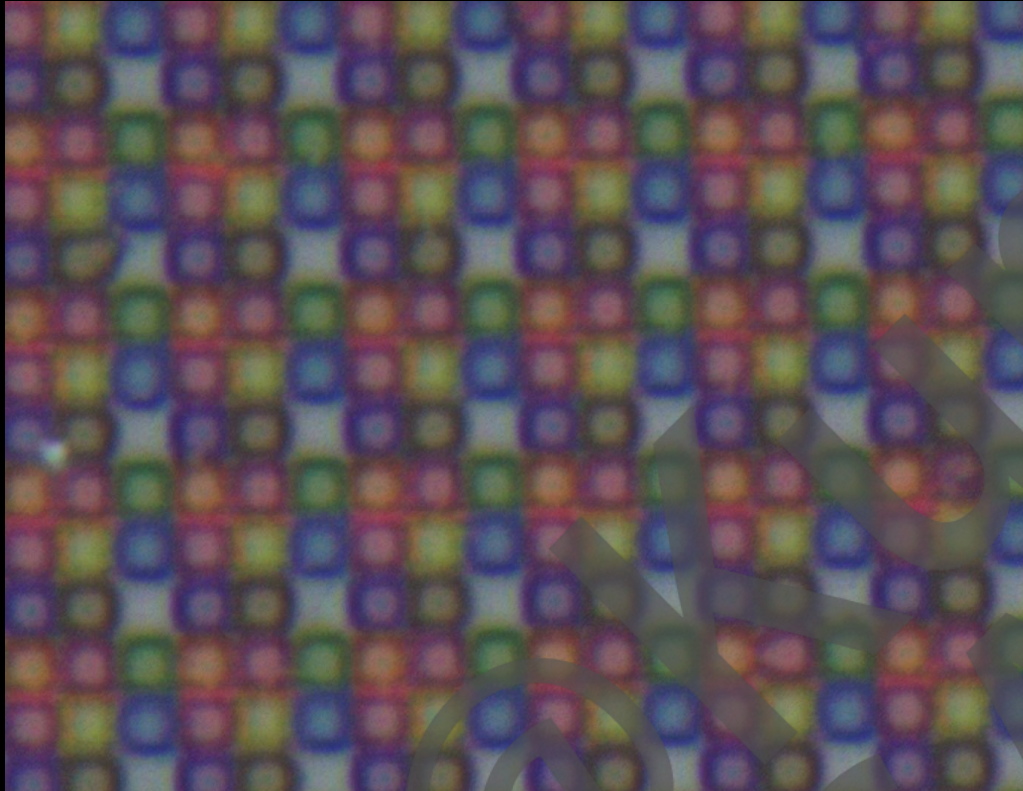
Answer is

The clear pixel is used as an intermediate pixel

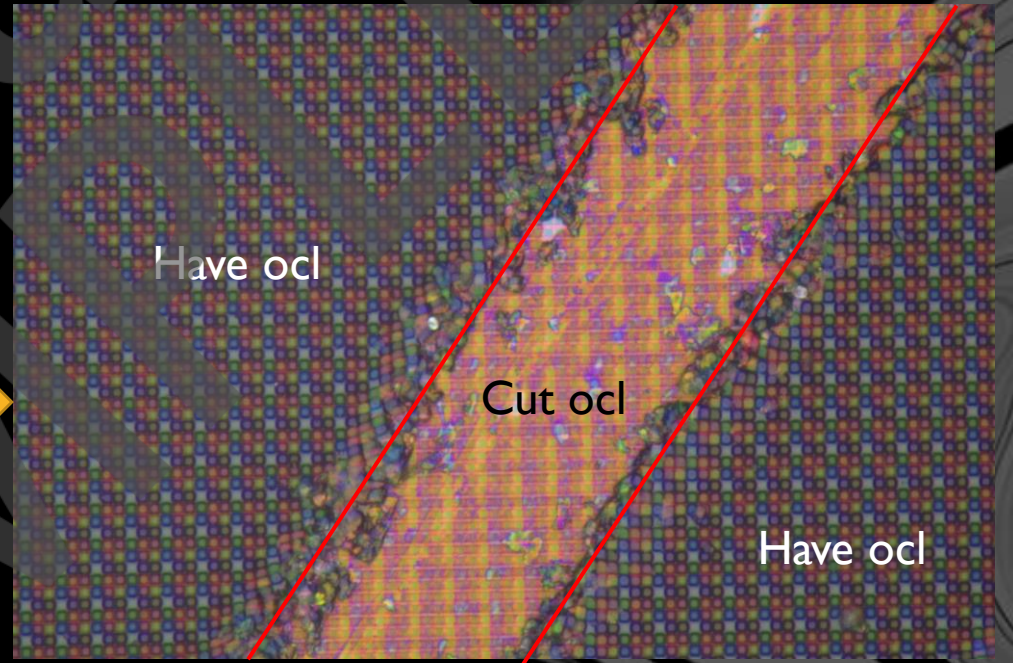
Accurate ambient color temperature can be obtained by combining with surrounding pixel information

And the algorithm can obtain color information far more than 8 color channels

1.5MP RED MAPLE COLOR CIS

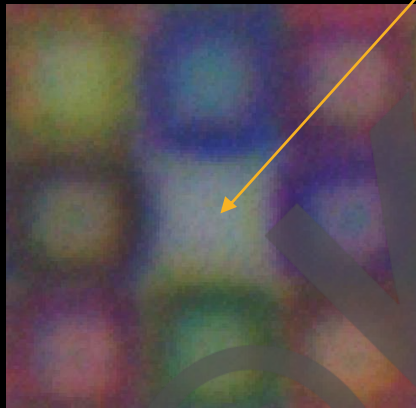


Cut ocl



1.5MP RED MAPLE COLOR CIS

The no OCL pixel in the centre,
there is still have a trap underneath.

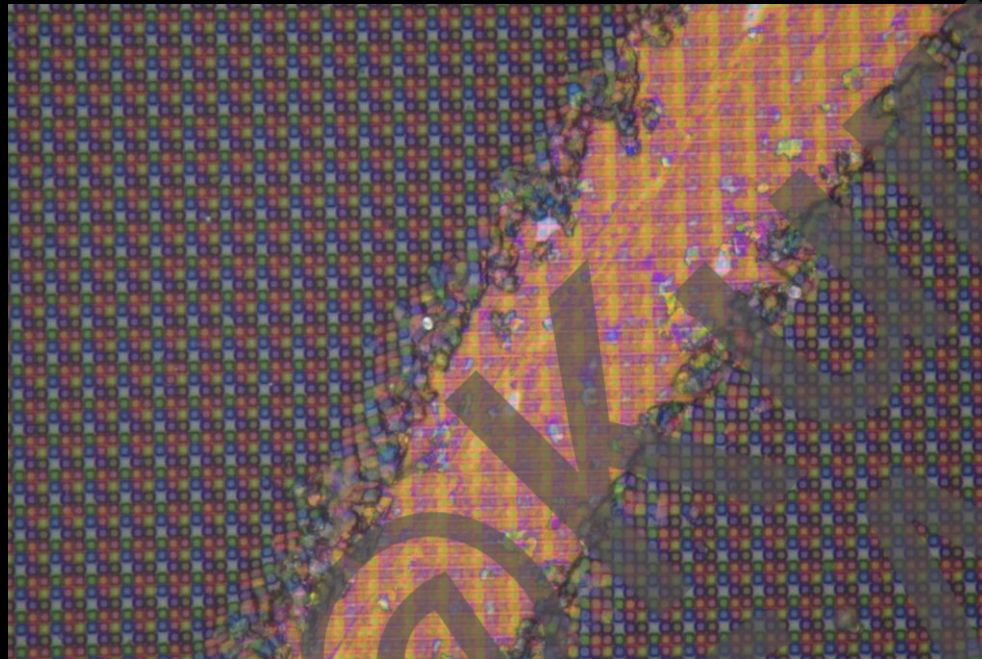


Have OCL

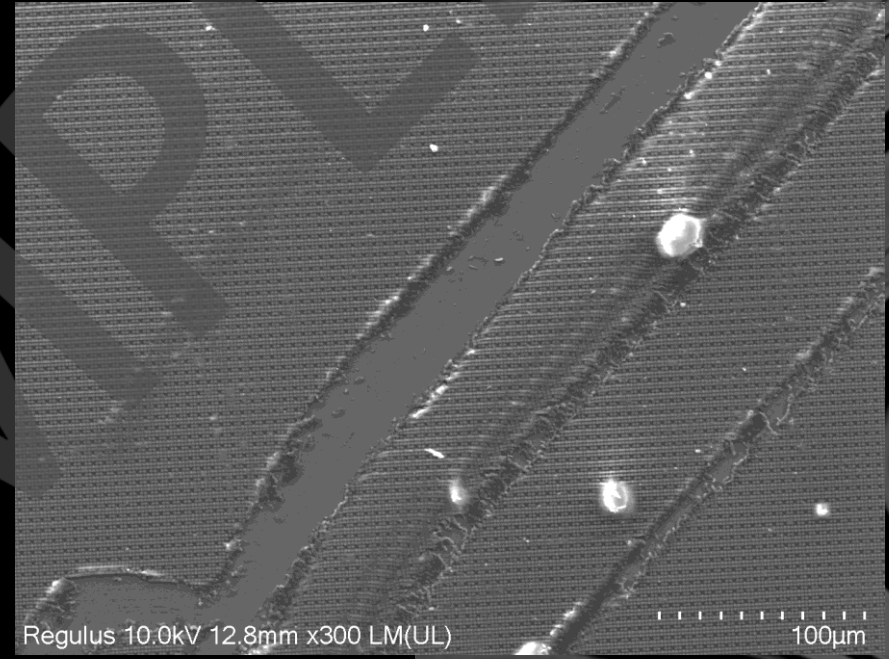


Cut OCL

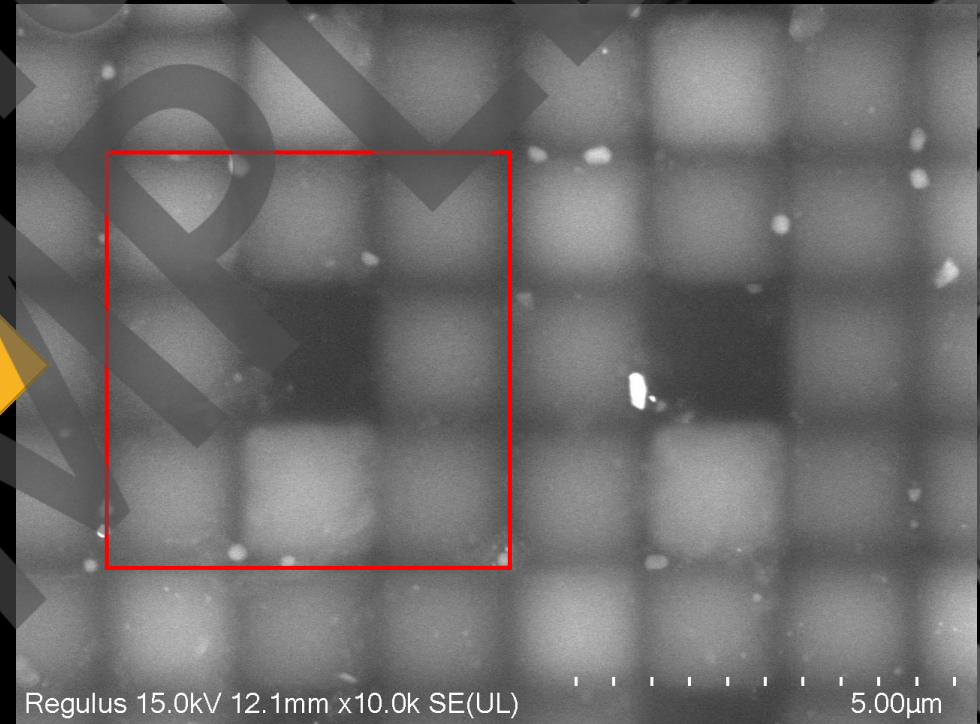
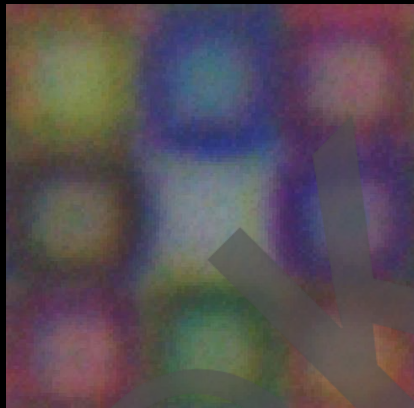
1.5MP RED MAPLE COLOR CIS



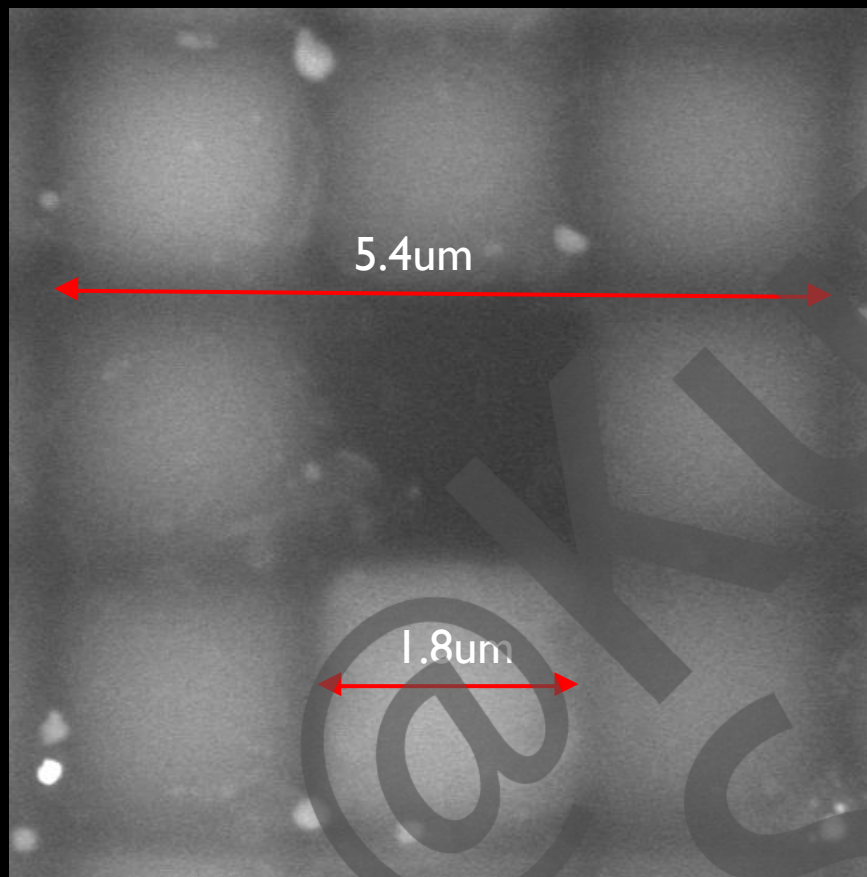
Use SEM



1.5MP RED MAPLE COLOR CIS



1.5MP RED MAPLE COLOR CIS



Pixel size: 1.8um
Pixel cluster size: 5.4um x 5.4um

1.5MP RED MAPLE COLOR CIS

So
Why Huawei Says
They have
1.5 million multi-spectral channels



业界首发
红枫原色摄像头
150万多光谱通道

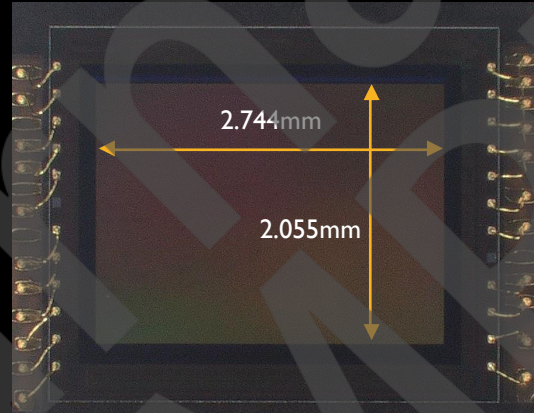


色彩还原准确度
120%+
vs Mate 60 Pro+

1.5MP RED MAPLE COLOR CIS

We know :

