

IR Presentation 2021

2021 Results & Q1 2022 Guidance

May 2022
OE Solutions IR

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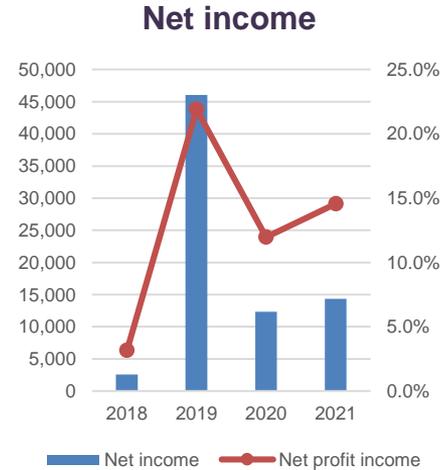
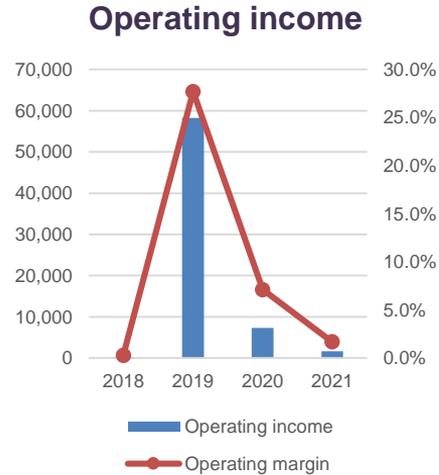
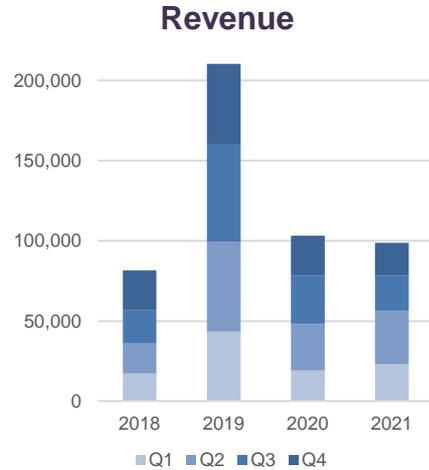
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2021 Result Review



2021 Revenue **98.7B KRW** , Operating income **1.7B KRW(1.7%)**, Net income **14.4B KRW(14.6%)**



※ Based on consolidated

(Unit : million KRW)

	2019	2020	Q1 21	Q2 21	Q3 21	Q4 21	2021
• Revenue	210,283	103,178	23,068	33,397	22,193	20,023	98,681
• Operating income	58,262	7,333	-1,203	4,370	1,518	-3,030	1,655
• Operating margin	27.7%	7.1%	-5.2%	13.1%	6.8%	-15.1%	1.7%
• Net income	46,065	12,352	2,573	6,085	2,480	3,233	14,372
• Net profit margin	21.9%	12.0%	11.2%	18.2%	11.2%	16.1%	14.6%

2021 Revenue **98.7B KRW** / YoY **-4.4%**

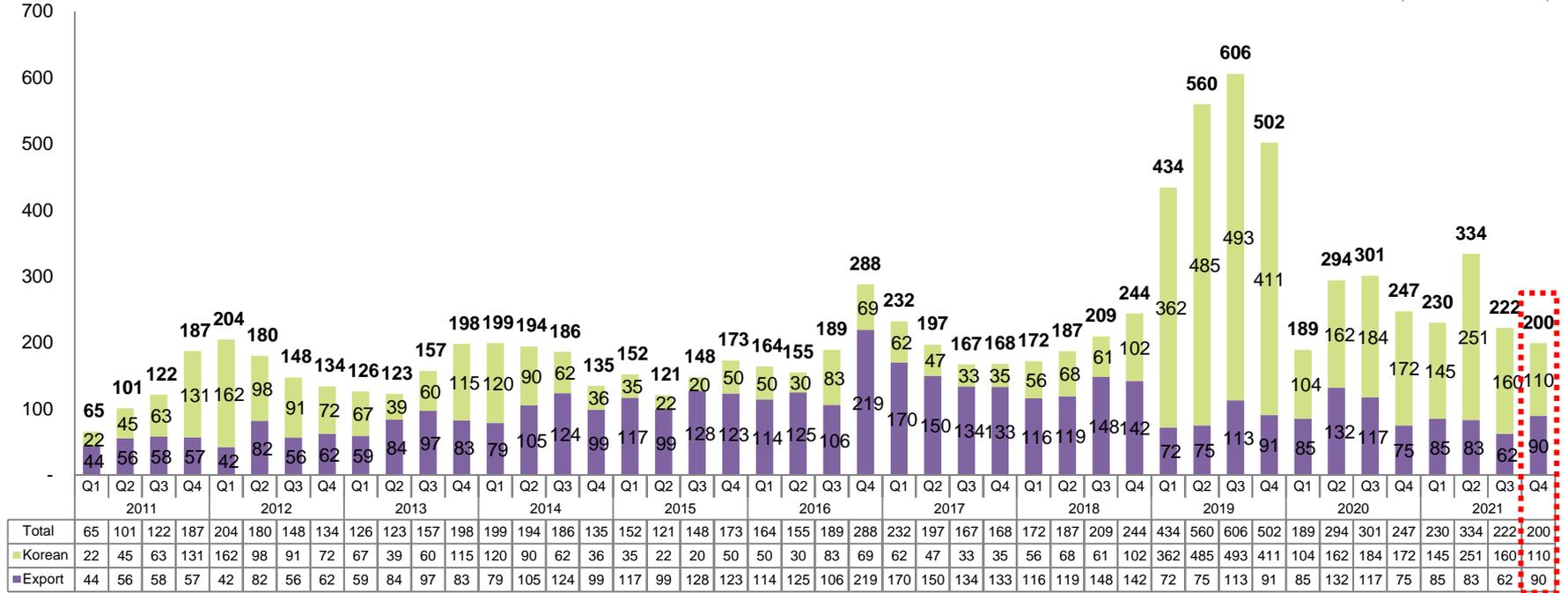
(Unit : million KRW)

