

Intron Technology (1760 HK)

Beneficiary of automotive megatrends in electrification and intelligence

Intron Tech is a fast-growing automotive electronics system solution provider in China, focusing on new energy, powertrain, body control and intelligent driving systems. Riding on automotive electrification and intelligence trends, we believe Intron is well-positioned to seize opportunities in booming automotive electronics and semiconductor market in China. As Infineon's largest automotive semi partner in Greater China and Horizon Robotics' major IDH partner, we estimate Intron will deliver 33%/34% sales/earnings CAGR in 2022-25E, driven by 39%/65% sales CAGR in New Energy/Automation & Connectivity segment. We initiate at BUY with TP of HK\$7.54 based on 12x FY23E P/E. Upcoming catalysts include favourable NEV policy, rising ADAS penetration and product launches.

- Fast-growing automotive electronics system provider in China.** Intron is Infineon's largest automotive semi partner in Greater China, and it also works closely with leading domestic chip suppliers such as Horizon Robotics and SemiDrive, offering cutting-edge system solutions for new energy and intelligent driving applications. With a light-asset R&D-focused business model, Intron enjoys an extensive client portfolio of 1200+ OEMs/Tier-1s, including BYD, BAIC, GWM, Geely, Li Auto and XPeng. For 2019-22, Intron delivered 28%/52% sales/net profit CAGR, backed by 27%/40%/19%/23% sales CAGR in New Energy/ Body Control/ Safety/ Powertrain systems.
- Electrification and intelligent driving serve as dual-growth engines.** Intron provides a full suite of auto system solutions for electrification (BMS, VCU, MCU) and intelligent driving (ADAS, cockpit) that can cater to OEMs' growing demand for third-party solution providers under E/E architecture transformation. For NEV segment, backed by Infineon's comprehensive MCUs/sensors/power semi portfolio, we believe Intron will continue to enjoy strong tailwinds with 39% sales FY22-25E CAGR. For automation & connectivity, we expect large-scale delivery of Horizon Robotics-based ADAS solutions (MADC2.0/2.5/3.5) to drive 65% sales CAGR in FY22-25E.
- Initiate at BUY with TP of HK\$7.54 (70% upside).** We forecast a 33%/34% sales/earnings CAGR in 2022-25E, thanks to 39%/65% sales CAGR in New Energy/Automation & Connectivity and improving pre-tax margin (9.4% in FY22, vs 9.8% in FY25E). With the stock trading at 7.7x/5.8x FY23/24E P/E after recent correction, we initiate at BUY with TP of HK\$7.54, based on 12x FY23E P/E (24% below 5-year hist. average), which we think is justified by 34% FY22-25E earnings CAGR. Catalysts include favourable NEV policy, rising ADAS penetration, share gains in NEV clients and product launches.

Earnings Summary

| (YE 31 Dec) | FY21A | FY22A | FY23E | FY24E | FY25E |
|----------------------|-------|-------|-------|-------|--------|
| Revenue (RMB mn) | 3,176 | 4,830 | 6,879 | 9,086 | 11,445 |
| YoY growth (%) | 59.4 | 52.1 | 42.4 | 32.1 | 26.0 |
| Net profit (RMB mn) | 200.6 | 415.0 | 600.5 | 799.0 | 999.2 |
| YoY growth (%) | 111.6 | 106.9 | 44.7 | 33.1 | 25.1 |
| EPS (Reported) (RMB) | 0.19 | 0.38 | 0.55 | 0.74 | 0.92 |
| Consensus EPS (RMB) | na | na | 0.54 | 0.67 | 0.78 |
| P/E (x) | 22.7 | 10.2 | 7.7 | 5.8 | 4.6 |
| P/B (x) | 2.6 | 2.0 | 1.8 | 1.5 | 1.2 |
| Yield (%) | 1.6 | 3.4 | 3.9 | 5.2 | 6.5 |
| ROE (%) | 13.2 | 21.3 | 25.4 | 28.0 | 28.6 |

Source: Company data, Bloomberg, CMBIGM estimates

BUY

Target Price HK\$7.54
Up/Downside 70.0%
Current Price HK\$4.44

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Stock Data

| | |
|--------------------------|-----------|
| Mkt Cap (HK\$ mn) | 5,081.0 |
| Avg 3 mths t/o (HK\$ mn) | 8.2 |
| 52w High/Low (HK\$) | 7.19/3.26 |
| Total Issued Shares (mn) | 1085.7 |

Source: FactSet

Shareholding Structure

| | |
|-----------------|-------|
| Magnate Era Ltd | 48.3% |
| Luk Wing Ming | 6.9% |

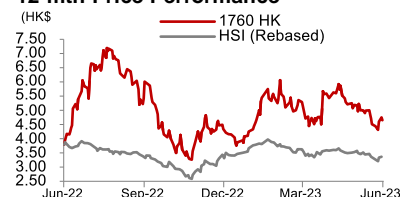
Source: HKEx

Share Performance

| | Absolute | Relative |
|-------|----------|----------|
| 1-mth | -9.8% | -6.1% |
| 3-mth | -9.1% | -3.1% |
| 6-mth | 9.1% | 6.6% |

Source: FactSet

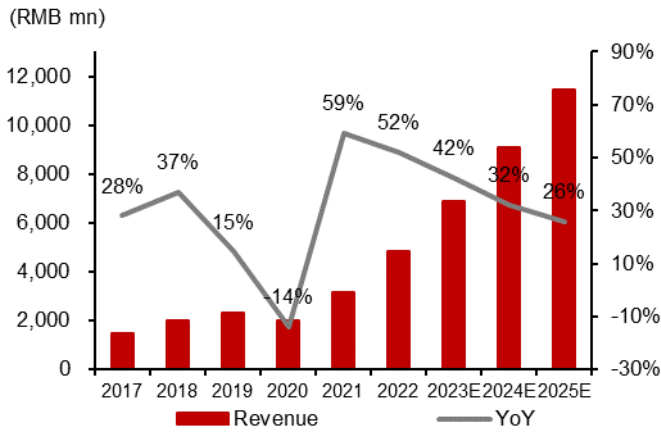
12-mth Price Performance



Source: FactSet

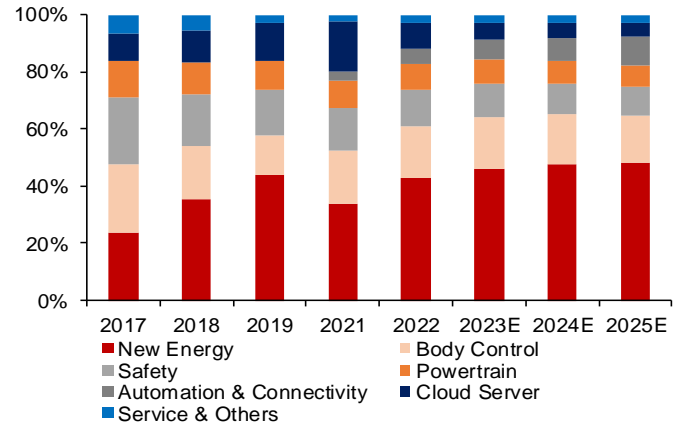
Focus Charts

Figure 1: Intron's revenue forecast



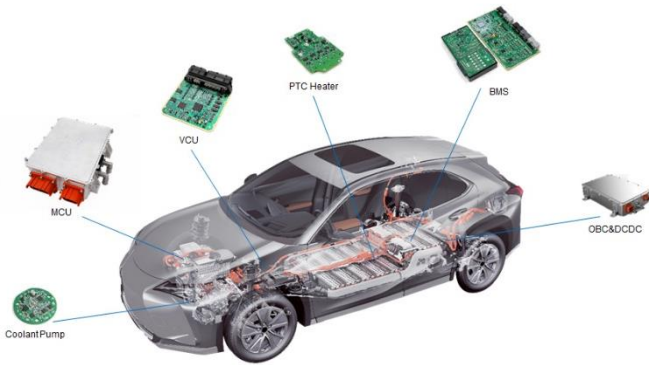
Source: Company data, CMBIGM estimates

Figure 2: Intron's revenue breakdown



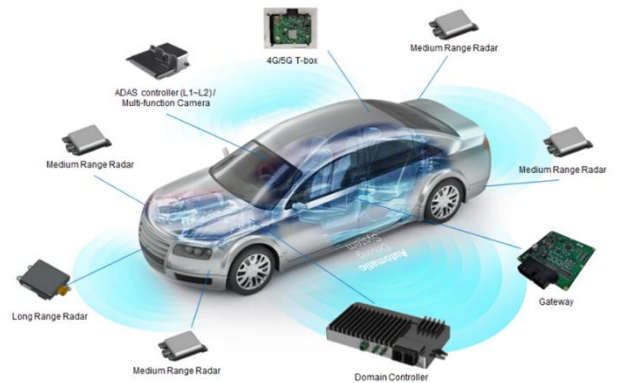
Source: Company data, CMBIGM estimates

Figure 3: Intron's new energy vehicle solutions



Source: Company data, CMBIGM estimates

Figure 4: Intron's intelligent vehicle solutions



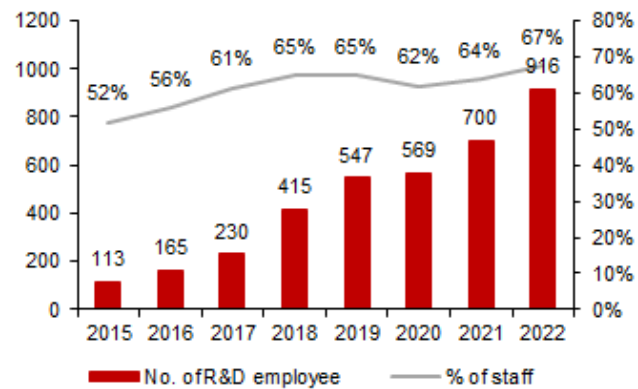
Source: Company data, CMBIGM estimates

Figure 5: Intron's extensive client/supplier portfolio



Source: Company data, CMBIGM estimates

Figure 6: Intron's number of R&D employee



Source: Company data, CMBIGM estimates

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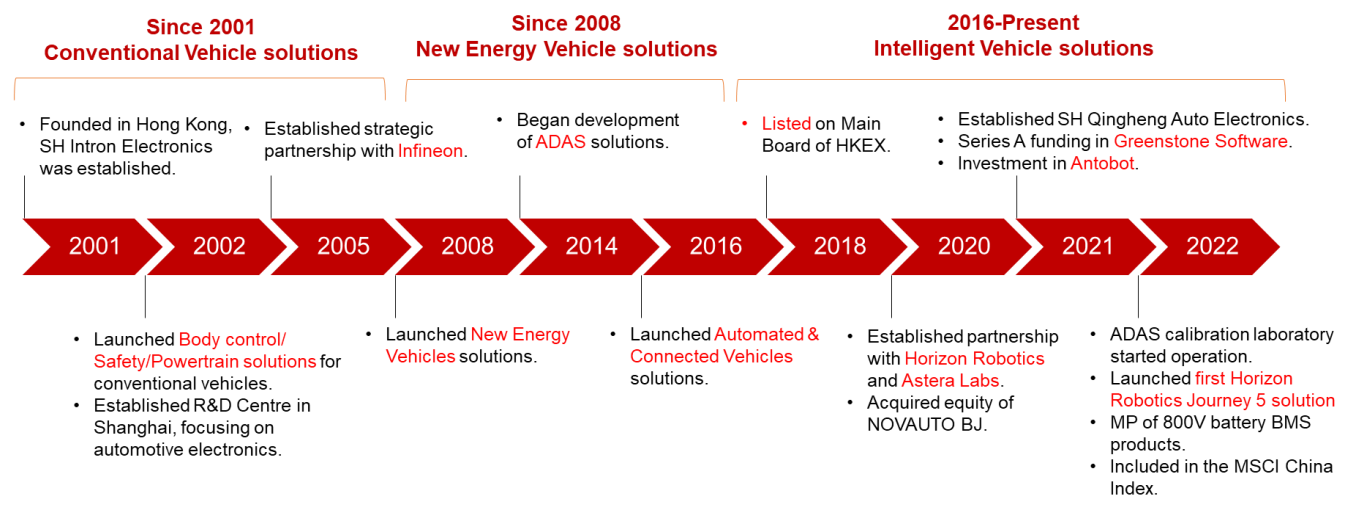
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Intron Technology: Beneficiary of automotive megatrends in electrification and intelligence

Founded in 2001 and listed on HKEX in 2018, Intron Technology is a leading automotive electronics solution provider in China, focusing on new energy, body control, safety, powertrain and automation/connectivity systems. Leveraging solid R&D capabilities and strong partnership with semiconductor suppliers, Intron offers comprehensive solutions of critical automotive electronic components, which helps OEM/tier-1 customers to shorten product development cycle and enhance manufacturing efficiency.

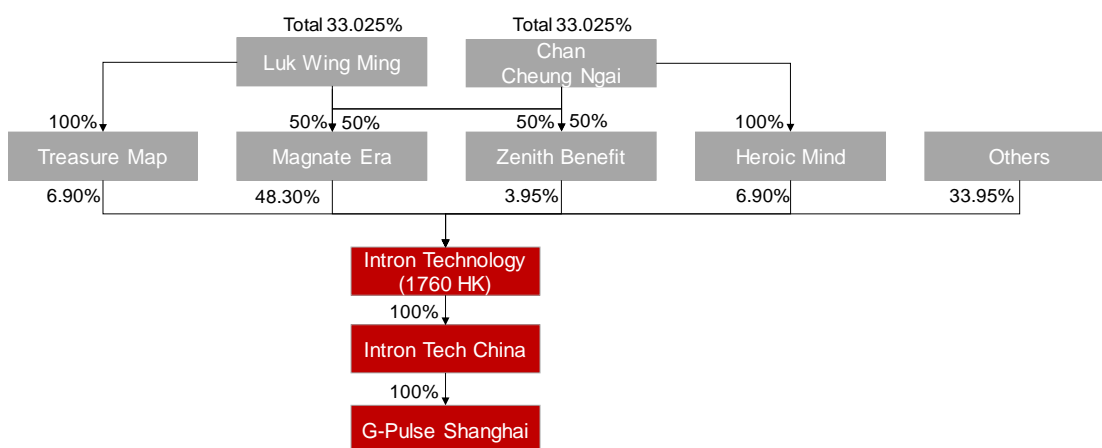
In 2002, Intron started to provide electronics solutions for conventional vehicles, such as body control, safety and powertrain systems. In 2008, Intron expanded into new energy vehicle system solution products, such as BMS, VCU and MCU. In 2016, Intron launched automated & connected vehicles solutions, such as ADAS controllers and multi-range radars. Driven by robust auto electrification trend, Intron delivered 28%/52% sales/net profit CAGR during 2019-22, driven by 27%/40%/19%/23% sales CAGR in New Energy / Body Control/ Safety/ Powertrain systems.

Figure 7: Intron’s company history



Source: Company data, CMBIGM estimates

Figure 8: Intron’s shareholding structure (FY22)

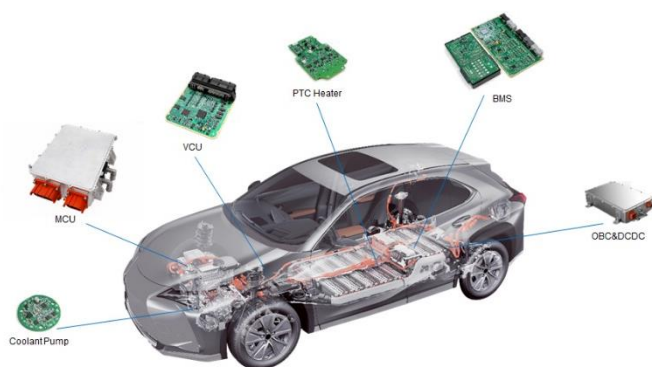


Source: Company data, CMBIGM estimates

Comprehensive product offerings: New Energy Vehicle, Body Control /Safety/Powertrain and Automated & Connected Vehicle systems

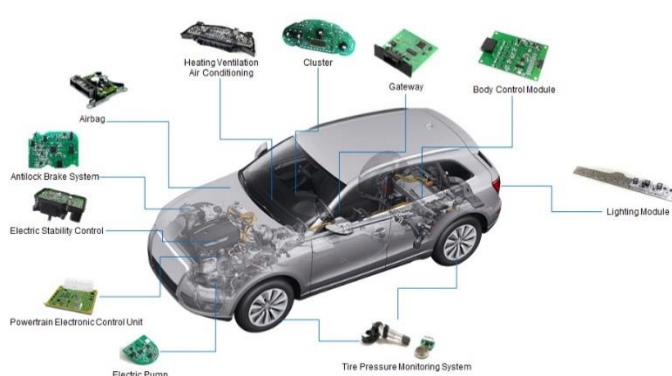
Intron provides a broad range of automotive electronic solutions for conventional vehicles, new energy vehicles and intelligent vehicles. **1) New Energy Vehicle solutions:** Intron’s NEV solutions cover three core products - battery management systems (BMS), vehicle control units (VCU) and motor control units (MCU). **2) Body Control/ Safety/ Powertrain solutions:** Intron’s solutions focus on body control, safety and ICE powertrain systems. **3) Automated & Connected Vehicles solutions:** The solutions include ADAS/AD domain controllers, millimeter-wave radars, cameras, intelligent cockpit system, 5G T-box and hybrid gateways, and recently launched zonal control unit (ZCU) for E/E architecture transformation.