Pixel area size: 2.744mm x 2.055mm



And

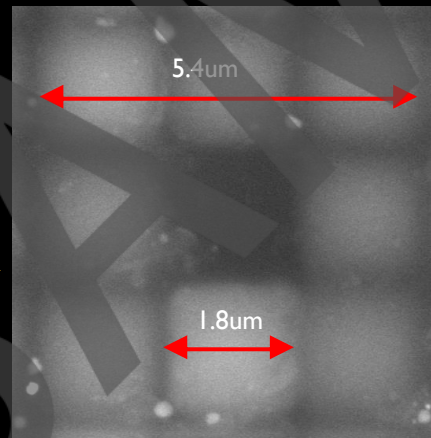
Pixel Size = 1.8um

Then

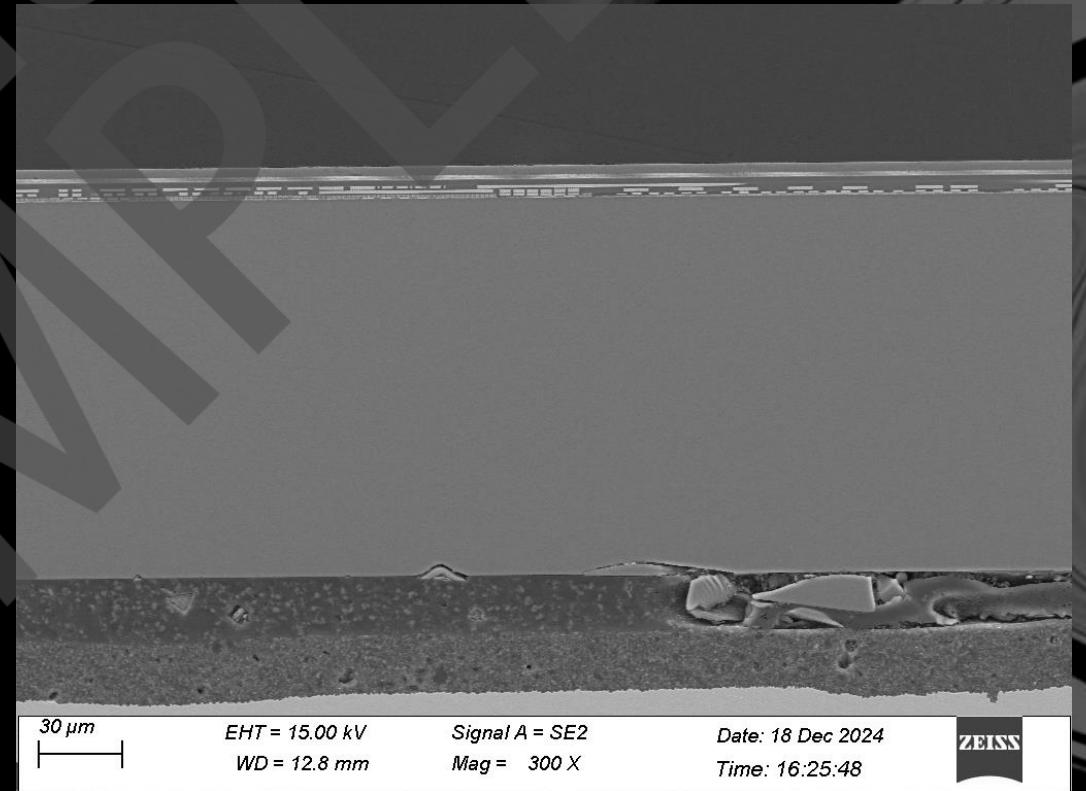
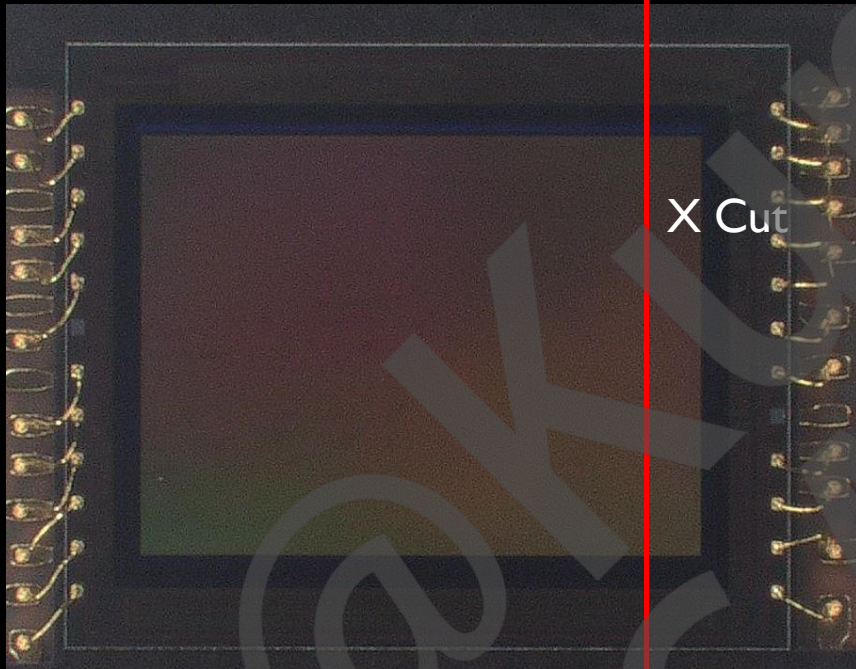
we can compute how many Pixel they have

Maybe they have **1.74MP** Pixel (1141 x 1524)

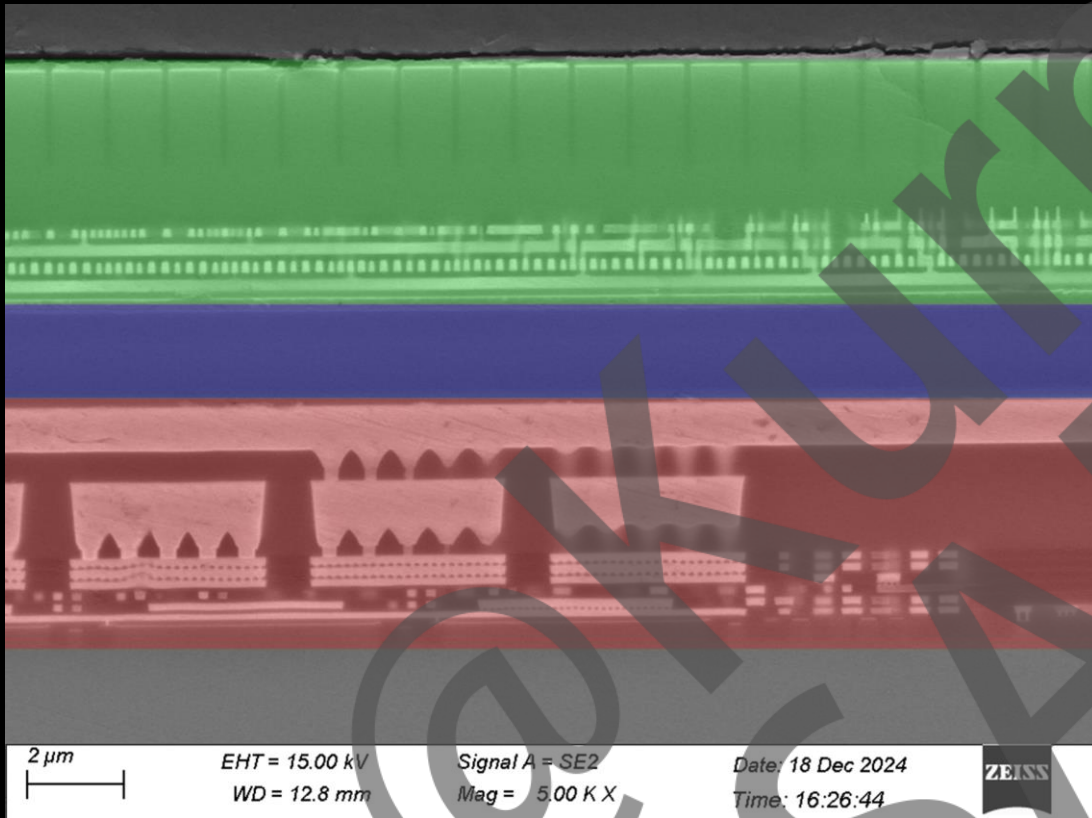
And maybe have **128 x 170** Pixel array



1.5MP RED MAPLE COLOR CIS



1.5MP RED MAPLE COLOR CIS



Cut OCL...sad



Pixel Wafer



Filling Layer



Logic Wafer

Total (no OCL) Height:

12.358um

Pixel wafer(no OCL) Height:

5.3um

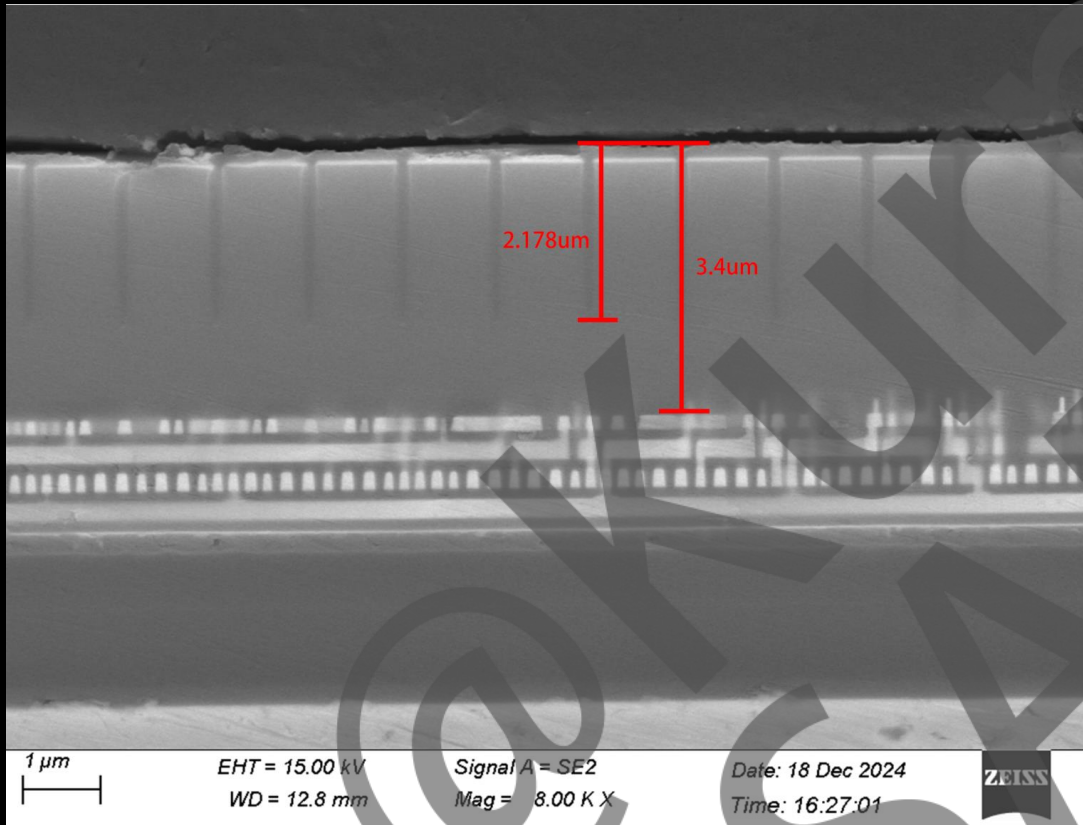
Filling Layer Height:

2.023um

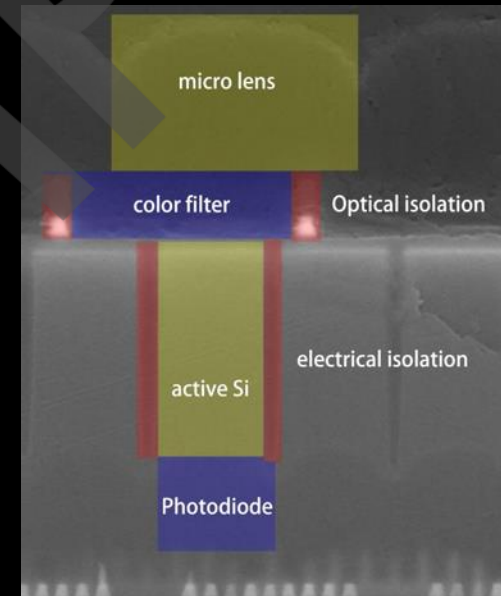
Logic wafer Height:

5.0um

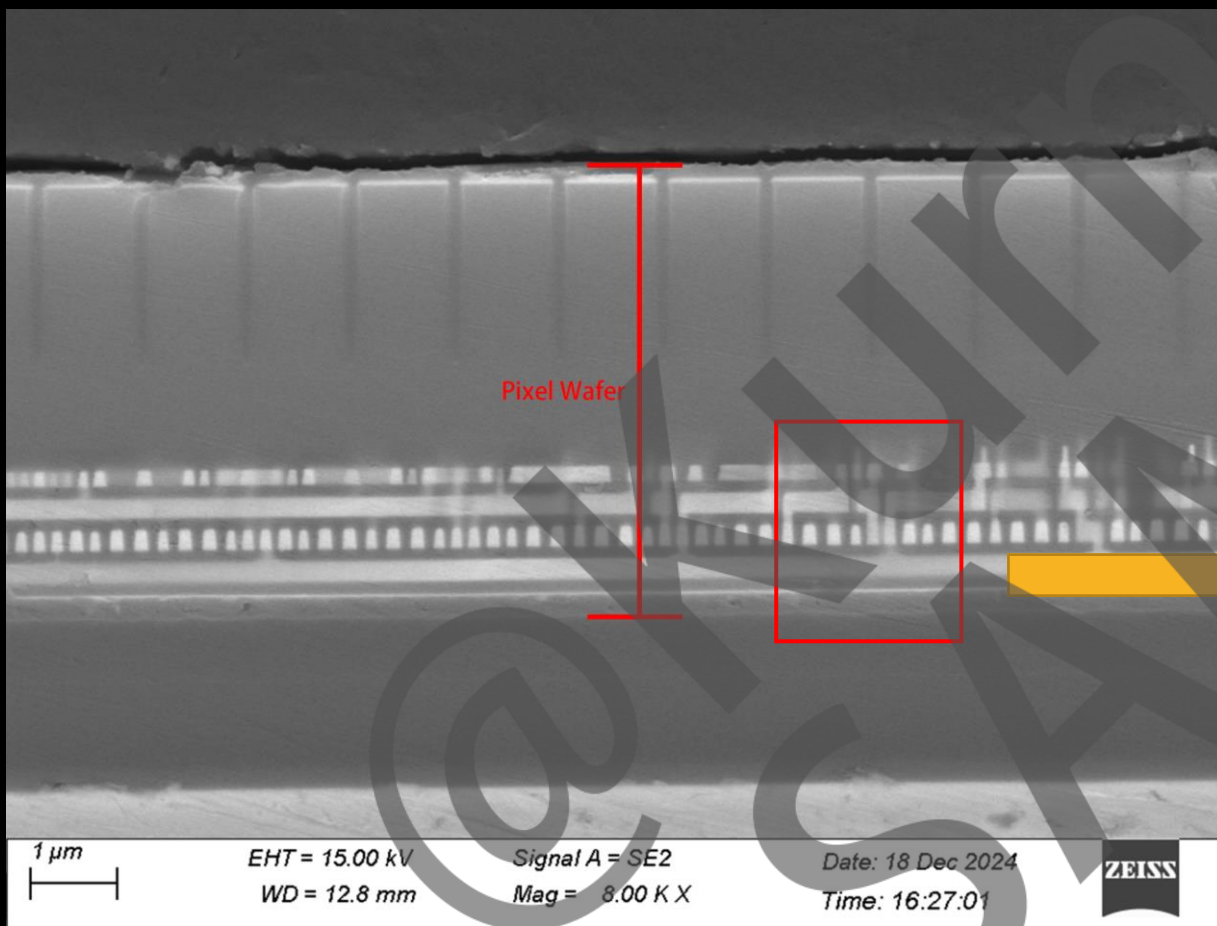
1.5MP RED MAPLE COLOR CIS



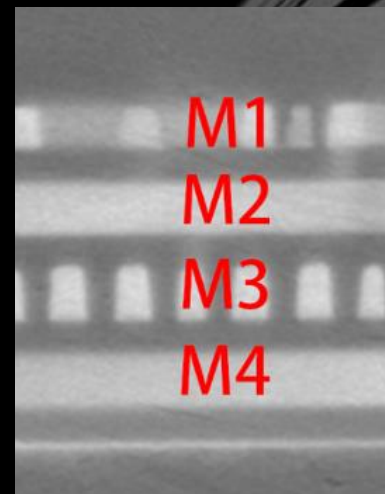
Color filter to Metal 1 Depth: 3.4um
Electrical isolation Depth: 2.178um