구분	2020	2021	%	YoY	Q3 21	Q4 21	QoQ
Revenue (Sales)	103,178	98,681		-4.4%	22,193	20,023	-9.8%
Gross profit	40,492	36,265	36.7%	-10.4%	8,850	5,052	-42.9%
Selling general Administrative expenses	33,139	34,610	35.1%	4.4%	7,332	8,083	10.2%
Operating Income(loss)	7,353	1,655	1.7%	-77.4%	1,518	-3,030	-299.7%
Profit (loss) Before tax	6,699	11,967	12.1%	78.6%	2,248	3,705	64.8%
Net income	12,352	14,372	14.6%	16.4%	2,480	3,233	30.3%

※ Based on consolidated

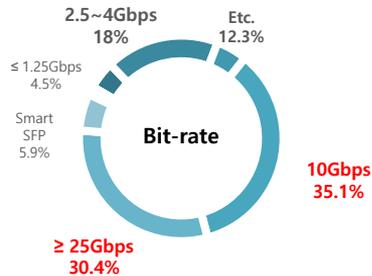
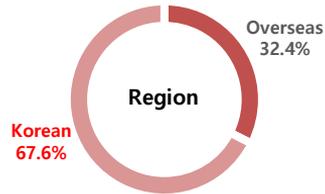
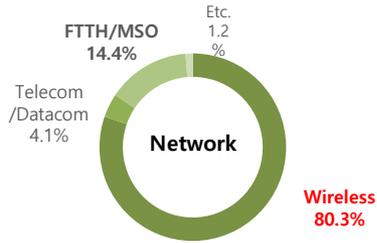
Global 5G investment Expected in 2022

(Unit: 100 million KRW)



※ Based on separate standard

Sales details



(Unit: 100 million KRW)

	2020	2021	YoY (%)
Network			
• Wireless	713.7	792.5	11.0%
• Telecom/Datacom	45.6	40.2	-11.8%
• FTTH/MSO	262.6	141.8	-46.0%
• etc.	9.8	12.3	-25.5%
Region			
• Korean	622.6	666.8	7.1%
• Overseas	409.0	320.0	-21.8%
Overseas ratio	39.6%	32.4%	
Bit-rate			
• ≤1.25Gbps	58.1	44.1	-24.1%
• 2.5~4Gbps	300.3	177.6	-40.9%
• 5~6Gbps	12.5	48.3	286.4%
• 10Gbps	473.2	346.8	-26.7%
• ≥25Gbps	156.4	299.9	91.8%
• Smart SFP	21.2	57.8	172.6%
• Component / Chip	9.8	12.3	25.9%
• etc.	0.2	0.01	-95.7
Total	1,031.7	986.9	-4.4%

