



APAC Opto Company Overview

Snapshot

- **Founded: July 1998**
- **Listed on OTC, Taiwan: Jan 2002**
- **Location: Hsinchu, Taiwan**
- **Capital: US\$27.85 Million @ Feb, 2022**
- **Employee: 261, Direct: 143, Indirect: 69, R&D: 49**
- **Land: 12737 m², Housing 13780 m²**

Investor Relations

➤ **Market Capitalization as of Feb/28/2022**

US\$83.9 Million

➤ **Share outstanding as of Feb/28/2022**

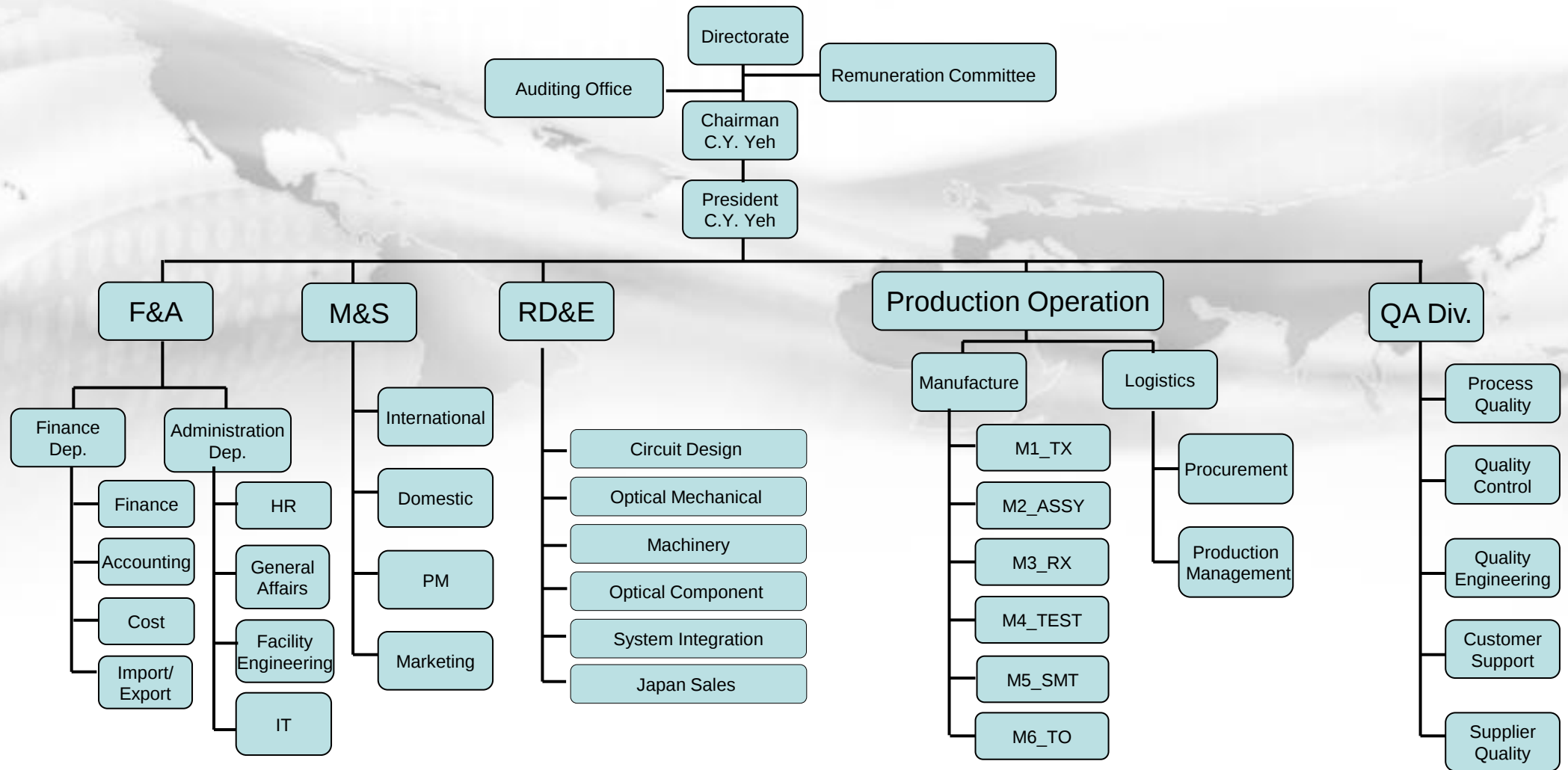
Common shares : 78.2 Million shares

➤ **Financial information**

OTC website <http://emops.twse.com.tw>

GTSM(OTC) Listed Companies → **Code 4908** → Submit

Organization Chart



APAC Products

Optical Communication Transceiver



Optical Extender

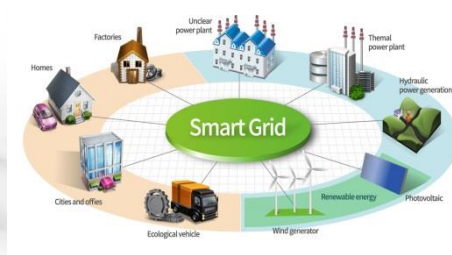


Application

Industrial Automation



Smart Grid



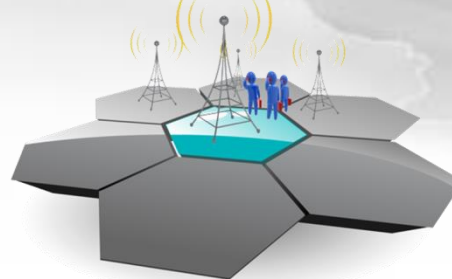
Intelligent Transportation



Oil & Gas



LTE (Mobile Network)



