18 Nov 2025

CMB International Global Markets | Equity Research | Sector Update

# Semiconductors

## Analog sector – PMIC recovery underway; RF in transition

We highlight a growing divergence within the analog semiconductor space. The power management IC (PMIC) and signal chain markets are stabilizing after a severe downturn, entering a cyclical recovery phase. In contrast, the mobile radio frequency front-end (RFFE) market remains under pressure, while automotive RFFE emerges as a key strategic growth frontier.

- **PMIC & signal chain:** Cyclical inflection. The global analog market is recovering, as represented by Texas Instruments' (TXN US) three rounds of price adjustments in 2025, which mark the end of the intense price war and set the stage for margin recovery. WSTS projects modest global YoY analog revenue growth of 3% in 2025 and 5% in 2026, yet lagging AI-driven logic/memory. China is a standout, forecast to grow 13% in 2025 and 11% in 2026 per Frost & Sullivan, driven by auto, computing, and localization tailwinds.

  The competitive landscape is being reshaped by supply chain regionalization, market bifurcation (broad SKU coverage vs. system-critical expertise), and a capital model divide (fabless agility vs. IDM control).

  We reiterate our BUY rating on BaTeLab (2149 HK, TP: HK$93.0), for its scalable SKU expansion strategy, resilient margins and attractive valuation.

- **RFFE:** Mobile bottoming, auto accelerating. The mobile RFFE market declined 11% YoY in 2024 by revenue to US$15.4bn, per Yole. We forecast only 2% YoY growth in 2025/26E, as RFFE content gains in 5G mobile phones are offset by architectural simplification, BOM pressure, and pricing competition. We believe a meaningful rebound awaits 6G later this decade. Conversely, automotive RFFE is a key growth area (17% 2023-29E revenue CAGR per Yole), fuelled by connectivity and ADAS, significantly increasing RF content per vehicle.

  **Consolidation defines strategy:** The market remains highly consolidated (Top 5: >80% share). Strategic shifts are underway: the Skyworks-Qorvo merger aims for scale and reduced Apple exposure; Chinese vendors benefit from localization but face fragmentation.

  We maintain our HOLD rating on Maxscend (300782 CH, TP: RMB81.5), viewing 2025-26E as transitional years in its fab-lite journey, with margin recovery likely taking another year.

**OUTPERFORM**
**(Maintain)**

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# Global analog market – PMIC and signal chain ICs

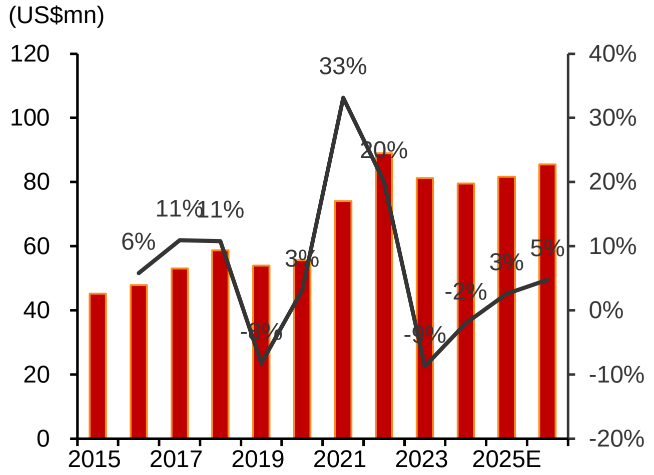
## Cyclical recovery amid structural reshaping

Following the 2021-2022 supply shortage, a severe inventory overhang led Texas Instruments (TI) to initiate widespread price cuts in 2023, triggering a sector-wide price war. As a result, the market declined 9% YoY in 2023 and contracted a further 2% in 2024, per WSTS, pressured by inventory overhang and weak demand. Key players, including TI, Analog Devices, SG Micro, and 3Peak, faced material revenue declines and gross margin compression.