※ Based on separate standard

5G(NR) Mobile Network Business



5G(NR) Mobile Network Business

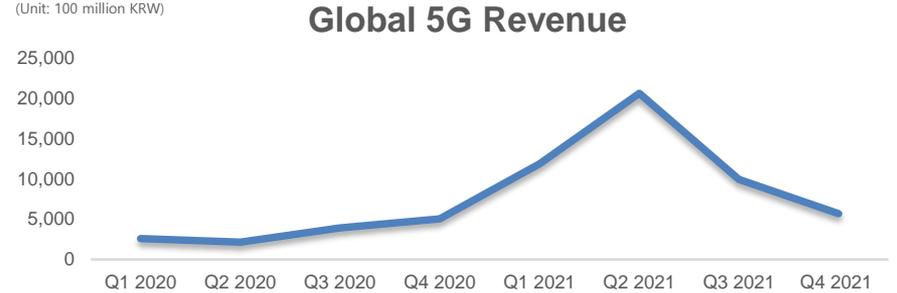
5G Network Supply chain



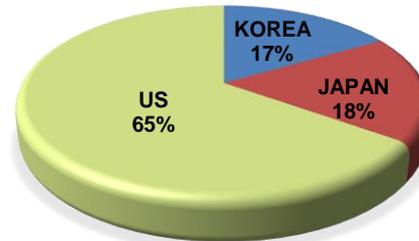
Global 5G Revenue Forecast

Global(US, Japan, etc.) 5G sales growth is expected to increase in the 2022

(Unit: 100 million KRW)



2021 5G Revenue



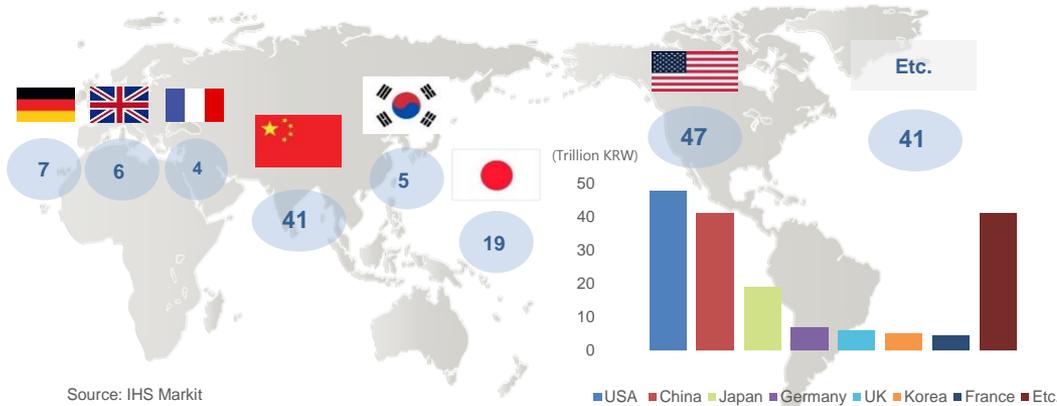
(Unit: 100 million KRW)

Region	Operator	Revenue	%
US	Verizon	37,522	65%
	KDDI	10,461	14%
JAPAN	NTT docomo		
KOREA	KT	9,563	28%
	LG U+		
	SKT		
Total		57,546	

5G Market Forecast

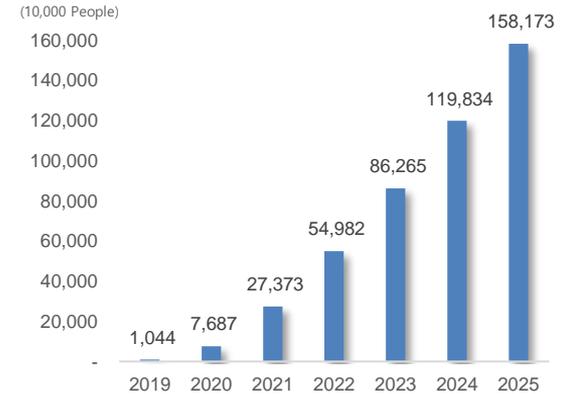


5G Infra equipment investment outlook - 5-year average



Source: IHS Markit

Global 5G subscribers outlook



Source: IHS Markit

Data traffic

Global Mobile data traffic outlook

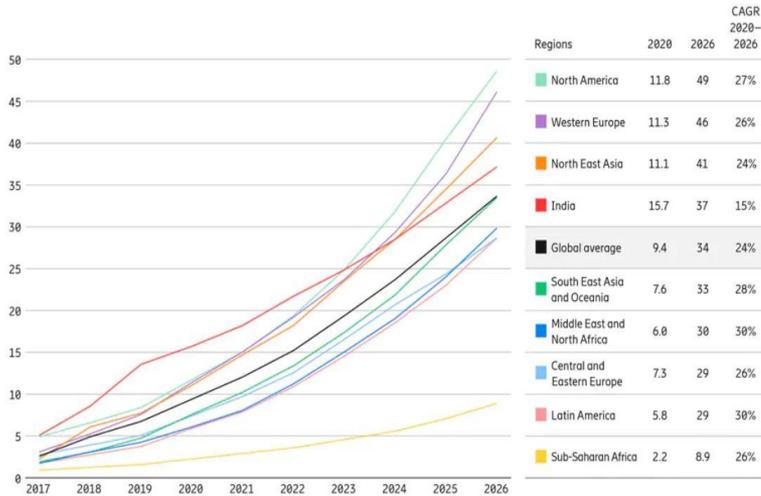
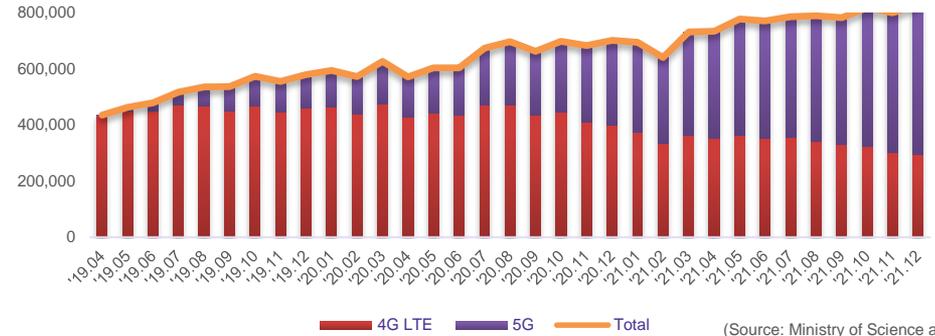