Figure 9: Intron’s New Energy Vehicle solutions (e.g. BMS, VCU, MCU) for NEVs



Source: Company data, CMBIGM estimates

Figure 10: Intron’s Body Control/Safety/Powertrain solutions for conventional vehicles



Source: Company data, CMBIGM estimates

Figure 11: Intron’s business segment and systems solutions

| Categories | Segment | FY22 Revenue | | System Solutions |
|---|--------------------------------|--------------|------------|--|
| | | % of Sales | YoY Growth | |
| New Energy Vehicle Solutions | New Energy | 43% | 91% | Core NEV solutions (incl. electric powertrain, thermal management) , such as BMS, VCU, MCU, OBC & DCDC, traction motor inverter, vehicle control unit, coolant pump, FAN controller and compressor. |
| Body Control / Safety / Powertrain Solutions | Body Control | 18% | 50% | Body control systems , including body control module, central gateway, heating ventilating, air conditioning and lighting module. |
| | Safety | 13% | 34% | Safety systems , including electric stability control, anti-lock brake controller, airbag, tyre-pressure monitoring and power steering systems. |
| | Powertrain | 9% | 40% | Powertrain systems , such as motor inverter, battery systems, power management, transmission and hybrid controllers. |
| Automated & Connected Vehicles Solutions | Automated & Connected Vehicles | 5% | 151% | Intelligent driving & automotive connectivity , including ADAS multi-function camera controller, domain controller, smart cabin, gateway control unit, MRR, LRR, 4G/5G T-box. |
| Cloud Server Related Solutions | Cloud Server | 9% | -24% | Power management of data centres/cloud servers. |
| | Service & Others | 3% | 92% | Engineering services , such as customized technical consulting services, electronics products prototype development services, system design, product testing and validation service. |

Source: Company data, CMBIGM estimates

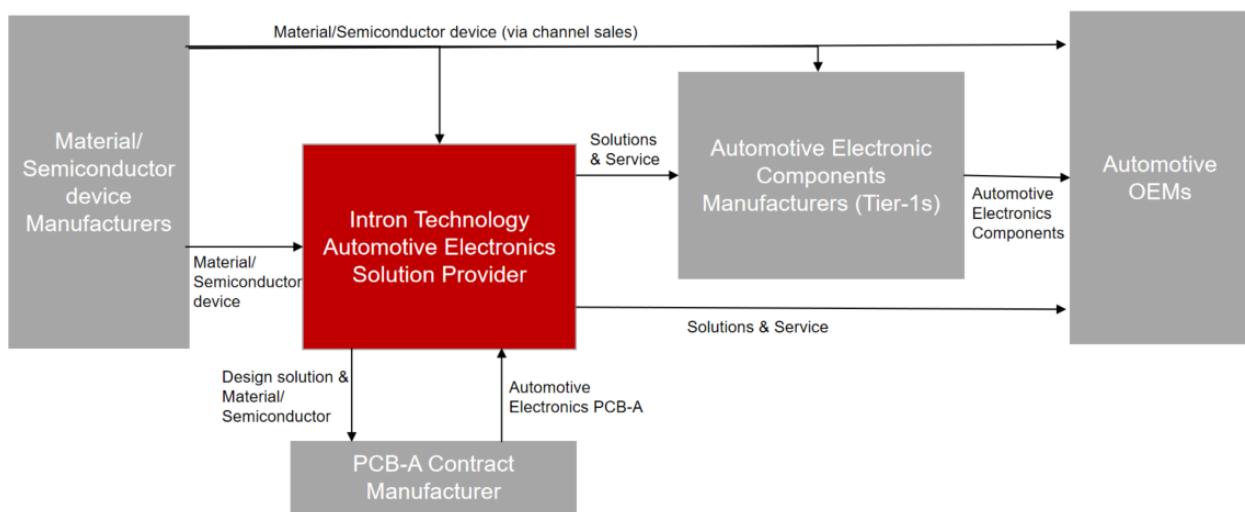
R&D-focused business model to empower automobile OEMs

Asset-light business model to offer customized system solutions

As an asset-light R&D-focused automotive system solutions provider, Intron partners and co-develops systems solutions with leading semiconductor suppliers (e.g. Infineon, NXP, Horizon Robotics), and outsources the production of assemblies to contract manufacturers.

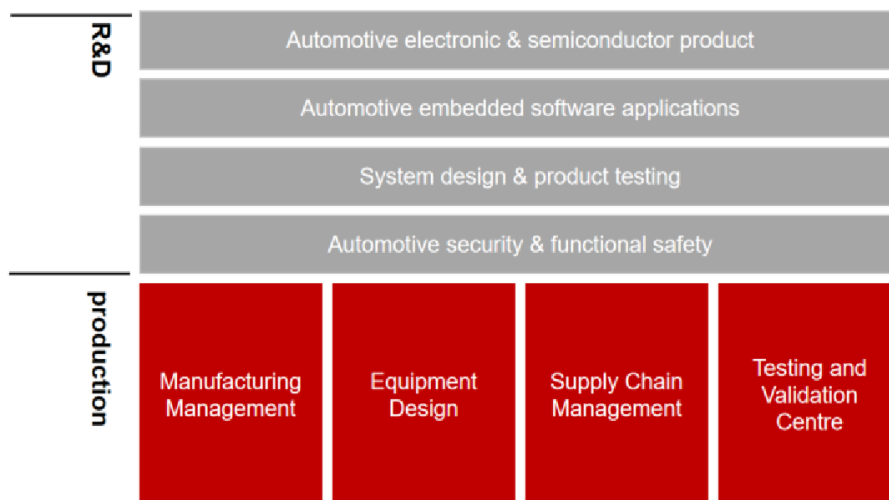
In the age of NEVs and intelligence, cars are differentiated by the functionality enabled by semiconductors and electronics. Leveraging an established R&D and commercialization platform, Intron connects upstream semiconductor suppliers and auto OEMs/tier-1s clients, and offers a broad spectrum of “ready-for-mass-production” solutions built with different semiconductors, embedded software and system-level design products.

Figure 12: Intron’s business model



Source: Company data, CMBIGM estimates

Figure 13: Intron’s product and service offerings



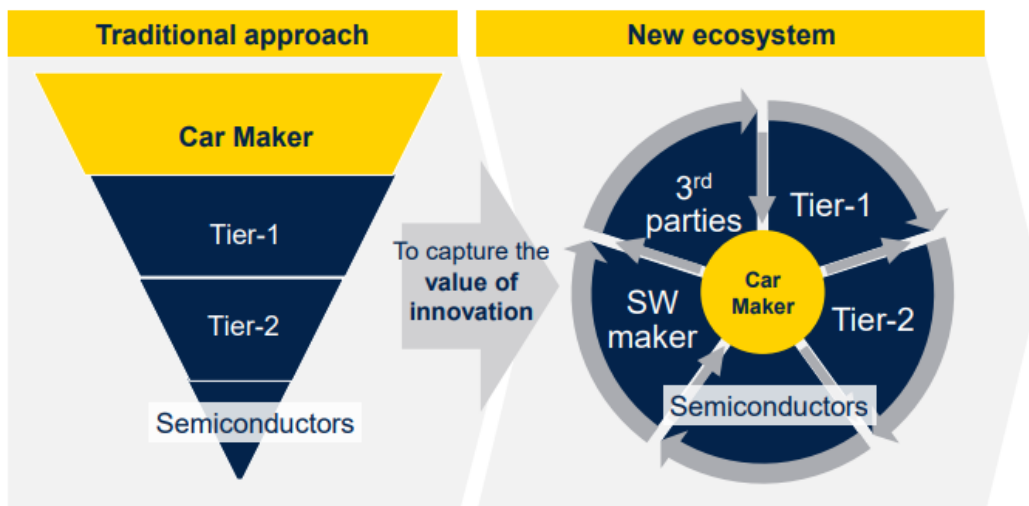
Source: Company data, CMBIGM estimates

Positioned as “technology enabler” to deliver time-to-market solutions

Trends driving the car of the future are enabled by more complex and intelligent electronics, and vehicle content and car differentiation strongly depend on semiconductors. In particular, in the past few years, global semi shortage and electrification/ intelligence trends accelerated supply chain transformation. As a leading automotive electronics solutions provider, Intron leverages strong R&D capabilities and know-how in automotive electronics systems, and helps OEM/Tier-1 customers quickly and strategically bring their products to market.

- 1) **Shorten product development cycle.** Intron participates in system design and accelerates engineering process, while reducing the need for physical prototypes and durability testing, which can reduce product development time.
- 2) **Improve cost efficiency with economies of scale.** Product design and development cycle of automotive electronics systems is time-consuming and requires substantial capital investments. Third-party solution providers like Intron can offer OEMs customized system solutions, effectively reducing R&D and production costs.
- 3) **Accelerate technology upgrade for domestic OEMs.** Automotive electronics solution providers co-develop system-level solutions with global semiconductor suppliers, which allows domestic OEMs to adopt latest global automotive system solutions and enhance the competitiveness of products.
- 4) **Reduce supplier risk with multi-platform solutions.** NEV OEMs emphasizes direct cooperation with upstream semi/component suppliers, and supply chain transforms from vertical straight line structure towards circular flat structure. OEMs are more willing to cooperate with solution providers for multiple alternate platforms. We believe “tier-X” like Intron is well-positioned to benefit from automotive supply chain revolution.

Figure 14: Emerging business model in automobile supply chain



Source: STMicroelectronics, CMBIGM estimates

Established partnership with semi suppliers and OEM/tier-1

Extensive client portfolio of OEM/tier-1; BYD is the largest customer

Over the past two decades, Intron has established partnership with more than 1,200 OEMs and Tier-1s to support development and production of automotive electronic systems. Major OEM clients include top 10 renowned Chinese NEV passenger vehicles brands, such as BYD, BAIC, GWM, Geely, GAC, Li Auto, XPeng and Leapmotor, and Tier-1 clients include CATL, CAEA and CJAE. We believe BYD has been Intron's largest customer since FY15, accounting for 12.8% of FY22 revenue.

Figure 15: Intron's upstream suppliers and OEMs/tier-1 customers



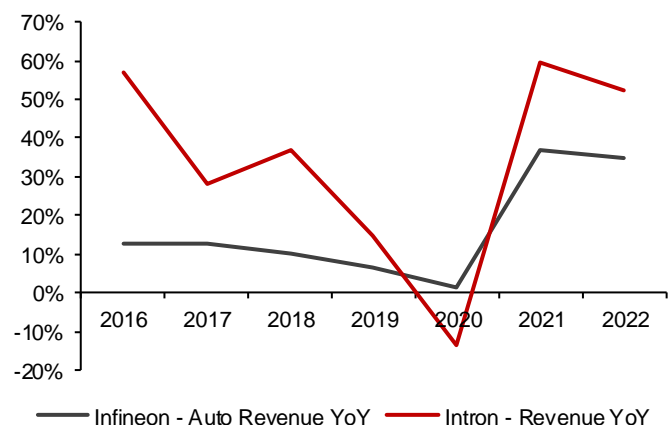
Source: Company data, CMBIGM estimates

Long-term partnership with semi leaders; Infineon is its largest supplier

Intron works closely with world-leading automotive semi suppliers, e.g. Infineon, TDK, Horizon Robotics and Wind River. Intron started partnership with Infineon in 2005, Epcos/JST in 2009, Kyocera in 2012, Panasonic in 2016, and Horizon Robotics in 2020. After 17+ years of partnership with Infineon, we believe Intron became Infineon's largest partner in auto segment in Greater China, and sourced 70%+ of semi from Infineon in 2022.

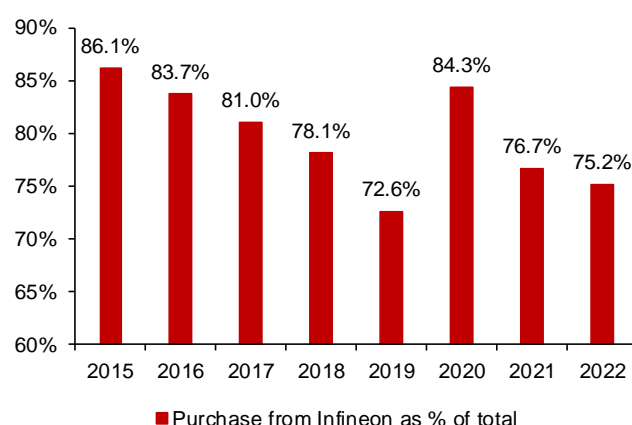
Infineon is global No.1 auto semiconductor leader with #1/#2/#3 position in power semi, MCU and sensor markets. Infineon is the clear industry leader in automotive semiconductor, especially MCUs, power semi and sensors. Driven by booming Chinese NEV market, China is Infineon's largest market (29% of FY22 sales), and its revenue from China grew 29%/28% YoY in FY21/FY22, vs Intron's 59%/52% YoY revenue growth.

Figure 16: Revenue growth for Infineon and Intron



Source: Infineon, Bloomberg, CMBIGM, *Infineon's FY ends on 30th September each year.

Figure 17: Intron's purchase from Infineon



Source: Company data, CMBIGM

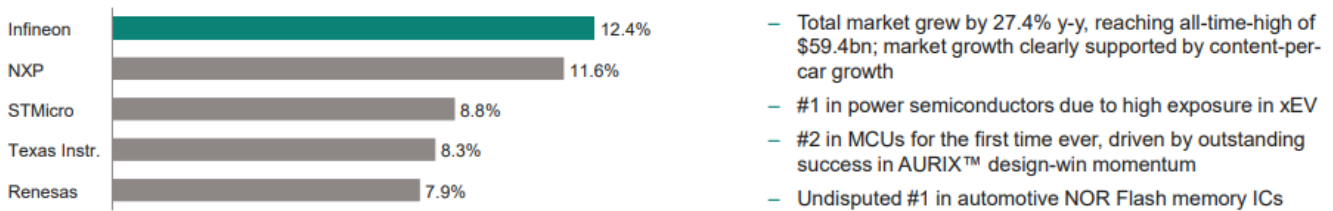
Figure 18: Infineon’s comprehensive product portfolio for all XEV segments



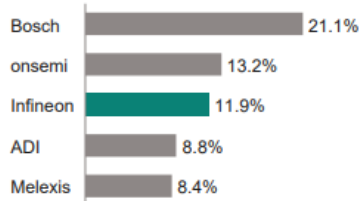
Source: Infineon, CMBIGM estimates

Figure 19: Infineon’s global leadership in automotive semiconductor market

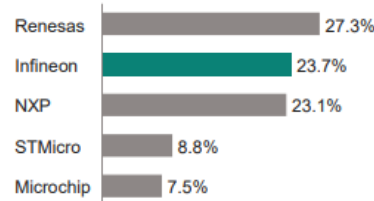
Automotive semiconductors (2022 total market: \$59.4bn; +27.4% y-y)



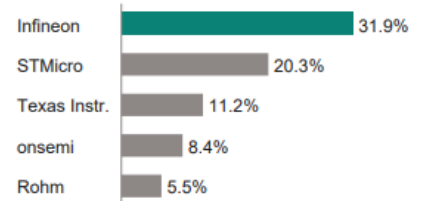
Sensors



MCUs



Power semiconductors



Source: Infineon, TechInsights, CMBIGM estimates

Auto semi industry outlook: content growth set to continue; Supply tightness to ease in 2H23E

In 1Q23, China reported 26% YoY growth for NEV sales shipment, vs triple-digit growth in 1Q22, according to CAAM. With NEV shipment mix increased to over 33% in May 2023, we believe China NEV shipment growth will gradually moderate, and recent price cut led to margin concerns for automotive supply chain in 1H23.

Based on our analysis of latest views from global auto semi leaders, we are positive on latest industry trends and outlook: **1) CY1Q23 auto semi revenue:** Double-digit YoY/mild QoQ growth for major players; **2) CY2Q23 auto semi revenue:** Expect continued QoQ growth with strong demand. **3) Auto semi supply tightness:** Expect to ease gradually in 2H23E. **4) Auto semi pricing:** Pricing trend was diverse across products as shortage persists for selected areas. Some categories continued to benefit from LTA and tailwinds from content growth. **5) 2H23E Outlook:** Several companies maintained positive view on China's NEV market recovery in 2H23E due to potential stimulus and demand recovery.