**A cyclical inflection appears underway.** A modest 4% recovery in industry-wide revenue during 1H25, alongside normalized inventory levels, suggests the sector is stabilizing. TI's three rounds of price adjustments in 2025 (June, August, September), affecting tens of thousands of SKUs, signal that channel destocking has concluded. We see this as **the end of the intense price war, setting the stage for pricing stabilization and a potential margin recovery ahead.**

That said, the rebound remains muted relative to logic and memory segments, which are surging on AI-driven demand. **WSTS projects the analog market will grow only 3% in 2025 and 5% in 2026.**

**Figure 1: Global analog market to grow modestly in 2025/26E (3%/5% YoY)**




Source: WSTS, CMBIGM

**Figure 2: Texas Instruments price adjustments (three times) in 2025**

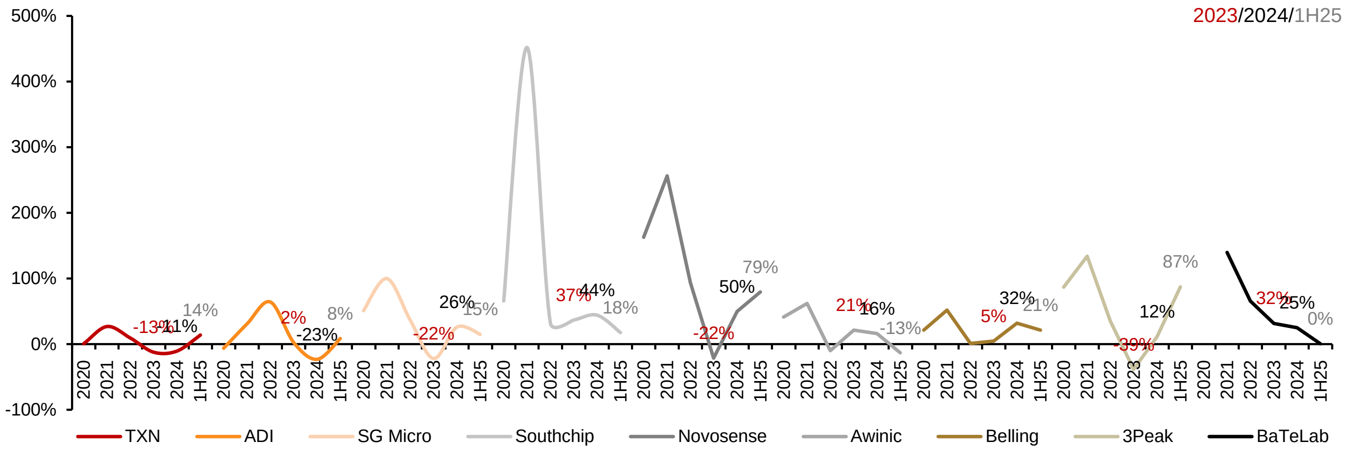
| Effective date | # of SKU affected | Pricing adjustments |
|---|---|---|
| 15 Jun, 2025 | 3.3k | Tiered adjustments:<br>1) ~9% SKU: >=100% ASP hike;<br>2) ~5% SKU: 50%-100%;<br>3) ~1% SKU: 30%-50%;<br>4) 55% SKU: 15%-30%;<br>5) 30% SKU: <15%. |
| 15 Aug, 2025 | 60k | 10%-30% price hike for Chinese customers, affecting:<br>1) Industrial control chips;<br>2) PMIC: 18%-25%;<br>3) BMS: 22%;<br>4) Fast-charging IC and RFFE chips: 5%-15% |
| 1 Sept, 2025 | Thousands | |

Source: Company data, Trendforce, ijiwei, EE Times China, SMBom, CMBIGM

**In contrast, China's analog market is set to significantly outpace global growth**, with Frost & Sullivan forecasting 13% expansion in 2025 and 11% in 2026. This strength is underpinned by demand recovery, new applications in strategic sectors, and a persistent localization tailwind. Policy support, including the anti-dumping probe into U.S.-origin analog chips, is accelerating the shift to domestic suppliers.