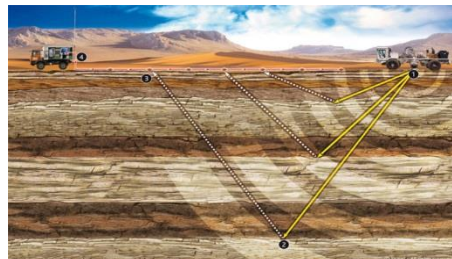
Medical Treatment & Health Care



IP Surveillance



Seismic Acquisition

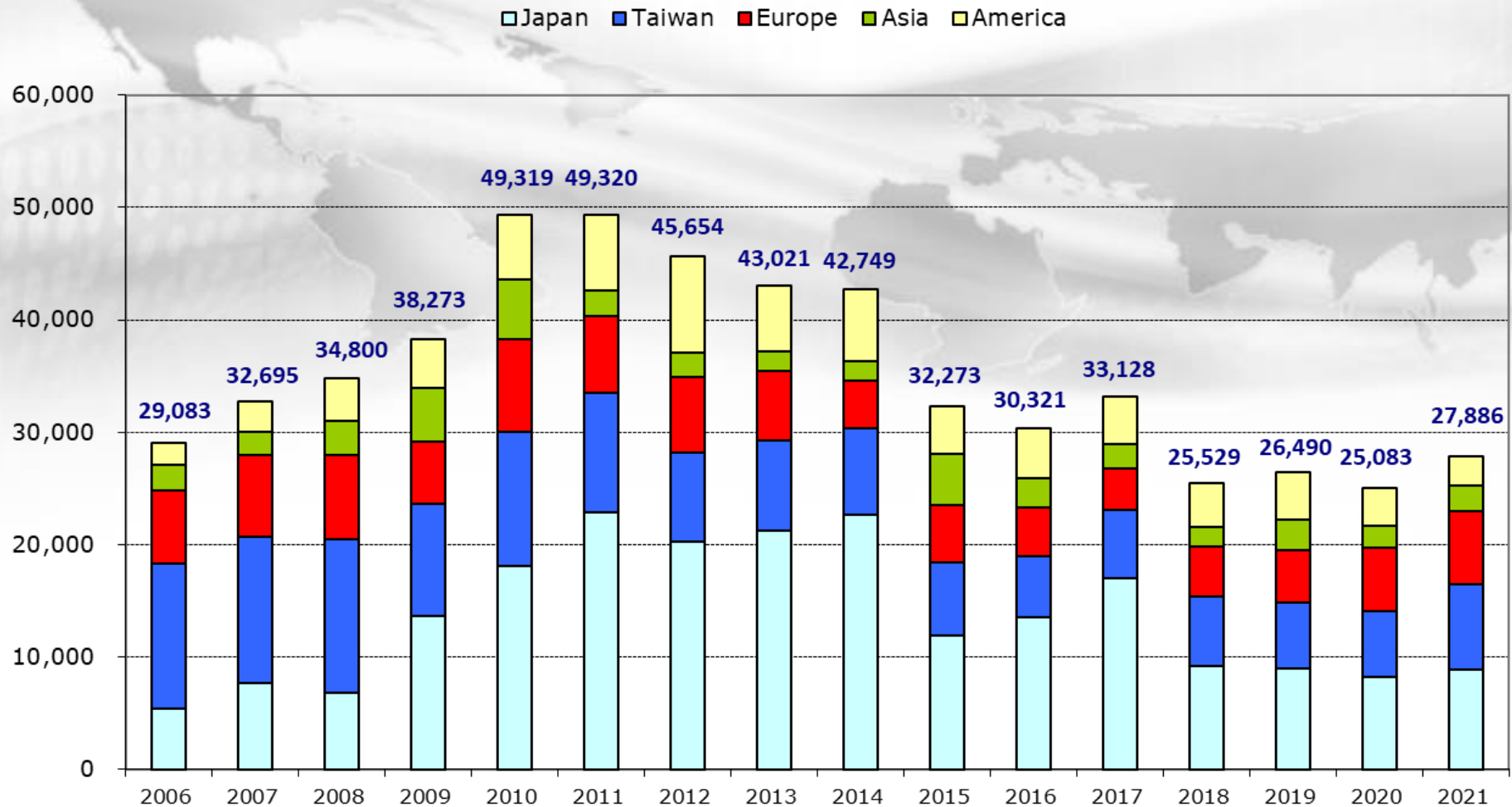


Mining Equipment



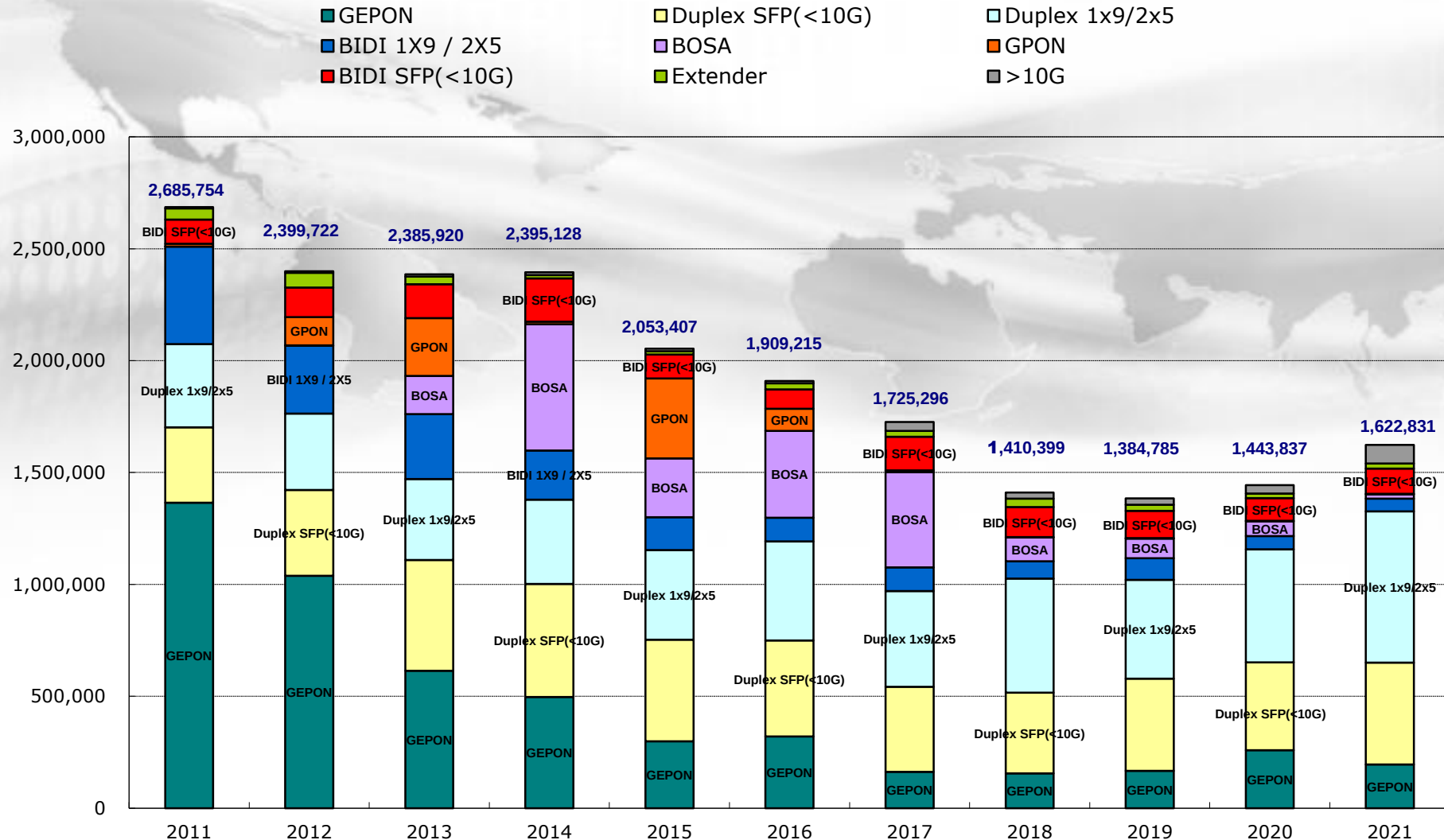
Annual Sales Revenue by Area

Unit: US\$'000



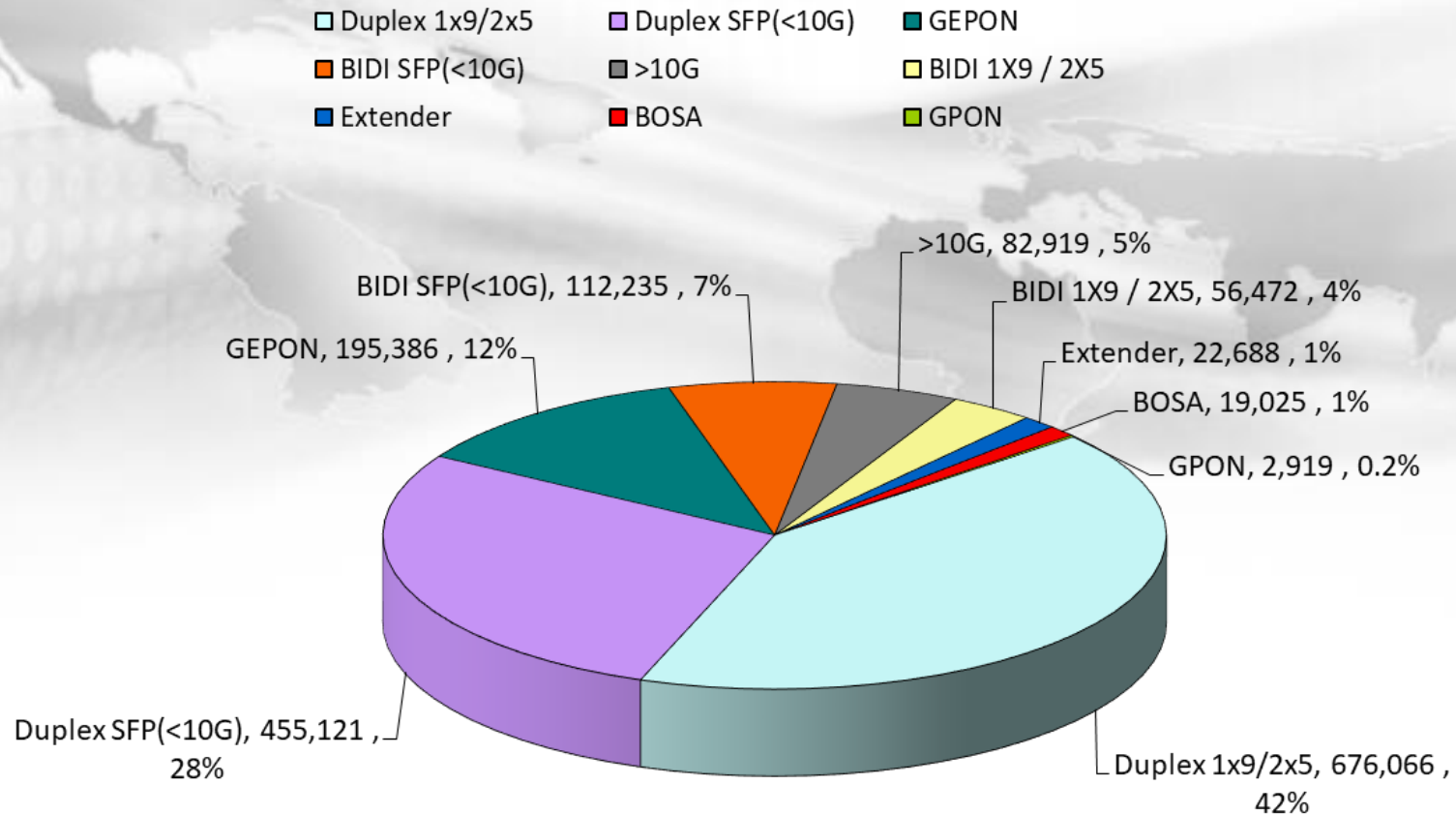
Annual Sales Quantity by Product

Unit: pc



2021 Sales Quantity by Product

Unit: pc



Transceiver (TRx) Design & Manufacturing

- TRx Module
- OSA Sub-Module
- OEM/ODM/Private Labeling
- Customized Specification

Electronic Manufacturing Services (EMS)

- TO Package
- COB Package
- SMT PCBA

