

Analog IC Insights On-the-Go by Maxim Integrated

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Introduction

<https://adafru.it/NfS>

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Maxim has a new app called Essential Analog. This is a really cool app because we're seeing electronic component manufacturers say *"Hey, lots of people use mobile devices. Let's make an app for them so they can find all the different parts."*

This app is called [Essential Analog IC insights on-the-go, available for iOS and Android \(https://adafru.it/NfS\)](https://adafru.it/NfS).

Through the marvels of modern video recording and phone screen capture, we're going to check out and show off what's available in this App.

You *don't* need to make a [Maxim account \(https://adafru.it/NfV\)](https://adafru.it/NfV) to use the App

However, if you want to purchase or sample components, [you will need to make a My Maxim account \(https://adafru.it/NfV\)](https://adafru.it/NfV)




Thanks to Maxim for supporting Adafruit so we could bring you this guide and video about their new app!

Newsfeed


🕒 12:25 PM

NEWSFEED




Better Battery-Powered Designs ☆

Learn how having a low IQ means longer battery life...




Easy Real-Tim... ☆

Set up the MAX31342 in less than 5 minutes




RF Product Sel... ☆


Find the right RF device for your




BOB is Here to Help ☆

Enjoy faster design with the MAX5715BOB DAC Breakout







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Let's start with the **Newsfeed**. To me, this is the most interesting because I really like seeing the new products that are coming from each chip manufacturer.

Personally, I like to subscribe to their RSS feeds, or in this case, I subscribe to the Newsfeed. There's videos you can play within the app that demo the latest eval boards, the latest chipsets, and there's a lovely design engineer who will take you through the process. I also like that there are closed captions on these, that's pretty cool!

There's also new app notes to read. App notes are a really good way to get a sense of how to use the part in the most efficient way. Maxim does a lot of medical, wearable, low-power electronics. For example, on the Newsfeed while writing this guide, there's an app note about quiescent current in buck and boost converters. The feature part for this app note is the [MAX17222 \(https://adafru.it/NfU\)](https://adafru.it/NfU) which is a nice little boost regulator because it can go down as low as 400mV input - you can run it off of a more-than-dead AAA battery!

Getting Part Details & Samples



NEWSFEED

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This MAX17222 seems quite interesting and I'd like to learn more! Click the diagram and it actually takes you to the Maxim website where you can download the datasheet, and at the specs in more detail: what the pinouts are, and voltage in, and current supply, and quiescent current, etc. There's also design simulators to verify before you start soldering

You can subscribe for more information on updates when this part has news, and for that you have to login. That way, when there's an update to the product you will be notified when there's new datasheet updates. You can also order components directly from this page or get up to 4 pcs samples ordered.



percentage, the better for increased battery life (>90% efficiency at μA level is ideal)

0.5A peak inductor current limit (Figure 4). With True Shutdown technology, the output is disconnected from the input without forward or reverse current.

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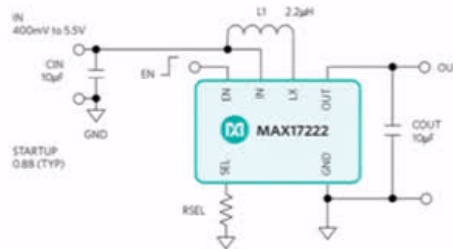


Figure 4. nanoPower boost regulators block diagram

Output voltage can be selected using a single standard 1% resistor. The MAX17222 features post-startup enable transient protection (ETP), which allows the output to remain regulated for input voltages down to 400mV, depending on the load current. The boost converter is available in 0.88 x 1.4mm² 6-bump WLP and 6-pin μDFN packages and features 95% peak efficiency to minimize heat dissipation.

To complement the power benefits of highly efficient boost regulators, choose low-power microcontrollers for your design. However, not all low-power microcontrollers are made the same. Given that the target applications discussed here require a small footprint and are battery-powered, the microcontrollers used should support these small form factor products.

Maxim's DARWIN microcontrollers work well with nanoPower ICs, together enabling products with the longest battery life and the smallest sizes.

DARWIN microcontrollers feature wearable-grade power technology with the lowest active mode and SRAM retention power available; the biggest embedded memories in their class to run more stacks and bigger applications; a scalable memory architecture for running code from external flash or accessing external SRAM to quickly scale application size or meet new market requirements; and advanced embedded security to protect designs from cyber threats. The responsible energy use of DARWIN microcontrollers and nanoPower ICs eases the pressure on the small batteries powering the end products.

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For beginner engineers who don't know this, Maxim is great about sending free samples of chips. If you see a chip and think "I might want to use this," just get the sample now, because it's free!

Maxim will ship it to you in a couple of days. You can get up to four pieces of each sample. And then when you're ready to use it in your design you don't have to dig around and try to find out how to get the part, especially if it's out of stock somewhere. So I always recommend to engineers, sample as much as you want. (I did when I was a student and I saved hundreds and hundreds of dollars!)

