

# IR Presentation Q2 2021

Q2 2021 Results & Q3 2021 Guidance

August 2021  
OE Solutions IR

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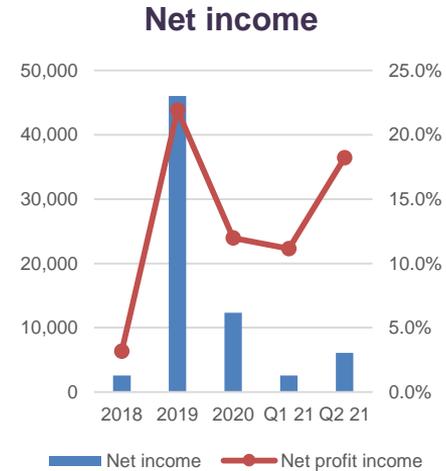
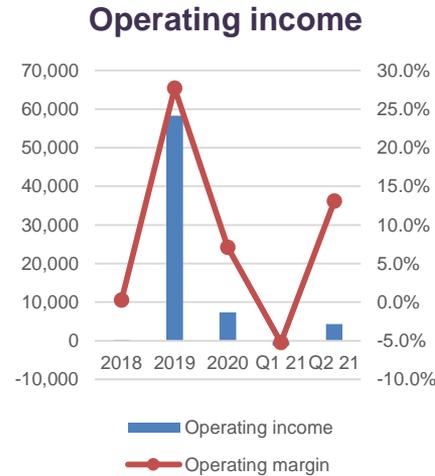
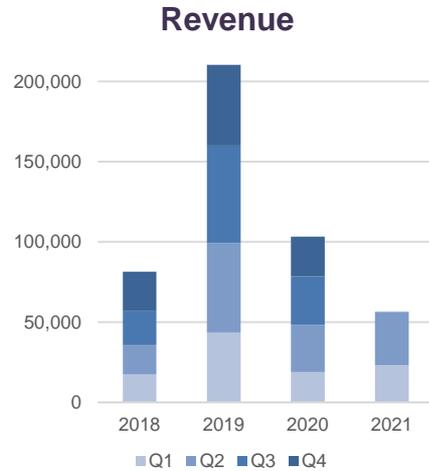
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## Q2 2021 Result Review



**Q2 2021 Revenue 33.4B KRW , Operating income 4.4B KRW(13%), Net income 6.1B KRW(18%)**



※ Based on consolidated

(Unit : million KRW)

|                     | 2018   | 2019    | 2020    | Q1 21  | Q2 21  |
|---------------------|--------|---------|---------|--------|--------|
| • Revenue           | 81,504 | 210,283 | 103,178 | 23,068 | 33,397 |
| • Operating income  | 234    | 58,262  | 7,333   | -1,203 | 4,370  |
| • Operating margin  | 0.3%   | 27.7%   | 7.1%    | -5.2%  | 13.1%  |
| • Net income        | 2,584  | 46,065  | 12,352  | 2,573  | 6,085  |
| • Net profit margin | 3.2%   | 21.9%   | 12.0%   | 11.2%  | 18.2%  |

## Q2 2021 Revenue **33.4B KRW** QoQ 44.8%, YoY 13.7%

(Unit : million KRW)

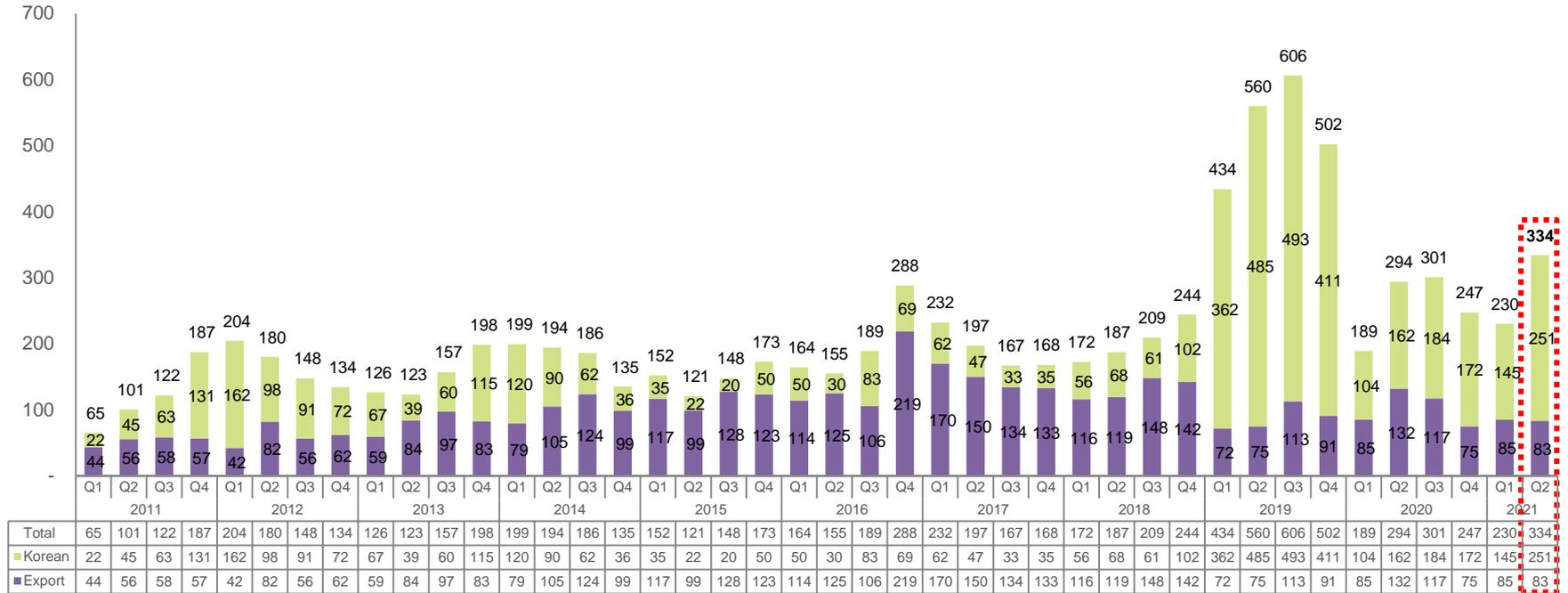
|   | Q1 21  | Q2 21  | %     | QoQ     | Q2 20  | YoY   |
|---|--------|--------|-------|---------|--------|-------|
| Revenue (Sales)                         | 23,068 | 33,397 |       | 44.8%   | 29,378 | 13.7% |
| Gross profit                            | 8,345  | 14,018 | 42.0% | 68.0%   | 12,638 | 10.9% |
| Selling general Administrative expenses | 9,548  | 9,648  | 28.9% | 1.0%    | 8,462  | 14.0% |
| Operating Income(loss)                  | -1,203 | 4,370  | 13.1% | 463.4%  | 4,176  | 4.7%  |
| Profit (loss) Before tax                | -443   | 6,457  | 19.3% | 1556.6% | 4,107  | 57.2% |
| Net income                              | 2,573  | 6,085  | 18.2% | 136.5%  | 3,798  | 60.4% |