RD Capability

RD&E

Circuit Design : Transceiver schematic, layout and testing

Optical Sub-module Design : OSA design and testing

Mechanical Design : Housing and tools develop

Optical Component Design : LD/PD packaging develop

Optical Extender Design : HDMI/DVI/USB/SDI optical extender develop

APAC Production Capacity

Capacity:

- Transceiver: 350 k-pc/month

Current Utilization:

- Transceiver: 150 k-pc/month

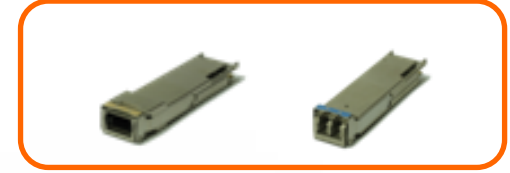
Capacity expansion if necessary:

- Transceiver: 3 months

Production Equipment

- Tx YAG Laser Welding Station : 21 sets
- Rx Alignment Machine : 16 sets
- ER Adjustment Station : 8 sets:
- DDM Calibration Station : 6 sets
- FQT Station : 10 sets

Standard Product



Product Type	Operating Temp. Range	1x9/2x5 non-pluggable	SFP/SFP+/SFP28	XFP	QSFP	QSFP28
125M/155M/ FastEthernet/OC3	C temp: 0~70 °C	● MM:2km ● SM:15/30/60/80/120km	● MM:2km ● SM:15/30/60/80/120km			
	I temp: -40~85 °C	● MM:2km ● SM:15/30/60/80/120km	● MM:2km ● SM:15/30/60/80/120km			
622M/OC12	C temp: 0~70 °C	● SM:20/50/80km	● SM:20/50/80km			
	I temp: -40~85 °C	● SM:20/50/80km	● SM:20/50/80km			
1.25G/GBE	C temp: 0~70 °C	● MM:550m ● SM:10/30/50/70km	● MM:550m ● SM:10/30/50/70/90/110/120km			
	I temp: -40~85 °C	● MM:550m ● SM:10/30/50/70km	● MM:550m ● SM:10/30/50/70/90/110/120km			
2.5G/OC48	C temp: 0~70 °C		● SM:5/20/50/80km			
	I temp: -40~85 °C		● SM:5/20/50/80km			
10G	C temp: 0~70 °C		● MM:300m ● SM:10/40/80km	● MM:300m ● SM:10/40/80km		
	I temp: -40~85 °C		● MM:300m ● SM:10/40/80km	● MM:300m ● SM:10/40/80km		
25G	C temp: 0~70 °C		● MM:OM4 100m, OM3 70m ● SM:10km/40km			
	I temp: -40~85 °C		● MM:OM4 100m, OM3 70m ● SM:10km/40km			
40G	C temp: 0~70 °C				● MM:150/300m SR4 ● SM:2km PSM4 ● SM:10km LR4	
100G	C temp: 0~70 °C					● MM:70/100m SR4 ● SM:2km CWDM4 ● SM:10km LR4