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MAX17222

400mV to 5.5V Input, nanoPower Synchronous Boost Converter with True Shutdown

nanoPower Boost Converter that Extends Battery Life and Reduces Solution Size

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Active in Production.



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Free Analog Parts Kit!



EFFICIENT POWER

Buck	Boost	Buck-Boost	LDO	Continua
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PRECISION MEASUREMENT

ADC	DAC	Audio Amp	Op-Amp	CSA
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RELIABLE CONNECTIVITY

RS485	RS232	CAN	BTR Switch	Wireless
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ROBUST PROTECTION

Supervisor	Temp Sensor	Isolator	Diode Vref	RTC
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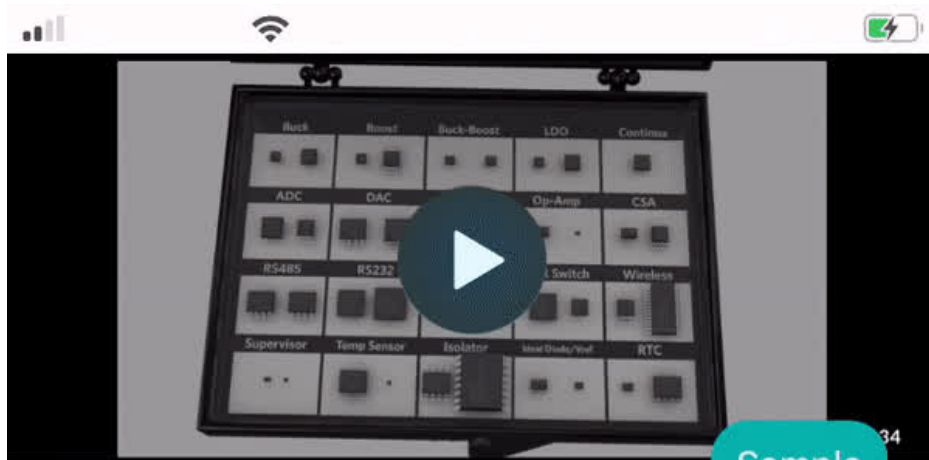
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There's free stuff that you can get! Who doesn't love FREE?

There's a free analog toolkit and you can watch the video about it to get a tour of the ~30 analog components included. There's like CAN bus parts, and boost converters, and isolators and all that good Maxim analog stuff.

Did I mention it's FREE? If you register on the Maxim site and through the app here and click sample, you can get this essentials kit for... free. Free app, free stuff!

Finding & Favoring Parts



EFFICIENT POWER

Buck Boost Buck-Boost LDO Continua

PRECISION MEASUREMENT

ADC DAC Audio Amp Op-Amp CSA

RELIABLE CONNECTIVITY

RS485 RS232 CAN BTR Switch Wireless

ROBUST PROTECTION

Supervisor Temp Sensor Isolator Diode Vref RTC

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You can also look for parts by type, that's what Maxim does best!

Let's say I want to look for an audio amplifier, they have some recommended ones. If you star a recommended part, when you go to **Favorites**, it shows up in your favorites listing. This is good if you're using the smart selector and want to peruse and fav a bunch of components for later specification analysis.

Filtering Parts

The screenshot shows a mobile application interface. At the top, a red status bar displays 'Sprint Wi-Fi', signal strength, a Wi-Fi icon, the time '12:37 PM', and a battery icon at '59%'. Below this is a white banner for a webinar. The banner features a green PCB with various components and a blue battery, with the text 'MAXIM EVK 1.1' and 'MAXIM INTEGRATED' visible. To the right of the image are two headshots: 'Eddie Lee' and 'V.A. Krishnan'. Below the headshots is the 'ALL ABOUT CIRCUITS Webinar' logo. The main content area is a list of categories, each in a teal bar with a white arrow: 'EFFICIENT POWER' (up arrow), 'PRECISION MEASUREMENT' (down arrow), 'RELIABLE CONNECTIVITY' (down arrow), and 'ROBUST PROTECTION' (down arrow). Below these are five white list items: 'Buck', 'Boost', 'Buck-Boost', 'LDO', and 'Continua', each with a right-pointing chevron. At the bottom is a dark blue navigation bar with five icons and labels: 'Smart selector' (list icon), 'Newsfeed' (document icon), 'Menu' (Maxim 'M' logo), 'Notification' (bell icon), and 'Favorites' (star icon).