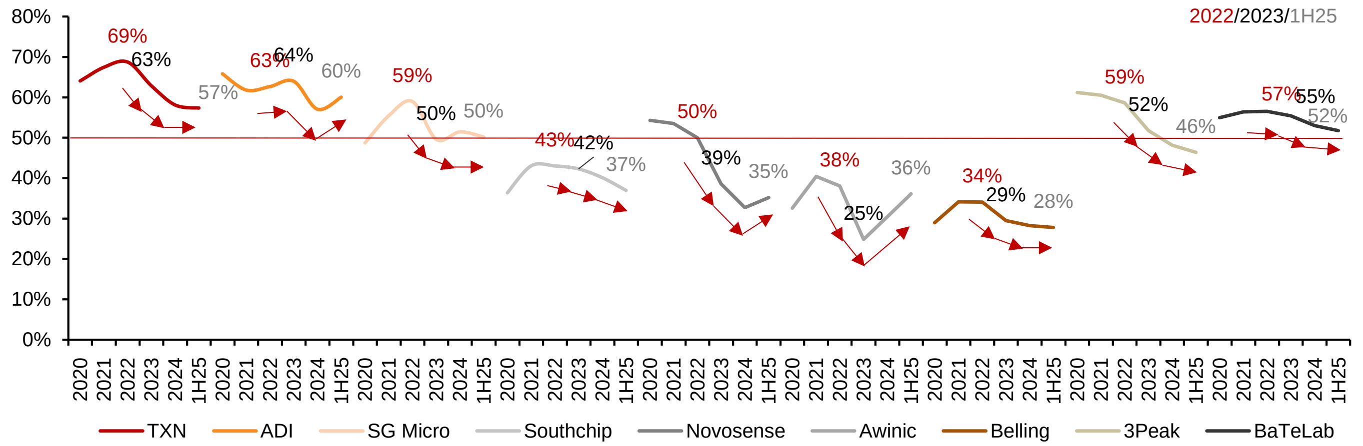
**Growth drivers are diverging, with automotive electronics and network/computing emerging as the primary engines**, each projected to grow 17% YoY in 2026 (per F&S), fueled by vehicle electrification and data center build-outs. By comparison, mature segments such as industrial/energy and consumer electronics are expected to grow at more moderate rates of 7% and 4%, respectively.

**Figure 3: Peers analysis – Significant revenue declines in 2023 due to weak demand and price war; revenue growth largely resumed since 2024/1H25**




Source: Company filings, Wind, Bloomberg, CMBIGM

**Figure 4: Peers analysis – Significant margin deterioration in 2023 due to weak demand and price war; margins largely remained at low levels after peaking in 2021-2022**




Source: Company filings, Wind, Bloomberg, CMBIGM

## Competitive landscape: reshaped by regionalization, market bifurcation, and capital model divide

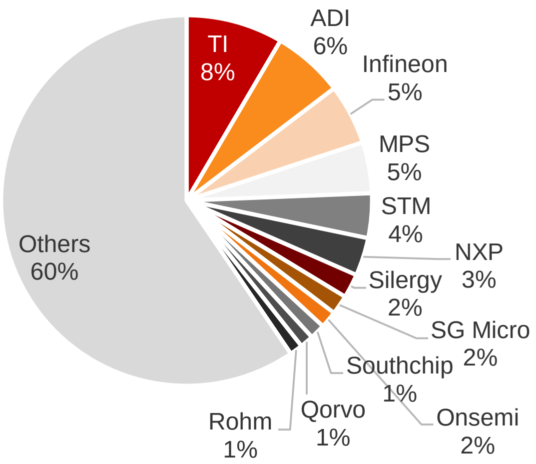
**Texas Instruments (TXN US) remains the global analog leader**, with ~US$12bn in analog revenue in 2024, accounting for an estimated **15% market share (WSTS)**, down from ~19% five years earlier, reflecting both heightened competition and geopolitical realignment. ADI has expanded its share via strategic M&A (Maxim Integrated), while Chinese players are rapidly broadening their SKU portfolios.

**China's analog market remains highly fragmented, with the top five players holding only ~28% share.** While international suppliers still lead, domestic vendors are gaining ground, supported by policy tailwinds, localization mandates, and improving price-performance ratios.