Figure 20: Latest comments from global auto semi leader

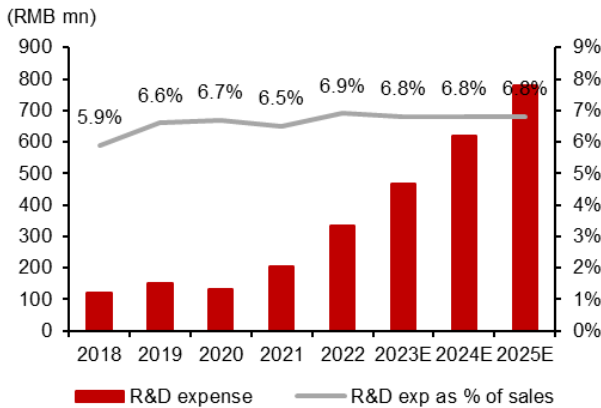
| Company | Date | Comments on auto semi during CY1Q23 earnings |
|-------------------|-----------|---|
| Texas Instruments | 4/25/2023 | <ul style="list-style-type: none"> Automotive segment was the only downstream segment delivered revenue QoQ growth (mid-single digits). Automotive has remained strong through last quarter. |
| ADI | 5/24/2023 | <ul style="list-style-type: none"> Automotive represented 24% of revenue and achieved another record, up 24% YoY/ 10% QoQ, BMS and in-cabin connectivity products increased nearly 40% YoY. Expect down low to mid-single digits sequentially in automotive segment. |
| Infineon | 5/4/2023 | <ul style="list-style-type: none"> Automotive segment set new revenue record of EUR 2.08bn, up 40% YoY/ 11% QoQ. Expect auto microcontroller supply tightness to last throughout the calendar year. Expect automotive segment to continue to post small QoQ growth for next quarter with full year segmental growth to exceed 14% YoY, well above company average. Strong demand for AURIX MCU products continues despite sluggish China auto shipment performance since the year started Expect China's auto market to pick up towards 2H23. |
| NXP | 5/2/2023 | <ul style="list-style-type: none"> Automotive revenue was up 17% YoY to reach US\$1.83bn, above mid-point of previous guidance. Automotive segment is expected to continue to deliver QoQ growth of high single-digit percent, well above company average of 3% at the midpoint. We witnessed a combination of positive tailwinds from adoption of xEV drivetrains and ADAS as well as NXP's specific content and price increases. Supply limitation in auto segment still obvious in 1Q23. Expect to normalize in 2H23. |
| On Semi | 5/1/2023 | <ul style="list-style-type: none"> Automotive revenue was up 38% YoY and flat QoQ, Supply constraint still evident in across several automotive technologies. Expect to see QoQ growth for 2Q23 in automotive business. Auto product price remained strong and protected by LTA. |
| STM | 4/27/2023 | <ul style="list-style-type: none"> ADG (Automotive & Discrete Group) revenue was up 43.9% on a double-digit growth in both automotive and power discrete. Demand in automotive market remained strong. Still facing capacity limitations in automotive silicon carbide and IGBT supply. Product price performance was diverse to large extent within the automotive product portfolio, expect flattish YoY price performance for overall automotive products. |
| Renesas | 4/27/2023 | <ul style="list-style-type: none"> Automotive revenue was up 9.3% YoY, down 0.8% QoQ, well above overall company revenue performance of +3.7% YoY and -8.1% QoQ and beating previous estimates. Restocking in inventory for automotive segment in 1Q23 and will continue into 2Q23. Still benefit from the automotive market tailwind, may expect additional stimulus measures in China auto market which should be an upside. |

Source: Company data, CMBIGM estimates

Future investment into intelligent driving, power semi and software platform

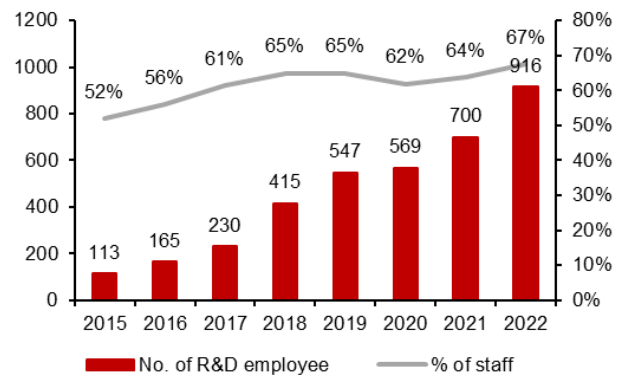
Intron’s asset-light business model minimizes fixed asset investment and allows resources to focus on R&D for future growth. Intron outsources system manufacturing to PCB-A manufacturers in China, and provides quality control and production monitoring through self-developed testing equipment and onsite engineers at production sites. In 2022, Intron has 916 R&D staff, accounting for 67% of workforce. Intron’s R&D expense has been increasing over past five years, and it accounted for 6.9% of revenue in 2022.

Figure 21: Intron’s R&D expense trend



Source: Company data, CMBIGM estimates

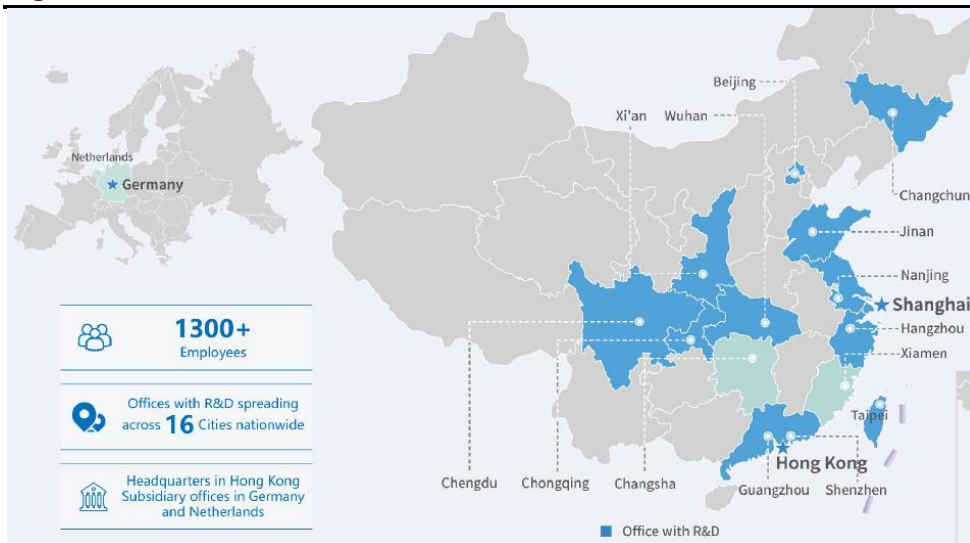
Figure 22: Intron’s number of R&D employee



Source: Company data, CMBIGM estimates

Intron has R&D and service locations in 16 cities, and recently expanded R&D facilities in Changchun, Shanghai and Chengdu amounting to additional 3,000sqm for future R&D and customer support. Its Chengdu and Shanghai Jiading R&D facilities started operation and focused on intelligent automotive software platform solutions, such as domain controller and millimeter-wave radar. Intron planned to add R&D facilities in Hong Kong for intelligent driving software development, advanced power semiconductor applications and collaborative robot solutions, which will start operation in 2023. The new R&D investments in Hong Kong will pave the way for Intron to penetrate into overseas market along with increasing exports volume from China domestic auto OEMs.

Figure 23: Intron’s R&D service & facilities sites in China



Source: Company data, CMBIGM estimates

Increasing investments into power semi, intelligent driving and software platform

In February 2021, the Company raised RMB 253mn through the share placement, which will be used for investments in the construction of the intelligent driving software platform, R&D of electrical vehicle control system software, customized development of power semiconductor and the establishment of the intelligent driving testing & validation fab. The funds raised from the share placement will be fully invested by the end of 2023, driving the Company's future development.

Figure 24: Intron's Feb 2021 share placement investments progress

| No. | Allocation purpose | Allocation amount (RMB mn) | Percentage of amount (%) | Amount invested until 31/12/2022 (RMB mn) | Amount due to invest since 31/12/2022 (RMB mn) | Timeline for investments |
|--------------|---|----------------------------|--------------------------|---|--|-------------------------------|
| 1 | Intelligent driving software development platform | 62.0 | 25% | 43.0 | 19.0 | Plan to invest by end of 2023 |
| 2 | XEV electrical control system software development platform | 35.0 | 14% | 25.9 | 9.1 | Plan to invest by end of 2023 |
| 3 | Customized development of power semiconductor | 35.0 | 14% | 29.2 | 5.8 | Plan to invest by end of 2023 |
| 4 | Intelligent driving testing and validation center | 62.0 | 25% | 42.0 | 20.0 | Plan to invest by end of 2023 |
| 5 | Operating capital | 58.6 | 22% | 58.6 | 0 | - |
| Total | | 252.6 | 100 | 198.7 | 53.9 | - |

Source: Company data, CMBIGM estimates

Growth Drivers

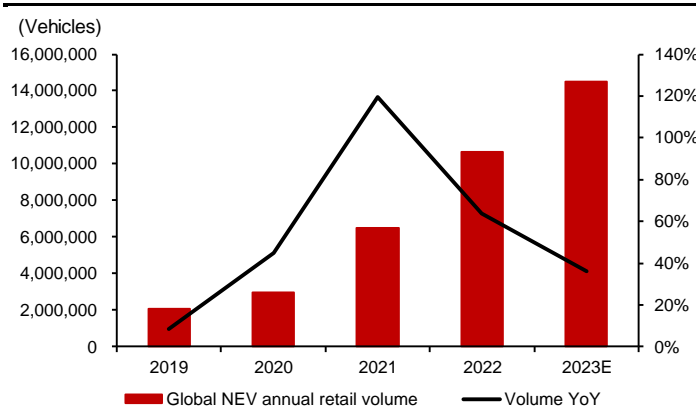
Driver 1: Accelerating electrification to boost electronics/semi content

China is leading in global NEV sales and vehicle electrification trend, leading to huge market potential for domestic supply chain. New energy vehicles sales volume and penetration rate increased significantly in China in the past two years. According to CAAM, sales volume of new energy vehicles in China reached 6.89mn in 2022, up 93.4% YoY, accounting for 64% of global NEV sales volume. NEV penetration in China reached 25.6% in 2022, increased 12.1ppts YoY. China domestic NEV brands accounted for 79.9% of total NEV sales volume.

With rapid growth of China's NEV market, domestic NEV brands have pioneered China NEV market with market share gain. According to CAAM, top 5 OEM brands of NEV sales in China in 2022 were BYD, SAIC, Tesla, Dongfeng and Geely, CR3 and CR5 of those OEM brands accounted for 53% and 65%. BYD's NEV sales volume exceeded 1.8mn units, up 207% YoY, capturing 27% market share.

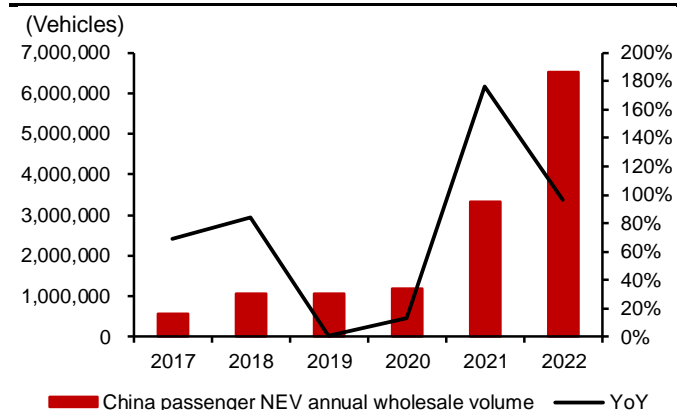
Growing localization will benefit Chinese supply chain. We have seen auto industry accelerating localization of production and R&D in recent years. Local players have better knowledge about domestic customers' requirements and react more rapidly to OEMs' requests. Therefore, local players are able to offer more competitive system solutions.

Figure 25: Global NEV annual retail volume



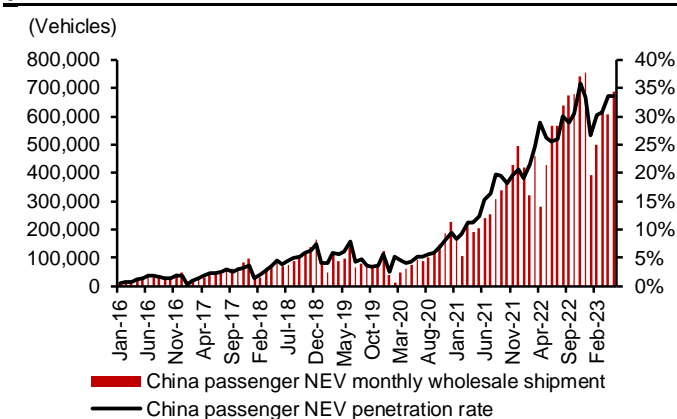
Source: TrendForce, CMBIGM estimates

Figure 26: China NEV annual retail volume



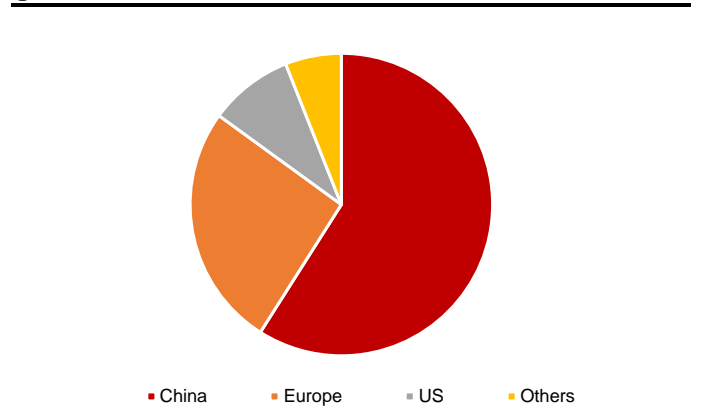
Source: CAAM, CMBIGM estimates

Figure 27: China monthly NEV retail volume and NEV penetration rate



Source: CAAM, CMBIGM estimates

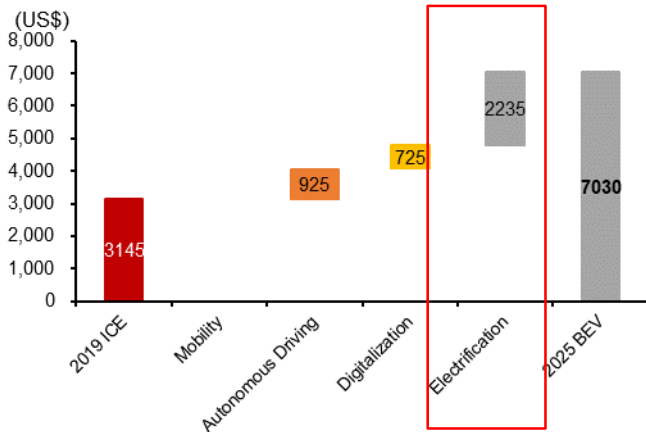
Figure 28: China accounted for more than 60% of global NEV sales in 2022



Source: Canalis, CAAM, CMBIGM estimates

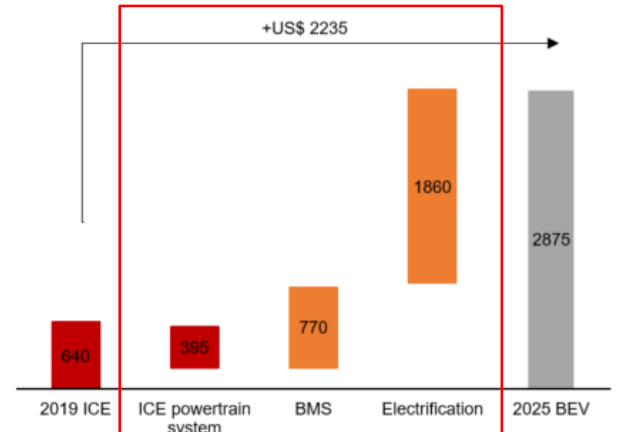
Accelerated vehicle electrification is set to boost demand for automotive electronics and E/E structure transformation. The key difference between ICE and NEVs is the usage of semiconductors in the powertrain system. Driven by accelerated transformation for conventional vehicles, total BOM value of automotive electronics components is expected to increase to US\$7,030 in 2025 from US\$3,145 in 2019, according to Roland Berger. The increased BOM value of US\$ 2,235 is mainly due to higher content value of BMS and other electronics components, which will benefit electronic solutions providers with comprehensive NEV product offerings, such as Intron.