※ Based on consolidated

# Quarterly Revenue trends

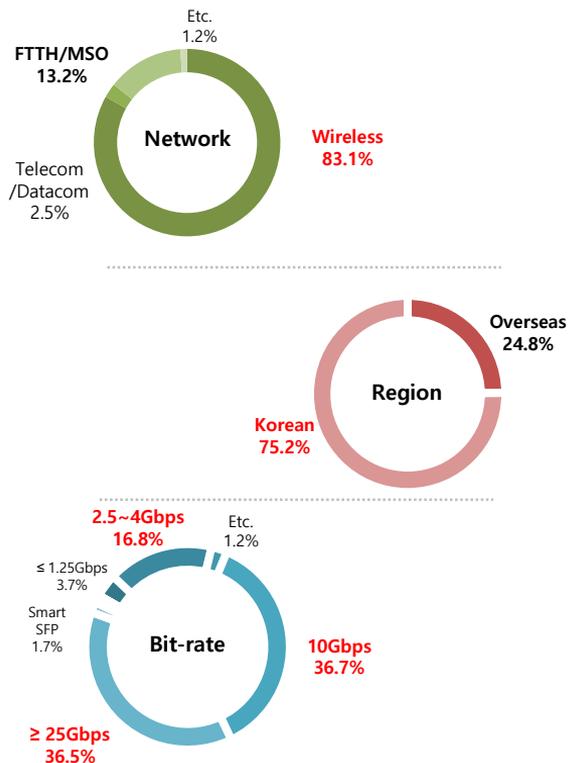
## Global 5G investment Expected in 2022

(Unit: 100 million KRW)



※ Based on separate standard

## Global 5G Wireless sales have a positive effect on Q2 2021 Revenue



(Unit: 100 million KRW)

|                       | 1Q 2020 | 2Q 2021 | QoQ (%) |
|-----------------------|---------|---------|---------|
| <b>Network</b>        |         |         |         |
| • <b>Wireless</b>     | 179.6   | 277.8   | 54.7%   |
| • Telecom/Datacom     | 5.7     | 8.3     | 45.6%   |
| • FTTH/MSO            | 44.1    | 44.2    | 0.2%    |
| • etc.                | 1       | 3.9     | 290.0%  |
| <b>Region</b>         |         |         |         |
| • <b>Korean</b>       | 145.2   | 251.2   | 73.0%   |
| • Overseas            | 85.2    | 83.0    | -2.6%   |
| <b>Overseas ratio</b> | 37.0%   | 24.8%   |         |
| <b>Bit-rate</b>       |         |         |         |
| • ≤1.25Gbps           | 9       | 12.4    | 37.8%   |
| • <b>2.5~4Gbps</b>    | 52.1    | 56      | 7.5%    |
| • 5~6Gbps             | 5.4     | 8.3     | 53.7%   |
| • <b>10Gbps</b>       | 101.4   | 122.6   | 20.9%   |
| • ≥25Gbps             | 53.8    | 125.4   | 133.1%  |
| • Smart SFP           | 7.7     | 5.6     | -27.3%  |
| • Component / Chip    | 1.0     | 3.9     | 275.0%  |
| • etc.                |         |         |         |
| <b>Total</b>          | 230.4   | 334.2   | 45.0%   |

※ Based on separate standard

# 5G(NR) Mobile Network Business



# 5G(NR) Mobile Network Business

## 5G Network Supply chain

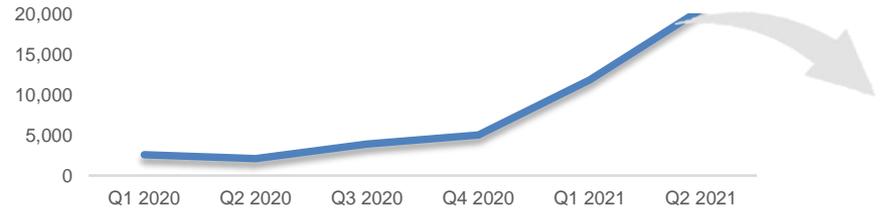


## Global 5G Revenue Forecast

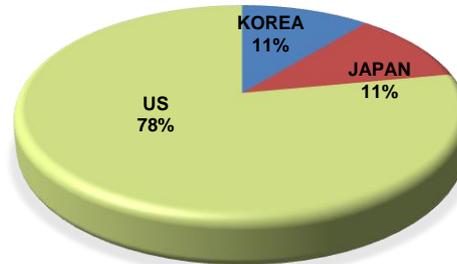
Global(US, Japan, etc.) 5G sales growth is expected to decrease in the second half of the year

(Unit: 100 million KRW)