**Looking ahead, we expect the competitive paradigm to be reshaped by three structural forces:**

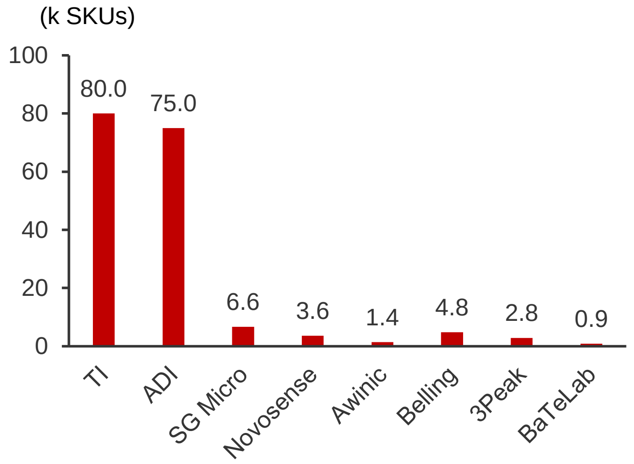
- **Supply chain regionalization: building resilience over efficiency.** Structural disruptions, from geopolitical tensions to pandemic-era bottlenecks, are fragmenting the global analog market, driving a shift from "Just-in-Time" to "Just-in-Case" supply chain models. Tariffs and anti-dumping investigations are accelerating this realignment, pushing customers to prioritize supply chain resilience and political compliance alongside cost.
- **Market bifurcation: the "long-tail" meets the "high-end". The analog sector's inherent characteristics reinforce this divergence. It remains a long-tail business**, with ~80% of revenue derived from products each contributing ≤0.1% of total sales. **Product life cycles also far outlast those of logic chips,** ~50% of ADI's revenue comes from products over ten years old, underscoring the value of reliability over node advancement. However, competing in this long-tail market builds the foundational scale and expertise required to eventually challenge incumbents in higher-margin, system-critical segments.

**Figure 5: Ranking of companies in China market, by revenue of analog IC products in 2024**




Source: Frost & Sullivan, Prismark, company filings, CMBIGM

**Figure 6: Analog is a "long-tail" business: # of SKUs remains one of the key barriers**




Source: Frost & Sullivan, company filings, CMBIGM
Note: SKU data as of 2024 year-end

**While broad SKU coverage remains a key barrier,** competition is increasingly shifting from quantity to quality. **Chinese vendors are expanding their portfolios** and achieving base-level certifications, but **global leaders such as TI and ADI continue to dominate system-critical segments**, including automotive functional safety and high-reliability power management for AI data centers, where performance and trust outweigh cost.

- **The capital model divide: agility vs. control.** The dominant **fabless model** among Chinese analog firms offers flexibility, capital lightness, and speed to market. Tapping multiple foundries allows for agile adoption of advanced processes. This model, **combined with improving product performance and supply chain resilience, positions domestic suppliers to capture meaningful market share amid trade tensions and localization pushes.**

  However, reliance on external foundries brings volatility in wafer pricing and allocation risks during upturns, making strategic foundry partnerships essential. We therefore anticipate a continued hybridization of business models, where aspiring leaders will increasingly adopt fab-lite strategies and forge deeper, more strategic cross-regional alliances with upstream foundries.

**Within the analog space, we still prefer BaTeLab (2149 HK).** The company continues to execute a scalable SKU expansion strategy, launching 130 new products in 1H25 (after 275 in FY24), bringing its total portfolio to 850. We forecast 200+ additional annual SKU launches, supporting sustained revenue growth and deeper market penetration. This aggressive SKU expansion strategy directly addresses the "long-tail" nature of the analog market, a key competitive barrier we highlighted earlier.

In 1H25, BaTeLab rebalanced its distributor network, reducing reliance on its largest overseas customer while expanding domestic channel partnerships, a transition we believe should be non-dilutive to profitability.