1.5MP RED MAPLE COLOR CIS



Metal Layers in Pixel Wafer: 4 layers



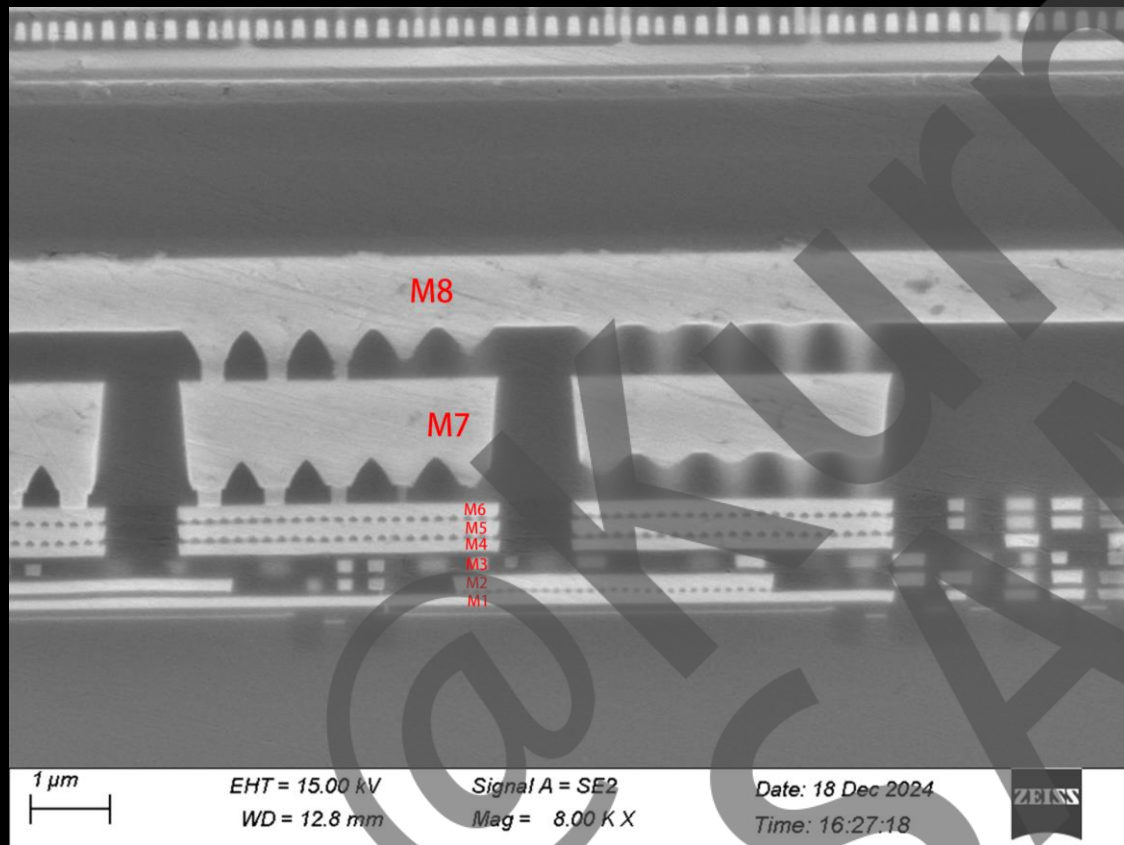
1.5MP RED MAPLE COLOR CIS



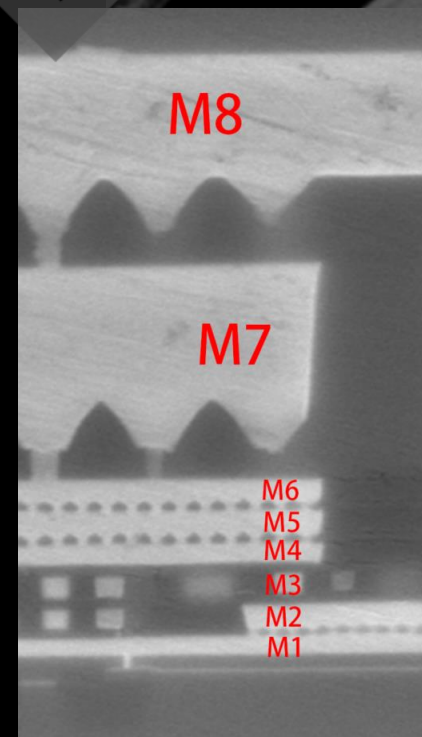
	(Just) Thickness	Pitch
M1	181nm	170nm
M2	220nm	x
M3	220nm	248nm
M4	220nm	x

1.5mp red maple Pixel Metal data

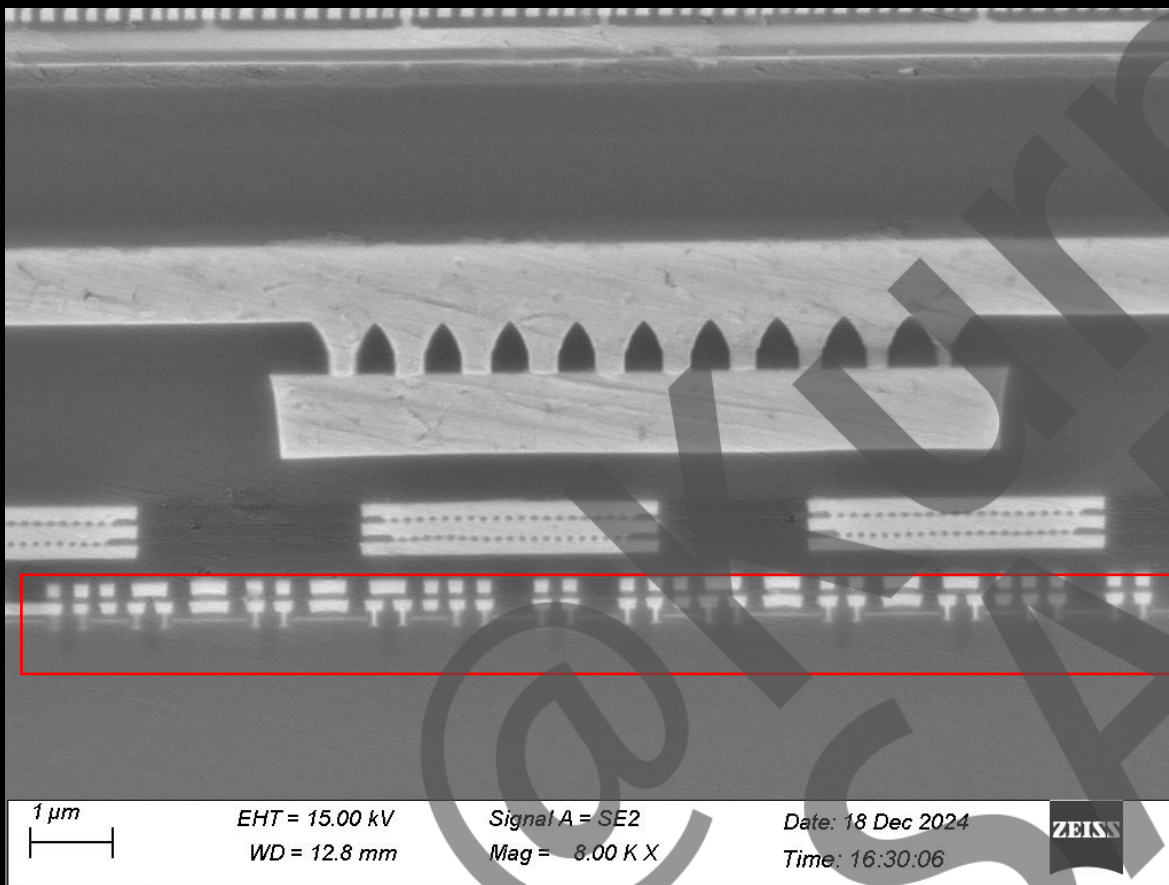
1.5MP RED MAPLE COLOR CIS



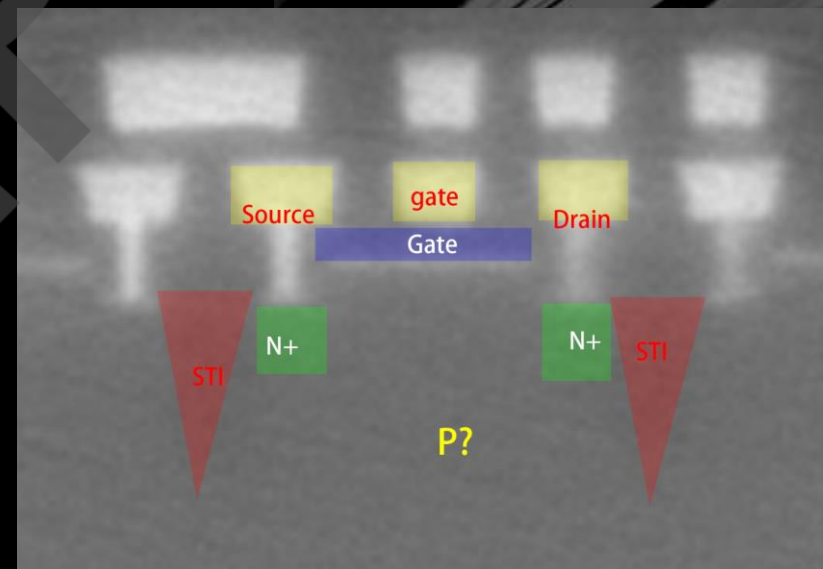
Metal Layers in Logic Wafer: IP 8M



1.5MP RED MAPLE COLOR CIS

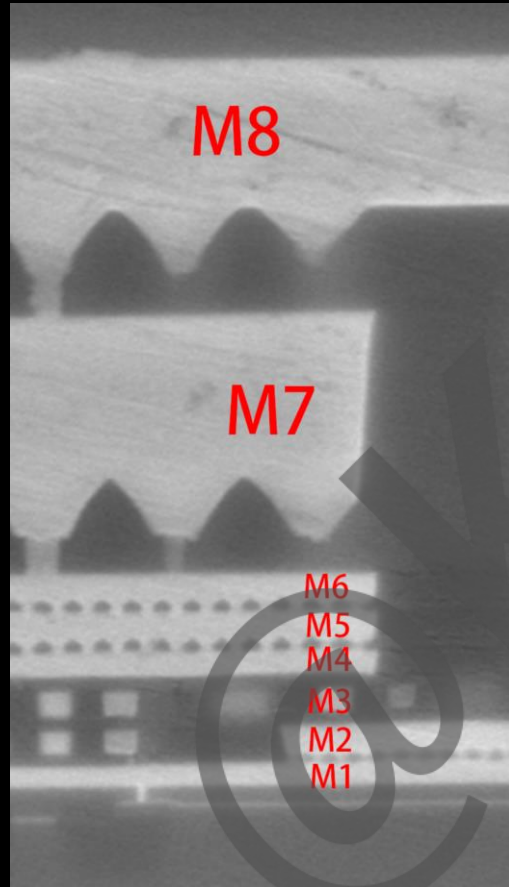


MosFET



Logic wafer Mosfet

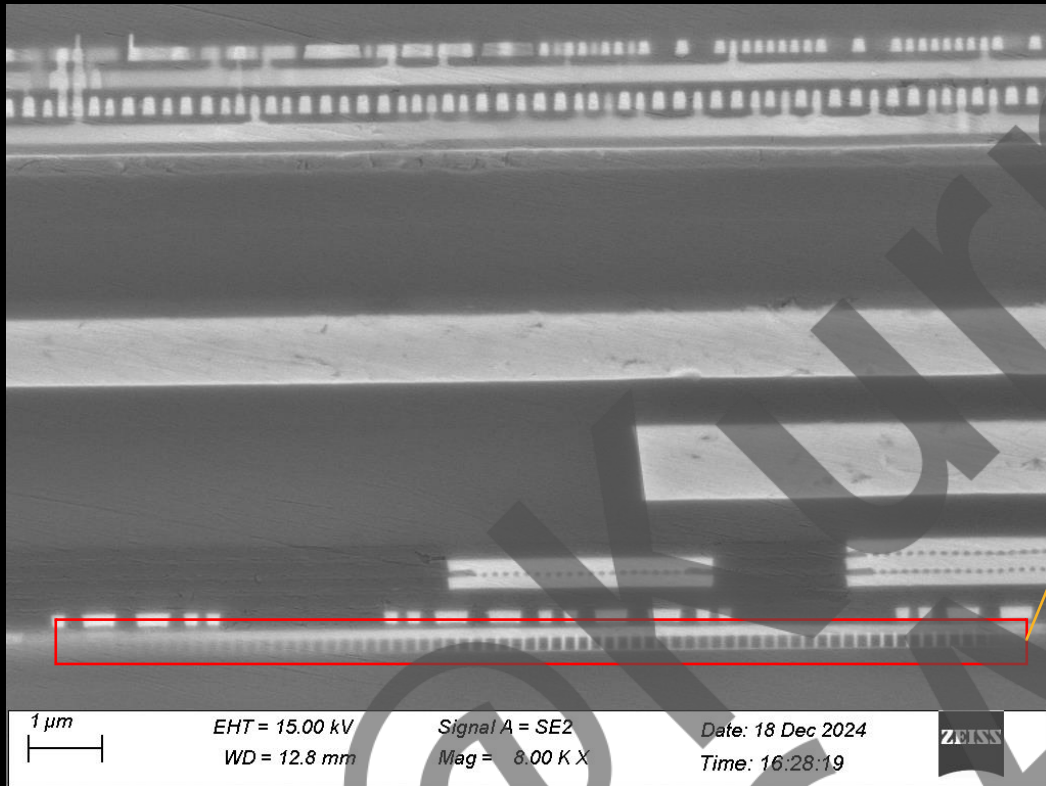
1.5MP RED MAPLE COLOR CIS



	(Just) Thickness	Pitch
M1	120nm	X
M2	150nm	X
M3	150nm	X
M4	150nm	X
M5	150nm	X
M6	150nm	X
M7	1000nm	X
M8	900nm	x