BIDI product



Product Type	Operating Temp. Range	1x9/2x5 BIDI	BIDI SFP/SFP+	BIDI XFP	BIDI SFP28
125M/155M/ Fast Ethernet/OC3	C temp: 0~70 °C	● MM:2/5km ● SM:15/25/40/60/80/100/120km	● MM:2km ● SM:20/25/40/60/80/100/120km		
	I temp: -40~85 °C	● MM:2/5km ● SM:15/25/40/60/80/100/120km	● MM:2km ● SM:20/25/40/60/80/100/120km		
1.25G/ Gigabit Ethernet	C temp: 0~70 °C	● MM:500m ● SM:15/25/40/60/80km	● MM:500m ● SM:10/20/40/60/80/120km		
	I temp: -40~85 °C	● MM:500m ● SM:15/25/40/60/80km	● MM:500m ● SM:10/20/40/60/80/120km		
2.5G/OC48	C temp: 0~70 °C		● SM:20/40/80/120km		
	I temp: -40~85 °C		● SM:20/40/80km		
10G	C temp: 0~70 °C		● SM:10/20/40/60km	● SM:10/20/40/60km	
	I temp: -40~85 °C		● SM:10/20/40/60km	● SM:10/20/40/60km	
25G	C temp: 0~70 °C				● SM:10km
	I temp: -20~85 °C				● SM:10km

CWDM / DWDM product



Product Type	Operating Temp. Range	1x9/2x5	SFP/SFP+	XFP
125M/155M/ Fast Ethernet/OC3	C temp: 0~70 °C	●1270~1450nm : up to 80km ●1470~1610nm : up to 120km		
1.25G/Gigabit Ethernet	C temp: 0~70 °C	●1270~1450nm : up to 50km ●1470~1610nm : up to 80km	●1270~1450nm : up to 60km ●1470~1610nm : up to 100km	
2.5G/OC48	C temp: 0~70 °C		●1270~1450nm : up to 60km ●1470~1610nm : up to 80km	
10G	C temp: 0~70 °C		●1270~1330nm : up to 40km ●1350~1450nm : up to 10km ●1470~1610nm : up to 70km(CWDM) up to 80km(DWDM)	●1270~1330nm : up to 40km ●1350~1450nm : up to 10km ●1470~1610nm : up to 70km(CWDM) up to 80km(DWDM)

AOC product



Product Type	Operating Temp. Range	SFP+ AOC	SFP25/28 AOC	QSFP+ AOC	QSFP28 AOC
10G	C temp: 0~70 °C	●1~100m			
25G	C temp: 0~70 °C		●1~100m		
40G	C temp: 0~70 °C			●1~100m	
100G	C temp: 0~70 °C				●1~100m

DAC product



Product Type	Operating Temp. Range	SFP+ Cable	QSFP+ Cable	QSFP+ to 4SFP+ Cable
10G	C temp: 0~70 °C	●1M~10M; Active/Passive		
40G	C temp: 0~70 °C		●1M~10M; Active/Passive	●1M~5M; Passive

DAC product



Part Number	Bit Rate (Gbps)	Length	AWG	Passive / Active	Temp.	Voltage (V)
SFPM-PEC-10G-01	10	1M	30	Passive	0~70	3.3
SFPM-PEC-10G-02	10	2M	30	Passive	0~70	3.3
SFPM-PEC-10G-03S	10	3M	30	Passive	0~70	3.3
SFPM-PEC-10G-03	10	3M	24	Passive	0~70	3.3
SFPM-PEC-10G-05	10	5M	24	Passive	0~70	3.3
SFPM-AEC-10G-03	10	3M	30	Active	0~70	3.3
SFPM-AEC-10G-05	10	5M	30	Active	0~70	3.3
SFPM-AEC-10G-07	10	7M	30	Active	0~70	3.3
SFPM-AEC-10G-10	10	10M	24	Active	0~70	3.3

SFP-T copper product



Product Type	Operating Temp. Range	SFP-T
10/100Base-T copper TRX	C temp: 0~70 °C	0~100m
	I temp: -40~85 °C	0~100m
10/100/1000Base-T copper TRX	C temp: 0~70 °C	0~100m
	I temp: -40~85 °C	0~100m
1000Base-T copper TRX	C temp: 0~70 °C	0~100m
	I temp: -40~85 °C	0~100m
2.5G/5G NBase-T copper TRX	C temp: 0~70 °C	0~100m
	I temp: -40~85 °C	0~100m
10GBase-T copper TRX	C temp: 0~70 °C	0~100m
	I temp: -40~85 °C	0~100m