**The company has demonstrated resilient profitability through the downcycle.** We forecast 21% net profit growth in 2025E, with net margins sustained above 25%. **The stock trades at 13.4x/10.6x 2025/26E P/E (as of 17 Nov 2025), a material discount to both A-share (62.x/58.6x P/E) and global peers (29.1x/25.2x P/E).** Potential risks include: 1) a slower-than-expected pace of SKU expansions, 2) deterioration in key customer relationships, and 3) constrained access to upstream wafer capacity.

**Figure 7: Peers table**

| Company | Ticker | Mkt Cap US$(mn) | Price (LC) | P/E (x) FY25E | FY26E | FY27E | EPS (US$) FY25E | FY26E | FY27E | GPM% FY25E | FY26E | FY27E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Domestic peers** | | | | | | | | | | | | |
| SG Micro | 300661 CH | 6,020 | 69.22 | 68.0 | 47.3 | 36.8 | 0.14 | 0.21 | 0.26 | 50.3 | 50.4 | 50.9 |
| Rockchip | 603893 CH | 9,885 | 166.86 | 63.8 | 47.6 | 37.7 | 0.37 | 0.49 | 0.62 | 41.6 | 42.3 | 42.6 |
| 3Peak | 688536 CH | 3,171 | 163.51 | 126.2 | 65.3 | 44.4 | 0.18 | 0.35 | 0.52 | 46.5 | 46.9 | 47.1 |
| Southchip | 688484 CH | 2,505 | 41.81 | 57.0 | 38.0 | 27.3 | 0.10 | 0.15 | 0.22 | 38.1 | 38.8 | 39.2 |
| Novosense | 688052 CH | 3,024 | 150.73 | - | 168.8 | 64.2 | -0.09 | 0.13 | 0.33 | 36.1 | 37.5 | 38.0 |
| Awinic | 688798 CH | 2,478 | 75.51 | 44.5 | 32.5 | 25.6 | 0.24 | 0.33 | 0.42 | 36.2 | 37.2 | 38.0 |
| Belling | 600171 CH | 3,206 | 32.13 | - | - | - | N/A | N/A | N/A | N/A | N/A | N/A |
| Batelab | 2149 HK | 384 | 47.32 | 13.5 | 10.7 | 8.5 | 0.45 | 0.57 | 0.71 | 52.4 | 52.4 | 52.4 |
| | | | **Average** | ***62.2*** | ***58.6*** | ***35.0*** | ***0.2*** | ***0.3*** | ***0.4*** | ***43.1*** | ***43.6*** | ***44.0*** |
| **Overseas peers** | | | | | | | | | | | | |
| Texas Instru. | TXN US | 144,771 | 159.33 | 28.1 | 25.5 | 20.8 | 5.68 | 6.24 | 7.66 | 56.7 | 56.5 | 58.9 |
| Analog | ADI US | 115,555 | 234.89 | 30.2 | 24.9 | 21.4 | 7.77 | 9.42 | 10.97 | 69.4 | 70.7 | 71.8 |
| | | | **Average** | ***29.1*** | ***25.2*** | ***21.1*** | ***6.7*** | ***7.8*** | ***9.3*** | ***63.1*** | ***63.6*** | ***65.3*** |

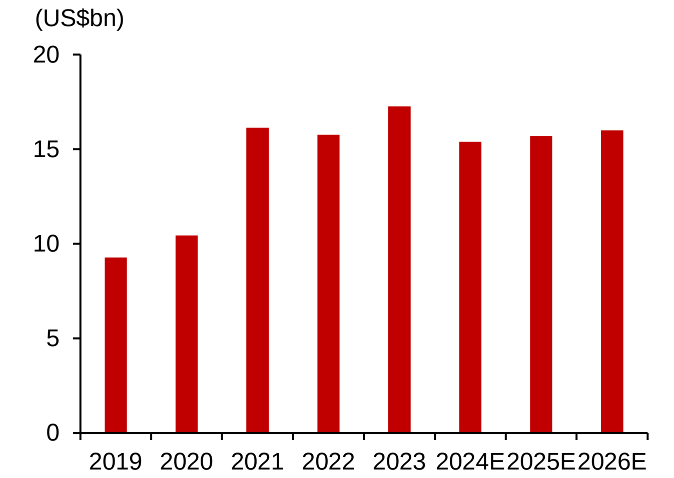
Source: Bloomberg consensus, CMBIGM; data as of 17 Nov 2025