### Global 5G Revenue outlook



## Q2 2021 5G Revenue



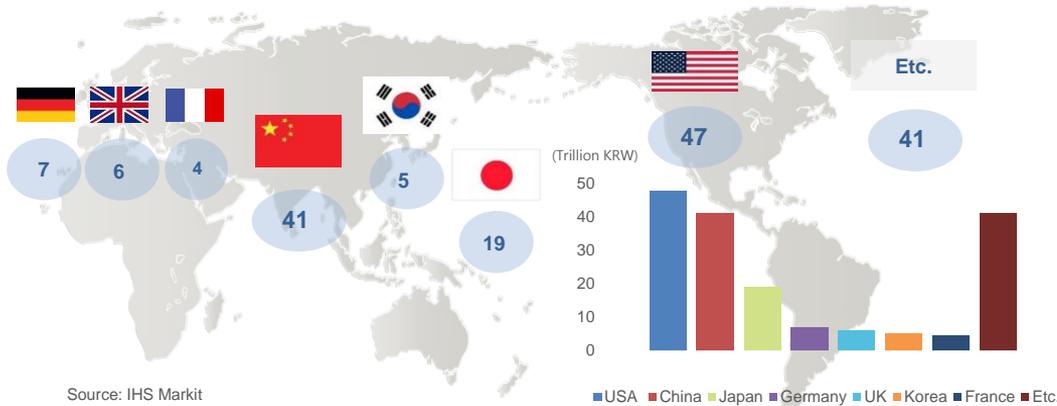
(Unit: 100 million KRW)

| Region       | Operator   | Revenue       | %   |
|--------------|------------|---------------|-----|
| US           | Verizon    | 18,026        | 78% |
| JAPAN        | KDDI       | 2,554         | 11% |
|              | NTT docomo |               |     |
| KOREA        | KT         | 2,537         | 11% |
|              | LG U+      |               |     |
|              | SKT        |               |     |
| <b>Total</b> |            | <b>23,117</b> |     |

## 5G Market Forecast

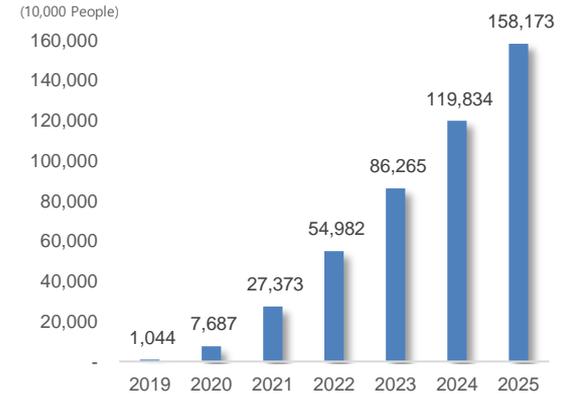


### 5G Infra equipment investment outlook - 5-year average



Source: IHS Markit

### Global 5G subscribers outlook



Source: IHS Markit

## Data traffic

### Global Mobile data traffic outlook

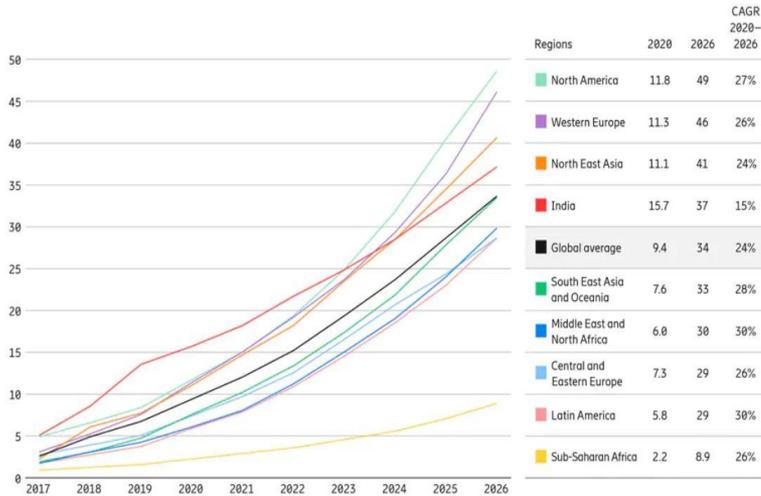
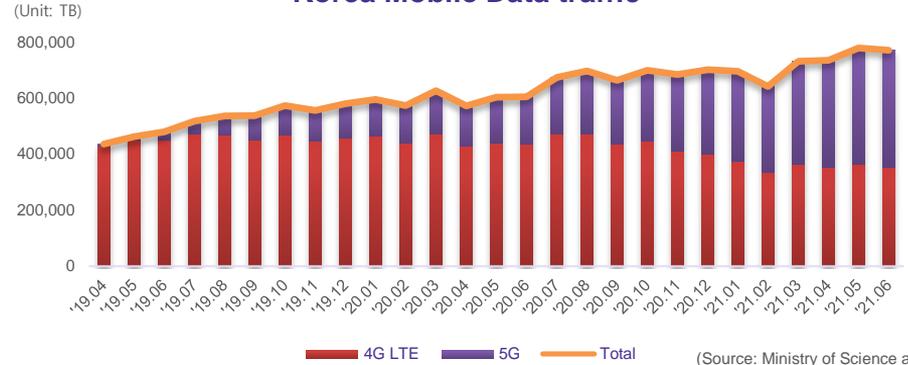


Figure 13: Mobile data traffic per smartphone (GB per month)

(Source: Ericsson)

### Korea Mobile Data traffic



4G LTE 5G Total

(Source: Ministry of Science and ICT)

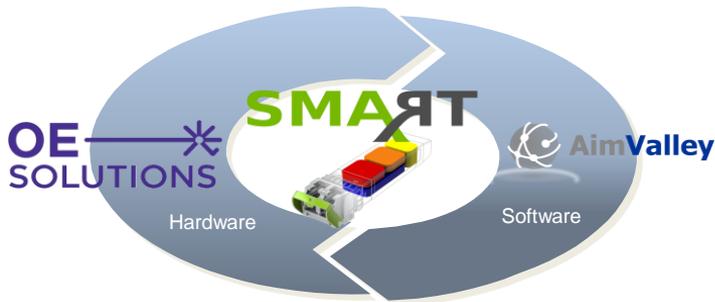


# OE Solutions Vision & Strategy



## World's First Leading Technology Smart Transceiver

### Smart Transceiver



### Product Features



### Smart Transceiver

The Network system features in the transceiver enable network migration at low cost and high efficiency. OE Solutions/AimValley

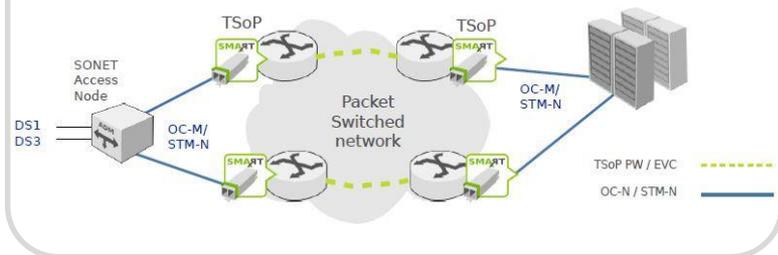
### World's First Leading Technology

Global Tier 1 customer design in good progress

→Ciena, CISCO, Nokia, Juniper, ADVA etc.