Figure 13: Mobile data traffic per smartphone (GB per month)

(Source: Ericsson)

(Unit: TB)

Korea Mobile Data traffic



(Source: Ministry of Science and ICT)

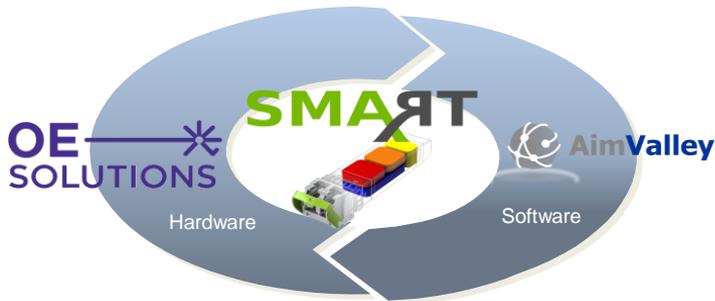


OE Solutions Vision & Strategy



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

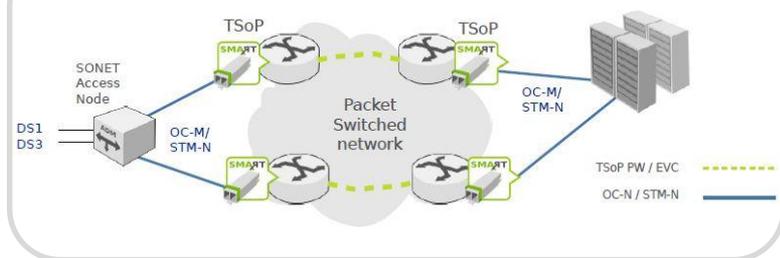
World's First Leading Technology

Global Tier 1 customer design in good progress

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

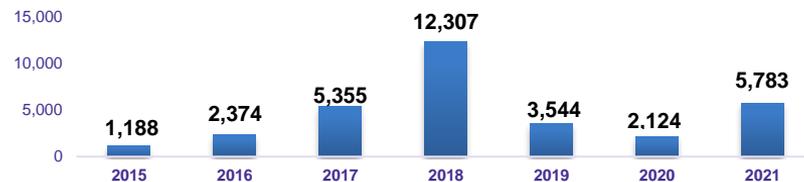
Simplify Network Migration

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



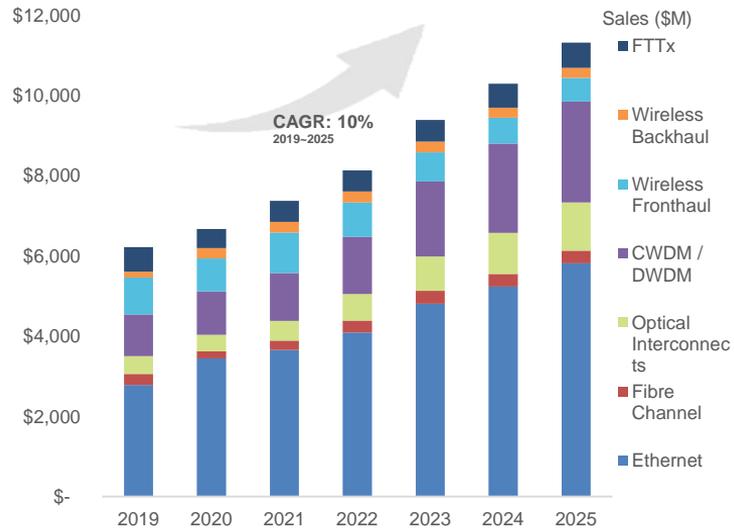
Transceiver



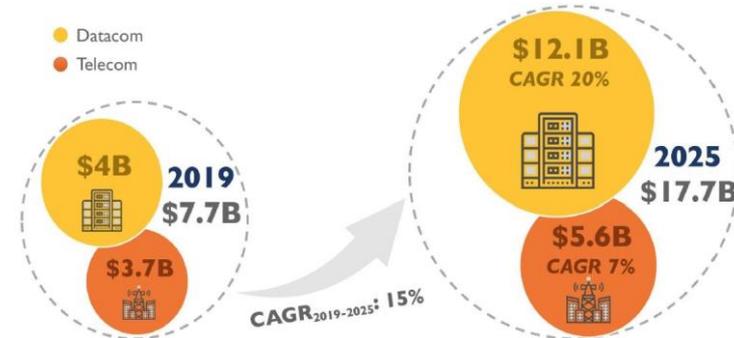