Figure 29: Overall BOM value (US\$) of auto electronics components for ICE and BEV



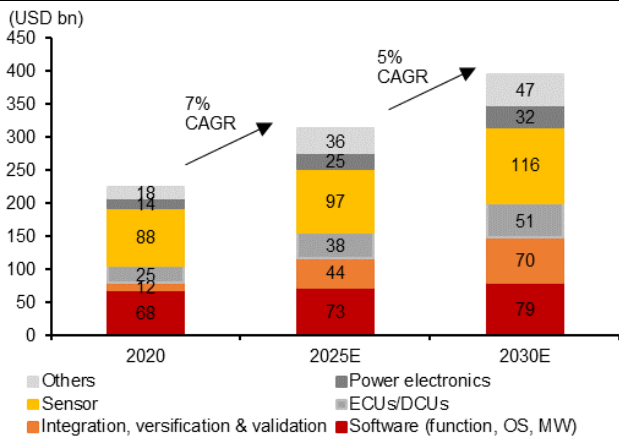
Source: Roland Berger, CMBIGM estimates

Figure 30: Auto electronics BOM value (US\$) for ICE and BEV



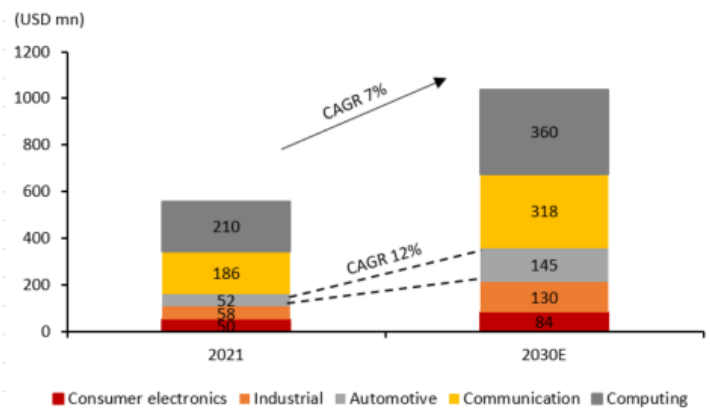
Source: Roland Berger, CMBIGM estimates

Figure 31: Automotive electronics & software market (2020-2030)



Source: McKinsey, CMBIGM estimates

Figure 32: Global semiconductor market by segment (2021-2030)

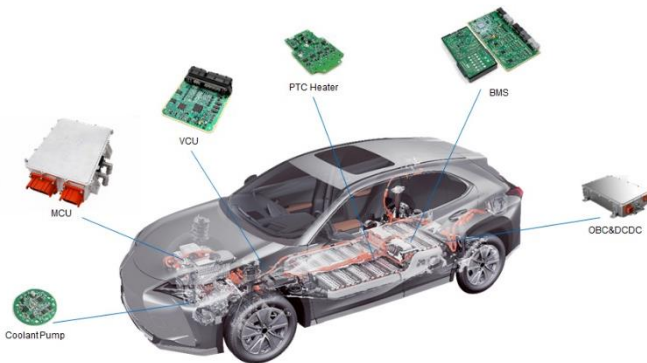


Source: Digitimes, CMBIGM estimates

Intron’s strong NEV product offerings in BMS/VCU/MCU system

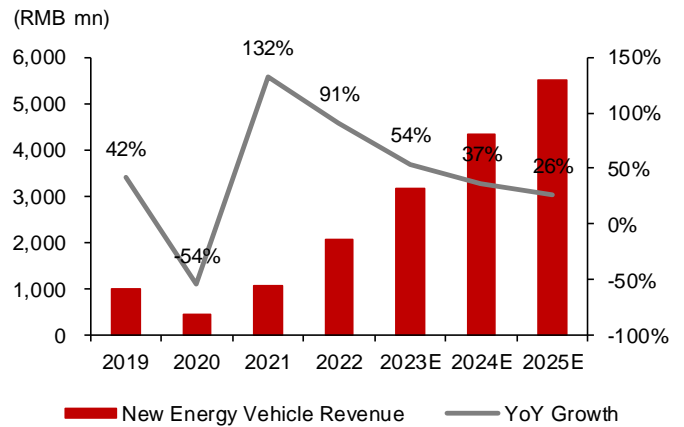
Intron’s NEV portfolio covers a full suite of NEV applications, including BMS, VCU and MCU systems. Leveraging in-depth understanding of NEV core technologies, solid relationship with domestic NEV OEMs and cost advantages with economies of scale, Intron’s expertise enables customers to bring automotive-grade technology to market at scale. Riding on rapid growth of Chinese NEV market, Intron’s NEV segment reported 27% sales CAGR during FY19-22, and we forecast 54%/37%/26% sales growth in FY23-25E.

Figure 33: Intron’s New Energy Vehicle solutions (e.g. BMS, VCU, MCU) for NEVs



Source: Company data, CMBIGM estimates

Figure 34: Intron’s New Energy Vehicle revenue

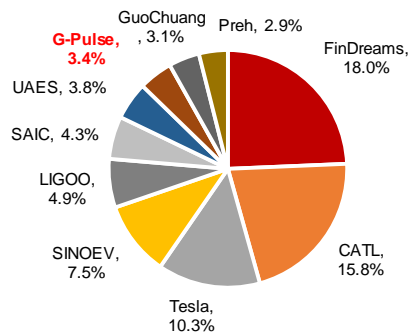


Source: Company data, CMBIGM estimates

Battery Management System (BMS): Intron is ranked No.8 in China

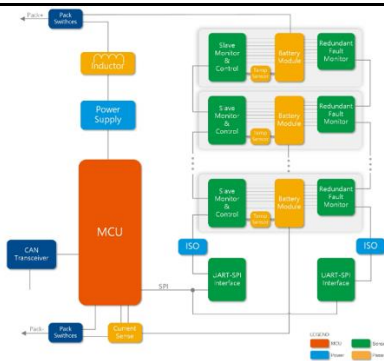
Intron’s BMS products are operated under its subsidiary G-Pulse. In 2021, G-Pulse is ranked No.8 in terms of China BMS installation, capturing 3.4% of market share. Battery management system (BMS) is responsible for managing rechargeable battery, preventing battery from overcharging and over-discharging, so as to extend the service life of the battery. BMS consists of AFE (battery sampling chip), MCU (micro-control processing unit), ADC (analog digital converter), digital isolator and other components. According to Frost & Sullivan, market size of BMS for NEVs in China is expected to grow at a CAGR of 16.6% from 2020 to 2025E driven by increasing demand of electrical vehicles.

Figure 35: G-Pulse’s BMS installation market share in China in 2021



Source: NE Times, CMBIGM estimates

Figure 36: BMS consists of MCU, PMIC, isolators and sensors



Source: Company data, CMBIGM estimates

For BEV, PHEV and HEV platforms, G-Pulse provides comprehensive BMS product portfolios, which adopt AFE semiconductors from IFX, ADI, NXP or Panasonic. With AUTOSAR architecture embedded software, G-Pulse BMS supports OTA update and is fully ASIL C verifiable. In 2022, Intron received the first exida ISO 26262 ASIL-C

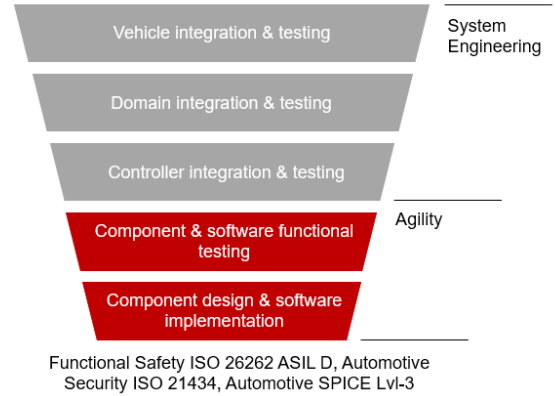
Certification for 800V high voltage BMS in China. G-Pulse provides full package of automotive electronic system products that meet automotive security and functional safety standards, based on OEM and Tier-1 customers' requirements.

Figure 37: G-Pulse's product offerings for ICEs and NEVs

| | |
|----------------------------------|--|
| 2004-2010 Traditional Vehicle | Clusters, diesel drivetrain, system sensors, tire pressure monitoring system, body control module, HVAC module, antilock brake system, diesel EFI controller, etc. |
| 2011-2017 New Energy Vehicle | Motor control unit, DCDC & OBC, battery management system, vehicle control unit, integrated power unit for EV, electric drivetrain functional safety, etc. |

Source: Company data, CMBIGM estimates

Figure 38: G-Pulse's R&D and testing abilities



Source: Company data, CMBIGM estimates

Vehicle Control Unit (VCU): Intron is ranked No.4 in China

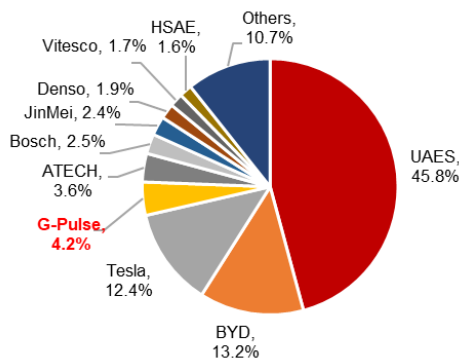
G-Pulse's VCU is ranked No.4 in China in 2021, capturing 4.2% of VCU market share.

Vehicle control unit (VCU) is the core electronic control unit for vehicles. VCU collects signals from motor control system, pedal accelerator, brake pedal and other components, analyze driver's driving intention and make response. A typical VCU consists of microcontroller, power supply, memory, sensors and interfaces.

VCU's software platform is based on AUTOSAR (Automotive Open System Architecture) established in 2003. AUTOSAR's 9 core partners include Bosch, BMW Group, Continental, Daimler, Ford, Toyota, GM, Volkswagen and PSA Peugeot Citroen. Intron was the fifth partner from China joining AUTOSAR.

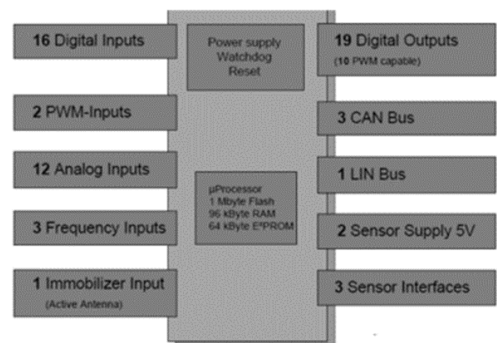
AUTOSAR is the most important middleware in VCU software, and AUTOSAR requires third party software designers and MCU/VCU chip makers for secondary development. As a key member of AUTOSAR, Intron provides embedded software design with best-in-class integration.

Figure 39: G-Pulse's VCU installation market share in China in 2021



Source: NE Times, CMBIGM estimates

Figure 40: Typical VCU consists of MCU, memory, power supply, sensors and interfaces



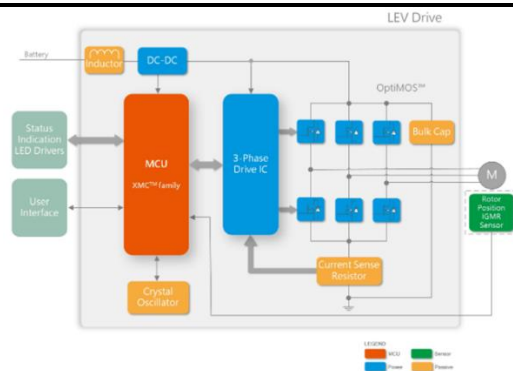
Source: CMBIGM estimates

Motor Control Unit (MCU): Intron has an established client base in China.

As one of the key components in NEV, motor control unit (MCU) is responsible for driving traction motors and providing diagnostic and protection functions (over-current, over-load, under-voltage, over-voltage, phase loss), energy regeneration, automated power de-rating, high voltage interlock and fault reporting. G-Pulse's MCU mainly consists of control board, driver board, power module, DC-Link capacitors and sensors. G-Pulse's MCU is fully ASIL D verifiable and is suitable for variant new energy models such as BEVs and HEVs.

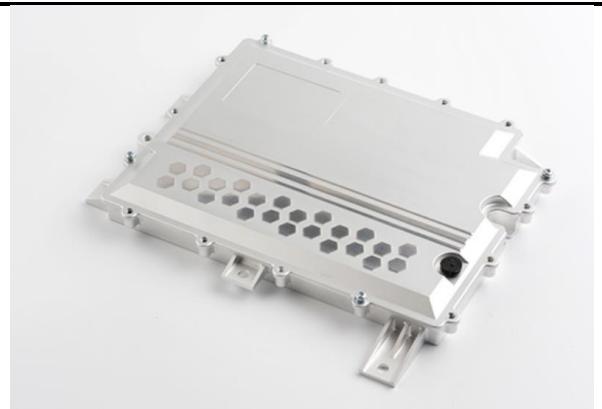
G-Pulse is the major MCU supplier for Geely Group. G-Pulse has established long-term partnership with VREMT (a powertrain subsidiary of Geely and ZEEKR) for development of MCU solutions. G-Pulse won the “Outstanding Contribution Award” at ZEEKR New Energy’s 2022 Supplier Conference in Feb 2023, for its outstanding performance in technologies, product quality and service. G-Pulse’s MCU products are widely used on vehicle models of Geely, ZEEKR, SMART, Lotus, Volvo and other new energy models.

Figure 41: Motor control unit consists of power module, MCU, drivers, capacitors and sensors



Source: Company data, CMBIGM estimates

Figure 42: G-Pulse MCU product example

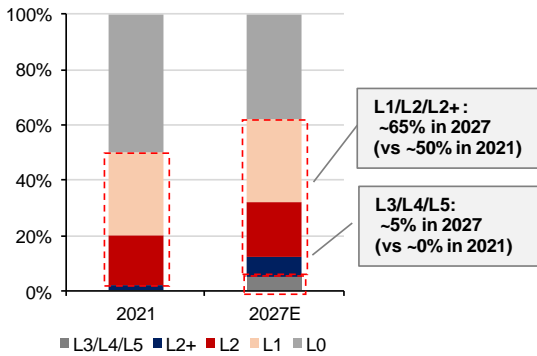


Source: Company data, CMBIGM estimates

Driver 2: Rapid adoption of intelligent driving to benefit supply chain

Autonomous driving has been gaining popularity in China in past two years thanks to increasing customer awareness on ADAS/AD functions. We believe L2/L3 will become a mainstream feature for major Chinese OEMs starting from 2023, based on our analysis on Chinese major OEMs' SAE level roadmap. Average semi content per car will increase by ~6 times from US\$160-180 for L2 vehicles to US\$1,150-1,250 for L4/L5 vehicles, according to Strategic Analytics.

Figure 43: Global car production by degree of automation (SAE level)



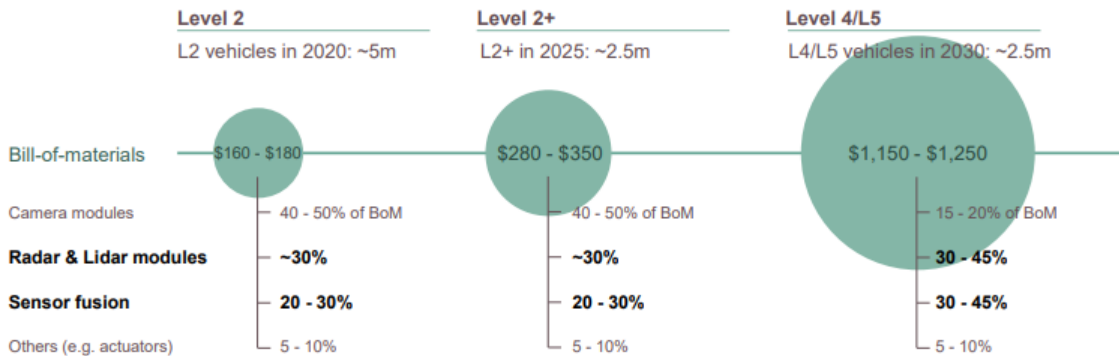
Source: Infineon, CMBIGM estimates

Figure 44: Chinese major OEMs' SAE level roadmap

| OEMs | 2021 | 2022 | 2023 | 2024 | 2025 |
|----------|------|-------|-------|-------|------|
| Chang'an | L2 | | L2-L3 | | L4 |
| GWM | L2.5 | L2-L3 | | L4 | |
| BYD | L2 | L2.5 | | L2-L3 | L4 |
| FAW | | L2.5 | | L3 | L4 |
| Geely | | L2-L3 | | L3 | L4 |
| GAC | | L2-L3 | | | L4 |
| BAIC | L2.5 | | L2-L3 | | L4 |
| SAIC | L2.5 | | L2-L3 | | L4 |
| CHERY | L2 | L2.5 | | L2-L3 | L4 |
| Dongfeng | | L2-L3 | | | L4 |

Source: Yi Ou, CMBIGM estimates

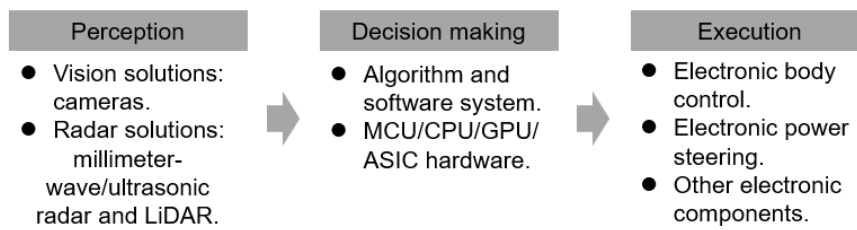
Figure 45: Avg. semi content per car by level of automation (SAE level)



Source: Strategic Analytics, Infineon, CMBIGM estimates

ADAS/AD mainly consists of three system levels: Perception, Decision-making and Execution. "Perception" sensors, such as cameras, ultrasonic radar, millimeter-wave radar and LiDAR, collect and transmit data to ECUs (Electronic Control Unit) for processing. "Decision-making" chips, MCU or SoCs, will analyze data from ECUs and send instructions to automotive systems (e.g. brake system, power steering system) for execution.