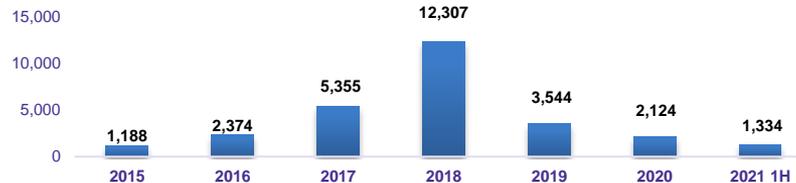
### Simplify Network Migration

#### Example of using Smart SFP

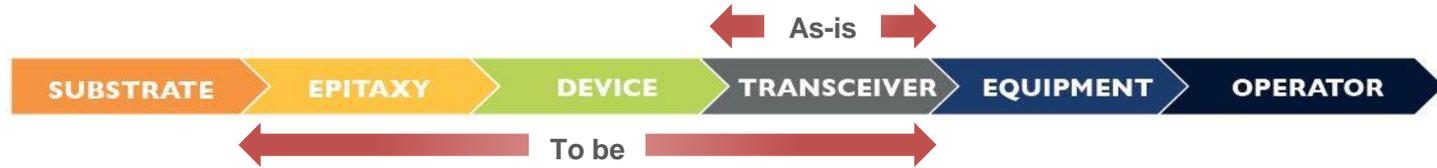


### Smart Transceiver Revenue

(Unit: million KRX)



Business expand



## Optical Component



- Mass production scheduled for the 2020
- 10G/25G/100G will start using in-house laser chip
- Component sales for China 5G and data center applications
- Component business expect high margin
- Through in-house capability, 1)Cost competitive 2) Supply and demand stabilization 3) Custom development will be possible
- Road map : 10G DML, 25G DFB, 25G EML, Tunable Chip
- 25G EML : Joint with ETRI



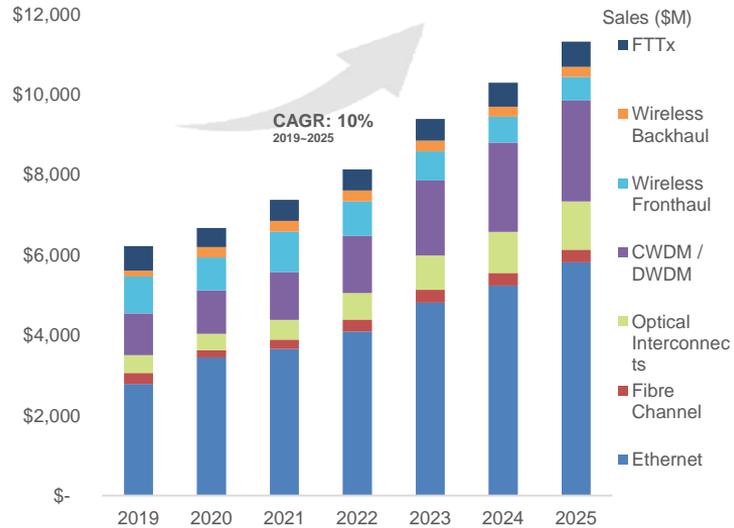
## Transceiver



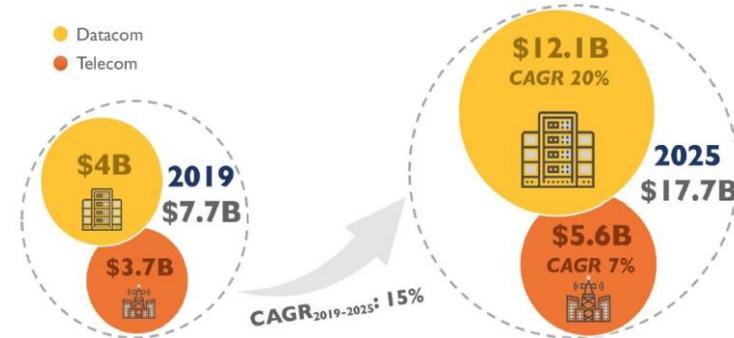
- Global 5G Transceiver All line-up
- Transceiver profitability and competitive advantage through in-house technology
- High bit-rate Transceiver development to launch a variety of Network Target products
- New Product in the second half
  - 50Gbps, 100Gbps, 400Gbps PAM4 for wireless and Data Center interconnector
  - 10Gbps Tunable Transceiver for WDM
  - Digital Coherent TRx for 100Gbps >100km