# Global analog market – Radio frequency

## Mobile RFFE: stabilizing at a cyclical trough

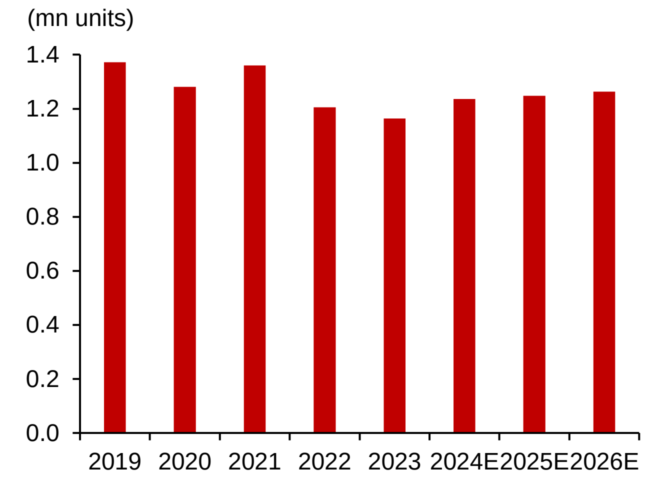
**The global mobile RF front-end (RFFE) market declined 11% YoY by revenue to US$15.4bn in 2024 (Yole), despite a 6% YoY increase in smartphone shipments.** This contraction was primarily driven by a 3% YoY drop in blended smartphone ASPs, reflecting persistent pricing pressure and a mix shift toward the entry-level segment (ASP<US$250), which expanded to 52% of shipment volumes.

**Figure 8: Yole anticipates a flattish near-term outlook for the RFFE market**




Source: Yole, IDC, Canalys, TechInsights, Counterpoint, CMBIGM

**Figure 9: IDC projects flat smartphone shipments in 2025/26E**



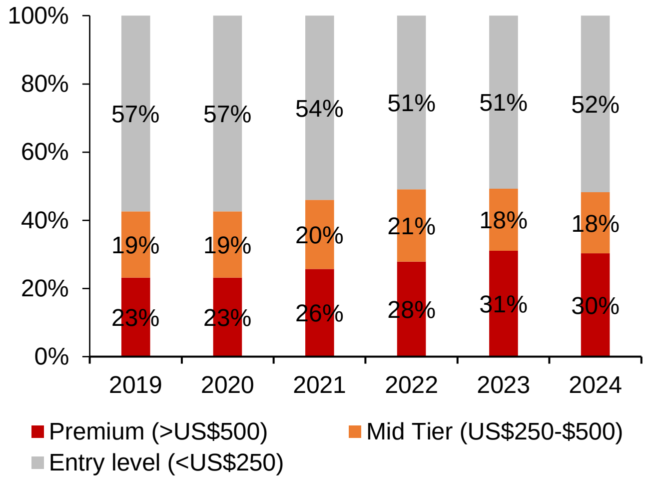

Source: IDC, CMBIGM.

**Looking ahead, we maintain our forecast of 2% YoY mobile RFFE market growth for 2025/26E.** This modest recovery will be shaped by several crosscurrents:

- **Content gains from 5G penetration:** 5G adoption reached 66% in 2024, supporting RFFE content growth. The technology's demand for higher data speeds, increased band coverage, and lower latency continues to drive component complexity and value per device.
- **The shift toward modularization** (i.e., Phase 8L, L-PAMiD) erodes the market for discrete components (reducing BOM cost and saving PCB space) and favors scaled integrated solution providers. This is further propelled by rising BOM pressure: soaring memory costs, driven by AI-led demand and NAND supply discipline, are pressuring other handset BOM.
- **Persistent pricing competition:** Intense competition among RF suppliers continues, particularly in the mid-to-low tier segment, compressing margins and partially offsetting content gains from the 5G transition.