- Global 5G Transceiver All line-up
- Transceiver profitability and competitive advantage through in-house technology
- High bit-rate Transceiver development to launch a variety of Network Target products
- New Product in the second half
 - 50Gbps, 100Gbps, 400Gbps PAM4 for wireless and Data Center interconnector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



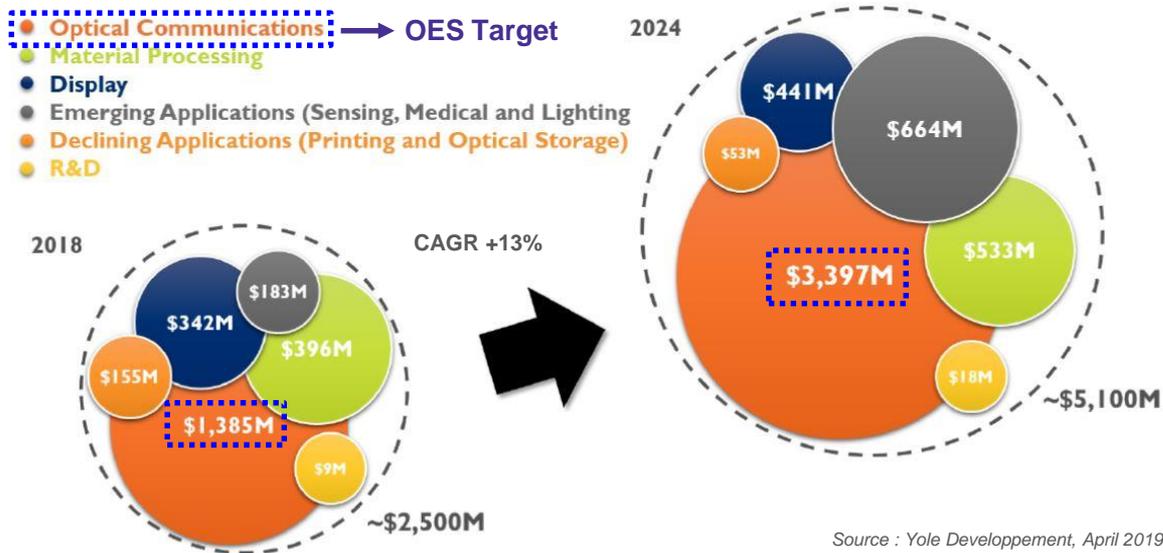
Source : Yole Developpement, 2020

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



Q1 of 22 Guidance



Q1 Revenue is expected to 17.0B KRW
 YoY -26.3%, QoQ -15.1% 하락

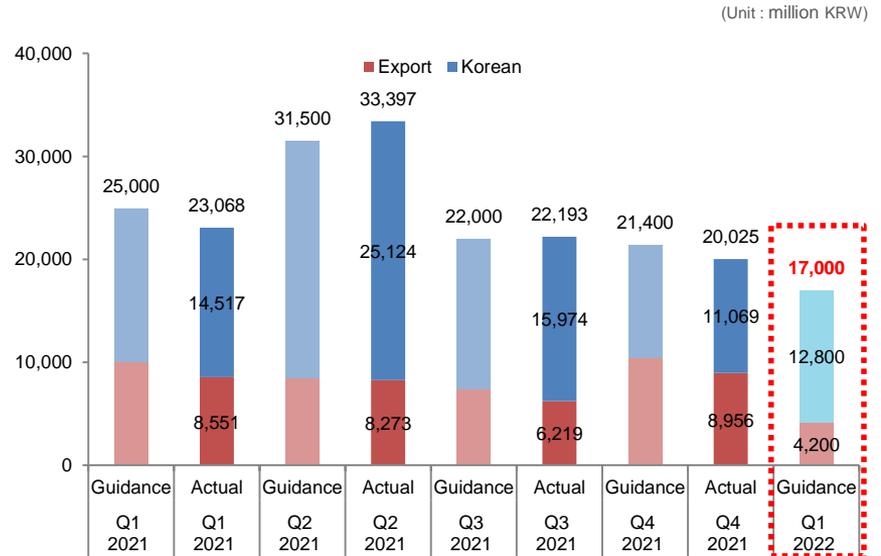
Quarterly Guidance

(Unit : million KRW)