## Demand for Transceivers continues to increase due to infrastructure investments that require data connectivity

### Transceiver Market Forecast



Source : LightCounting, 2020 October Report



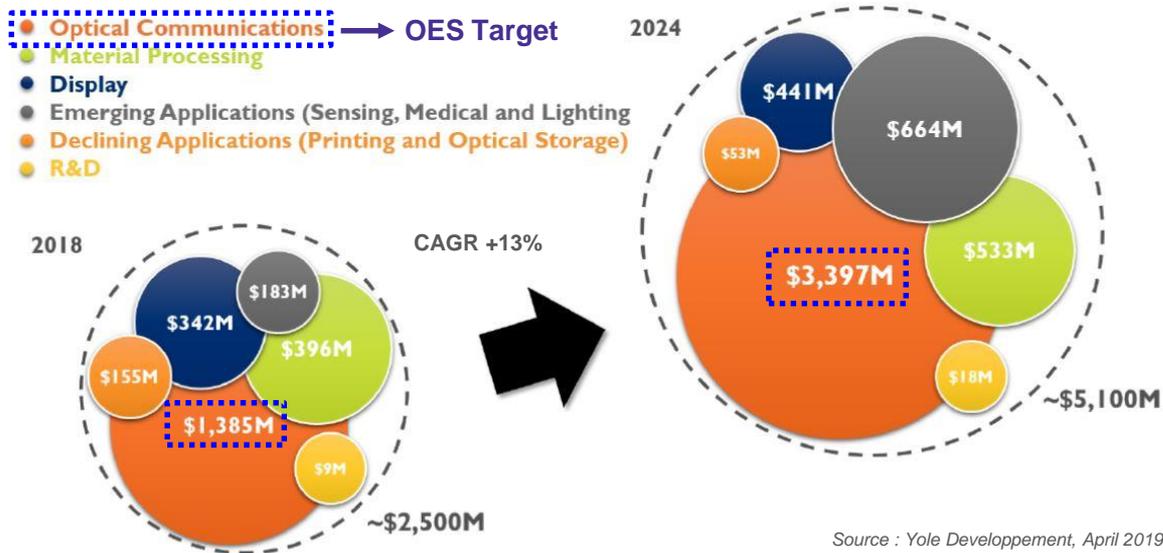
Source : Yole Developpement, 2020

# Vision & Strategy for OES's Semiconductor Laser Diode Chip

Target the Optical Communication market through Edge Emitting Lasers technology  
EEL technology has potential to expand into many businesses

\*EEL Market

\*EEL : Edge Emitting Lasers



Q3 of 21 Guidance



**Q3 Revenue is expected to 22B KRW**  
 YoY -27%, QoQ -34%

## Quarterly Guidance

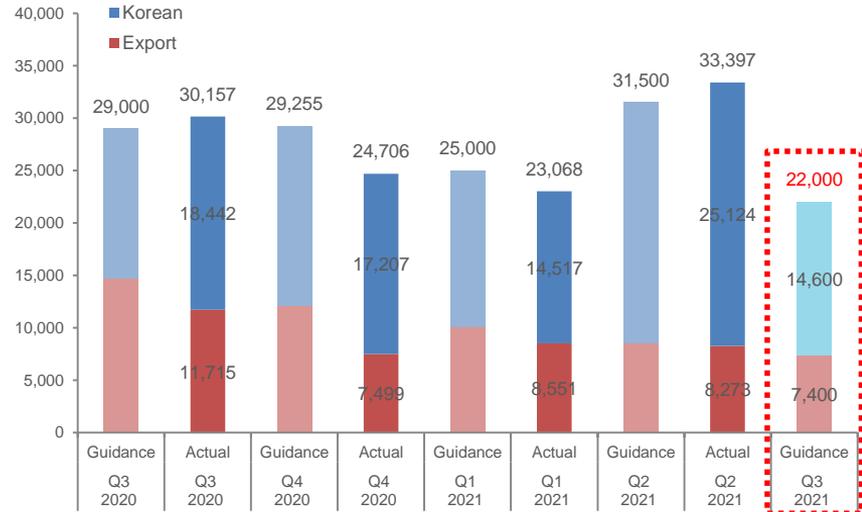
(Unit : million KRW)

|                 | Q3 2020 Actual | Q4 2020 Actual | Q1 2021 Actual | Q2 2021 Actual | Q3 2021 Guidance |
|-----------------|----------------|----------------|----------------|----------------|------------------|
| Revenue (Sales) | 30,157         | 24,706         | 23,068         | 33,397         | <b>22,000</b>    |
| Domestic        | 18,442         | 17,207         | 14,517         | 25,124         | <b>14,600</b>    |
| Export          | 11,715         | 7,499          | 8,551          | 8,273          | <b>7,400</b>     |

※ Consolidated and forecast as of August 2021

## Quarterly Trends

(Unit : million KRW)



# Appendix

- Company Introduction
- Financials



# About OE Solutions

## Overview

|                            |   |                            |                                    |
|----------------------------|---|----------------------------|------------------------------------|
| <b>Name</b>                | OE Solutions, Co., Ltd  | <b>Date of Established</b> | Aug.7, 2003                        |
| <b>Number of Employees</b> | 470 (Korea: 447 / USA: 19 / Japan: 4)   | <b>Date of Listing</b>     | Feb.27, 2014(KOSDAQ code : 138080) |
| <b>Product</b>             | Optical Transceiver   | <b>Homepage</b>            | www.oesolutions.com                |
| <b>Locations</b>           | Head Quarter : Gwangju, South Korea / US : Ridgefield Park, NJ, USA / JAPAN : Tokyo Japan |                            |                                    |

(As of July.31,2021 )

## Locations



- Hilversum, Netherlands**
- Europe Headquarter
  - Europe Sales
  - Smart and system R&D

- Gwangju, Korea**
- Global Headquarter
  - Manufacturing
  - R&D

- Seoul (Anyang), Korea**
- Korea Sales
  - R&D

- Seoul (Suwon), Korea**
- Korea Sales
  - Engineering Support

- Taipei, Taiwan**
- China Sales
  - Engineering Support

- Tokyo, Japan**
- Japan Sales
  - Engineering Support

- Ridgefield Park, NJ, USA**
- US Headquarter
  - US (East Coast) Sales
  - Engineering Support

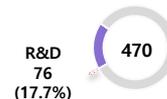
- Irvine, CA, USA**
- R&D

- Santa Barbara, CA, USA**
- R&D

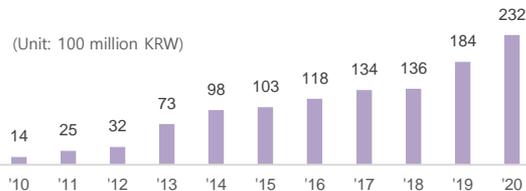
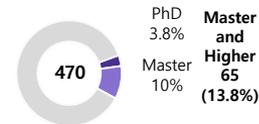