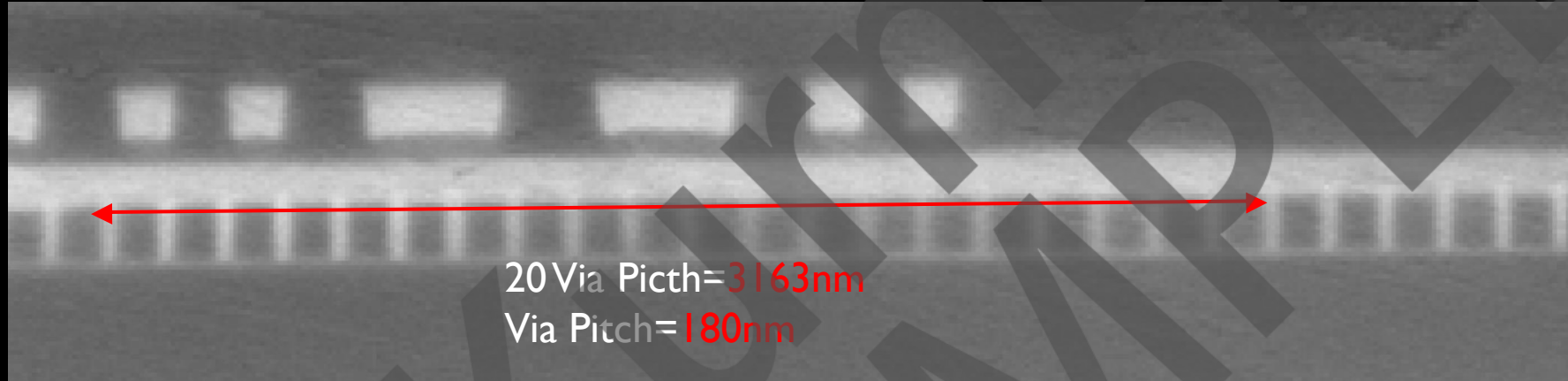
1.5mp red maple Logic Metal data

1.5MP RED MAPLE COLOR CIS



For this Photo
We can see the dense lines in the Via I
Then we can know the Via I Pitch,
Then Estimating process

1.5MP RED MAPLE COLOR CIS

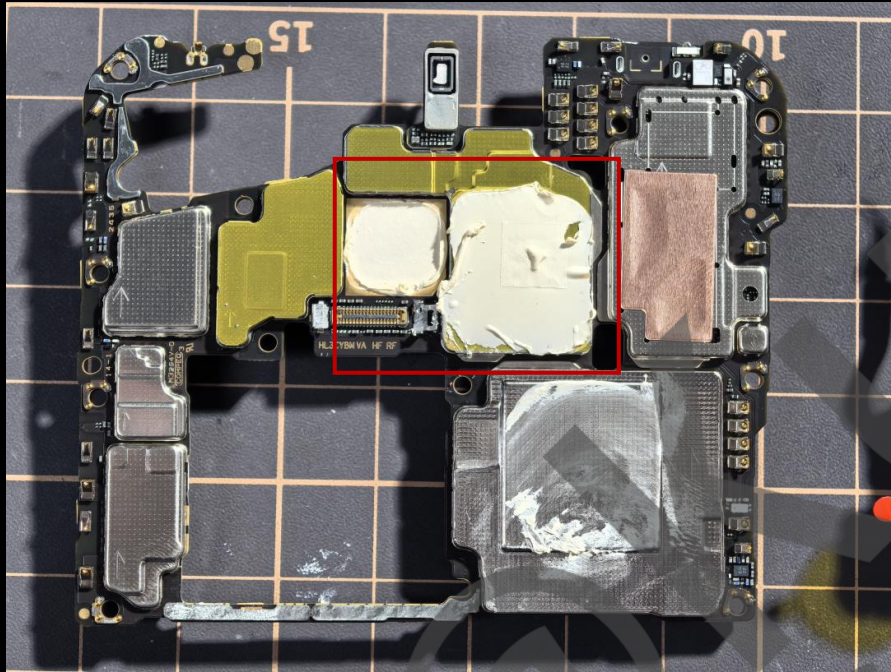


for Metal data and Via data and Mosfet data
I think this chip Logic wafer Like TSMC 65nm?

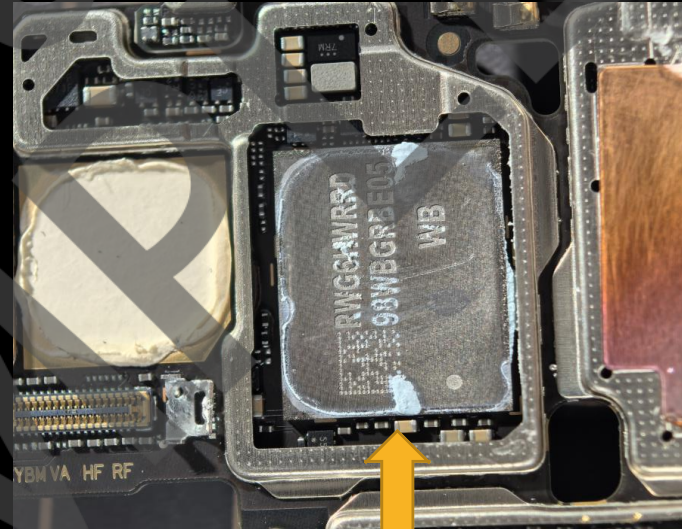


NAND(UFS)

MATE70PRO+ NAND

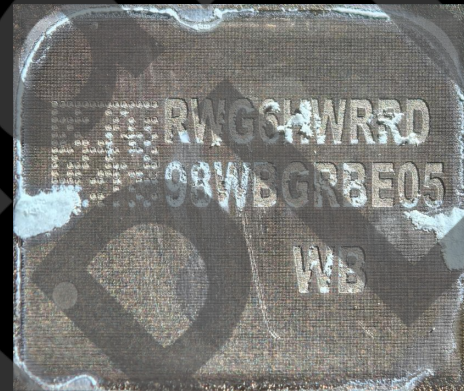
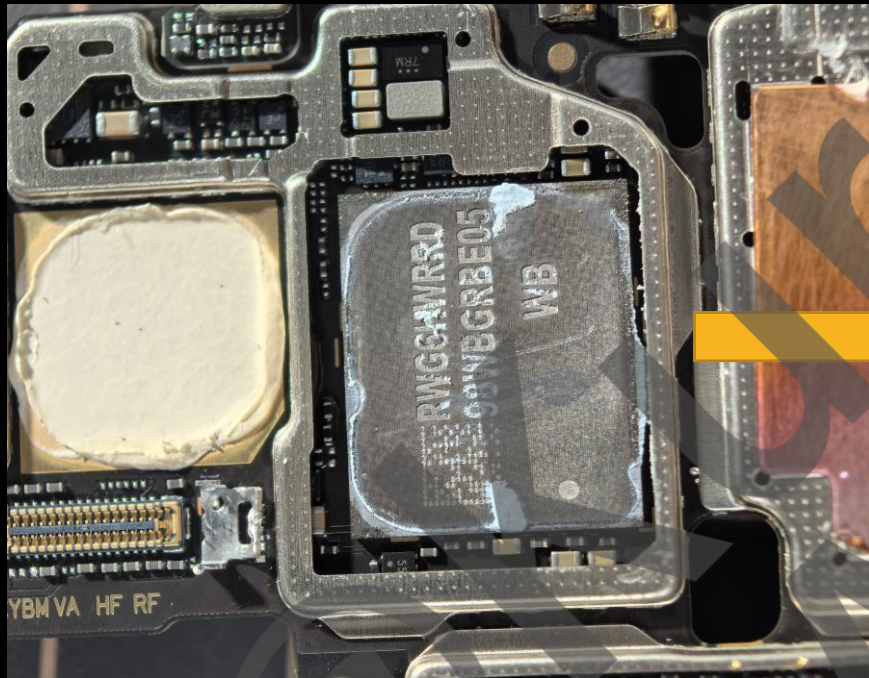


Remove the shield



512GB UFS

MATE70PRO+ NAND



Front



Back

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RWG6HWRRD
98WBGRBE05
WB

↑
Encrypted Topmark



BGA133

MATE70PRO+ NAND



Package in X Cut



Package in Y Cut



X cut

Y cut

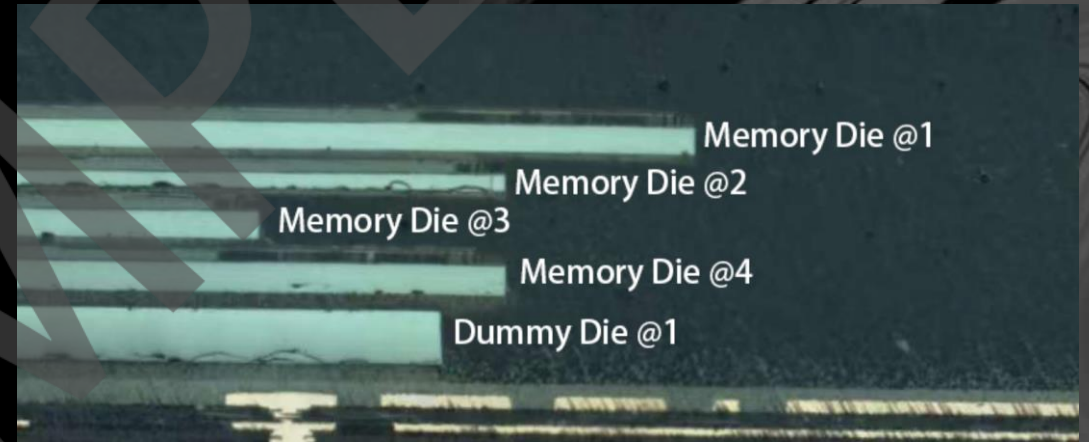
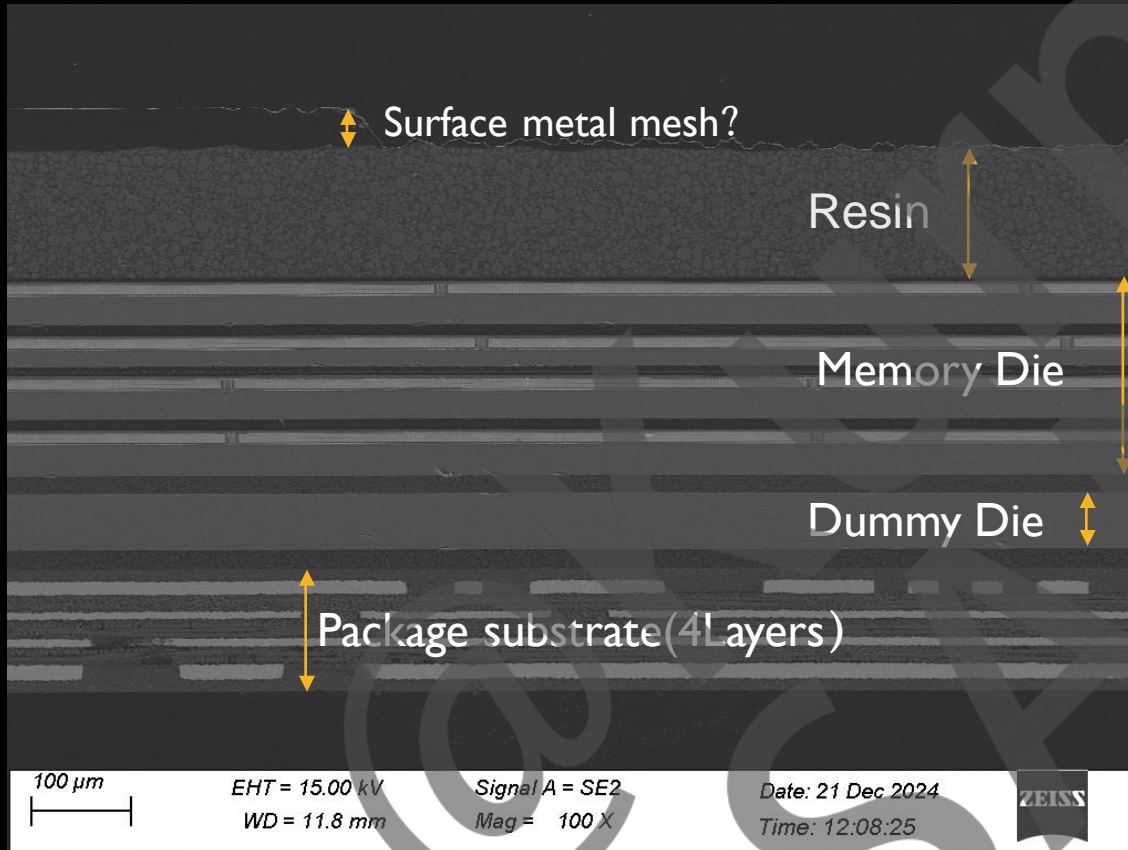
MATE70PRO+ NAND



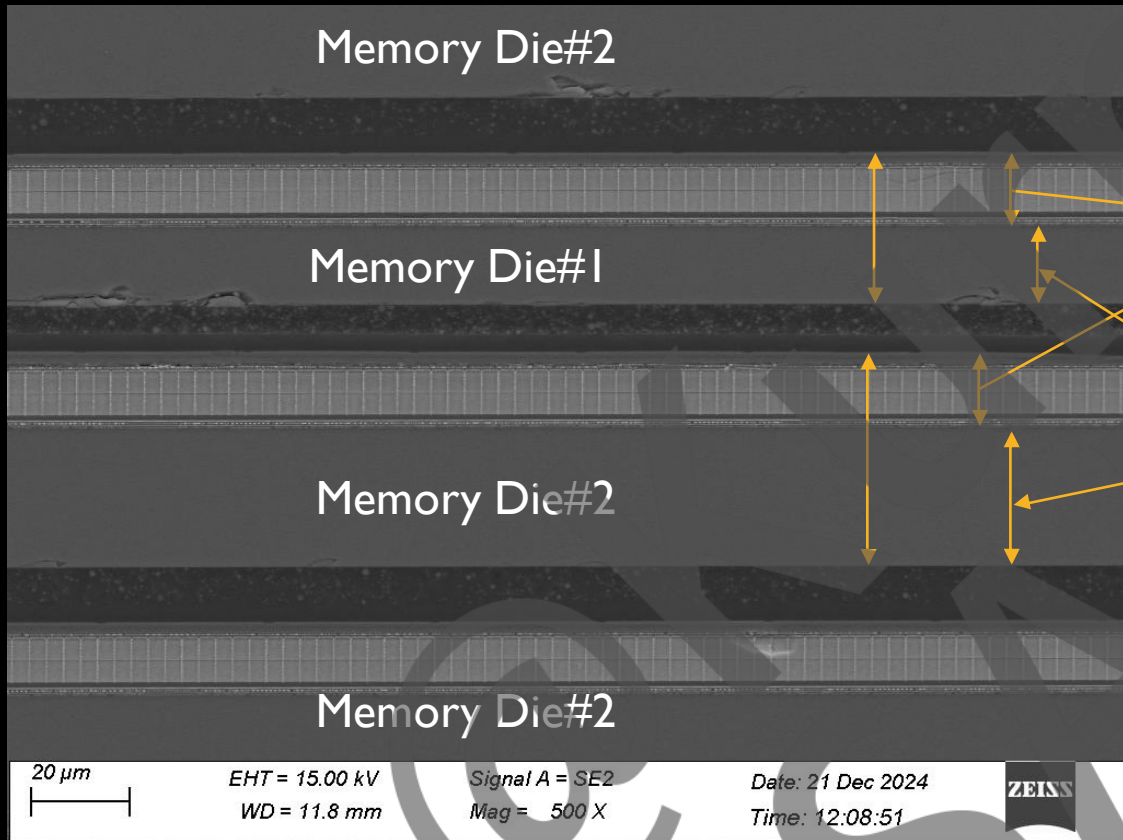
The memory package integrates a total of 4 memory chips

