

“息光 技术” 点 项 2021 年度
项目申报 南建
(征求意见稿)

2021

2021

3

25

1
 40 nm
 20 nm
 0.5dB/cm 90% /
 3V cm
 150mW/ 3dB /

PDK 2 MZI

70 GHz 3V

10% 3 20 4

1.5 dB

50 GHz 5

20 MSA
 5 20 3

PLC
 SiO₂ PLC
 SiO₂ PLC
 SiO₂
 SiO₂
 PLC
 SiO₂ PLC
 1 SiO₂
 SiO₂
 SiO₂ 0.3%-2.5%
 0.0006 2%
 90° 1° 0.01dB/cm
 90% SiO₂
 Y /
 Y AWG MZI
 2 SiO₂ PLC
 PDK

			0.5 dB	3	PLC
				4	5
		15		5	
	30				
			5		
SiO ₂	PLC				
		20			MSA
	5			30	3

1
4000Mcells/s

5%

PDK

20

500

30fps@2K

100

/

2

III-V

5%

100

20

3

15

III-V

SOI

CMOS

5dB/cm

	2dB/cm		
15dB		7dB	10dBm
	30mW		10
	50mA	-40	-85
		3dB	
	20		6
	1		
			100 GHz
	30	1mW	RIN
<-145dBc/Hz	2		
	10 GHz		
	<10mW		-120
dBc/Hz@100 kHz	3		

5GHz~25GHz

10dB 40

20dB 4

6

20

6G

1 128 1

340 20GHz 1 128 1-2mm

2 1kHz

NEP 50pW/Hz^(1/2) 100Hz

NEP 10fW/Hz -40 50 2

	890	45GHz	1	128	1-2mm
			2		
1kHz		NEP		100pW/Hz ^(1/2)	
15Hz		NEP		50fW/Hz	-40
50	3				20
		6			

THz

500km/h

8

/ /

32

40GHz

20

6

QoT

/

20

6

67GHz
 10dBm
 30dB
 SCI 5
 10
 10o
 100kA/cm2
 10um2
 SCI
 5 10
 1550nm
 $V_{\pi}L_{\pi}=2V \cdot cm$

$\leq 6\text{dB}$
3dB $\geq 40\text{GHz}$
10

$\geq 130\text{dB}\cdot\text{Hz}^{2/3}@10\text{GHz}$
SCI 5

2GHz $\geq 50\%$
 $\leq 10^{-5}/\text{gate}$
10

SCI 5

0.1dB/m

10^8

10dB

ns
 $\leq 0.3\text{dB}$
40GHz
5 10
 2π
 $\leq 0.3\text{dB}$
SCI

CMOS

CMOS

1550nm
20dB

80nm

3dB

25 dB

500

0.05

3

10000

Imagenet

Resnet50

5000

>5,000 fps

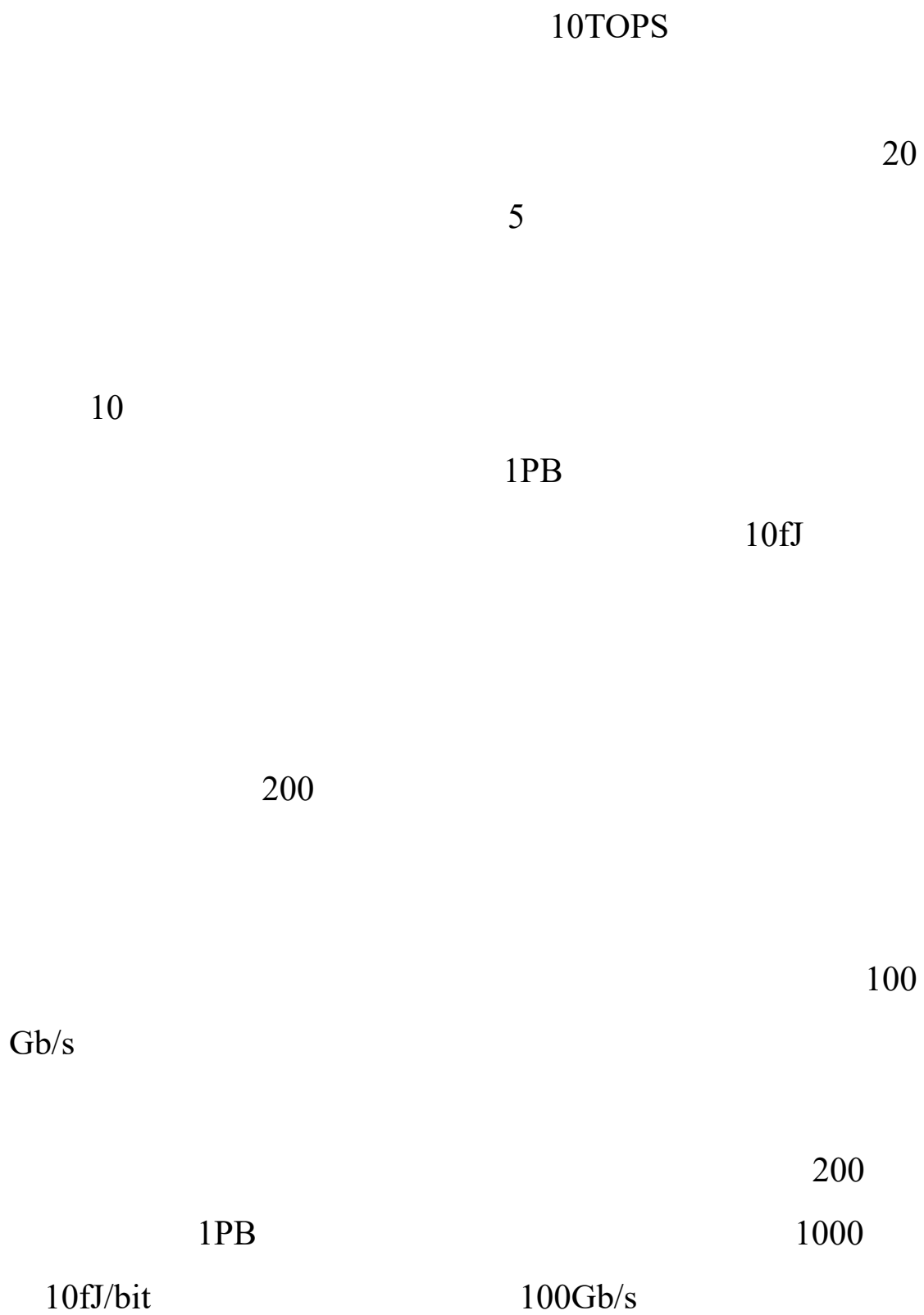
150W

5

6

20

agy €DËP



20

6

RGB

10 @30fps

0.25 200

8k @30fps

1mm@2 , 100mm@10 ,

1m@100

1mm@2 , 10mm (20)

20

2

6

(0.25m-6m)

(10^7)

350g

20

2

6

3D

3D

3D

3D

3D

3D

3D

3D

3d

3D

3D

3D

3D

3D

3D

0.5 mm

3D

3D

20

2

7

3D

3D

3D

3D

3D

3D
3D
3D
3D
3D
3D
3D
3D
3D
3D
3D
3D
20
2
7