Figure 46: Three levels of ADAS/AD vehicle systems



Source: Yi Ou, CMBIGM estimates

ADAS-enabled vehicles are equipped with multiple sensors, such as cameras, millimeter-wave radar, ultrasonic radar and LiDAR. New vehicles launched after 2021 were equipped with a large number of sensors, which will enable advanced autonomous driving functions through OTA updates in the future.

Figure 47: Increasing use of sensing technologies along SAE level progression

| SAE level | Features | Sensing technology |
|-----------|-------------------|--|
| 5 | AD, VPA | Camera x3-7, Radar x5-6, Ultrasonic x8, Lidar x4 |
| 4 | AD | Camera x3-7, Radar x5-6, Ultrasonic x8, Lidar x2 |
| 3 | TJA, HP, DM | Camera x3-7, Radar x5-6, Ultrasonic x8, Lidar x1 |
| 2 | LKA, ACC | Camera x3-7, Radar x1-3, Ultrasonic x8 |
| 1 | LKA, ACC | Camera x1-3, Radar x1-3, Ultrasonic x6 |
| 0 | BSD, FCW/AEB, LDW | Camera x1-3, Radar x1-3, Ultrasonic x6 |

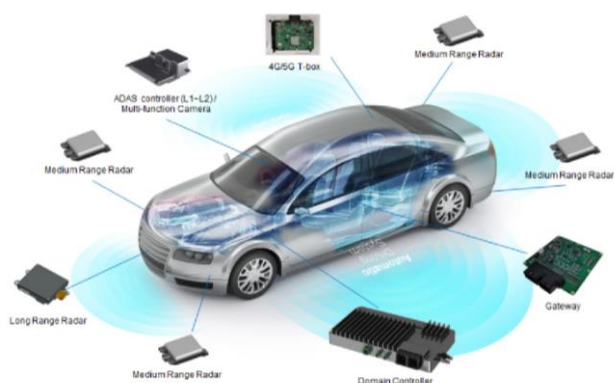
Source: Yole, CMBIGM estimates

Intron is well-positioned to capture intelligent vehicle trend

G-Pulse provides ADAS domain controllers for L1-L3 autonomous driving systems.

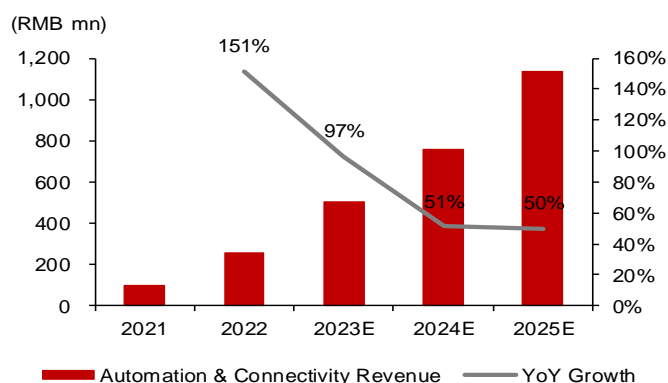
Intelligent driving controller analyses data generated from radars, cameras, LiDAR and other sensors for real-time monitoring and control. Intron partners with various chip vendors such as Infineon (MCU), Horizon Robotics (ADAS) and SemiDrive (cockpit) to develop intelligent driving domain controllers and ADAS products. In FY22, Intron's Automation & Connectivity posted 151% YoY sales growth, and we forecast 65% sales CAGR in FY22-25E, given ADAS adoption and mass production of new solutions (MADC2.5, MAD3.5).

Figure 48: G-Pulse's intelligent vehicle solutions



Source: Company data, CMBIGM estimates

Figure 49: Automation & Connectivity revenue



Source: Company data, CMBIGM estimates

Figure 50: ADAS/AD domain controller products launched by different automobile system providers

| System provider | Chip suppliers | Products launched |
|-----------------|---------------------------------------|--|
| Intron Tech | Infineon, Horizon Robotics, SemiDrive | <ul style="list-style-type: none"> Domain controller, Horizon Matrix Pilot 3, based on Horizon Robotics' Journey 3. AD domain controllers, MAD2.0/ MAD2.5/ MAD3.5, based on Journey 5. |
| Desay SV | NVIDIA, Qualcomm | <ul style="list-style-type: none"> Domain controllers, IPU-03 and IPU-04, based on NVIDIA's Xavier and Orin chips. |
| Foryou Corp | Huawei, Horizon Robotics | <ul style="list-style-type: none"> Smart parking product (APA) based on Hisilicon's chips Intelligent driving domain controller based on Horizon Robotics' Journey 5 chip. |
| ThunderSoft | Qualcomm | <ul style="list-style-type: none"> Intelligent cockpit system solutions based on Qualcomm's product series such as 8155 and 820A. |
| Neusoft Reach | NXP, Horizon Robotics | <ul style="list-style-type: none"> Domain controller products based on NXP's chips and Horizon Robotics' Journey Series. |

Source: Company websites, CMBIGM estimates

G-Pulse partnered with Horizon Robotics as one of its three IDH since 2020. Horizon Robotics is a leading ADAS/AD chip vendor targeting mass-market solutions. It launched its first ADAS chip, Journey 2, in 2019, and its latest chip, Journey 5, has been equipped by top NEV OEMs in China. G-Pulse and Horizon Robotics have established strategic partnership since 2020, and G-Pulse is Horizon Robotics' only IDH partner mass producing the entire Journey series (Journey 2/ Journey 3/ Journey 5).

G-Pulse MADC2.5 with Journey 5 chip will start mass production in 2H23E. In 2021, Intron unveiled its G-Pilot 3 intelligent driving domain controllers (L1-L2+) based on Journey 3 chip. In 2022, Intron launched two high-level automated driving domain controller solutions, MADC2.0 and MADC2.5, based on Journey 5 chip. In 2Q23, Intron released its 3rd-gen solution, MADC3.5, based on Journey 5 chip. Other projects with Horizon Robotics include new sensors for intelligent cabins, Time-of-Flight (ToF) sensors, and underlying software and hardware platforms. In Apr 2023, G-Pulse's MADC2.5 obtained certification from Horizon Robotics, and is ready for mass production in 2H23E.

Figure 51: Horizon Robotics pioneered in domestic ADAS chip solutions

| Chip Vendor | Mobileye | | NVIDIA | | Horizon Robotics | | | Black Sesame | | Hisilicon Huawei | |
|-------------------------|--|----------------------|------------------------|------------------------|-------------------------|---|--|----------------------|---------------------|--------------------------|--------------------------|
| | | | | | | | | | | | |
| Chips | Mobileye EyeQ4 | Mobileye EyeQ5H | NVIDIA Xavier | NVIDIA Orin | Journey 2 | Journey 3 | Journey 5 | Huashan-2 A1000 | Huashan-2 A1000 Pro | MDC610 | MDC810 |
| Date of Mass production | 2018 | 2021 | 2020 | 2022 | 2020 | 2021 | 2022 | 2022 | 2022 | 2021 | 2022 |
| Key Features | 28nm 2.5 TOPS 3W | 7nm 24 TOPS | 12nm 30 TOPS 30W | 8nm 200 TOPS 45W | 28nm 4 TOPS 2W | 16nm 5 TOPS 2.5W | 16nm 128 TOPS 30W | 16nm 58 TOPS | 16nm 196 TOPS | 160 TOPS | 400+ TOPS |
| SAE Level | L2-L3 | L4 | to L5 | L2-L5 | L2 | L2/L2+ | L2-L4 | L2+ | L3/L4 | L3/L4 | L4/L5 |
| Car models launched | NIO E58/ E56/ EC6, AION V/X, NETA U, Xpeng G3i | BMW 1X, ZEEKR 001 | Xpeng P7/P5 | Li Auto L9 | Chang'an UNI, JAC QX | Li Auto ONE, NETA U-II, MAXUS MIFA9 | Li Auto L8/L7, BYD, SAIC, FAW | JAC, FAW, SAIC | - | ARCFOX, AVATR, BYD | ARCFOX, AVATR, BYD |

Source: Horizon Robotics, Black Sesame, Yi Ou Research, CMBIGM estimates

Figure 52: Horizon Robotics' major partners

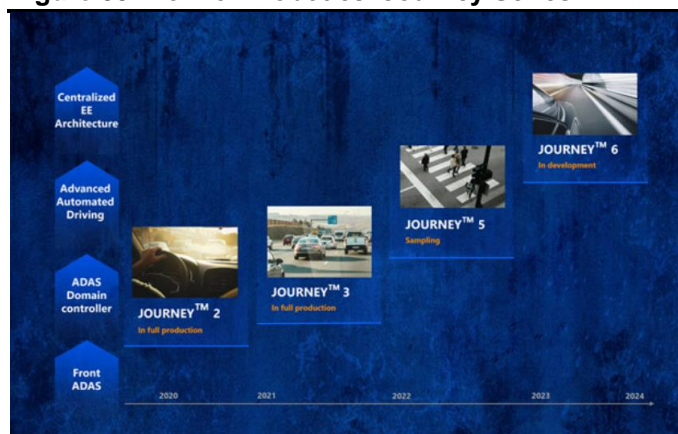


Official IDH partners: G-PULSE 金脉, 映驰科技 Enjoy Move, TZTEK 天准

Solution and System providers: REACH, LuXshare, Continental, Freetech, autoAI, MAXIEYE, MINIEYE, PhyGent, 舜腾OCRAFT, 梵非科技, HOLOMATIC, 兆戎股份, 奥视智能, BAIDU 百度, UAES, HEBODA, 华宇智行 INTRON, JIMU

Source: Companies data, CMBIGM estimates

Figure 53: Horizon Robotics' Journey Series



Centralized EE Architecture: JOURNEY™ 6 (In development)

Advanced Automated Driving: JOURNEY™ 5 (Sampling)

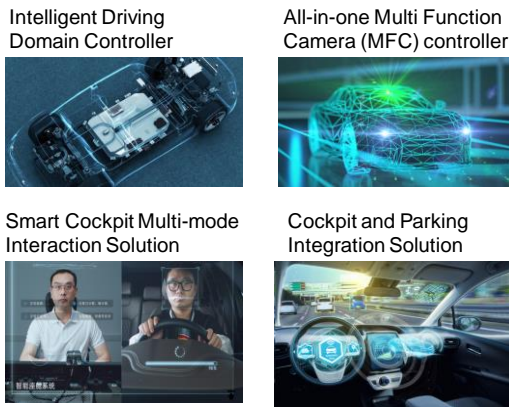
ADAS Domain controller: JOURNEY™ 3 (In full production), JOURNEY™ 2 (In full production)

Front ADAS: (Timeline from 2020 to 2024)

Source: Horizon Robotics, CMBIGM estimates

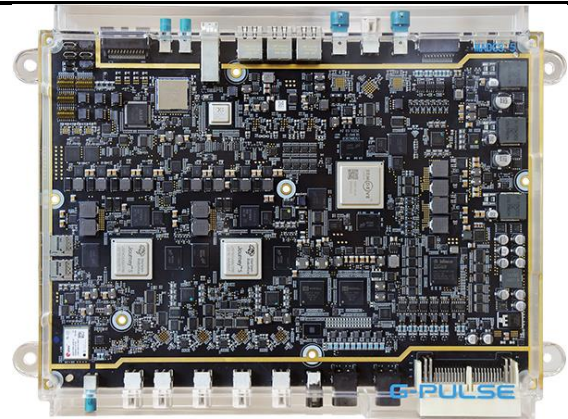
Intron targets a wave of product launches in automation & connectivity in 2023. For 2Q23, Intron launched MADC3.5, its 3rd-gen cockpit controller solution for L2+/L2++ level, and it will also release new smart antenna controllers, such as vehicle communication control unit incorporating V2X, UWB and 5G communication. For 3Q23E, Intron's new digital key peripheral distance solutions will be integrated into smart terminal solutions for internet of vehicles. In 2H23E, Intron will also release cross-platform service-based products by partnering with SemiDrive to enhance gateway solution offerings. Intron's other ongoing projects include service-oriented gateway software, hybrid gateway controllers with Baidu and automotive networking intelligent terminal controller with Uisee.

Figure 54: G-Pulse's intelligent vehicle solutions



Source: Company data, CMBIGM estimates

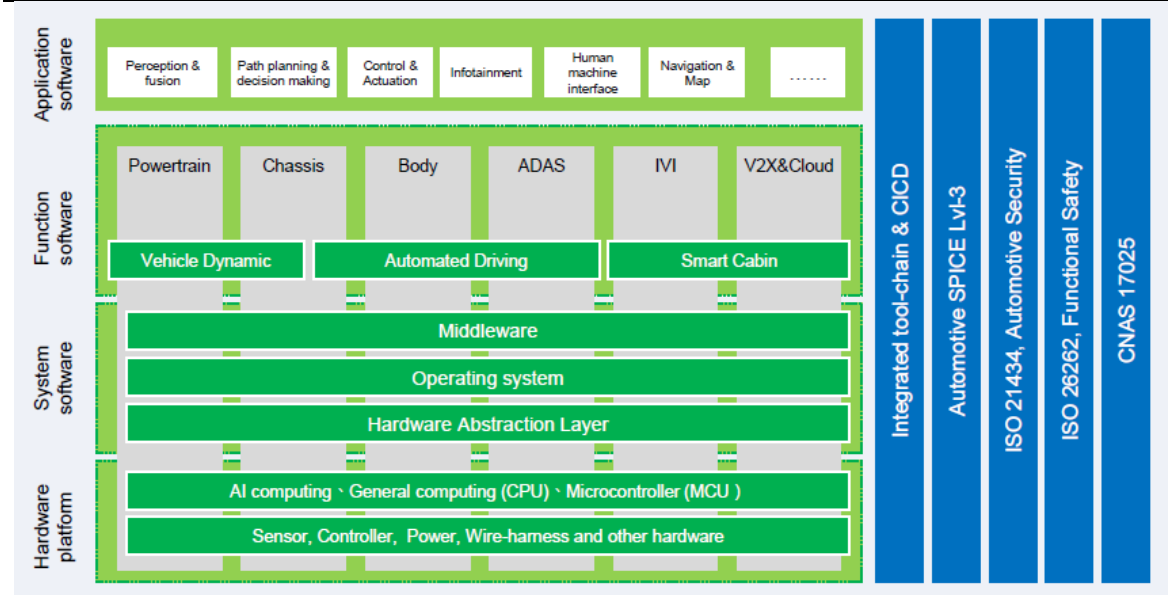
Figure 55: G-Pulse MADC 3.5 cockpit controller solutions



Source: Company data, CMBIGM estimates

Increasing efforts in automotive software capability for system-level intelligent driving ADAS/AD. Intron has established system and software development capability that meets the automotive functional and security standards such as ISO26262, ISO21434 and ASPICE. We believe Intron is well-positioned to offer system-level solutions with software and hardware integration that serves vehicle intellectual transformation.

Figure 56: Intron's software & hardware capability for AD/ADAS applications



Source: Company data, CMBIGM estimates

Driver 3: E/E architecture transformation to offer compelling market opportunity

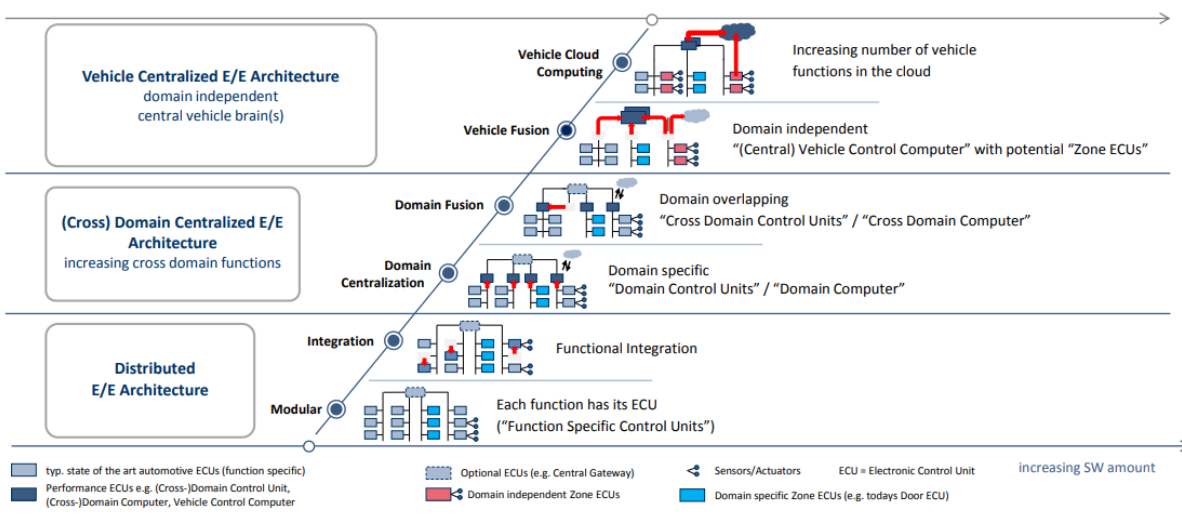
Vehicle electronic and electrical (E/E) architecture transformation from distributed EEA to centralized EEA is undergoing and leads to long-term impact of automotive supply chain. In traditional auto supply chain, different ECUs are sourced from different suppliers with self-developed software, resulting in a lack of compatibility and scalability, which make it difficult to conduct software upgrade through OTA (Over-the-Air) updates.