	Q1 2021 Actual	Q2 2021 Actual	Q3 2021 Actual	Q4 2021 Actual	Q1 2022 Guidance
Revenue (Sales)	23,068	33,397	22,193	20,025	17,000
Domestic	14,517	25,124	15,974	11,069	12,800
Export	8,551	8,273	6,219	8,956	4,200

※ Consolidated and forecast as of March 2022

Quarterly Trends



Appendix

- Company Introduction
- Financials



About OE Solutions

Overview

Name	OE Solutions, Co., Ltd	Date of Established	Aug.7, 2003
Number of Employees	412 (Korea: 389 / USA: 19 / Japan: 4)	Date of Listing	Feb.27, 2014(KOSDAQ code : 138080)
Product	Optical Transceiver	Homepage	www.oesolutions.com
Locations	Head Quarter : Gwangju, South Korea / US : Ridgefield Park, NJ, USA / JAPAN : Tokyo Japan		

(As of December.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

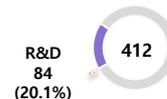
- Irvine, CA, USA**
- R&D

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

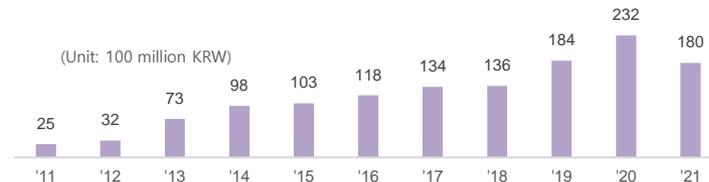
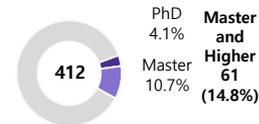


R&D Engineer & Cost

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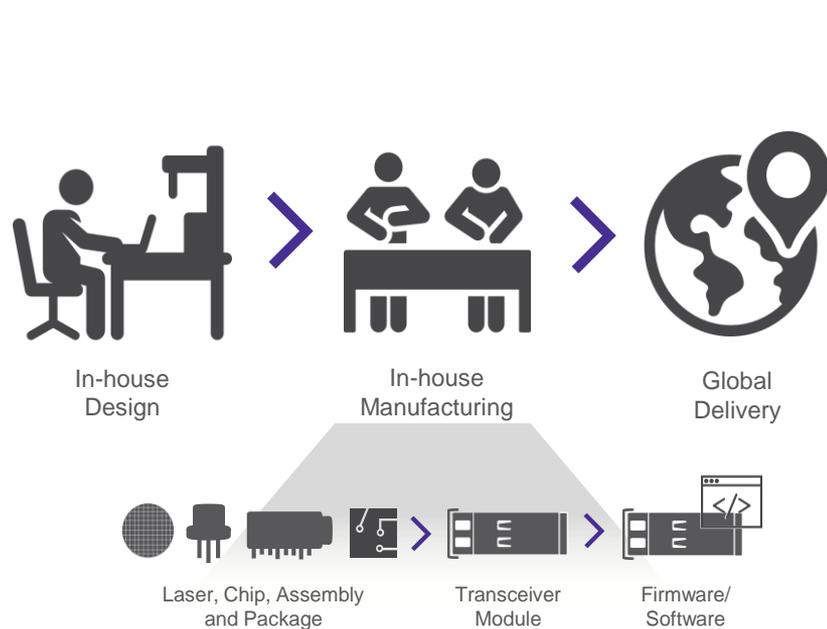
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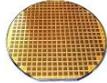


Leading Supplier of High-Reliability Optical Components for Challenging Deployment Environments