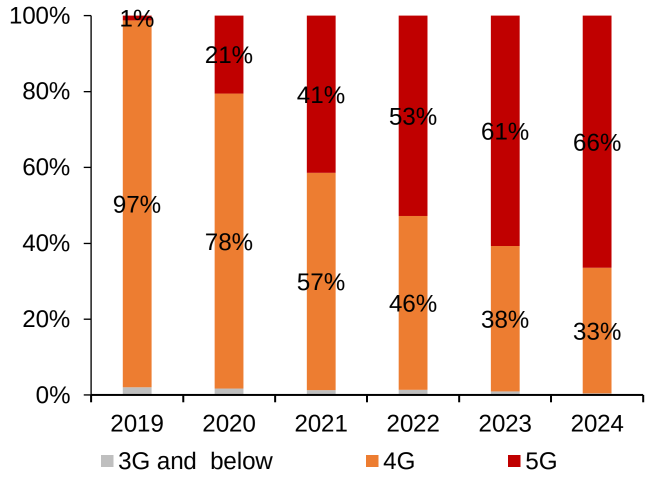
**We do not expect a meaningful RFFE market rebound until the arrival of 6G by the end of this decade,** which should catalyze a device replacement cycle and drive the next phase of content expansion.

**Figure 10: Smartphone shipment by price tiers**




Source: Yole, CMBIGM

**Figure 11: 5G penetration continued to rise**




Source: Yole, CMBIGM

## Automotive RFFE: A strategic growth frontier

**We believe the automotive RFFE market will significantly outgrow the mobile segment**, with Yole projecting a 17% CAGR from 2023-29E. The transformation of cars into "connected platforms on wheels" is fueling demand for a complex mix of cellular (4G/5G), Wi-Fi, Bluetooth, GNSS (global navigation satellite system), V2X, and UWB (ultra wide band) technologies. Beyond connectivity, ADAS and autonomous driving rely heavily on radar and V2X communication, which are major growth pillars for automotive RFFE. **This transformation establishes the car as the next major volume and value driver for the RF industry.**

**Figure 12: RFFE applications in auto industry**


Source: Qualcomm, CMBIGM

## Competitive landscape: Consolidation as a strategic imperative

**The global RFFE market remains highly concentrated,** with the top five suppliers, Broadcom, Qualcomm, Qorvo, Skyworks, and Murata, collectively controlling over 80% of the market (Yole). In contrast, we estimate the top three Chinese vendors, Maxscend, Vanchip, and Lansus, account for just ~7% globally, **reflecting both the high barriers to entry and the early stage of China's RF ecosystem development.**

**Mounting pressures, including slowing industry growth, customer insourcing initiatives, and persistent pricing competition, are driving three key strategic shifts:**

- **Incumbent consolidation to enhance resilience:** The proposed merger of Skyworks and Qorvo (expected to close by early 2027) aims to create a U.S.-based leader in RF and analog semiconductors. The rationale is twofold: first, to reduce exposure to Apple's vertical integration efforts (~60% of combined revenue); second, to strengthen competitiveness against Chinese suppliers in the mid-low tier segment. By combining product portfolio and complementary IP, especially in power amplifiers (PAs) and filters, the merged entity seeks to improve scale, portfolio breadth, and margin defense.
- **Localization Tailwinds for Chinese suppliers amid fragmentation:** Chinese RFFE players benefit from policy support, domestic semiconductor localization, and access to the world's largest smartphone and automotive markets. This marks a strategic shift, as these vendors are increasingly evolving from passive technology followers to proactive designers, offering customized solutions tailored to domestic OEMs' specific requirements. **However, near-term growth remains constrained by pricing pressure, customer concentration, and a fragmented competitive landscape.** An active IPO market has encouraged independence over consolidation, delaying the scale benefits needed to challenge global leaders.
- **Automotive RFFE as a strategic battleground:** With a 17% 2023-29E CAGR (Yole), automotive RFFE has become a key growth vector. U.S. suppliers such as Qualcomm lead in integrated connectivity platforms, while European players (NXP, Infineon) retain strength in radar and V2X. Chinese vendors, including Vanchip, Lansus, and Maxscend, are gaining design-win traction domestically, though revenue contribution remains immaterial (<5% of total sales) and production volumes are early-stage.