In addition, growing variety of functions for intelligent and electrification requires more ECUs and communication systems, which results in higher system complexity, increasing weight of wire harness and higher cost burden, while increasing number of sensors also leads to exponential growth of network traffic and traditional low-speed buses cannot meet real-time requirements for data transmission and processing.

To address above issues, Bosch introduced an E/E architecture roadmap in 2019, which now becomes an industry trend. The transformation consists of six stages: Distributed E/E architecture (modularization, integration), Domain-centralized E/E architecture (domain centralization, domain fusion), and Central-centralized E/E architecture (in-vehicle, cloud computing).

Figure 57: Ongoing vehicle E/E architecture transformation

BOSCH view on E/E-Roadmap



Source: Bosch, CMBIGM estimates

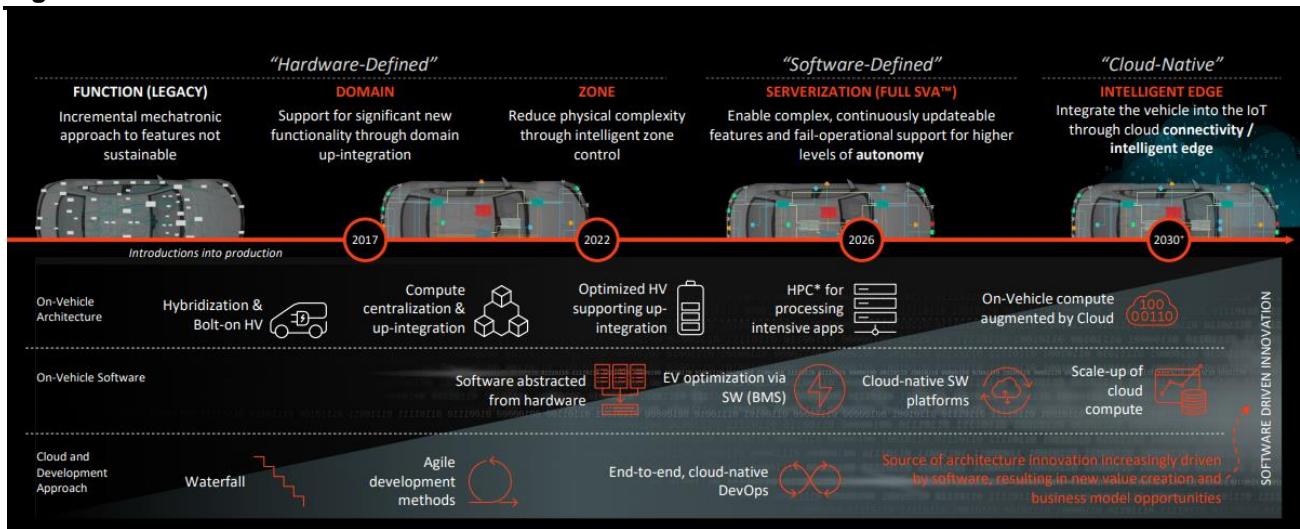
Under Distributed E/E architecture, each ECU is responsible for a specific function. For example, there is one controller for vehicle lighting control and one controller for keyless entry system. As the number of vehicle functions increases, the architecture becomes increasingly complex and unsustainable. So later in functional integration E/E stage, one single ECU is responsible for multiple functions, reducing the number of ECUs.

Under Domain centralized E/E architecture, domain controllers are divided based on functionality. The most common five functional domains are based on Bosch’s definition: powertrain domain, chassis domain, body domain, cockpit domain and autonomous driving domain. Domain controllers are interconnected through Ethernet and CANFD (CAN with Flexible data-rate). The cockpit domain and autonomous driving domain have increasing computing power requirements due to the need to process large amounts of data.

Under cross-domain centralized E/E architecture, functional domains are merged to reduce costs and enhance collaboration. Multiple domains are merged together and controlled by a cross-domain control unit. For example, powertrain domain, chassis domain and body domain are merged into one vehicle control domain, reducing total number of domains from five (autonomous driving domain, powertrain domain, chassis domain, cockpit domain and body domain) to three (autonomous driving domain, intelligent cockpit domain and vehicle control domain).

Under centralized E/E architecture, functional domains will be further integrated into zonal control units (ZCU), where localized perception, data processing, control and execution will be connected to central computing system, which allows software-defined vehicle to support more advanced levels of autonomy.

Figure 58: Next-Generation E/E Architecture from zonal to software-defined



Source: Aptiv, CMBIGM estimates

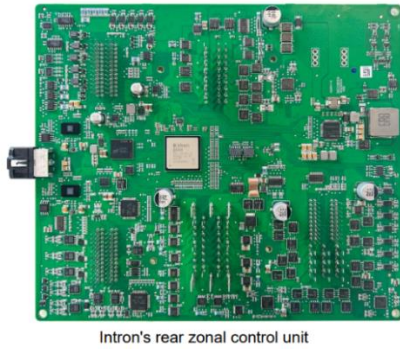
Intron’s new ZCU products are set to step up as a new growth driver

Zonal control unit (ZCU) is crucial for tomorrow’s mobility. Zonal control unit (ZCU) plays a critical role in vehicle E/E architecture transformation. One zonal control unit each can bundle all electronic and electrical connections in a local sub-area of the vehicle. For example, ZCUs will take over all control, data and communication management tasks in the front right, front left and rear areas of the vehicle. The use of localized ZCU allows cost reduction through the reduced placement of wire harness and minimization of communicating interfaces. Centralized computing power also supports iterative upgrades of software applications on vehicle, which is critical in the era of software-defined vehicles.

Intron’s G-Pulse recently launched two high-end front and rear ZCU solutions in May 2023 during 20th Shanghai International Automotive Industry Exhibition. Its ZCU products adopt Infineon’s latest 3rd-gen AURIX TC4x Series microcontrollers, featuring reduced number of wirings and ECUs. It can reduce costs, shorten development cycle and fully integrate with third-party software.

Intron’s ZCU solutions integrate primary and secondary power distribution, body control, thermal management, chassis control and other functions such as seat adjustment, electric tailgate adjustment and wiper control. The peripherals are equipped with DSI3 signal acquisition and an on-board 8GB eMMC storage module, supporting Gigabit/2.5G Ethernet. In the perspective of software capability, both zonal control unit platforms combine ETAS AUTOSAR basic software and SOA design concepts.

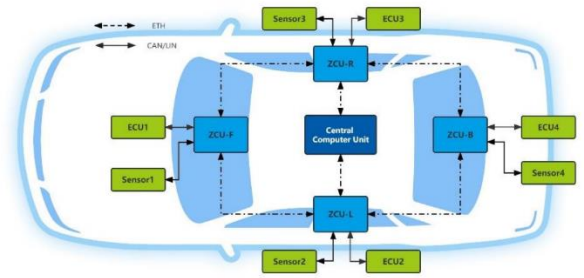
Figure 59: Intron’s latest ZCU product based on Infineon’s latest AURIX TC4x microcontroller



Intron's rear zonal control unit

Source: Company data, CMBIGM estimates

Figure 60: E/E architecture transformation leads to localized zonal control unit deployments



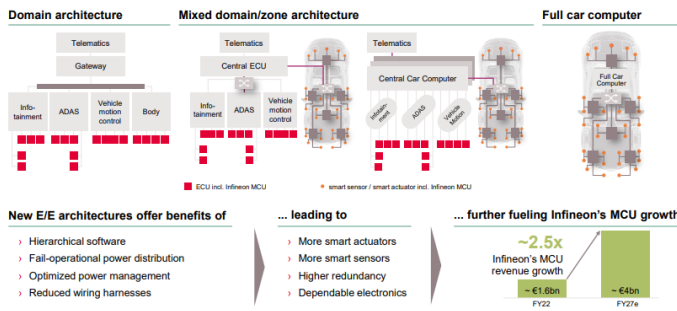
Next-Generation Zonal Electrical and Electronic Architecture Diagram

Source: Company data, CMBIGM estimates

Infineon’s new MCU product series for next generation E/E architecture design.

Infineon has launched a series of MCU products to enable E/E architecture transformation. For example, BYD adopted Infineon’s MCU solution to deliver intelligent power switches for new zonal E/E architecture. For upcoming AURIX MCU products, Infineon’s server-based zonal controller AURIX TC4 family offers the same scalability in terms of performance, memory and housing variants as the previous generations, AURIX TC2x and TC3x. Also, AURIX TC4x was designed for usage in ZCU and HPC. Further focus applications are radar, chassis and safety and powertrain/electrification. TC4x also features integrated resistive RAM, allowing key vehicle functions to move from standby to active immediately.

Figure 61: Infineon’s MCUs products for new E/E architecture



Source: Infineon, CMBIGM estimates

Figure 62: Infineon partnered with BYD for new E/E architecture

Infineon awarded for BYD's new E/E architecture based on zonal platform

Design-win for three zones

- New E/E architecture enabling efficient MCU setup and smart power distribution
- MCU: TRAVEO™ 2G (2 MB to 8 MB on-chip memory)
- Intelligent power devices (IPDs): PROFET™ +2 high-side switch

Superior solution by combining MCU and IPD for new zonal E/E architecture

Source: Infineon, CMBIGM estimates

Financial Forecasts

Expect 33% revenue CAGR in FY23-25E

We estimate Intron's revenue will grow 42%/32%/26% YoY in FY23/24/25E, backed by 39%/65% CAGR in New Energy/ Automation & Connectivity as major growth drivers and 29%/23%/26% CAGR in Body Control/Safety/Powertrain on share gain amid localization.

1) New Energy Vehicle Solutions (39% CAGR in FY22-25E):

- For FY21/22, this segment delivered 132%/91% YoY growth, mainly due to large-scale delivery of core NEV solutions (BMS, MCU, VCU, thermal mgmt. system).
- For FY23/24/25E, we forecast 54%/37%/26% YoY revenue growth, driven by key NEV customers such as BYD, Li Auto and XPeng, and share gain in model launches and overseas market expansion.

2) Automation & Connectivity Vehicle Solutions (65% CAGR in FY22-25E):

- For FY22, this segment posted 151% YoY after reclassification as separate segment, mainly driven by increasing installation and penetration, and mass production of ADAS controllers (L1-L2) and domain controllers (L2+).
- For FY23/24/25E, we forecast 97%/51%/50% YoY revenue growth, backed by rising adoption in higher level ADAS/AD in China, shipment growth of Horizon Robotics-based ADAS solutions (MADC2.0, MADC2.5, MADC 3.5) and new zonal control unit (ZCU) for intelligent driving.

3) Body Control/Safety/Powertrain Solutions (26% CAGR in FY22-25E):

- For FY21/22, body control/safety/powertrain solutions grew 37%/-3%/27% YoY in FY21 and 50%/34%/40% YoY in FY22, driven by product launches and client wins. For FY21, decline in safety was due to separation of Automation & Connectivity.
- For FY22-25E, we forecast 29%/23%/26% revenue CAGR, driven by:
 - Body control:** mass production of new projects, customer wins, new lighting solutions and upgrade demand for energy conservation and emission reduction.
 - Safety:** client wins and ASP upgrade, especially braking and steering applications;
 - Powertrain:** increasing demand of engine management system, TCU and ECU, share gain in smart motor control and engine control system solutions, and orders of diesel and gasoline Electronic Fuel Injection (EFI) solutions.

Figure 63: Revenue breakdown by segment

| RMB mn | 2020 | 2021 | 2022 | 2023E | 2024E | 2025E |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| New Energy | 467 | 1,082 | 2,067 | 3,178 | 4,352 | 5,491 |
| ... YoY | -53.8% | 131.6% | 91.0% | 53.8% | 36.9% | 26.2% |
| Body Control | 422 | 579 | 868 | 1,215 | 1,549 | 1,882 |
| ... YoY | 32.6% | 37.1% | 50.0% | 40.0% | 27.5% | 21.5% |
| Safety | 491 | 476* | 636* | 807 | 979 | 1,174 |
| ... YoY | 31.2% | -2.9% | 33.5% | 26.9% | 21.3% | 20.0% |
| Powertrain | 244 | 309 | 432 | 583 | 718 | 861 |
| ... YoY | 6.1% | 26.6% | 39.9% | 35.0% | 23.1% | 20.0% |
| Automation & Connectivity | - | 101* | 255* | 501 | 758 | 1,137 |
| ... YoY | - | - | 151.3% | 96.8% | 51.1% | 50.0% |
| Cloud Server | 303 | 550 | 420 | 384 | 461 | 553 |
| ... YoY | -2.5% | 81.5% | -23.5% | -8.6% | 20.0% | 20.0% |
| Service & Others | 67 | 79 | 152 | 210 | 269 | 346 |
| ... YoY | 2.8% | 19.1% | 91.8% | 38.1% | 28.4% | 28.4% |
| Revenue | 1,993 | 3,176 | 4,830 | 6,879 | 9,086 | 11,445 |
| ... YoY | -13.7% | 59.4% | 52.1% | 42.4% | 32.1% | 26.0% |

Source: Company, CMBIGM estimates, * in FY22, Automation & Connectivity is separated from Safety segment

Expect 34% earnings CAGR in FY23-25E

We expect Intron's earnings will grow 45%/33%/25% YoY in FY23/24/25E, mainly driven by 1) 33% revenue FY22-25E CAGR, 2) stable GPM of 20-21% based on cost-plus pricing model and slight FX headwinds, and 3) improving operating efficiency on economies of scale (pre-tax margin: 9.4% in FY22, vs 9.8% in FY25E).

For FY20-22, Intron's GPM improved steadily from 18.0% in 2020 to 21.5% in 2022 and pre-tax margin increased from 4.9% in 2020 to 9.4% in 2022, mainly due to economies of scale and operating leverage.

For FY23-25E, we estimate GPM will stabilize at 21.2%/20.9%/20.6% given Intron's cost-plus pricing method, and pre-tax profit margin will gradually improve to 9.7%/9.9%/9.8% level thanks to S&M/admin expense ratio decrease from 2.1%/1.7% in 2023 to 2.0%/1.5% in 2025E. Intron For R&D, we estimate stable expense ratio at 6.8% for FY23-25E.

Compared to consensus, our FY23-25E earnings is 2-18% above consensus given our more positive view on product mix, operating leverage and economies of scale.

Figure 64: P&L forecast

| RMB mn | 2020 | 2021 | 2022 | 2023E | 2024E | 2025E |
|---------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Revenue | 1,993 | 3,176 | 4,830 | 6,879 | 9,086 | 11,445 |
| ...YoY | -13.7% | 59.4% | 52.1% | 42.4% | 32.1% | 26.0% |
| Cost of sales | -1,635 | -2,551 | -3,789 | -5,423 | -7,188 | -9,089 |
| Gross profit | 358 | 625 | 1,041 | 1,456 | 1,898 | 2,356 |
| GPM (%) | 18.0% | 19.7% | 21.5% | 21.2% | 20.9% | 20.6% |
| ...YoY | -23.1% | 74.5% | 66.4% | 39.9% | 30.3% | 24.2% |
| S&M | (68) | (101) | (106) | (144) | (182) | (229) |
| ...% of rev | -3.4% | -3.2% | -2.2% | -2.1% | -2.0% | -2.0% |
| R&D | (134) | (206) | (332) | (468) | (618) | (778) |
| ...% of rev | -6.7% | -6.5% | -6.9% | -6.8% | -6.8% | -6.8% |
| Admin | (85) | (107) | (95) | (117) | (145) | (172) |
| ...% of rev | -4.2% | -3.4% | -2.0% | -1.7% | -1.6% | -1.5% |
| Pre-tax profit | 98 | 217 | 455 | 671 | 896 | 1,121 |
| Pre-tax profit margin (%) | 4.9% | 6.8% | 9.4% | 9.7% | 9.9% | 9.8% |
| ...YoY | -23.5% | 120.9% | 109.9% | 47.4% | 33.7% | 25.1% |
| Net profit | 95 | 201 | 415 | 600 | 799 | 999 |
| NPM (%) | 4.8% | 6.3% | 8.6% | 8.7% | 8.8% | 8.7% |
| ...YoY | -20.1% | 111.6% | 106.9% | 44.7% | 33.1% | 25.1% |

Source: Company data, CMBIGM estimates

Figure 65: CMBIGM estimates vs consensus

| RMB mn | CMBIGM | | | Consensus | | | Diff (%) | | |
|--------------|--------|-------|--------|-----------|-------|--------|----------|---------|---------|
| | FY23E | FY24E | FY25E | FY23E | FY24E | FY25E | FY23E | FY24E | FY25E |
| Revenue | 6,879 | 9,086 | 11,445 | 6,885 | 9,212 | 11,435 | 0% | -1% | 0% |
| Gross profit | 1,456 | 1,898 | 2,356 | 1,430 | 1,885 | 2,298 | 2% | 1% | 3% |
| Net profit | 600 | 799 | 999 | 591 | 735 | 848 | 2% | 9% | 18% |
| EPS (RMB) | 0.55 | 0.73 | 0.91 | 0.54 | 0.67 | 0.78 | 1% | 8% | 17% |
| Gross margin | 21.2% | 20.9% | 20.6% | 20.8% | 20.5% | 20.1% | 0.4 ppt | 0.4 ppt | 0.5 ppt |
| Net Margin | 8.7% | 8.8% | 8.7% | 8.6% | 8.0% | 7.4% | 0.1 ppt | 0.8 ppt | 1.3 ppt |

Source: Bloomberg, CMBIGM estimates

Sensitivity analysis on Intron's net profit

We conducted sensitivity analysis of gross margin and operating expense ratios on our net profit estimate. Our base case assumes gross margin of 21.2% and S&M/R&D/Admin expense ratio of 2.1%/6.8%/1.7%.