## R&D Engineer & Cost

< By sector >



< By education >



\* 자회사 포함

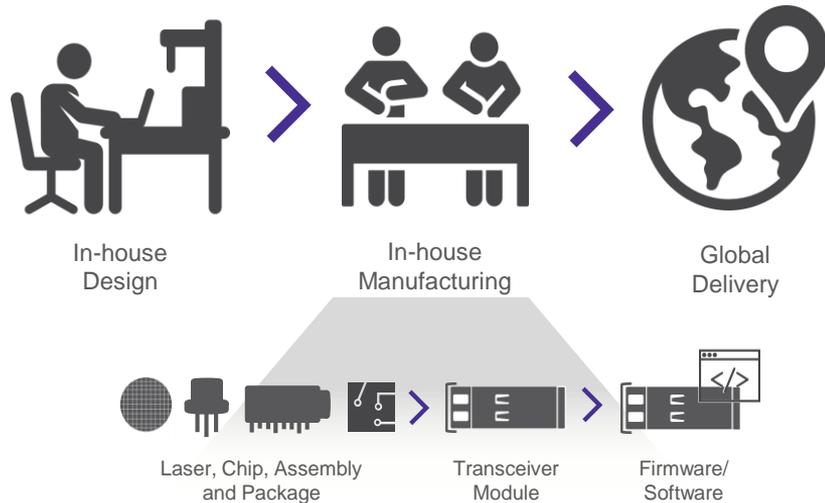
25 August 2021 | 21

# OE Solutions – A Global Supplier of Transceivers

## Leading Supplier of High-Reliability Optical Components for Challenging Deployment Environments



- ❑ Leading supplier of optical components since 2003
- ❑ Founded by a team of Bell Labs and Samsung veterans
- ❑ Traded on KOSDAQ since 2014
- ❑ Key supplier to tier-1 MSO and Wireless OEMs
- ❑ Serving global customer in over 50 countries
- ❑ Leading supplier of BID1 and I-Temp Optics
- ❑ Leading supplier of Smart SFPs (co-developed with AimValley)
- ❑ Vertically integrated production
- ❑ In-house production in Gwangju, S. Korea factory
- ❑ R&D sites in Korea, USA and the Netherlands

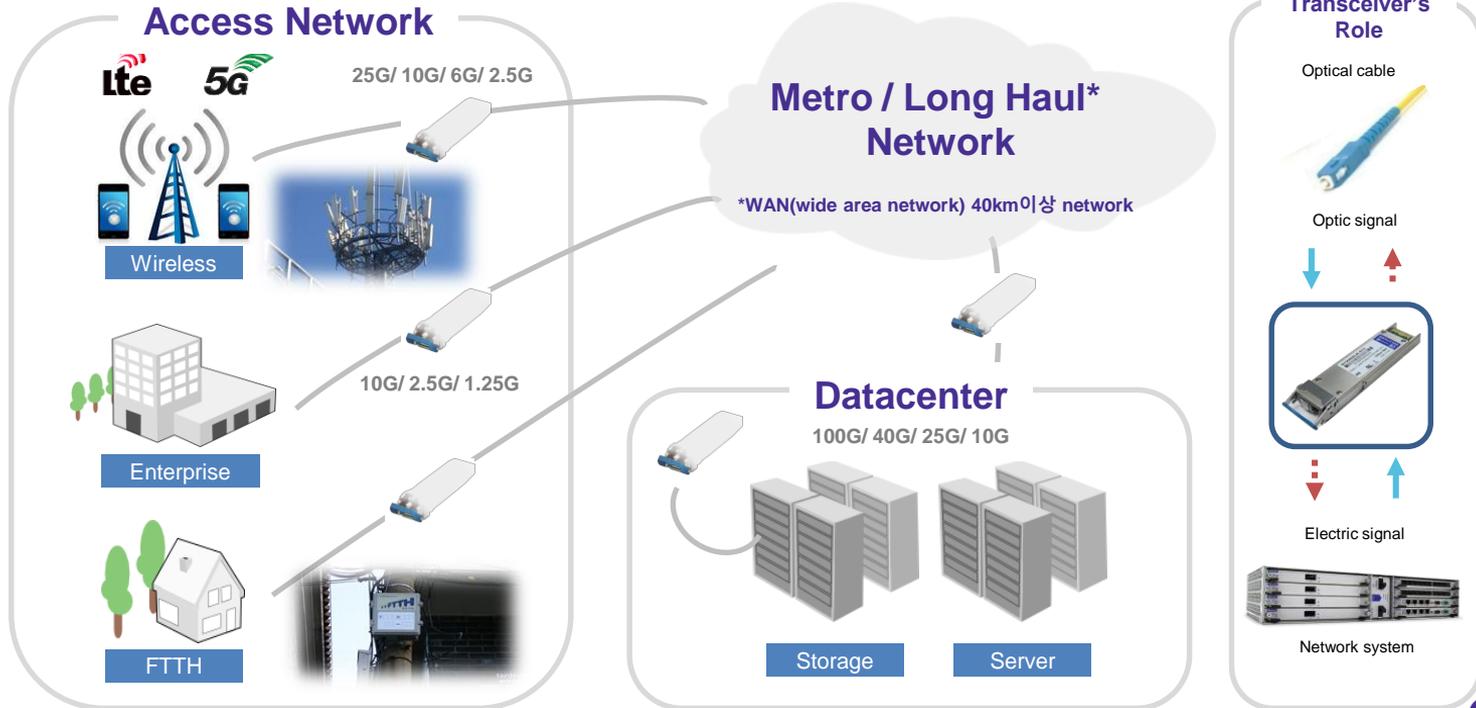


| Manufacturing Process          |   |  | Manufacturing Technology  |   |
|--------------------------------|---|--|---|---|
| <b>Chip</b>                    |  | Laser Diode<br>Photo Diode                                     | Epitaxy / Fabrication / Wafer Characterization                                |  |
| <b>Assembly</b>                |  | TO/ XMD<br>(Cooled/ Uncooled)                                  | Die Bonding, Wire Bonding, Seam Sealing,<br>Burn-in, DC/AC Test               |  |
| <b>Package</b>                 |  | OSA<br>(TOSA/ ROSA/ BOSA)                                      | Laser welding, Epoxy bonding, DC/AC Test                                      |  |
| <b>Circuit /<br/>Module</b>    |  | Transceiver<br>(Tuning & Test)                                 | Auto Soldering / Auto Tuning / Test   |  |
| <b>Firmware /<br/>Software</b> |  | Sub-system (Network Migration &<br>Self-Monitoring Technology) | Co-developed with AimValley,<br>a networking technology expert in Netherlands |  |
| <b>Production</b>              |  | Own manufacturing,<br>assembly & testing facility              | Low cost, flexible production   |  |