**Figure 13: Strategic positioning of key automotive RFFE players**

| Players | Strategic focus and key developments |
|---|---|
| **Qualcomm** | Leading in integrated RFFE modules, antenna tuners, and V2X solutions, targeting soft-ware defined vehicle platforms |
| **Skyworks** | Enhanced automotive capacity vis $2.75bn acquisition of Silicon Labs' infrastructure & automotive unit, adding power and timing ICs |
| **Qorvo** | Expanded into UWB positioning (Decawave) and SiC power devices (UnitedSiC), strengthening in-cabin and EV power segments |
| **European players** | Maintain leadership in radar and V2X solutions, led by NXP and Infineon |
| **Vanchip** | AEC-Q100 5G RFFE qualified, design-wins with BYD and Dongfeng, auto revenue expected to reach tens of millions RMB in 2025 |
| **Lansus** | Volume shipping automotive PAs in 2022. Automotive communication sales reached RMB16mn in 5M25 |
| **Maxscend** | Enter volume production of UWB chips and exploring further automotive RF engagements |

Source: Company data, Bloomberg, CMBIGM

**We maintain our HOLD rating on Maxscend (300782 CH).** Despite Maxscend's strong positioning in the RFFE market and China's localization trend, we think its margin recovery may take another year, as it navigates its transition to a fab-lite model. Upside catalysts: stronger-than-expected demand/margin recovery and accelerated localization. Downside risks: slower capacity ramp-up, and intensified competition.

**Figure 14: Peers table**

| Company | Ticker | Mkt Cap US$(mn) | Price (LC) | P/E (x) FY25E | P/E (x) FY26E | P/E (x) FY27E | EPS (US$) FY25E | EPS (US$) FY26E | EPS (US$) FY27E | GPM% FY25E | GPM% FY26E | GPM% FY27E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Domestic peers** | | | | | | | | | | | | |
| Qualcomm | QCOM US | 186,333 | 173.98 | 14.6 | 14.3 | 14.0 | 11.92 | 12.15 | 12.44 | 55.9 | 55.7 | 55.9 |
| Broadcom | AVGO US | 1,617,221 | 342.46 | 50.8 | 36.7 | 28.2 | 6.74 | 9.34 | 12.12 | 78.6 | 75.8 | 73.8 |
| Skyworks | SWKS US | 9,902 | 66.60 | 11.9 | 15.0 | 13.2 | 5.60 | 4.43 | 5.05 | 46.8 | 45.8 | 46.6 |
| Qorvo | QRVO US | 7,852 | 84.98 | 15.9 | 13.3 | 12.1 | 5.35 | 6.38 | 7.00 | 44.6 | 47.3 | 48.1 |
| | | | ***Average*** | ***23.3*** | ***19.8*** | ***16.9*** | ***7.4*** | ***8.1*** | ***9.2*** | ***56.5*** | ***56.1*** | ***56.1*** |
| **Overseas peers** | | | | | | | | | | | | |
| Maxscend | 300782 CH | 5,356 | 71.17 | 256.9 | 49.4 | 32.1 | 0.04 | 0.20 | 0.31 | 31.3 | 35.6 | 38.5 |
| Vanchip | 688153 CH | 2,032 | 33.56 | 189.6 | 73.4 | 39.3 | 0.03 | 0.06 | 0.12 | 27.5 | 28.0 | 28.4 |
| Smarter Micro | 688512 CH | 746 | 11.35 | - | - | 810.7 | -0.06 | -0.04 | 0.00 | 8.2 | 13.6 | 16.2 |
| Grand Kangxi | 688653 CH | 740 | 12.39 | - | - | - | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | ***Average*** | ***223.3*** | ***61.4*** | ***294.1*** | ***0.0*** | ***0.1*** | ***0.1*** | ***22.3*** | ***25.7*** | ***27.7*** |

Source: Bloomberg consensus, CMBIGM; data as of 17 Nov 2025

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| | |
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