Optical Extender

DVI Extender



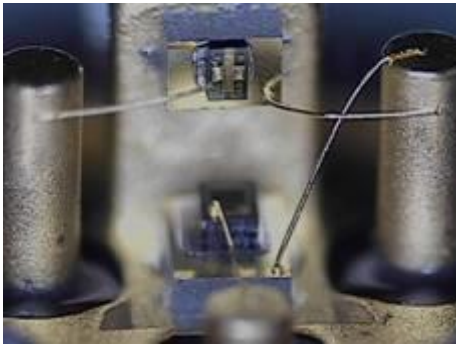
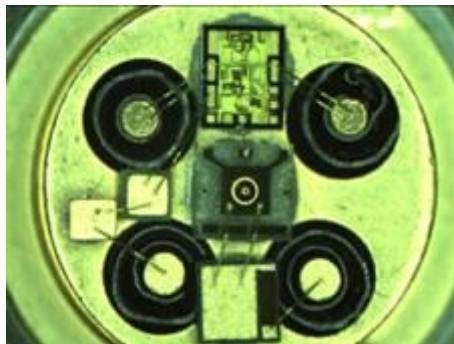
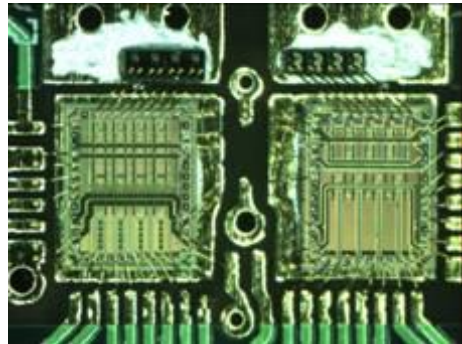
HDMI/Displayport Extender



USB/3G-SDI/KVM Extender



OEM Service for TO package

Package Type	TO56	TO46 & TO5	COB
Product	FP LD DFB LD	PIN/APD TIA LED Termopile	USB AOC DVI/HDMI AOC QSFP+ AOC
Capability (Accuracy)	+/- 25 μm θ +/- 1°	+/- 30 μm	+/- 10 μm
Capacity (pcs/month)	100-k	200-k	15-k
Example			

TO Package Machine

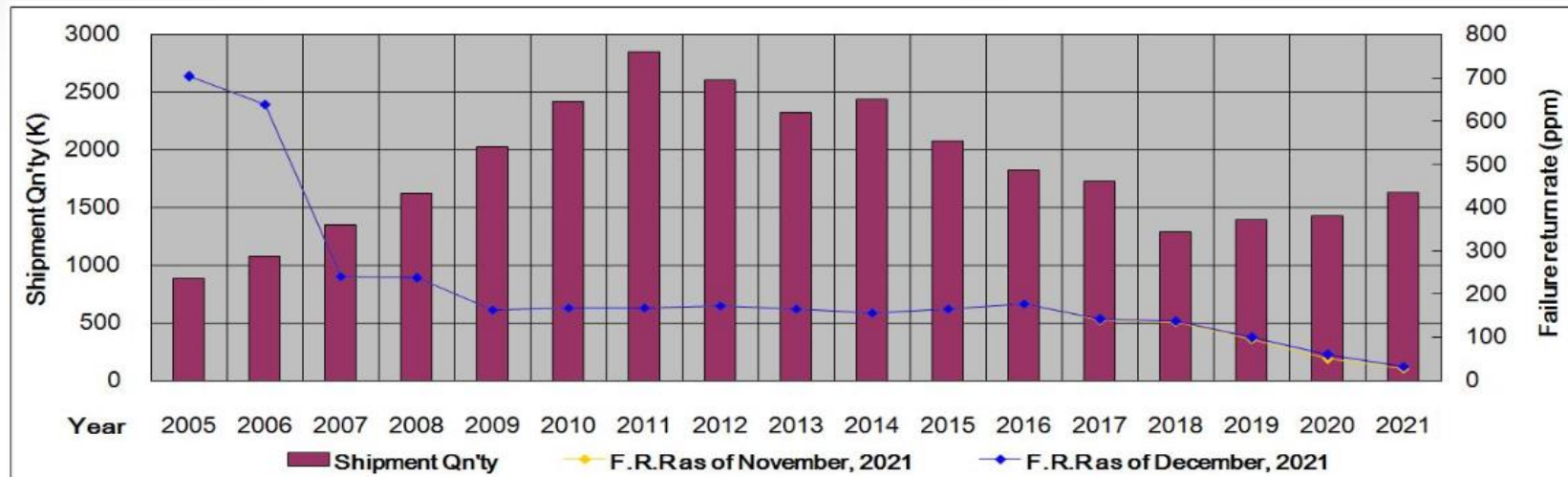
Package Machine	TO56	TO46 & TO5	COB
Die bond			
Wire bond			
Capping			
Burn-in			