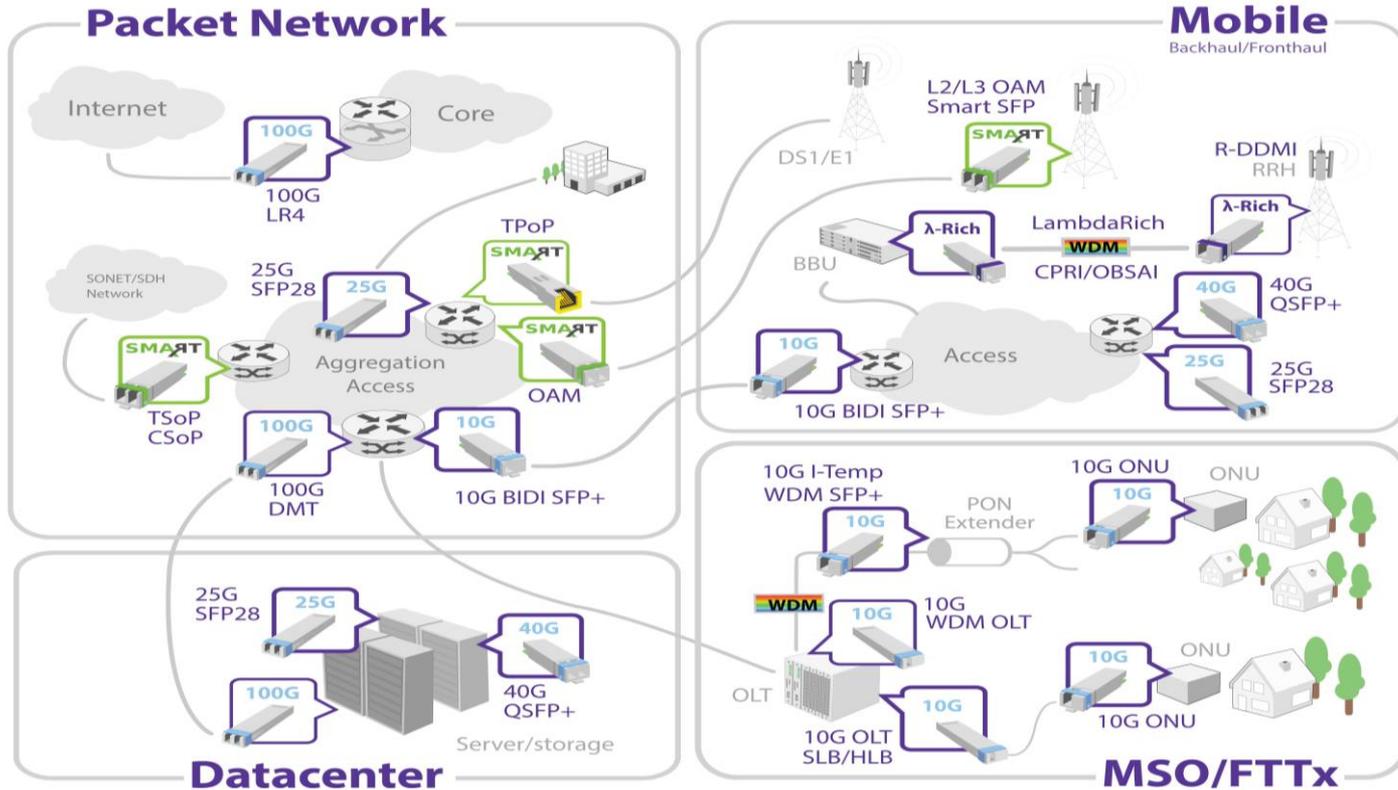
# Transceiver Products Applications

The use of Transceiver in the Network

Transceiver required for network connections



# Key Application Areas



# Condensed income statement

## Consolidated

(Unit : million KRW)

|   | 2018         | 2019          | 2020          | 2021          |              |
|---|--------------|---------------|---------------|---------------|--------------|
|   |              |               |               | 1Q            | 2Q           |
| Revenue (Sales)                         | 81,504       | 210,283       | 103,178       | 23,068        | 33,397       |
| Cost of sales                           | 54,106       | 122,835       | 62,686        | 14,722        | 19,380       |
| Gross profit                            | 27,398       | 87,448        | 40,492        | 8,345         | 14,018       |
| Selling general administrative expenses | 27,164       | 29,186        | 33,159        | 9,548         | 9,648        |
| <b>Operating income(loss)</b>           | <b>234</b>   | <b>58,262</b> | <b>7,333</b>  | <b>-1,203</b> | <b>4,370</b> |
| Profit (loss) before tax                | 1,951        | 58,388        | 6,699         | -443          | 6,457        |
| Net income                              | <b>2,584</b> | <b>46,065</b> | <b>12,352</b> | <b>2,573</b>  | <b>6,085</b> |

## Separate standards

(Unit : million KRW)

|   | 2018         | 2019          | 2020          | 2021          |              |
|---|--------------|---------------|---------------|---------------|--------------|
|   |              |               |               | 1Q            | 2Q           |
| Revenue (Sales)                         | 81,406       | 210,242       | 103,172       | 23,039        | 33,423       |
| Cost of sales                           | 54,117       | 122,835       | 62,686        | 14,722        | 19,380       |
| Gross profit                            | 27,289       | 87,407        | 40,486        | 8,317         | 14,043       |
| Selling general administrative expenses | 26,925       | 28,533        | 33,180        | 9,714         | 9,649        |
| <b>Operating income(loss)</b>           | <b>364</b>   | <b>58,874</b> | <b>7,305</b>  | <b>-1,397</b> | <b>4,395</b> |
| Profit (loss) before tax                | 1,945        | 59,436        | 6,990         | -625          | 5,695        |
| Net income                              | <b>2,641</b> | <b>47,026</b> | <b>12,227</b> | <b>2,390</b>  | <b>5,352</b> |