Package Capacity: 512GB
Die Capacity: 512GB/4
128GB

MATE70PRO+ NAND



MATE70PRO+ NAND



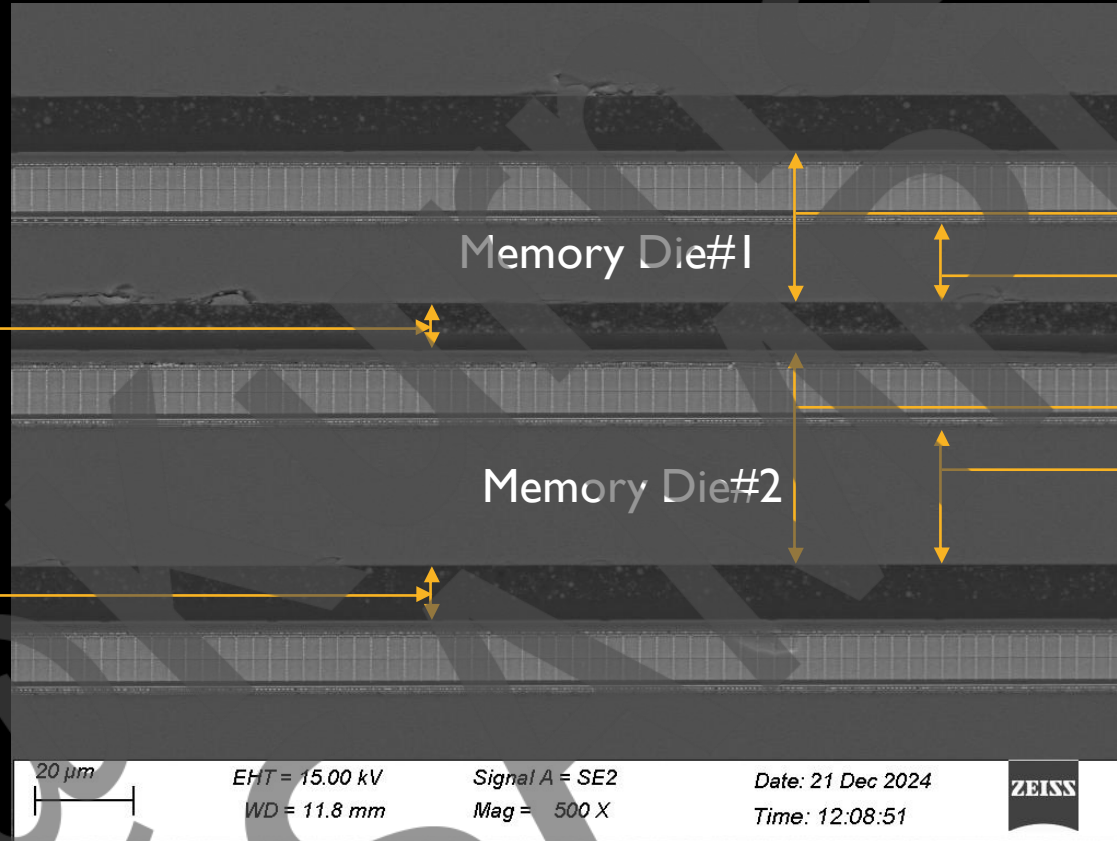
Same Thickness: 15.28 μ m

There are **two thicknesses** of Memory Die #1/#2.
The only difference is the Si Sub thickness.

MATE70PRO+ NAND

Adhesive#1:
9.282um

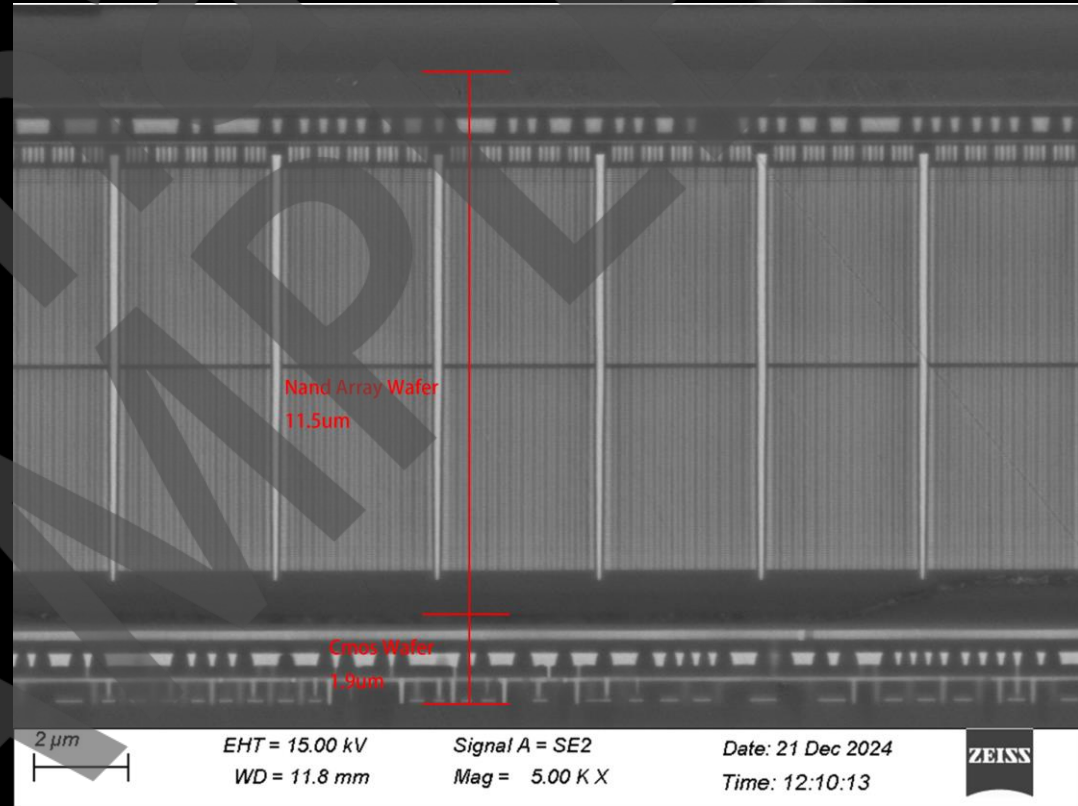
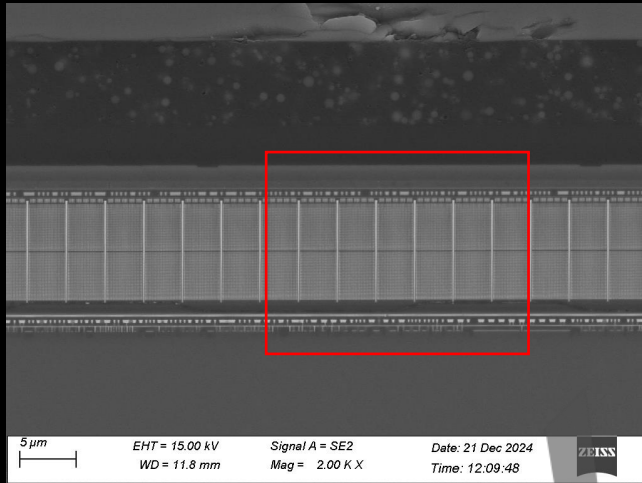
Adhesive#2:
11.027um



Memory Die #1 Thickness: 30.927um
Si Sub Thickness: 15.816um

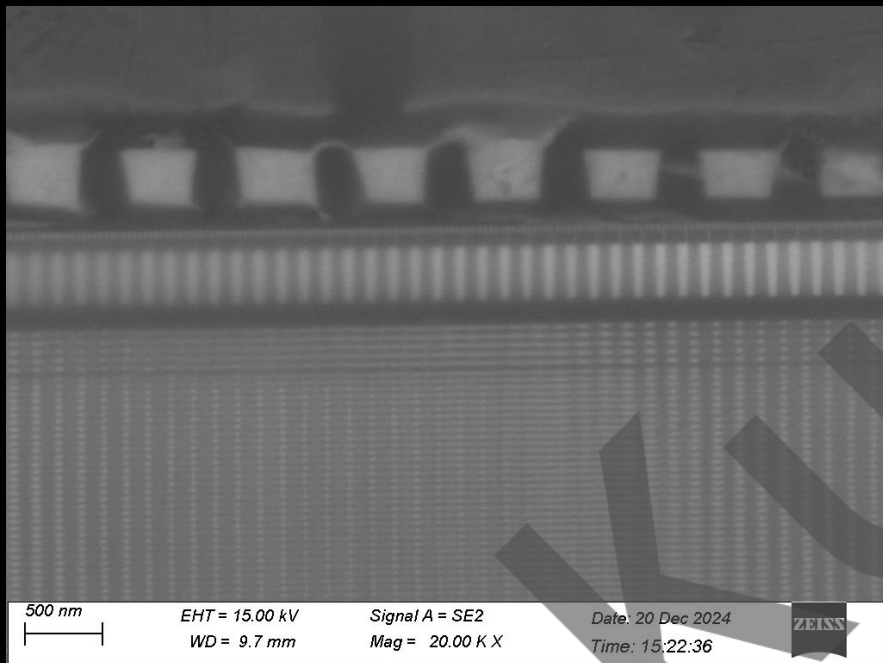
Memory Die #2 Thickness: 43.328um
Si Sub Thickness: 28.078um

MATE70PRO+ NAND



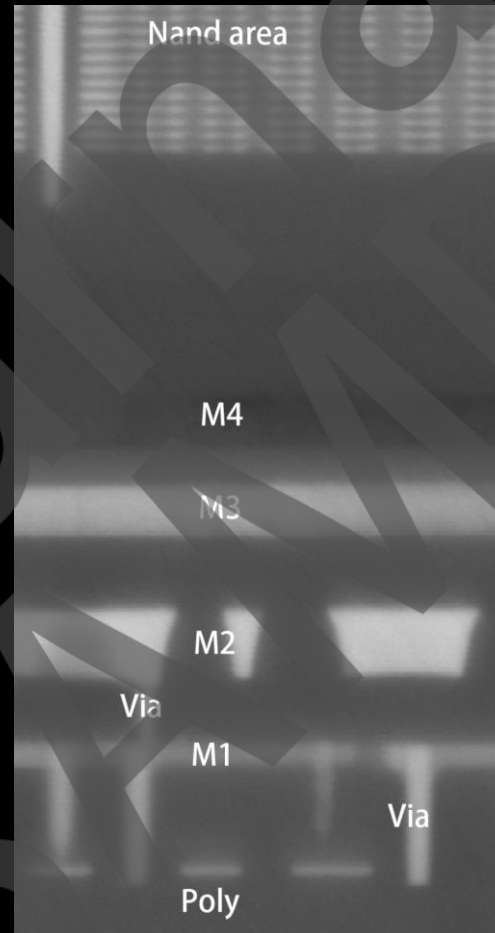
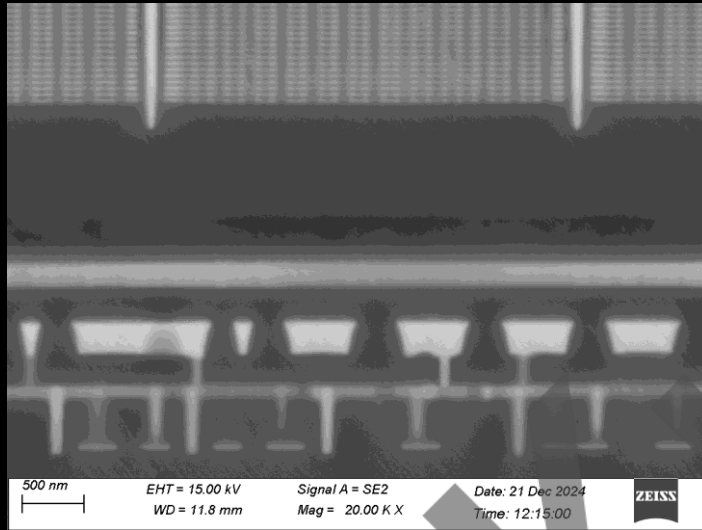
Nand Array Wafer : 11.5um
Cmos Wafer: 1.9um

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Nand Wafer use 4 Metal Layers

MATE70PRO+ NAND

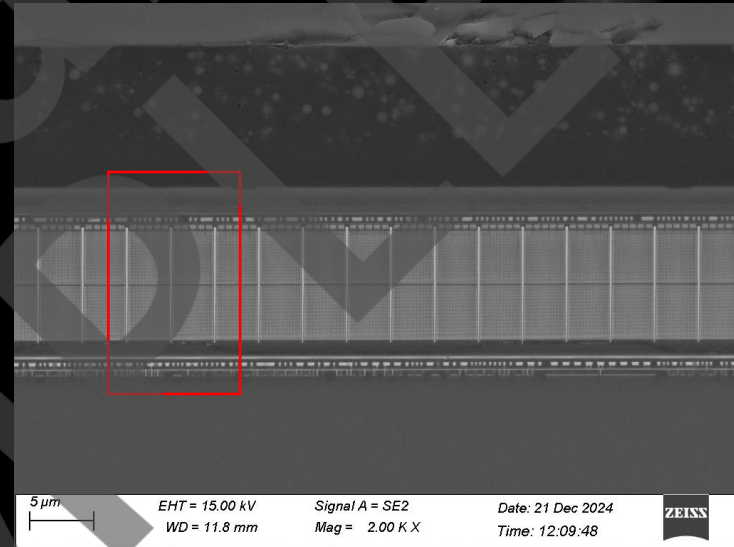
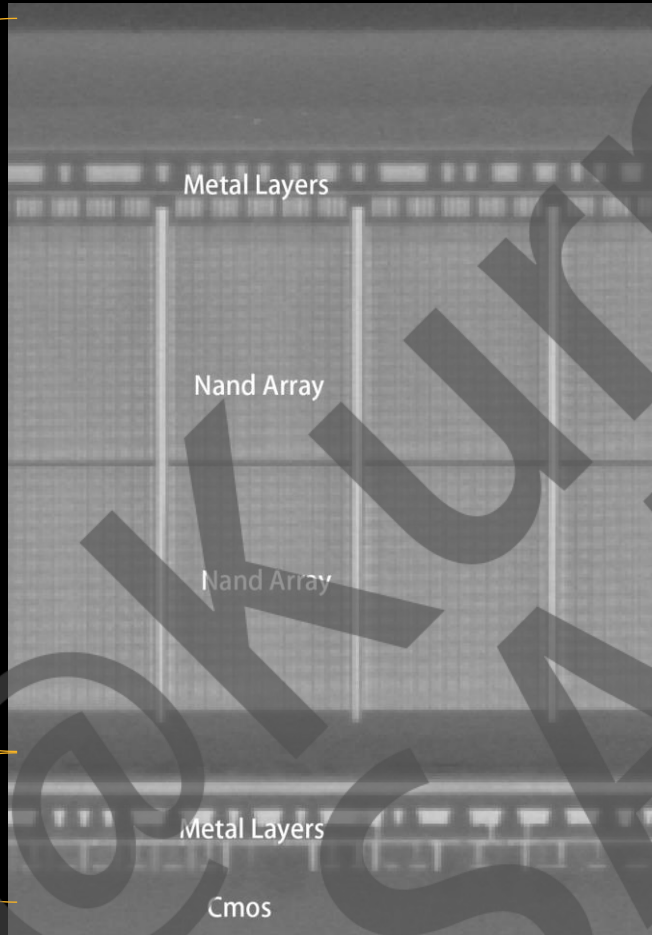