For gross margin, we think Intron's GPM is relatively stable at 19-21% level given cost-plus pricing model with customers. However, gross margin is sensitive to fluctuations in foreign exchange rate. In our sensitivity analysis, considering historical GPM during 2016-2022, we adopt 20.3%-22.1% for our bull/bear GPM assumptions.

For opex ratio, we believe R&D expense ratio remain stable at 6.8% level, while S&M and admin expense ratio will be impacted by operating leverage and economies of scale. We adopt the range of 1.95-2.25% and 1.55-1.85% for S&M and admin expense ratios for our bull/bear analysis.

Under our bull case assumptions, when GPM improved by 0.3ppt and S&M/admin expense ratio decreased by 0.05ppt/0.05ppt, Intron's FY23E net profit would lead to 4% upside to base case. For the most bullish case with GPM of 22.1% and S&M/admin expense ratio of 1.95%/1.55%, FY23E net profit would have 13% upside to our base case.

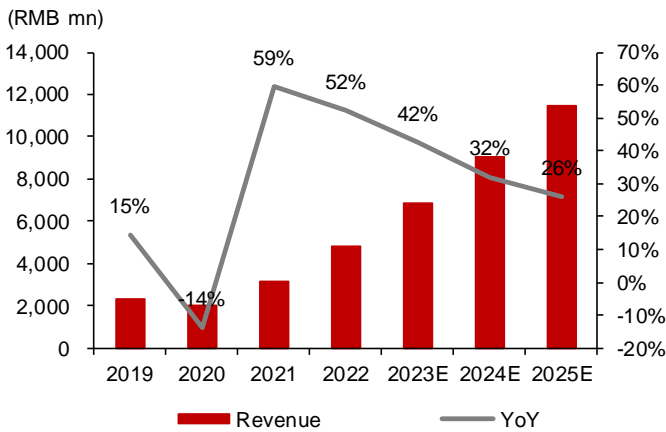
Under our bear case assumptions, when GPM dropped by 0.3ppt and S&M/admin expense ratio increased by 0.05ppt/0.05ppt, Intron's FY23E net profit would lead to 4% downside to base case. For the most bearish case with GPM of 20.3% and S&M/admin expense ratio of 2.25%/1.85%, FY23E net profit would have 12% downside to our base case.

Figure 66: Sensitivity analysis on Intron's net profit

| RMB mn | Gross Margin | S&M exp ratio | Admin exp ratio | R&D exp ratio | FY23E PT Margin | FY23E Net Margin | FY23E Net Profit | Upside/Downside to base case |
|-------------|--------------|---------------|-----------------|---------------|-----------------|------------------|------------------|------------------------------|
| Bull Case 1 | 22.1% | 1.95% | 1.55% | 6.8% | 11.0% | 9.9% | 676 | 13% |
| Bull Case 2 | 21.8% | 2.00% | 1.60% | 6.8% | 10.6% | 9.6% | 652 | 9% |
| Bull Case 3 | 21.5% | 2.05% | 1.65% | 6.8% | 10.1% | 9.2% | 624 | 4% |
| Base Case | 21.2% | 2.10% | 1.70% | 6.8% | 9.7% | 8.8% | 600 | 0% |
| Bear Case 1 | 20.9% | 2.15% | 1.75% | 6.8% | 9.4% | 8.5% | 578 | -4% |
| Bear Case 2 | 20.6% | 2.20% | 1.80% | 6.8% | 9.0% | 8.1% | 553 | -8% |
| Bear Case 3 | 20.3% | 2.25% | 1.85% | 6.8% | 8.6% | 7.8% | 529 | -12% |

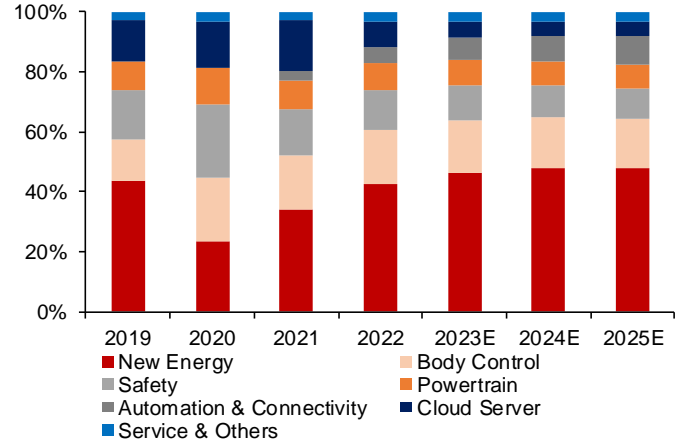
Source: Bloomberg, CMBIGM estimates

Figure 67: Revenue trend



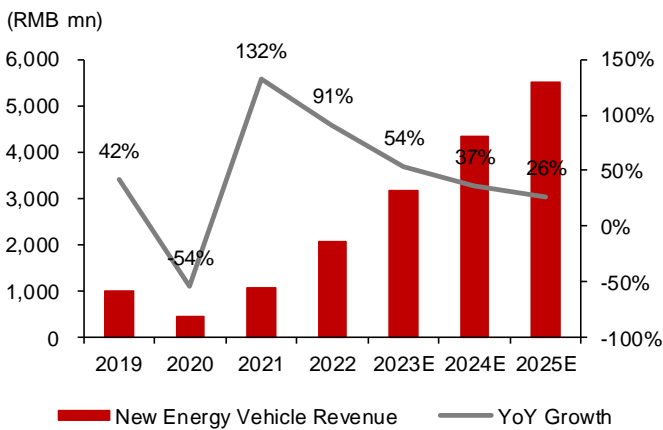
Source: Company data, CMBIGM estimates

Figure 68: Revenue breakdown by segment



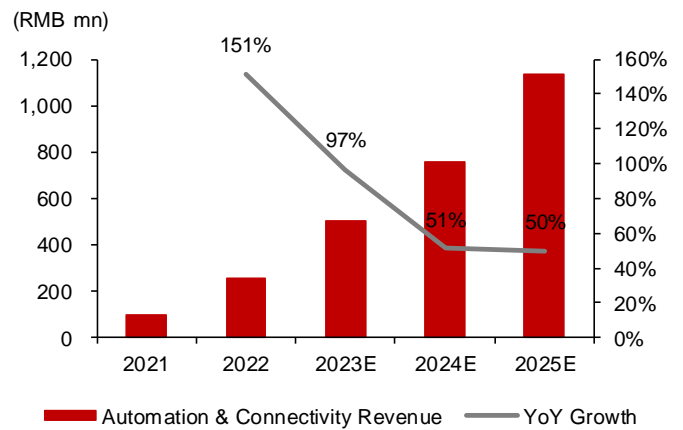
Source: Company data, CMBIGM estimates

Figure 69: New Energy revenue trend



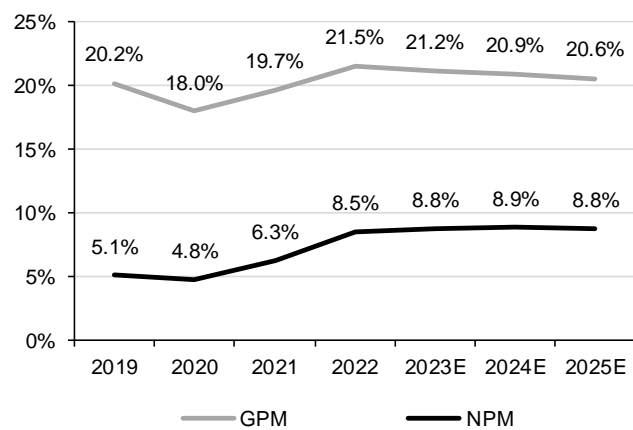
Source: Company data, CMBIGM estimates

Figure 70: Automation&Connectivity revenue trend



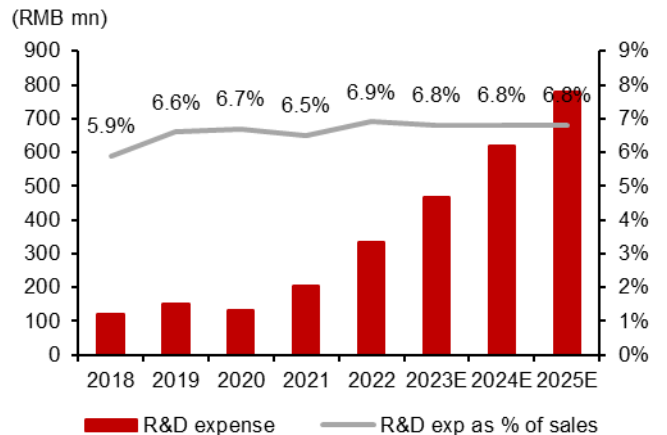
Source: Company data, CMBIGM estimates

Figure 71: Margin trends



Source: Company data, CMBIGM estimates

Figure 72: R&D expense trend



Source: Company data, CMBIGM estimates

Peers Comparison

BOE Varitronix (710 HK, BUY): Global auto display leader with rapid share gain

BOE Varitronix is the largest global automotive display supplier. Leveraging BOE Group's leading technology and strong client base, BOEVx is rapidly transforming into an integrated automotive smart cockpit display solution provider. BOEVx's revenue/net profit grew 39%/78% YoY to HK\$ 10,772mn/583mn in FY22.

BYD Electronics (285 HK, HOLD): Automobile electronics arm of BYD Group

BYD Electronics leverages its extensive experience in electronics, communications and automotive related fields to offer intelligent cockpits and AD system solutions for clients such as BYD and other global tier-1s. The industry-leading DiLink automotive intelligent system solution and other in-vehicle intelligent modules (multi-media central control, 4G/5G communication module, etc) are BYDE's major automotive products. BYDE reported 1Q23 revenue of RMB 26,375mn and net income of RMB 459mn, which were up 26% YoY and 155% YoY, respectively.

Sunny Optical (2382 HK, HOLD): Global No.1 automobile lens manufacturer

Sunny Optical is the global No.1 automotive lens supplier by shipment, and it is leading in automotive lens sets for ADAS and AD applications. Sunny Optical mass produced the industry's first polygonal rotating prisms applied in LiDAR and has completed R&D of several industrial leading lens solutions such as 17MP front-view lens sets, 2MP hybrid front-view ADAS lens sets and micro lens array. Sunny reported FY22 revenue of RMB 33,197mn and net income of RMB 2,474mn, down 12% YoY and 51% YoY, respectively.

Luxshare (002475 CH, BUY): Broad automobile electronics product portfolio; Target to become leading global automotive tier-1 supplier

As Apple's major component/OEM supplier, Luxshare has expanded into automotive electronics as key strategic focus for next three 5-year plan, aiming to become one of the leading global automotive tier-1 suppliers. Luxshare started its automotive products in 2011, and its product portfolio includes auto cables, wire harness, chargers and connectors, covering intelligent and electrical vehicle applications. Luxshare established a joint venture with Chery to accelerate its tier-1 business development. Luxshare posted 1Q23 revenue of RMB 49,942mn and net income of RMB 2,018mn, up 20% YoY and 12% YoY, respectively.

Desay SV (002920 CH, NR): Leading automotive intelligent cockpit system provider

Desay SV is a leading domestic automotive cockpit manufacturer with expansion into autonomous driving and automotive network services. Desay offers system level products focusing on three major business areas: smart cabin (intelligent cockpit), smart drive (autonomous driving) and smart service (network services).

Foryou (002906 CH, NR): Leading automotive electronic supplier in intelligent cabin and autonomous driving.

Foryou is a leading supplier of automotive electronic components, intelligent cabin and autonomous driving solutions. Foryou's product offering covers automotive electronics, precision die-casting, precision components and LED lighting products. In recent years, Foryou expended into automotive electrification, intelligent cockpit, smart vehicle connectivity and weight-reduction product developments. Its autonomous driving controller product is based on Horizon Robotics' Journey 5 chip.

Joyson Electronics (600699 CH, NR): Leading supplier of automotive safety, intelligent driving and intelligent cockpit products.

Joyson focuses on intelligent cockpit, intelligent vehicle networks, intelligent driving, new energy management, and automotive safety system applications. Joyson has a leading position in global automotive security and network markets, expanded the integrated safety solutions for intelligent driving and intelligent cockpit. The Company's intelligent vehicle network 5G-V2X product has started mass production, and it also launched 800V BMS products for new energy vehicles.

Jingwei Hirain (688326 CH, NR): Leading supplier of intelligent driving solutions.

Jingwei Hirain is an intelligent driving domain controller and intelligent driving system-level solution provider. Hirain entered intelligent driving business in 2015, and the Company provides comprehensive products in the fields of intelligent driving electronics, intelligent automotive networking electronics, vehicle body control and new energy & power system electronics products. Its client portfolio includes FAW, SAIC, BAIC, JMC and Borg Warner.

Valuation

Initiate at BUY with TP of HK\$7.54 (70% upside)

Our TP of HK\$7.54 is based on 12x FY23E P/E. We use price/earnings as our valuation methodology since we believe it better captures Intron's earnings growth potential. We view our target multiple of 12x P/E (vs. average of 15.8x forward P/E since 2018) as reasonable and justified by 34% earnings CAGR over 2022-25E and 39%/65% sales CAGR in New Energy and Automation & Connectivity segments.

Intron now trades at 7.7x/5.8x FY23/24E P/E, vs 26.2x/19.4x FY23/24E P/E for A/H-listed automobile components/solutions peers, which we think is highly undervalued, especially considering Intron's high ROE of 25.4%, vs 13.0% for peers' average ROE. We think Intron deserves a re-rating given its high earnings growth and high ROE compared to peers.

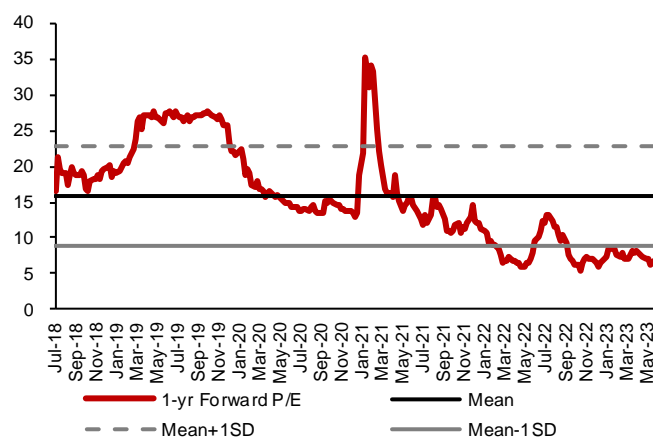
Upcoming catalysts include potential favourable NEV policy, rising ADAS/AD penetration, share gain in NEV customers and product launches.