# Condensed statement of financial position

## Consolidated

(Unit : million KRW)

|  | 2018          | 2019           | 2020           | 2021           |                |
|--|---------------|----------------|----------------|----------------|----------------|
|  |               |                |                | 1Q             | 2Q             |
| Current assets                         | 57,027        | 137,422        | 129,808        | 129,878        | 118,317        |
| Cash and cash equivalents              | 11,073        | 44,259         | 40,068         | 35,829         | 36,938         |
| Accounts receivable                    | 18,969        | 33,138         | 14,847         | 14,454         | 10,543         |
| Inventory asset                        | 19,740        | 24,222         | 22,484         | 27,813         | 33,452         |
| Non-current assets                     | 42,125        | 46,945         | 65,377         | 68,992         | 86,295         |
| Property, plant and equipment          | 30,476        | 30,161         | 39,269         | 39,938         | 41,066         |
| Intangible assets                      | 782           | 738            | 746            | 754            | 732            |
| <b>Total assets</b>                    | <b>99,152</b> | <b>184,367</b> | <b>195,184</b> | <b>198,870</b> | <b>204,612</b> |
| Current liabilities                    | 25,369        | 42,847         | 45,749         | 49,841         | 49,446         |
| Short-term debt                        | 19,400        | 27,000         | 36,000         | 36,000         | 36,000         |
| Non-current liabilities                | 5,736         | 2,211          | 2,455          | 2,602          | 2,640          |
| <b>Total liabilities</b>               | <b>31,105</b> | <b>45,059</b>  | <b>48,204</b>  | <b>52,443</b>  | <b>52,086</b>  |
| Capital                                | 3,870         | 5,312          | 5,312          | 5,312          | 5,312          |
| Paid-in capital in excess of par value | 26,969        | 52,031         | 52,002         | 52,002         | 52,002         |
| Retained earnings                      | 34,868        | 79,731         | 87,511         | 86,900         | 92,985         |
| <b>Total equity</b>                    | <b>68,047</b> | <b>139,308</b> | <b>146,981</b> | <b>146,427</b> | <b>152,526</b> |

## Separate standards

(Unit : million KRW)

|  | 2018          | 2019           | 2020           | 2021           |                |
|--|---------------|----------------|----------------|----------------|----------------|
|  |               |                |                | 1Q             | 2Q             |
| Current assets                         | 55,790        | 136,299        | 127,504        | 127,904        | 116,319        |
| Cash and cash equivalents              | 10,227        | 42,423         | 34,557         | 32,788         | 31,540         |
| Accounts receivable                    | 18,299        | 33,096         | 18,137         | 14,804         | 12,368         |
| Inventory asset                        | 19,740        | 24,222         | 22,484         | 27,811         | 33,452         |
| Non-current assets                     | 41,993        | 46,416         | 65,055         | 68,730         | 86,005         |
| Property, plant and equipment          | 30,119        | 29,192         | 38,592         | 39,314         | 40,518         |
| Intangible assets                      | 54            | 36             | 18             | 14             | 9              |
| <b>Total assets</b>                    | <b>97,783</b> | <b>182,715</b> | <b>192,559</b> | <b>196,634</b> | <b>202,324</b> |
| Current liabilities                    | 26,119        | 43,065         | 44,794         | 49,529         | 49,827         |
| Short-term debt                        | 19,400        | 27,000         | 36,000         | 36,000         | 36,000         |
| Non-current liabilities                | 5,643         | 1,676          | 2,164          | 2,300          | 2,339          |
| <b>Total liabilities</b>               | <b>31,761</b> | <b>44,740</b>  | <b>46,959</b>  | <b>51,828</b>  | 52,166         |
| Capital                                | 3,870         | 5,312          | 5,312          | 5,312          | 5,312          |
| Paid-in capital in excess of par value | 26,969        | 52,031         | 52,002         | 52,002         | 52,002         |
| Retained earnings                      | 32,638        | 78,461         | 86,116         | 85,322         | 90,674         |
| <b>Total equity</b>                    | <b>66,022</b> | <b>137,975</b> | <b>145,600</b> | <b>144,806</b> | <b>150,158</b> |

Thank you.

**OE** —   
**SOLUTIONS**

# Contact Us

## **OE Solutions Korea Headquarters**

53, Cheomdanyeonsin-ro 30beon-gil,  
Buk-Gu, Gwangju, 61080, Korea

Tel: +82 (62) 960-5252

Fax: +82 (62) 960-5258

Email: [sales@oesolutions.com](mailto:sales@oesolutions.com)

## **OE Solutions America U.S. Headquarters**

65 Challenger Road STE 240  
Ridgefield Park, NJ 07660, USA

Tel: +1 (201) 568-1188

Fax: +1 (201) 568-1177

Email: [sales@oesolutions.com](mailto:sales@oesolutions.com)

## **Website**

[www.oesolutions.com](http://www.oesolutions.com)

## **OE Solutions Seoul (Anyang) Office**

Unit B-#1619, Geumgang Penterium IT Tower, 282, Hagui-ro,  
Dongan-gu, Anyang-si, Gyeonggi-do, 14056, Korea

Tel: +82 (31) 450-2800

Fax: +82 (31) 450-2815

Email: [sales@oesolutions.com](mailto:sales@oesolutions.com)

## **OE Solutions Japan Japan Headquarters**

3F Nagai Building, 1-24-2, Shinjuku, Shinjuku-ku, Tokyo, 160-  
0022, Japan

Tel: +81 (3) 6274-8543

Fax: +81 (3) 6274-8549

Email: [sales@oesolutions.com](mailto:sales@oesolutions.com)