- ❑ 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

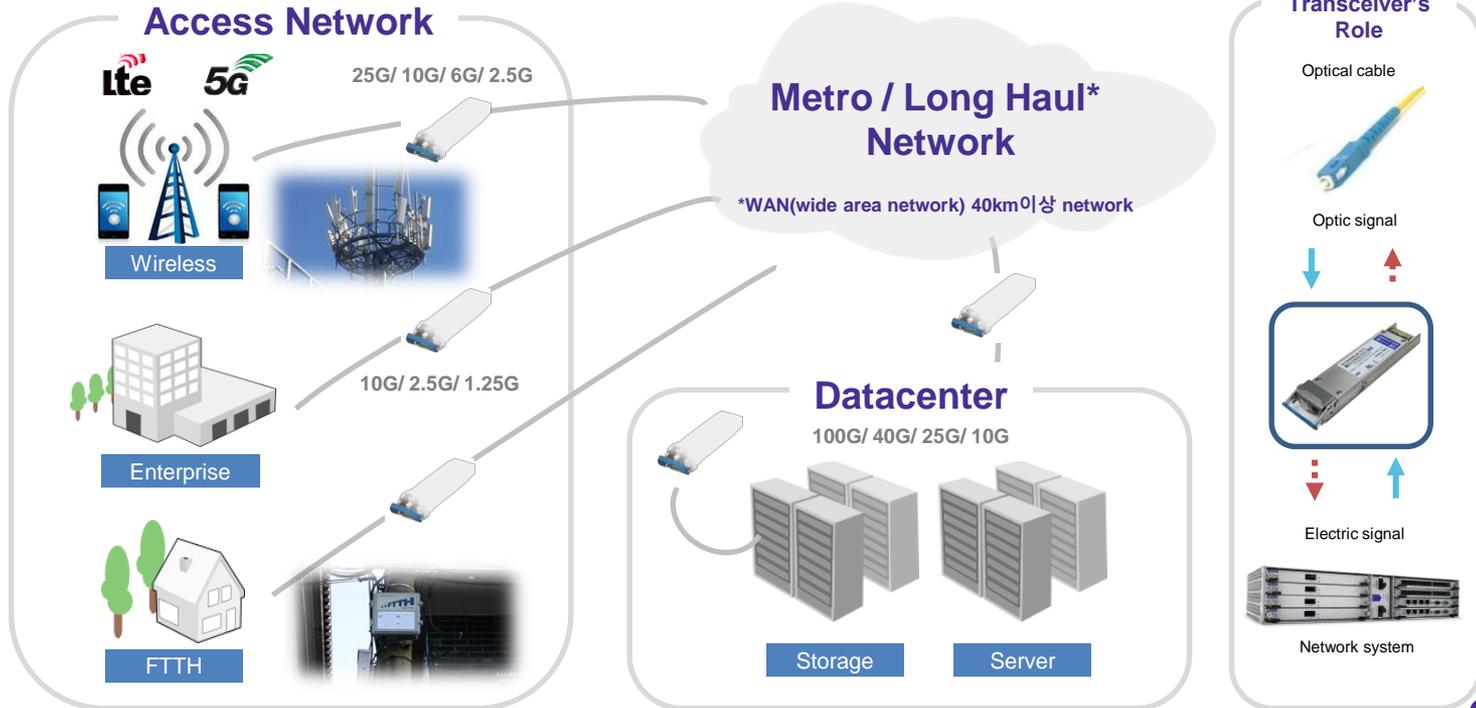


Manufacturing Process			Manufacturing Technology	
Chip		Laser Diode Photo Diode	Epitaxy / Fabrication / Wafer Characterization	
Assembly		TO/ XMD (Cooled/ Uncooled)	Die Bonding, Wire Bonding, Seam Sealing, Burn-in, DC/AC Test	
Package		OSA (TOSA/ ROSA/ BOSA)	Laser welding, Epoxy bonding, DC/AC Test	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