Figure 73: Intron Tech's peers valuation

| Company | Ticker | CMBI Rating | Market Cap US\$(mn) | Price (LC) | TP (LC) | Up/Down -side | P/E (x) | | P/B (x) | | ROE (%) | | |
|-----------------|-----------|-------------|---------------------|------------|---------|---------------|---------|-------------|-------------|------------|------------|-------------|-------------|
| | | | | | | | FY23E | FY24E | FY23E | FY24E | FY23E | FY24E | |
| Intron Tech | 1760 HK | BUY | 617 | 4.44 | 7.54 | 70% | 7.7 | 5.8 | 1.8 | 1.5 | 25.4 | 28.0 | |
| BOE Varitronix | 710 HK | BUY | 1,139 | 11.26 | 23.7 | 110% | 12.2 | 9.0 | 1.9 | 1.6 | 16.3 | 19.8 | |
| BYD Electronics | 285 HK | HOLD | 6,634 | 23.05 | 24.5 | 6% | 15.8 | 12.9 | 1.6 | 1.5 | 10.4 | 11.4 | |
| Sunny Optical | 2382 HK | HOLD | 10,193 | 72.75 | 86.8 | 19% | 22.2 | 19.2 | 3.0 | 2.7 | 13.4 | 14.1 | |
| Luxshare | 002475 CH | BUY | 29,912 | 30.35 | 48.0 | 58% | 20.1 | 16.3 | 2.1 | 1.9 | 10.5 | 11.4 | |
| Desay SV | 002920 CH | NR | 11,488 | 149.74 | NA | NA | 52.2 | 38.2 | 10.6 | 8.7 | 21.3 | 24.0 | |
| Foryou Corp | 002906 CH | NR | 2,238 | 34.01 | NA | NA | 30.0 | 22.8 | 3.4 | 3.1 | 11.5 | 13.5 | |
| Joyson | 600699 CH | NR | 3,265 | 17.27 | NA | NA | 27.4 | 18.5 | 1.8 | 1.7 | 6.8 | 9.4 | |
| Deren electron | 002055 CH | NR | 786 | 9.41 | NA | NA | 17.6 | 9.7 | 1.7 | 1.5 | 9.4 | 14.7 | |
| Jingwei Hirain | 688326 CH | NR | 2,550 | 153.80 | NA | NA | 57.0 | 40.8 | 3.3 | 3.1 | 5.8 | 9.1 | |
| Average | | | | | | | | 26.2 | 19.4 | 3.1 | 2.7 | 13.0 | 15.2 |

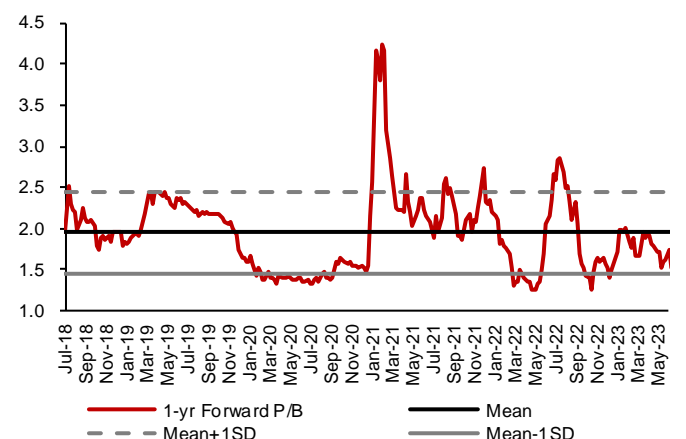
Source: Bloomberg, CMBIGM estimates, as of 26 Jun 2023

Figure 74: 12M forward P/E band



Source: Bloomberg, CMBIGM estimates

Figure 75: 12M forward P/B band



Source: Bloomberg, CMBIGM estimates

Key Risks

1) Weaker-than-expected NEV sales in China.

Intron's NEV revenue is mainly derived from sales of NEV solutions to Chinese OEM/Tier-1 customers. If Chinese NEV market growth is weaker than expected, Intron's revenue will be negatively impacted.

2) Slower ADAS/AD penetration or weaker demand for Horizon Robotics's solution.

Intron's intelligent system solutions are based on Horizon Robotics' Journey 2/3/5 chip solutions. If market demand for Horizon Robotics' products is weaker than expected or industry competition is more intensified than expected, there will be negative impact to Intron's intelligent driving business.

3) Share allocation loss with Infineon and reliance on Infineon's core technology

A substantial portion of Intron's system solutions are developed and based on core technology of Infineon's semiconductor devices. As a large portion of semiconductors are purchased from Infineon, Intron relies on Infineon's industry leadership in innovation of automotive semiconductors. In addition, Intron will face the risk of share allocation loss if more auto system solution providers establish business relationship with Infineon.

4) ASP/margin pressure due to auto semi oversupply.

Global automobile semiconductor market experienced supply shortage since 2020 due to Covid-19 disruption to supply chain, and the shortage problem started to alleviate since 1Q23 following new capacity expansion and weaker auto demand on macro headwinds. Pricing of automobile semi products will face downside risks if oversupply happens, and this will lead to ASP/margin pressure to Intron.

Appendix

Management Background

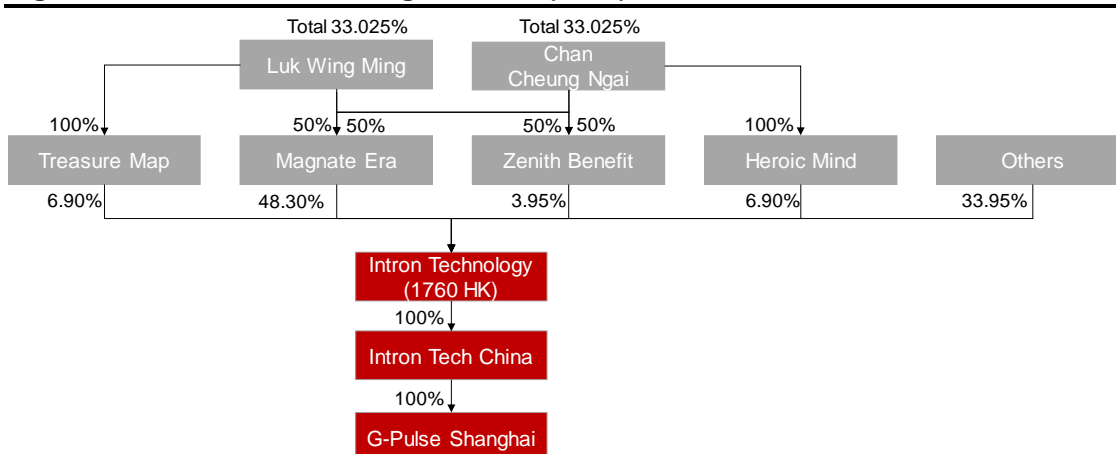
Intron's management have extensive industry experience and technical background. The co-founder and co-CEO, Mr Luk Wing Ming, was graduated from Shanghai Jiao Tong University with a major in Materials Engineering and has over 25 years of working experience including more than 20 years of experience in automotive electronics. He also worked in top semiconductor distributor, Array Electronics (China), during 1996-2001. The other co-founder and co-CEO, Mr Chan Cheung Ngai, has over 25 years of experience, including over 20 years in automotive electronics. He also worked in Array Electronics for 7 years. CFO, Mr. Ng Ming Chee, was graduated from the University of Western Australia and had worked in the finance departments of various multinational companies, including Telstra, NBA Sports and Culture Development (Beijing) and Intel (China). The two co-founders, Mr. Luk Wing Ming and Mr. Chang Cheung Ngai, directly/indirectly holds 66.05% of total shares in FY22, obtaining the controlling rights of the Company.

Figure 76: Background of management team

| Title | Name | Experience |
|---|----------------------|---|
| Co-founder, Chairman and Co-CEO, Executive Director | Mr. Luk Wing Ming | Obtained Bachelor's degree in Materials Engineering from Shanghai Jiao Tong University and an MBA from the China Europe International Business School. Over 25 years of working experience including over 20 years of experience in automotive electronics. Previously worked as a strategic marketing manager in semiconductor distributor, Array Electronics (China), during 1996-2001. |
| Co-founder, Co-CEO, Executive Director | Mr. Chan Cheung Ngai | Over 25 years of experience, including over 20 years in automotive electronics. Previously worked for 7 years as electronic device sales manager at Arrow Electronics. Has been responsible for product design and patent registration of Intron. |
| General manager, Executive Director | Mr. Chan Ming | Obtained Bachelor's Degree in Electrical and Electronic Engineering from the University of Birmingham in the UK and an MBA from the University of Wales, previously worked at Arrow Electronics and HiSilicon with more than 20 years of industry experience. |
| CFO, Executive Director | Mr. Ng Ming Chee | Obtained Bachelor's Degree from the University of Western Australia and an MBA from Brunel University. Chartered accountant in Australia and Hong Kong. Previously served as Chief Financial Officer or Financial Director for several multinational companies, including Telstra, NBA Sports and Culture Development (Beijing) and Intel (China). |

Source: Company data, CMBIGM estimates

Figure 77: Intron's shareholding structure (FY22)



Source: Company data, CMBIGM estimates

Financial Summary

| INCOME STATEMENT | 2020A | 2021A | 2022A | 2023E | 2024E | 2025E |
|--|--------------|--------------|--------------|--------------|--------------|---------------|
| YE 31 Dec (RMB mn) | | | | | | |
| Revenue | 1,993 | 3,176 | 4,830 | 6,879 | 9,086 | 11,445 |
| Cost of goods sold | (1,635) | (2,551) | (3,789) | (5,423) | (7,188) | (9,089) |
| Gross profit | 358 | 625 | 1,041 | 1,456 | 1,898 | 2,356 |
| Selling expense | (68) | (101) | (106) | (144) | (182) | (229) |
| Admin expense | (218) | (313) | (427) | (585) | (763) | (950) |
| Other income | 49 | 30 | 40 | 36 | 36 | 36 |
| Other expense | (2) | (2) | (50) | (50) | (50) | (50) |
| Share of (losses)/profits of associates/JV | (1) | 1 | 2 | 2 | 2 | 2 |
| Net interest income/(expense) | (20) | (24) | (45) | (45) | (45) | (45) |
| Pre-tax profit | 98 | 217 | 455 | 671 | 896 | 1,121 |
| Income tax | (3) | (17) | (44) | (64) | (90) | (112) |
| After tax profit | 95 | 200 | 411 | 606 | 807 | 1,009 |
| Minority interest | 0 | (0) | (4) | (6) | (8) | (9) |
| Net profit | 95 | 201 | 415 | 600 | 799 | 999 |
| Gross dividends | 28 | 60 | 126 | 180 | 240 | 300 |
| BALANCE SHEET | | | | | | |
| YE 31 Dec (RMB mn) | | | | | | |
| Current assets | 1,695 | 2,294 | 3,351 | 3,884 | 4,526 | 5,371 |
| Cash & equivalents | 388 | 572 | 337 | 446 | 229 | 178 |
| Account receivables | 783 | 1,163 | 1,698 | 2,124 | 2,535 | 3,187 |
| Inventories | 447 | 498 | 1,086 | 1,084 | 1,530 | 1,775 |
| Prepayment | 40 | 27 | 182 | 182 | 182 | 182 |
| ST bank deposits | 36 | 32 | 49 | 49 | 49 | 49 |
| Financial assets at FVTPL | 0 | 0 | 0 | 0 | 0 | 0 |
| Other current assets | 0 | 0 | 0 | 0 | 0 | 0 |
| Contract assets | 1 | 1 | 0 | 0 | 0 | 0 |
| Non-current assets | 360 | 565 | 724 | 767 | 806 | 841 |
| PP&E | 154 | 170 | 195 | 222 | 248 | 264 |
| Right-of-use assets | 23 | 33 | 33 | 43 | 50 | 62 |
| Deferred income tax | 24 | 42 | 54 | 54 | 54 | 54 |
| Intangibles | 126 | 224 | 325 | 331 | 338 | 345 |
| Financial assets at FVTPL | 15 | 76 | 85 | 85 | 85 | 85 |
| Other non-current assets | 18 | 20 | 32 | 32 | 32 | 32 |
| Total assets | 2,054 | 2,859 | 4,075 | 4,651 | 5,332 | 6,212 |
| Current liabilities | 747 | 1,097 | 1,907 | 2,057 | 2,171 | 2,342 |
| Short-term borrowings | 433 | 632 | 950 | 950 | 950 | 950 |
| Account payables | 74 | 237 | 331 | 481 | 595 | 766 |
| Tax payable | 6 | 18 | 27 | 27 | 27 | 27 |
| Other current liabilities | 0 | 1 | 1 | 1 | 1 | 1 |
| Lease liabilities | 12 | 15 | 20 | 20 | 20 | 20 |
| Accrued expenses | 221 | 194 | 578 | 578 | 578 | 578 |
| Non-current liabilities | 16 | 19 | 20 | 20 | 20 | 20 |
| Long-term borrowings | 0 | 0 | 0 | 0 | 0 | 0 |
| Other non-current liabilities | 16 | 19 | 20 | 20 | 20 | 20 |
| Share capital | 9 | 9 | 9 | 9 | 9 | 9 |
| Other reserves | 1,283 | 1,733 | 2,129 | 2,555 | 3,122 | 3,831 |
| Total shareholders equity | 1,292 | 1,743 | 2,149 | 2,575 | 3,142 | 3,850 |
| Minority interest | 0 | 1 | 11 | 11 | 11 | 11 |
| Total equity and liabilities | 2,054 | 2,859 | 4,075 | 4,651 | 5,332 | 6,212 |

| CASH FLOW | 2020A | 2021A | 2022A | 2023E | 2024E | 2025E |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| YE 31 Dec (RMB mn) | | | | | | |
| Operating | | | | | | |
| Profit before taxation | 98 | 217 | 455 | 671 | 896 | 1,121 |
| Depreciation & amortization | 49 | 60 | 90 | 109 | 121 | 130 |
| Tax paid | (21) | (22) | (35) | (64) | (90) | (112) |
| Change in working capital | 2 | (285) | (643) | (274) | (745) | (725) |
| Others | 6 | 16 | 0 | 0 | 0 | 0 |
| Net cash from operations | 134 | (15) | (134) | 442 | 183 | 414 |
| Investing | | | | | | |
| Capital expenditure | (137) | (159) | (216) | (152) | (160) | (165) |
| Acquisition of subsidiaries/ investments | 0 | 0 | 0 | 0 | 0 | 0 |
| Net proceeds from disposal of short-term investments | 1 | 0 | 0 | 0 | 0 | 0 |
| Others | (20) | (64) | 0 | 0 | 0 | 0 |
| Net cash from investing | (156) | (222) | (216) | (152) | (160) | (165) |
| Financing | | | | | | |
| Dividend paid | (36) | (29) | (126) | (180) | (240) | (300) |
| Net borrowings | (0) | 208 | 0 | 0 | 0 | 0 |
| Proceeds from share issues | 0 | 253 | 0 | 0 | 0 | 0 |
| Others | (18) | (4) | 0 | 0 | 0 | 0 |
| Net cash from financing | (54) | 428 | (126) | (180) | (240) | (300) |
| Net change in cash | | | | | | |
| Cash at the beginning of the year | 497 | 388 | 572 | 337 | 446 | 229 |
| Exchange difference | (33) | (8) | 0 | 0 | 0 | 0 |
| Cash at the end of the year | 388 | 572 | 337 | 446 | 229 | 178 |
| GROWTH | 2020A | 2021A | 2022A | 2023E | 2024E | 2025E |
| YE 31 Dec | | | | | | |
| Revenue | (13.7%) | 59.4% | 52.1% | 42.4% | 32.1% | 26.0% |
| Gross profit | (23.1%) | 74.5% | 66.4% | 39.9% | 30.3% | 24.2% |
| Net profit | (20.1%) | 111.6% | 106.9% | 44.7% | 33.1% | 25.1% |
| PROFITABILITY | 2020A | 2021A | 2022A | 2023E | 2024E | 2025E |
| YE 31 Dec | | | | | | |
| Gross profit margin | 18.0% | 19.7% | 21.5% | 21.2% | 20.9% | 20.6% |
| Return on equity (ROE) | 7.5% | 13.2% | 21.3% | 25.4% | 28.0% | 28.6% |
| GEARING/LIQUIDITY/ACTIVITIES | 2020A | 2021A | 2022A | 2023E | 2024E | 2025E |
| YE 31 Dec | | | | | | |
| Current ratio (x) | 2.3 | 2.1 | 1.8 | 1.9 | 2.1 | 2.3 |
| Receivable turnover days | 143.8 | 111.8 | 108.1 | 101.4 | 93.6 | 91.3 |
| Inventory turnover days | 118.8 | 67.6 | 76.3 | 73.0 | 66.4 | 66.4 |
| Payable turnover days | 27.3 | 22.3 | 27.3 | 27.3 | 27.3 | 27.3 |
| VALUATION | 2020A | 2021A | 2022A | 2023E | 2024E | 2025E |
| YE 31 Dec | | | | | | |
| P/E | 23.8 | 22.7 | 10.2 | 7.7 | 5.8 | 4.6 |
| P/E (diluted) | 23.8 | 23.1 | 10.3 | 7.8 | 5.8 | 4.7 |
| P/B | 1.7 | 2.6 | 2.0 | 1.8 | 1.5 | 1.2 |
| Div yield (%) | 1.5 | 1.6 | 3.4 | 3.9 | 5.2 | 6.5 |

Source: Company data, CMBIGM estimates. Note: The calculation of net cash includes financial assets.

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