Cmos Wafer use 4 Metal Layers

MATE70PRO+ NAND

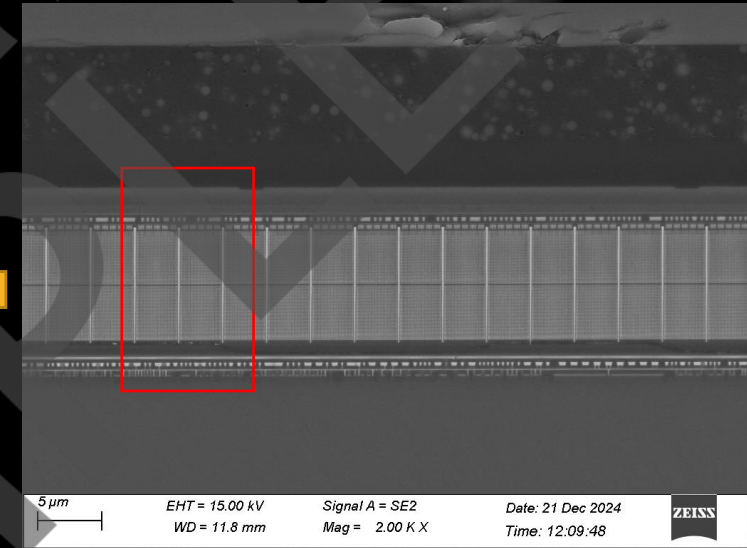
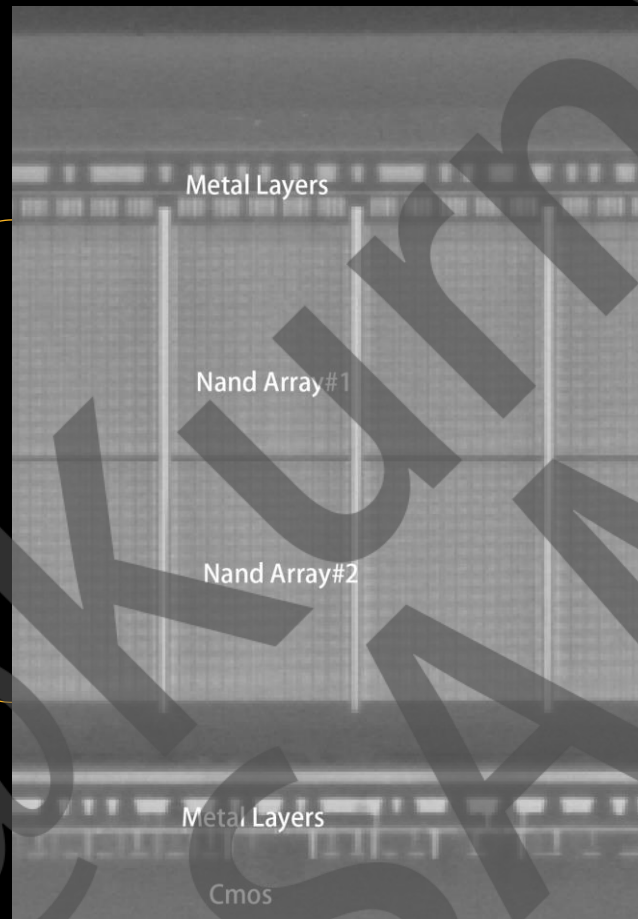
Nand Array Wafer

Cmos Wafer

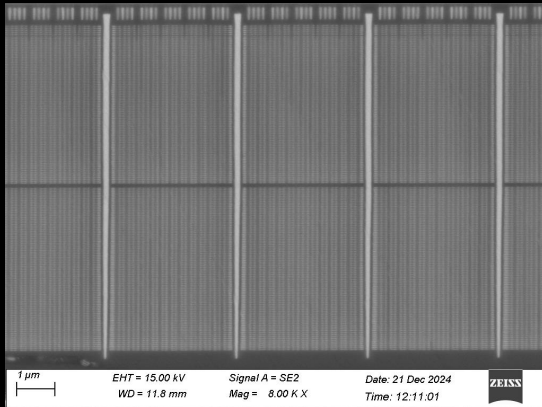


MATE70PRO+ NAND

The Nand Array made of Deck1 and Deck2

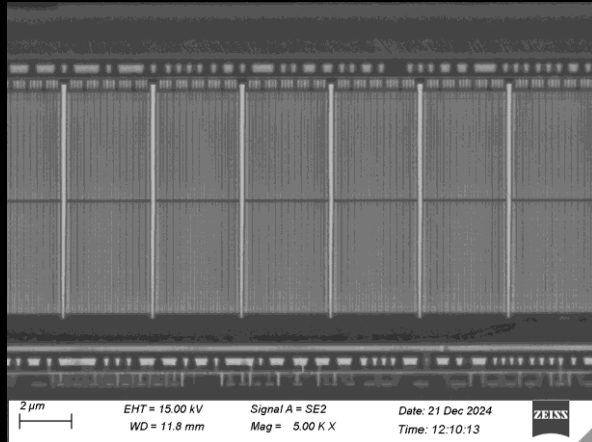


MATE70PRO+ NAND



Deck#1 Layers 91
Dummy Layers 5
Deck#2 Layers 93
Total Layers 179

MATE70PRO+ NAND



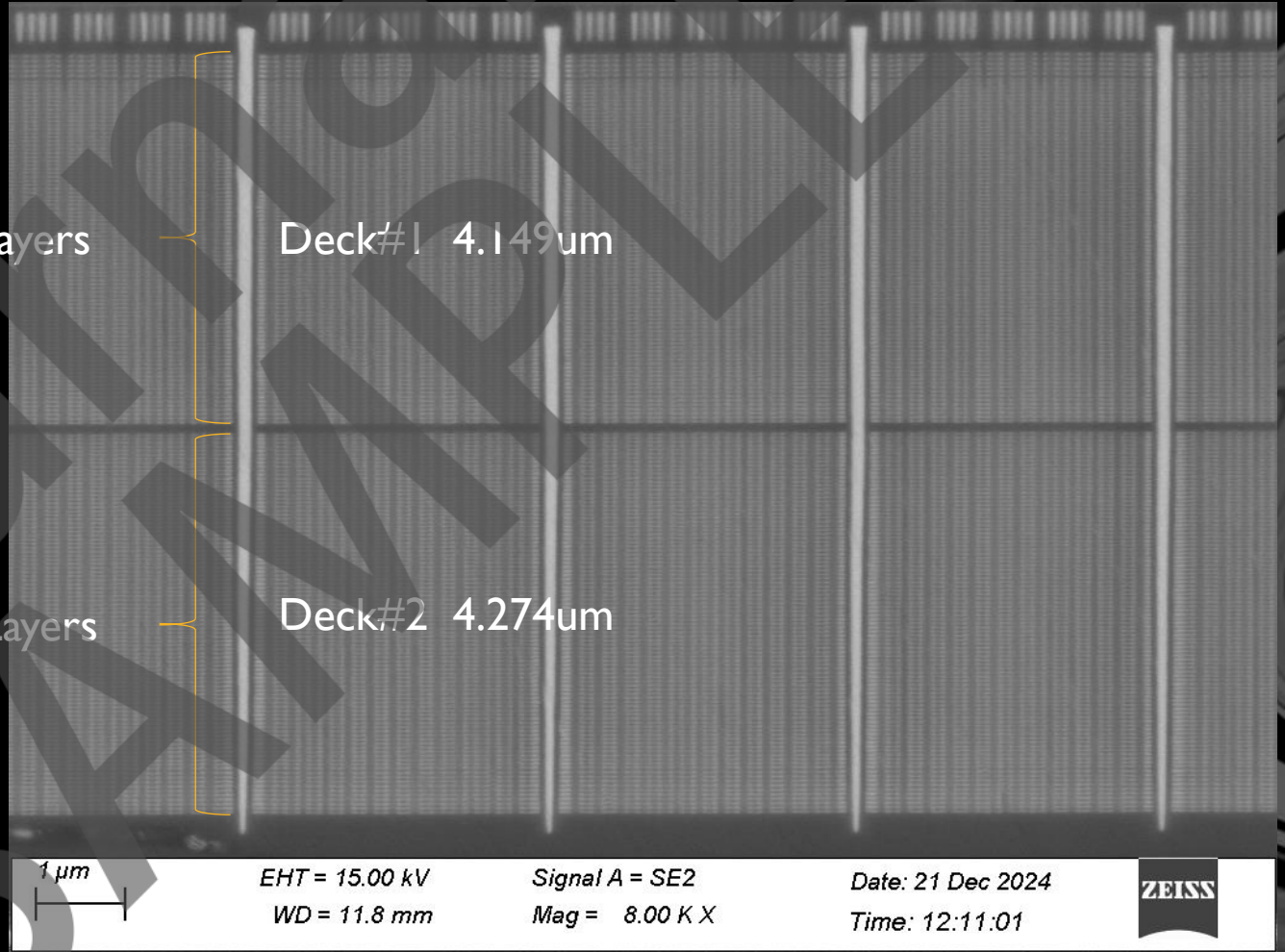
Deck#1 Layers 91 (5 dummy)
Deck#2 Layers 93
Total Layers 179
Deck#1 Thickness 4.149 μ m
Deck#2 Thickness 4.274 μ m
Total Thickness 8.535 μ m

91 Layers

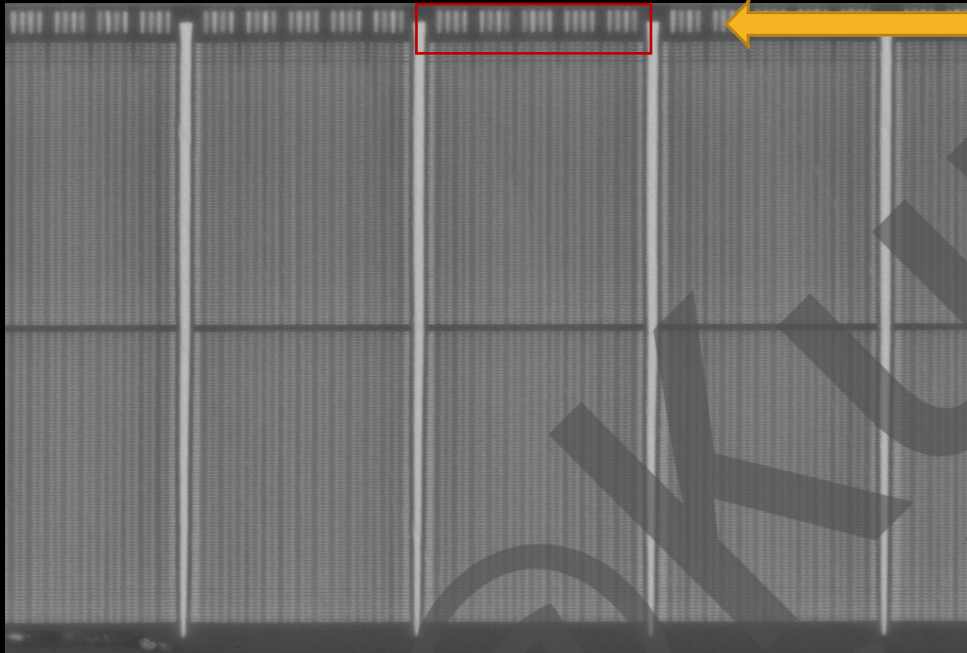
Deck#1 4.149 μ m

93 Layers

Deck#2 4.274 μ m



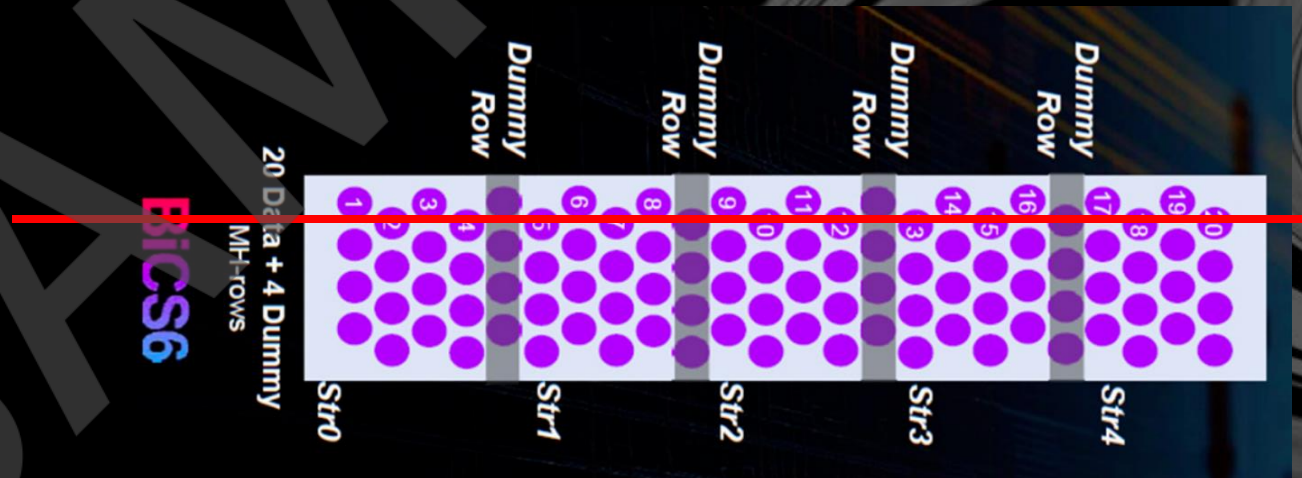
MATE70PRO+ NAND



1 μ m
EHT = 15.00 kV
WD = 11.8 mm
Signal A = SE2
Mag = 8.00 K X
Date: 21 Dec 2024
Time: 12:11:01
ZEISS



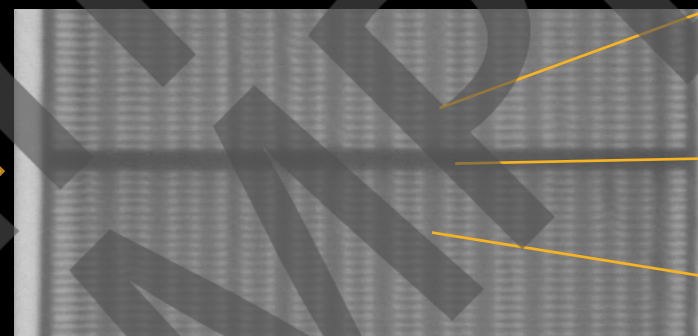
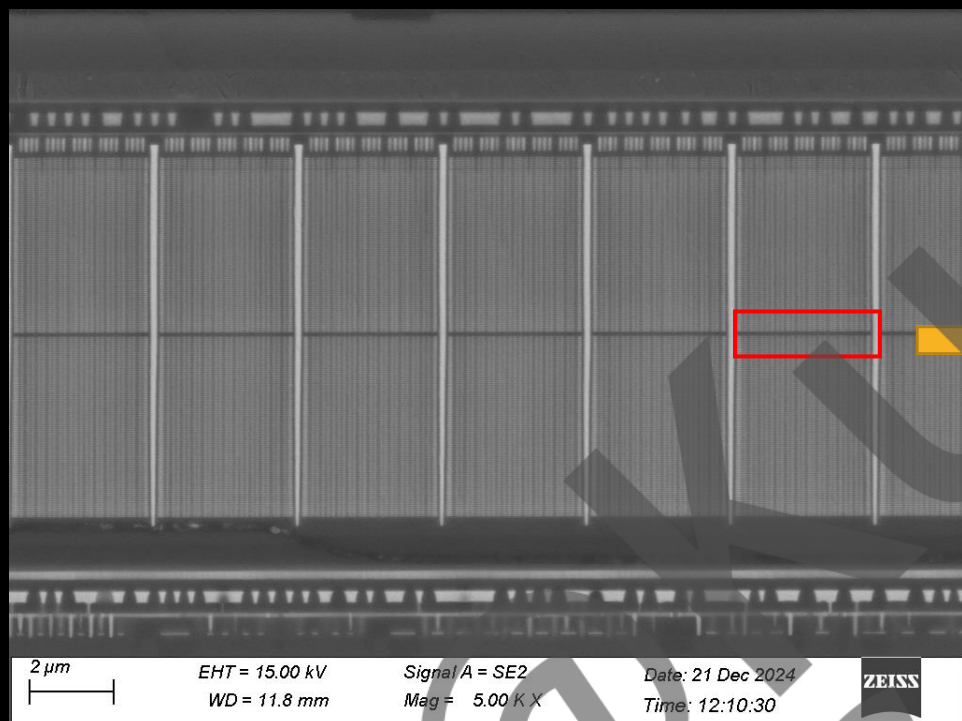
Have 24Pillar
20Pillar+4Dummy Pillar