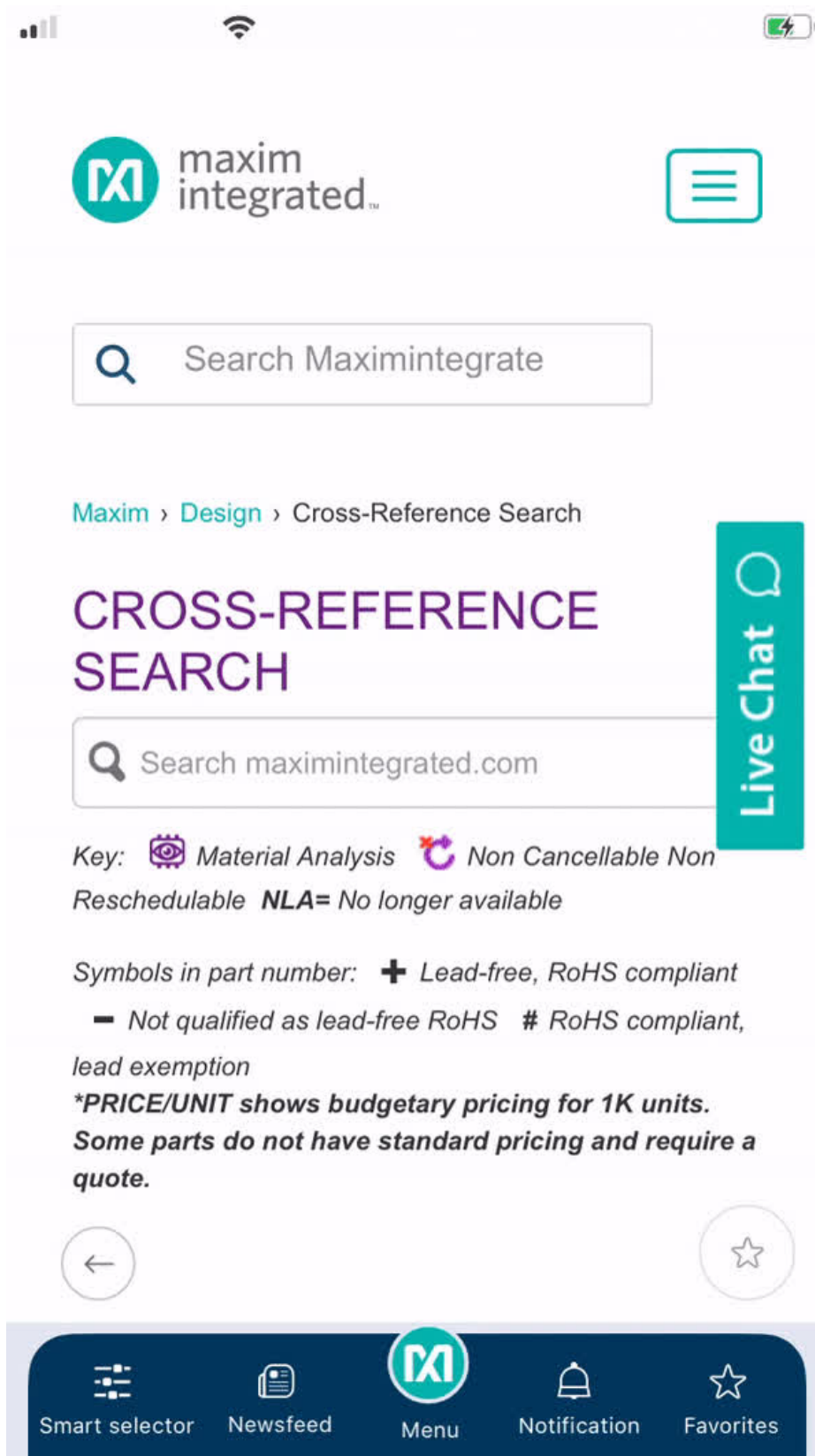
Normally when looking for new parts on Maxim's website (or a distributor website) you would first indicate that you're looking for, say, a boost converter and then you'd filter by specification **"Well, I have to make sure it can take between 2.5 volts and 5 volts and I need it to give me at least 3 volts output, and I need about 200 milli-amps output."**

When you search, use the filtering tools to pare down the large quantities of parts to a half dozen or so. Then you might star some as you're going through them and then look at them in detail later when you want to look at the datasheets in more detail. Star which ones you want, they'll show up in your Favorites!

Profile & Leaderboard

There's also a profile, and, a leaderboard. When you watch videos or order samples or look up datasheets, you get points. You can check out leaderboards and if you register, you'll be added if you'd like.

Cross References



One more thing, I want to show you the cross-references. This is kind of handy: sometimes I want a part that's similar to another part but maybe that part is discontinued, or I want something with different specifications or pricing!

So let's say that I want a Maxim ADC and I'm used to using the TI ADS series of ADCs. Open up the **Cross Reference** menu and you can type in part of a part number. You don't need to type out the full part number, just the first 5 digits.

The apps will search it's database and give you a few options. So if you're using the ADS1146, you might be interested in the Maxim 1415 for example.

People who watch Desk of Ladyada know I say "Always get multiple sources for your components so if something happens to your supplier, or it's unavailable, or the lead time is really long, you have an alternative." This is a good tool for that!