O/E Transceiver Road Map

Year Month	Y2022											
	1	2	3	4	5	6	7	8	9	10	11	12
SFP+ Tunable DWDM (10G, 80km 50G or 100Ghz spacing)			RD				ES			MS		
SFP28 ER-lite (25G, 30km, DFB+APD)	ES		MS									
SFP28 BIDI ER-lite (25G, 30km, DFB+APD)	ES		MS									
SFP56 LR/ER PAM(EML) (50G, 10/40km, EML+PIN or APD)			RD								ES	
QSFP56 SR4 C-temp (200G, OM3 70m/OM4 100m)	RD		ES							MS		
QSFP56 SR4 AOC C-temp (200G, Max 100m)	RD		ES							MS		
QSFP56 LR4 PAM(DFB) (200G, 2km)			RD								ES	
QSFP56 LR4 PAM(EML) (200G, 30km, EML+APD)			RD								ES	

Field Return Rate

Year	Return Qn'ty (piece)	Shipment Qn'ty (piece)	Field Return Rate(ppm)
2011	483	2,856,331	169
2012	449	2,606,314	172
2013	377	2,329,961	162
2014	383	2,442,249	157
2015	348	2,081,838	167
2016	327	1,823,720	179
2017	246	1,733,086	142
2018	179	1,288,474	139
2019	139	1,392,047	100
2020	86	1,431,708	60
2021	54	1,635,795	33



Remark:

Field return rates as of the date in terms of product manufacture date that were built and shipped off in each individual year

ISO Certificate

ISO 9001 :2015





APAC OPTO ELECTRONICS INC.

NO. 3, TZU CHIANG RD., HSINCHU INDUSTRIAL PARK, HUKOW TOWNSHIP, HSINCHU COUNTY 30352, TAIWAN, R. O. C.

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

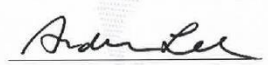
Scope of certification

DESIGN, MANUFACTURE AND SUPPLY OF OPTICAL AND ELECTRICAL COMMUNICATION PRODUCTS.

Original cycle start date:	15-11-2005
Expiry date of previous cycle:	01-11-2020
Certification / Recertification Audit date:	25-09-2020
Certification / Recertification cycle start date:	02-11-2020

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 01-11-2023

Certificate No.: TW005233 Version: I Issue Date: 01-11-2020




Certification Body Address: 5th Floor, 68 Prescott Street, London, E1 8HG, United Kingdom
Local Office: 3F-B, No. 16, Nanjing E. Rd., Sec. 4, Songshan Dist., Taipei 10553, Taiwan

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call: +886 2 2570 7655

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ISO 14001 :2015





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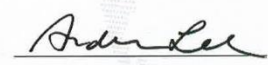
Scope of certification

DESIGN, MANUFACTURE AND SUPPLY OF OPTICAL AND ELECTRICAL COMMUNICATION PRODUCTS.

Original cycle start date:	20-01-2009
Expiry date of previous cycle:	19-01-2021
Certification / Recertification Audit date:	25-09-2020
Certification / Recertification cycle start date:	20-01-2021

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 19-01-2024

Certificate No.: TW005249 Version: I Issue Date: 01-11-2020




Certification Body Address: 5th Floor, 68 Prescott Street, London, E1 8HG, United Kingdom
Local Office: 3F-B, No. 16, Nanjing E. Rd., Sec. 4, Songshan Dist., Taipei 10553, Taiwan

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