BICS6

20 Data + 4 Dummy
MH-rows

MATE70PRO+ NAND

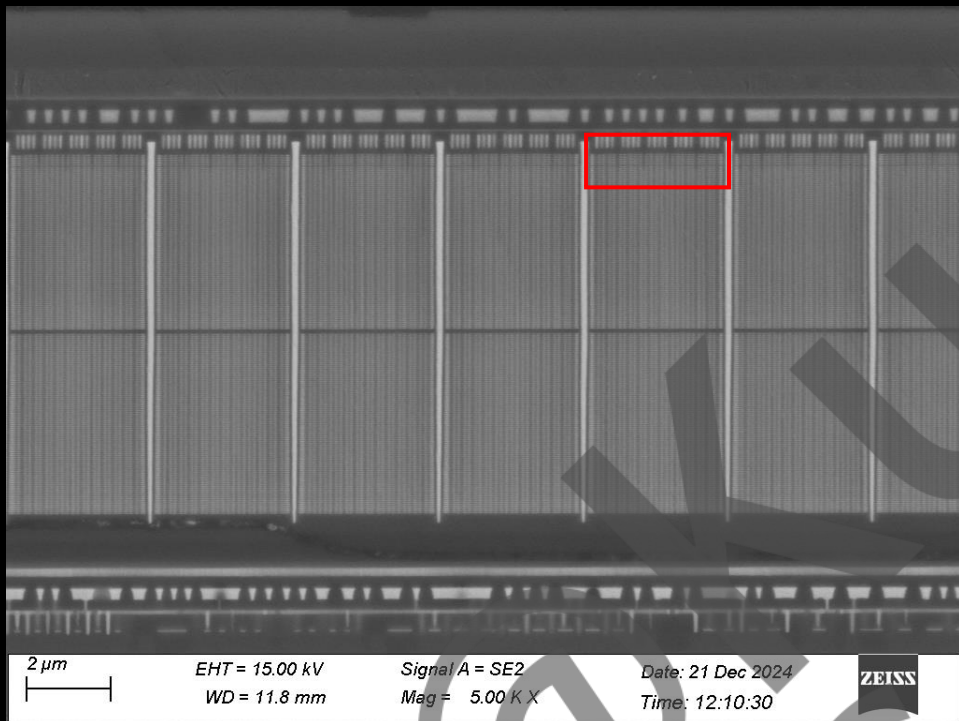


Deck#1 Channel Hole

Seperation of Deck interface

Deck#2 Channel Hole

MATE70PRO+ NAND



MATE70PRO+ NAND



Die Capacity: 512GB/4
128GB

2Deck
Deck#1 Layers 91 (5dummy)
Deck#2 Layers 93
Total Layers 179

Pillar number 24



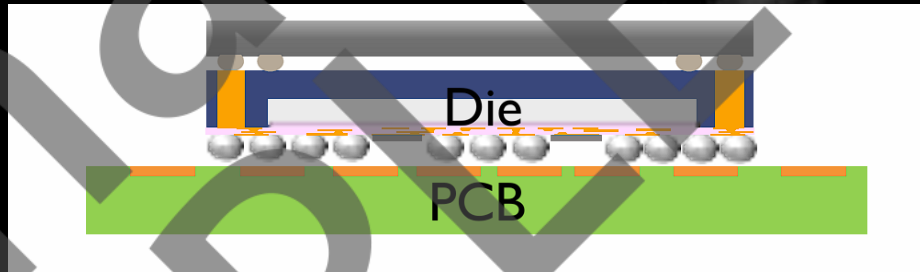
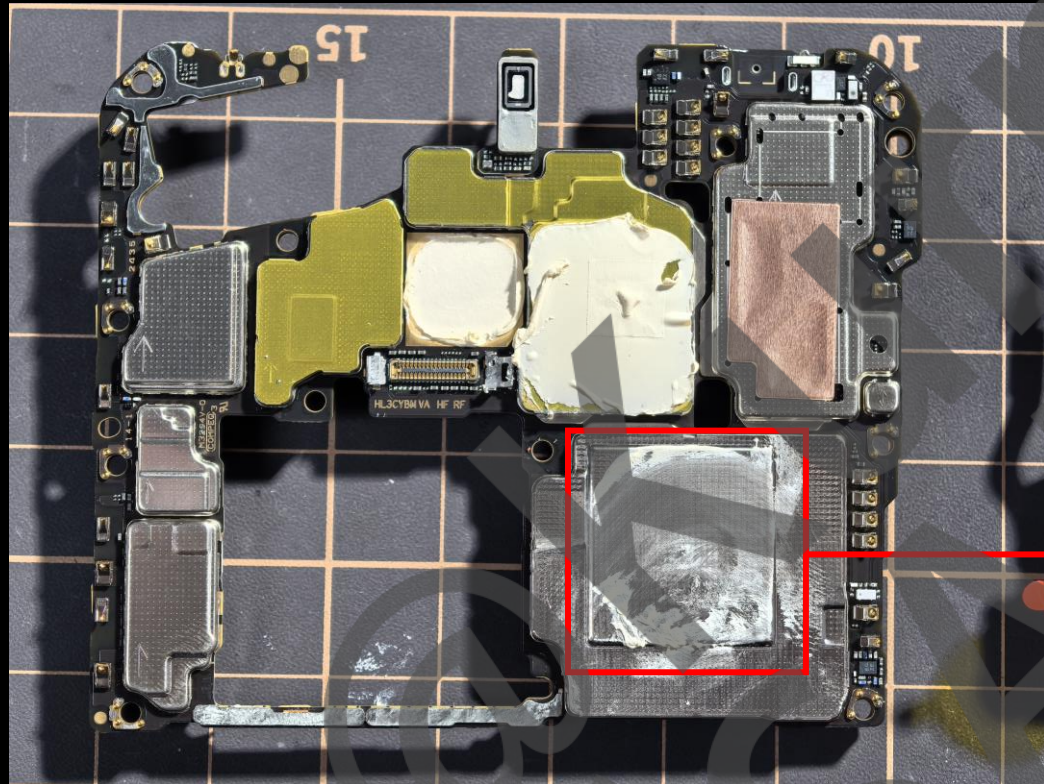
KIOXIA

Maybe it is BiCS6 By Kioxia

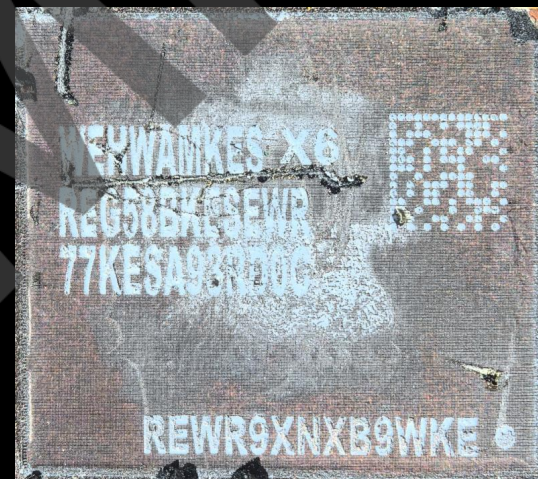


MEMORY (LPDDR)

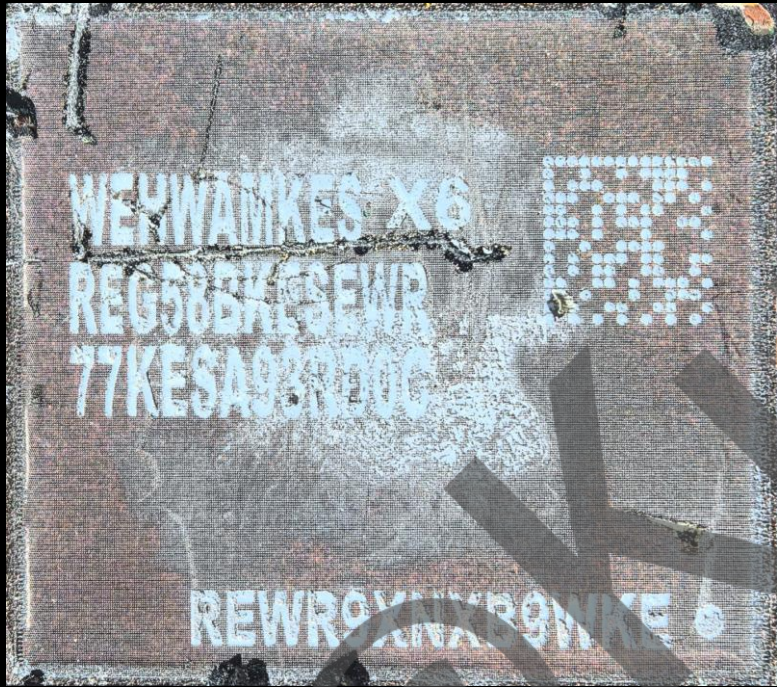
MATE70PRO+ LPDDR



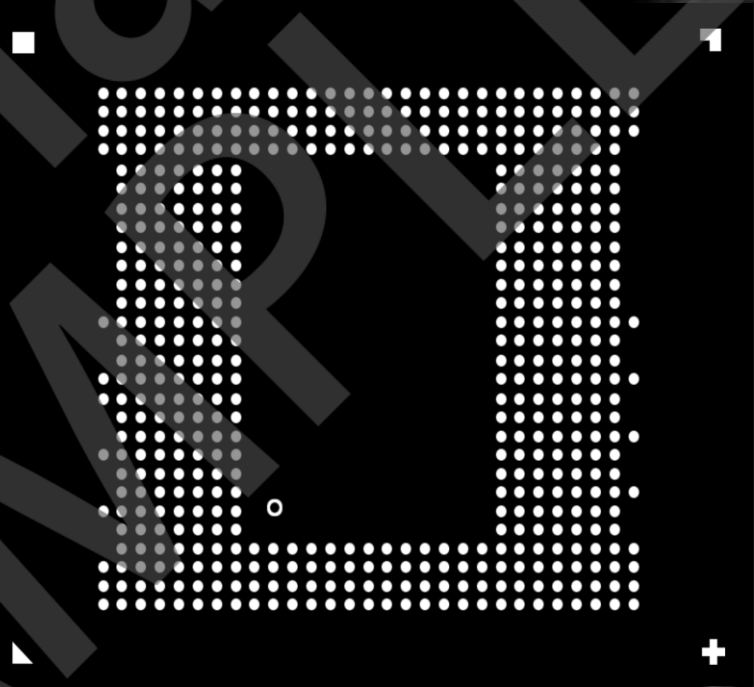
Package on Package



MATE70PRO+ LPDDR



Front



End

MATE70PRO+ LPDDR



WEHWAMKES X6
REG58BKSEVR
77KESA93ROOC

REWR9XNXB9WKE

Memory Topmark



BGA519(BGA496?)

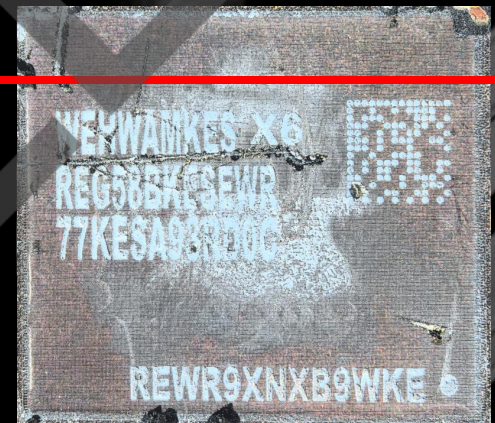
MATE70PRO+ LPDDR



13.9mm



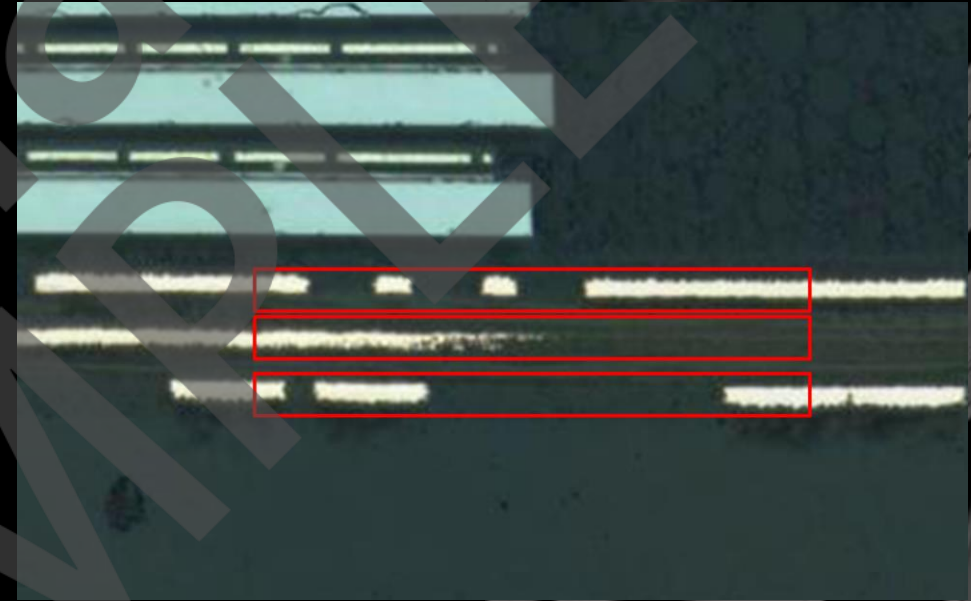
X-cut



MATE70PRO+ LPDDR

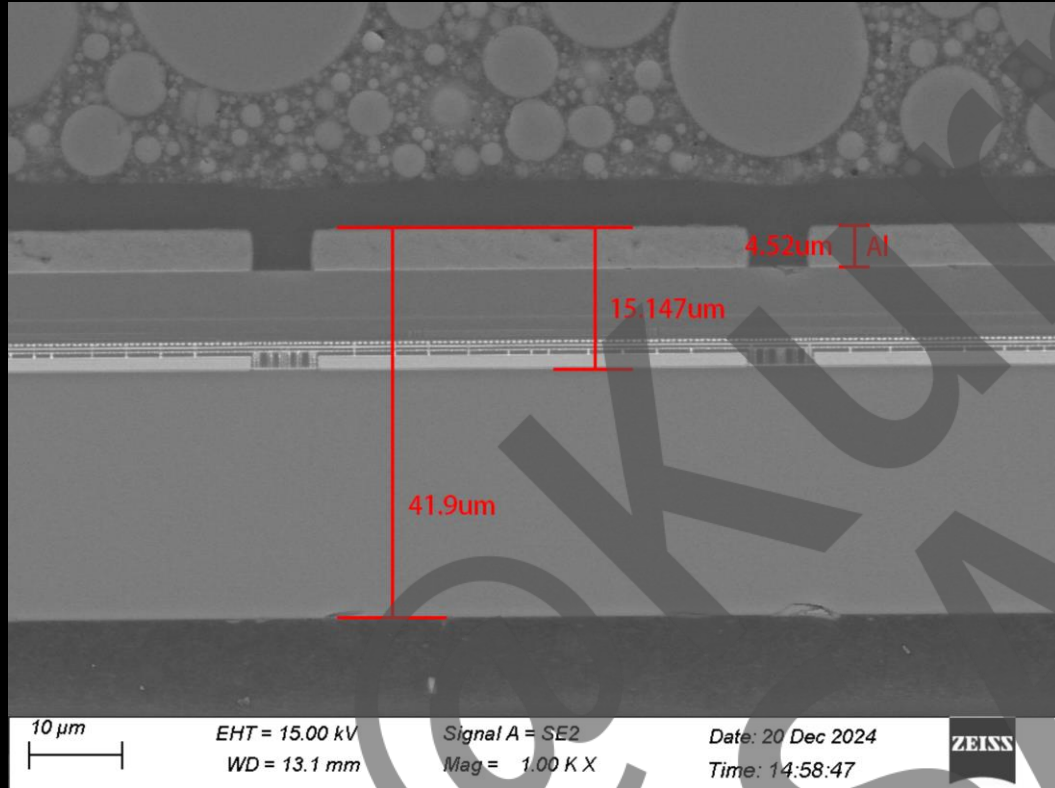


Die num in package: 8 dies
Package capacity: 16GB/128Gb
Die capacity: 2GB/16Gb



Package Sub RDL Number: 3Layers

MATE70PRO+ LPDDR



Die Total thickness:

41.9um

Si substrate thickness:

26.753um

Capacitor Metal layer thickness:

15.147um

Al thick metal thickness

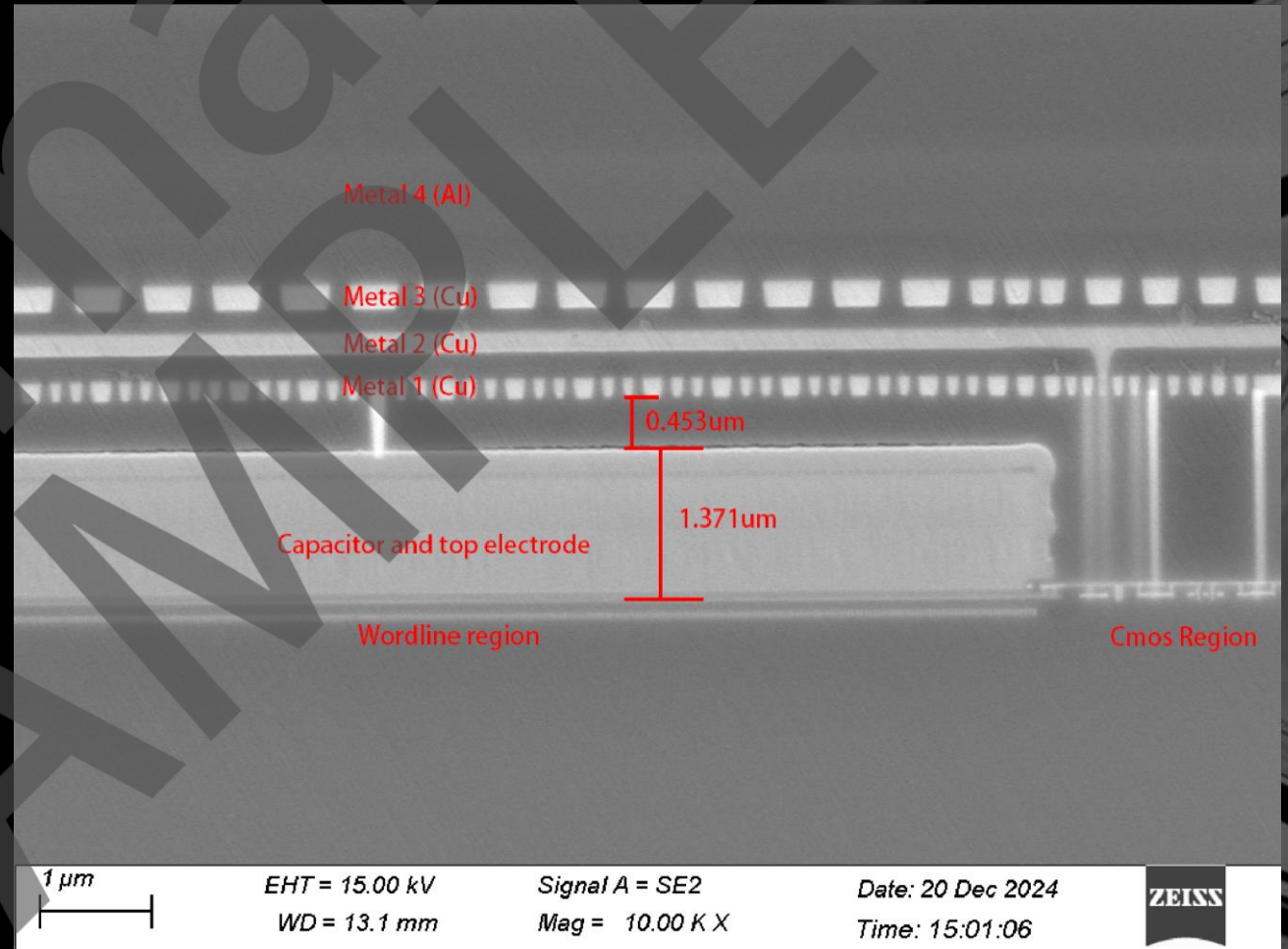
4.52um

MATE70PRO+ LPDDR

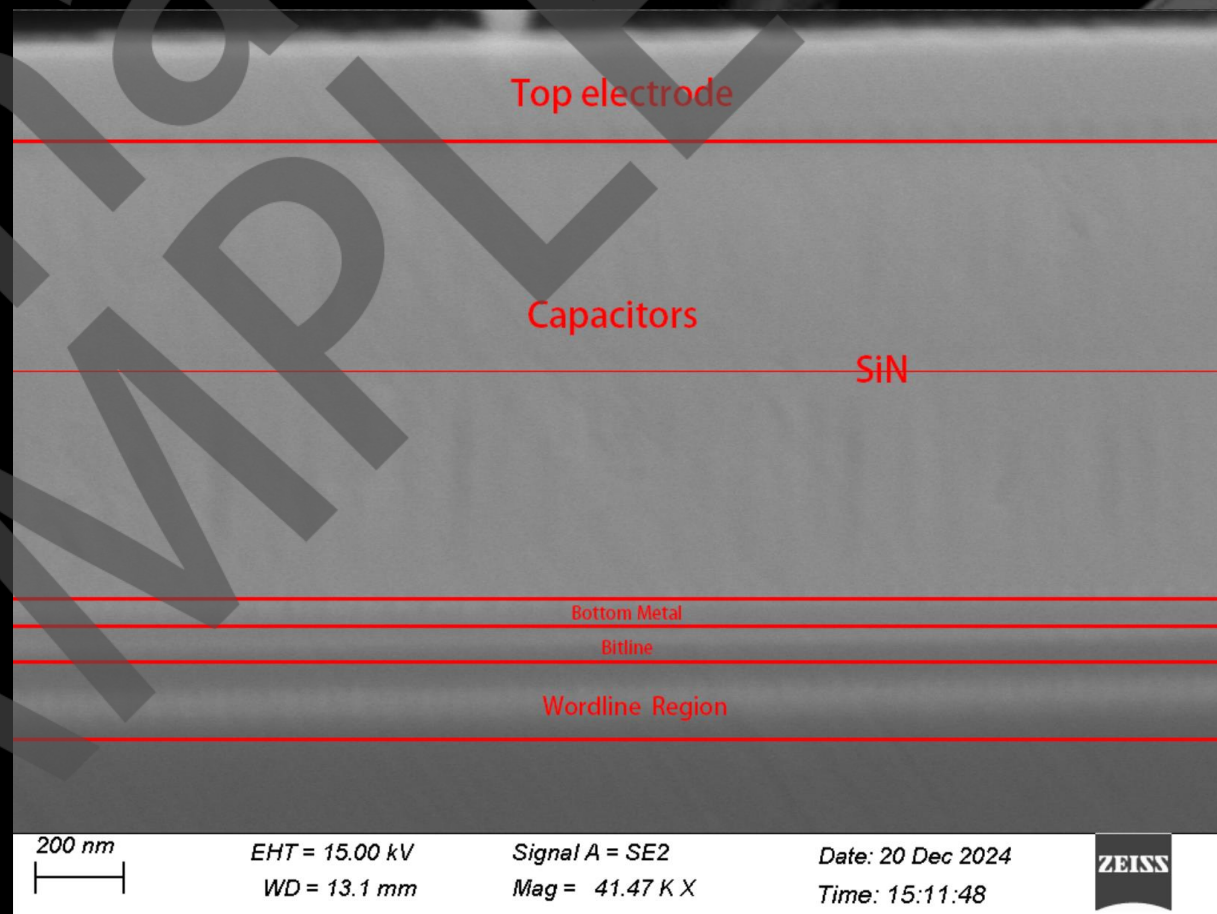
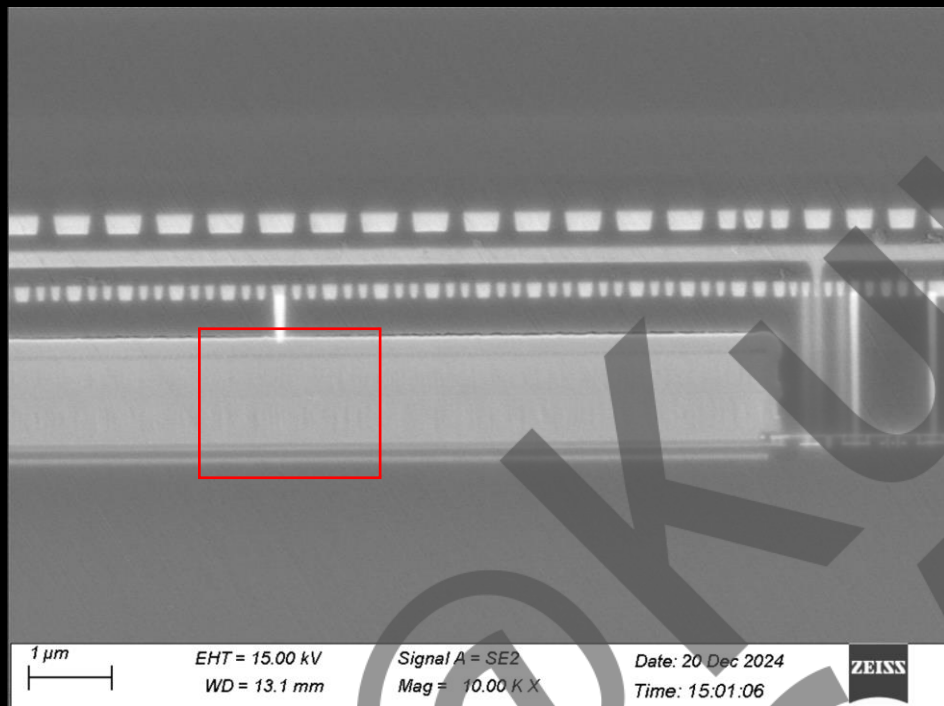
CMOS transistors and Capacitor are formed
At the base of the silicon substrate

Below the capacitors there is a wordline region

And have **4** Metal layers

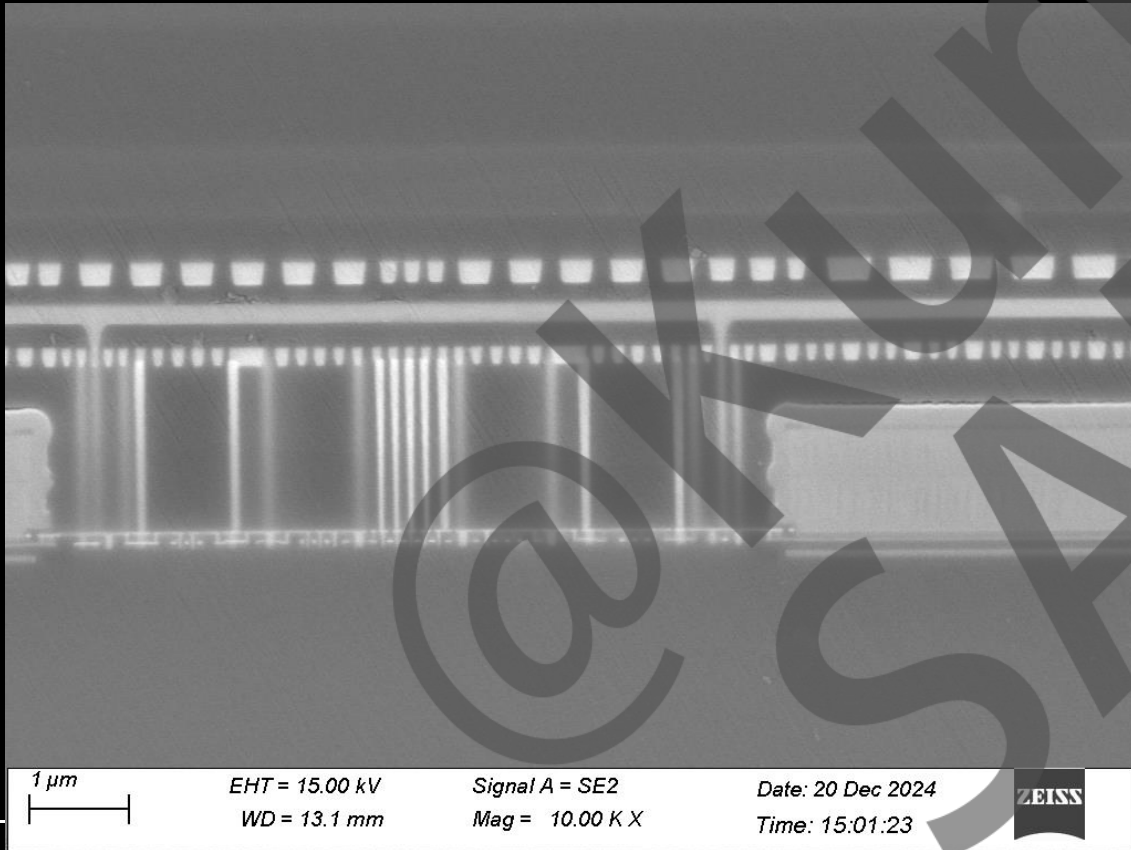


MATE70PRO+ LPDDR



MATE70PRO+ LPDDR

Unable to analyze, too little data
But according to the empirical formula,
this is a bit like Micron's Lpddr5/x



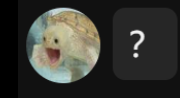
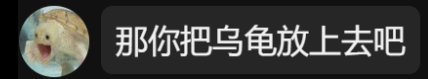
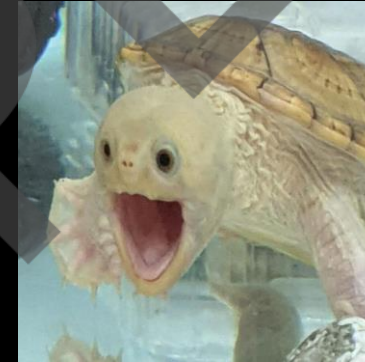
micron

END

Thanks By @英短咕咕咕
Providing funds and products



Thanks By @FlowRay
Provide some technical support



Thanks

The author of this report is @Kurnal
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