

April 2021

Analog Maxim deal confirmed: what does this mean for their patent portfolios?

July 2020 saw Analog Devices (ADI) set to buy Maxim Integrated in an all-stock transaction valued at US\$21 billion, representing a 22% premium to Maxim’s previous day closing price. Earlier in April 2021 this deal received EU approval and the acquisition went ahead at the agreed price of \$21 billion. Consequently, the semiconductor patent landscape is set to shift as ADI’s market share increases and their position in the competitive landscape strengthens.

In light of this closed deal between two of the leading manufacturers of analog semiconductors, ADI are faced with the challenge of consolidating their portfolio with that of Maxim Integrated. For ADI the addition of Maxim adds enhanced domain expertise, new capabilities, an expanded range of products and a patent portfolio in excess of 970 patent families.

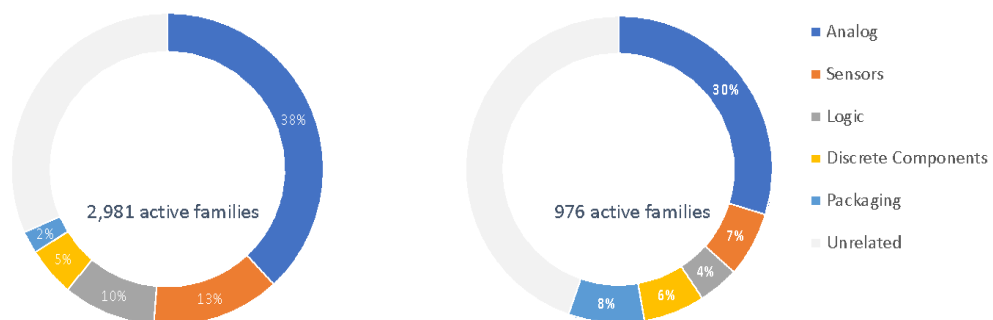
This article explores the following:

- a breakdown of ADI and Maxim’s portfolios by semiconductor technologies
- the portfolio strength of the consolidated portfolio versus other organisations in this space
- adopting an efficient due diligence approach to M&A

Strong overlap in analog chip technology area

Demand for analog chips has recovered in recent years supported by the need for a whole new generation of sensors and circuits to support the IoT revolution and enable processing of real-life data in homes, cars, factories and farms. Analog Devices is the second largest supplier in the space by revenue after Texas Instruments which reported a top line number for the analog segment of US\$10.2 billion in 2019. Combined 2019 revenue for Analog Devices and Maxim is over US\$7 billion.

Analog Devices & Maxim: Active patent families classified by semiconductor product categories



Patent families classified using CIPHER AST N/D Product Taxonomy

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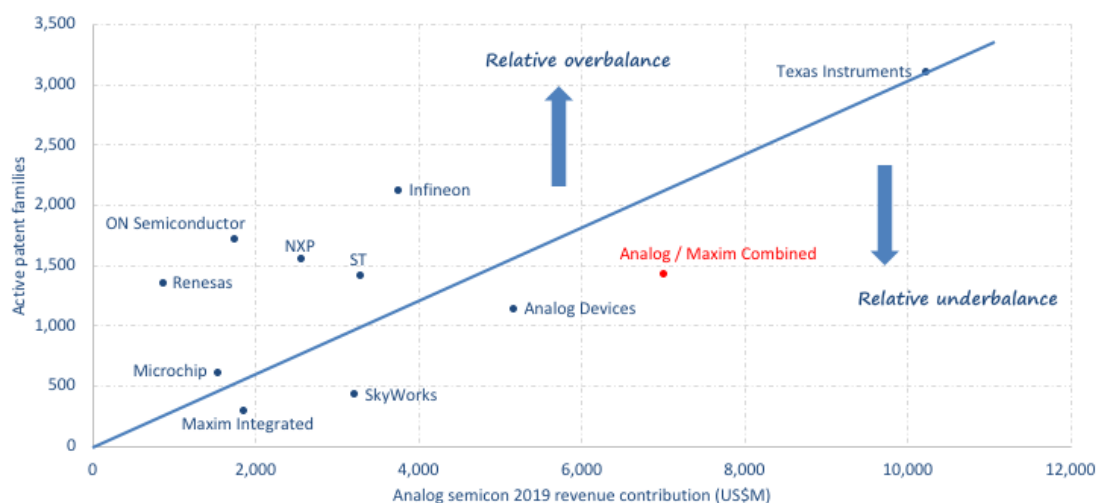
Taking a look at the top ranked analog semiconductor manufacturers and suppliers, there is likely scope for further consolidation. In the context of understanding how well each is served by the slice of their patent portfolio that covers analog semicon inventions, we take a closer look at the relative patent portfolio balance of each. Defensive strength against incoming patent assertion threat is exhibited by those companies having a relatively higher number of patents to revenue dollars versus the peer group as a whole. Sitting in balance is Texas Instruments and above the line in a position of strength are On Semiconductor, Microchip, Europe based Infineon, ST and NXP and Japanese firm Renesas. Analog Devices and Maxim both look underweight on this measure, along with the US listed Skyworks.

Semiconductors can, broadly speaking, be classified according to the type of circuits used, digital, analog or a combination of both. Digital semiconductors process binary digital information, for example in computer processors circuits where two different voltages are assigned each representing a unique logical value. Analog semiconductors process analog signals and so have applications in all types of sensors, audio and power supply components where voltage, current, frequency or charge can vary continuously across the circuit. Mixed circuits are typically semiconductors that contain both digital and analog circuits and are therefore capable of processing both signal types.

Strong, well-balanced Analog Devices/Maxim Integrated combined portfolio

Referencing data from Statista, the top ranked analog integrated circuit (IC) suppliers worldwide by revenue include both Maxim and Analog Devices, which sits in second place after Texas Instruments. Total 2019 analog integrated circuit revenue contribution from the top ten companies is estimated by Statista at US\$34 billion. Recognising accepted best practice that optimum patent portfolio balance is best determined using revenue contribution as the commercial metric, we have looked across this set of top-tier analog circuit suppliers to identify which exhibit defensive strength with this slice of their patent portfolio. In this context strength represents being in a position better placed to defend against incoming patent assertion threats, through having a relatively higher number of patents to revenue dollars versus peers. The Cipher AST N/D product taxonomy has been used to quickly and accurately classify the number of patents for each organisation that are specific to analog type semiconductors.

Patent portfolio balance: analog semiconductor classified active patent families vs 2019 revenue



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An efficient approach to M&A

Acquisition deals like Analog Devices and Maxim Integrated are a regular occurrence and require efficient approaches. With automated and digitised methods quickening the due diligence phase of an acquisition, organisations are able to rely on the speed at which intelligence is brought to them by their M&A teams.

Cipher eliminates any manual inefficiencies that have previously hindered the due diligence process. By automatically counting and sorting patents, Cipher helps put you in a stronger position to analyse the target assets/organisation, assess the litigation risk associated with those assets and map the acquired assets onto the technology areas relevant to you.

For more information on the Analog Devices and Maxim Integrated patent portfolios or insight on how to adopt an efficient due diligence approach that works for your business, please get in touch at info@cipher.ai.