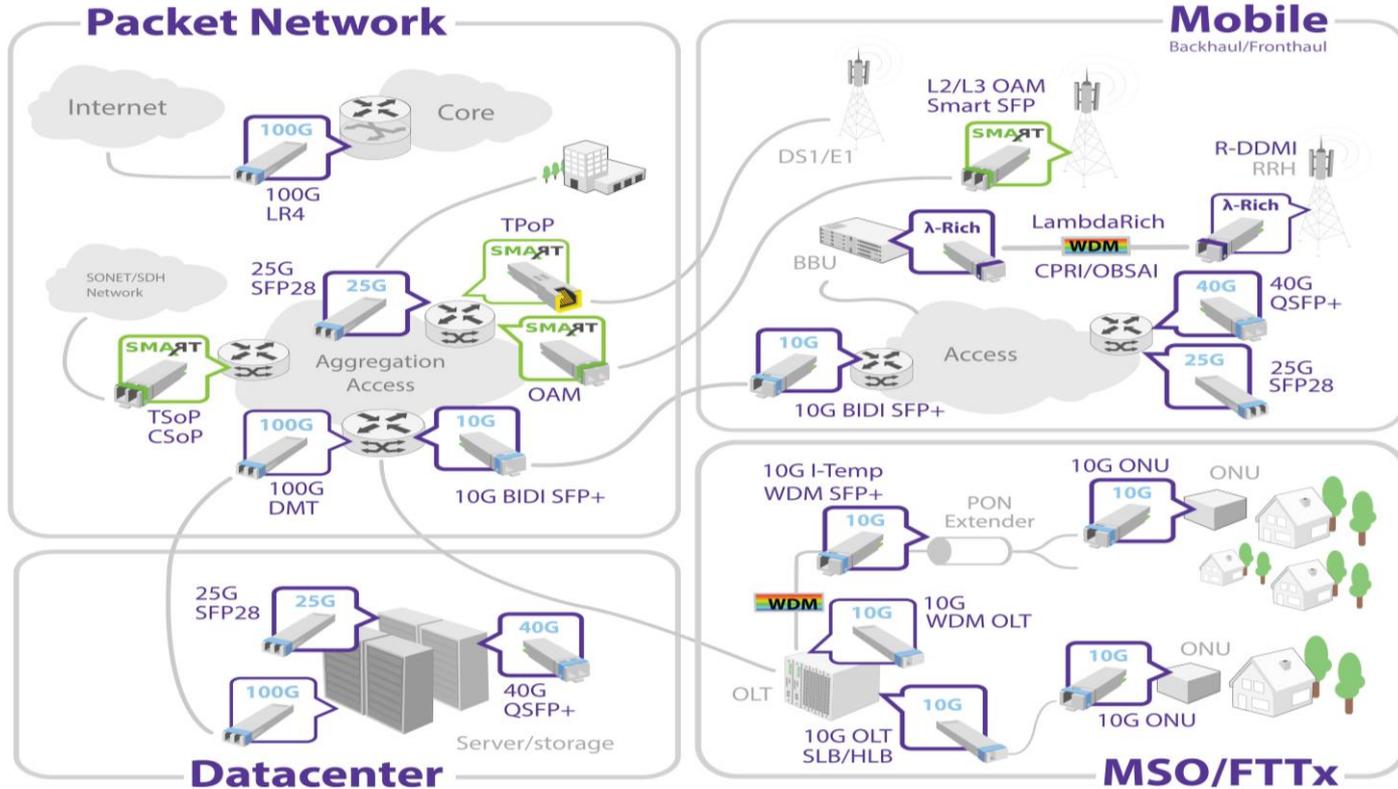
Transceiver Products Applications

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
Revenue (Sales)	81,504	210,283	103,178	98,681
Cost of sales	54,106	122,835	62,686	62,416
Gross profit	27,398	87,448	40,492	36,265
Selling general administrative expenses	27,164	29,186	33,159	34,610
Operating income(loss)	234	58,262	7,333	1,655
Profit (loss) before tax	1,951	58,388	6,699	11,967
Net income	2,584	46,065	12,352	14,372

Separate standards

(Unit : million KRW)

	2018	2019	2020	2021
Revenue (Sales)	81,406	210,242	103,172	98,681
Cost of sales	54,117	122,835	62,686	62,416
Gross profit	27,289	87,407	40,486	36,265
Selling general administrative expenses	26,925	28,533	33,180	33,912
Operating income(loss)	364	58,874	7,305	2,353
Profit (loss) before tax	1,945	59,436	6,990	11,466
Net income	2,641	47,026	12,227	13,920

Condensed statement of financial position

Consolidated

(Unit : million KRW)

	2018	2019	2020	2021
Current assets	57,027	137,422	129,808	106,938
Cash and cash equivalents	11,073	44,259	40,068	31,095
Accounts receivable	18,969	33,138	14,847	10,778
Inventory asset	19,740	24,222	22,484	33,334
Non-current assets	42,125	46,945	65,377	94,901
Property, plant and equipment	30,476	30,161	39,269	39,791
Intangible assets	782	738	746	860
Total assets	99,152	184,367	195,184	201,839
Current liabilities	25,369	42,847	45,749	40,745
Short-term debt	19,400	27,000	36,000	34,000
Non-current liabilities	5,736	2,211	2,455	1,794
Total liabilities	31,105	45,059	48,204	42,539
Capital	3,870	5,312	5,312	5,312
Paid-in capital in excess of par value	26,969	52,031	52,002	52,002
Retained earnings	34,868	79,731	87,511	99,665
Total equity	68,047	139,308	146,981	159,299

Separate standards

(Unit : million KRW)

	2018	2019	2020	2021
Current assets	55,790	136,299	127,504	105,532
Cash and cash equivalents	10,227	42,423	34,557	27,929
Accounts receivable	18,299	33,096	18,137	12,599
Inventory asset	19,740	24,222	22,484	33,334
Non-current assets	41,993	46,416	65,055	93,630
Property, plant and equipment	30,119	29,192	38,592	38,676
Intangible assets	54	36	18	52
Total assets	97,783	182,715	192,559	199,162
Current liabilities	26,119	43,065	44,794	40,811
Short-term debt	19,400	27,000	36,000	34,000
Non-current liabilities	5,643	1,676	2,164	1,047
Total liabilities	31,761	44,740	46,959	41,858
Capital	3,870	5,312	5,312	5,312
Paid-in capital in excess of par value	26,969	52,031	52,002	52,002
Retained earnings	32,638	78,461	86,116	97,819
Total equity	66,022	137,975	145,600	157,303

Thank you.

OE — 
SOLUTIONS

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