EconOscillators: Frequently Asked Questions

This application brief provides a basic overview of the DS1065, DS1073, and DS1075 EconOscillators. It describes basic architecture/frequency options and also describes the DS1075K EconOscillator Evaluation/Programming Kit. It details what can and cannot be changed by the customer and details the requirements for obtaining specially programmed EconOscillators from the factory.

How Can I Get A DS1073, DS1075, Or DS1065 To Evaluate?

Free samples are available on any EconOscillator^{TM} in stock. The fastest method is to send us an e-mail at the factory and request a sample pack. The standard sample pack contains a DS1075M-100 and a DS1075Z-100. If you want another frequency, base part number, or package, please include this information in your e-mail request.

If you aren't sure of the part number, include a description of what you want and we will contact you with information on what is available to suit your needs. If you need a frequency not listed in our standard frequencies list, contact the factory.

How About Industrial Temperature Range?

Presently, the DS1075-IND is available for operation over the industrial temperature range. It is functionally similar to and pin-compatible with the standard DS1075, although accuracy specifications have been relaxed. We expect to be able to offer other industrial temperature range devices in the future. Contact us for immediate needs.

Can I Achieve Crystal Accuracy With The DS1075?

You can still use all the features of the DS1075 while improving the accuracy by adding a crystal (up to 25MHz) as a reference. Also, existing external clocks up to 50MHz may be applied to the DS1073 or the DS1075 and prescaled to any desired frequency within the limitations of the device. Lower frequency crystals can be used with these devices to make a low-power clock oscillator. For example, lab tests at Dallas Semiconductor showed that a 1MHz crystal prescaled to 50kHz

used 240µA of current at room temperature. We are presently evaluating crystals for operation at lower frequency ranges.

Where Can I Get More Information?

The following information is available on this website.

[DS1075 News Release](#)
[EconOscillator Family News Release](#)
[DS1065 Product Announcement](#)
[DS1075-IND Product Announcement](#)
[DS1073 Product Announcement](#)
[DS1075 Product Announcement](#)
[DS1075 Data Sheet](#)
[DS1073 Data Sheet](#)
[DS1065 Data Sheet](#)
[DS1075-IND Data Sheet](#)
[Tech Brief 9](#)
[Tech Brief 11](#)
[Tech Brief 12](#)
[Tech Brief 13](#)
[Tech Brief 16](#)
[Tech Brief 33](#)

What EconOscillator Devices Are Available?

Three devices are currently available from stock:

- DS1065 EconOscillator/Divider - Single, programmable, fixed-frequency output, 1-Wire® interface, 5V power, TO-92 package.
- DS1073 3V EconOscillator/Divider - Dual, programmable, fixed-frequency outputs, 1-Wire interface, 3V power, external power-down, 8-pin DIP package.
- DS1075 EconOscillator/Divider - Dual, programmable, fixed-frequency outputs, 1-Wire interface, 5V down, 8-pin DIP and 8-pin SO packages. An industrial temp range version (DS1075-IND) is also available.

What Is Meant By A "special device"?

Any frequency that is not listed in our Selection Guide is considered special. Dallas

Semiconductor will custom program devices to a customer's requirements. Certain minimum purchases apply, depending on the type of programming needed.

- Simple: Products that have one of the standard master oscillator frequencies, but non-standard values are chosen for the dividers and function select bits. A 1,000 piece minimum purchase applies. Dallas Semiconductor will then make this a standard part available to all customers. In some cases, devices will be held in stock.
- Complex: Products that require a non-standard master oscillator frequency. These are frequencies that require a modification of the master frequency or use of a master frequency that is not already available. A 10,000 piece minimum purchase applies. Dallas Semiconductor will then make this a standard part available to all customers. In some cases, devices will be held in stock.

What Are The Requirements For Dallas Semiconductor To support A Custom Opportunity?

There is a minimum volume requirement. In general, the minimum volume for any custom programmed EconOscillator is 1,000 pieces.

What Devices Does The Development Kit Support?

DS1075K Evaluation Kits support all existing devices and are available for immediate shipment. A new kit (The DS1070K) is in development and will be released soon. The DS1070K will support all existing devices as well as devices in development. Contact the factory on status of this kit and of new devices in development.

What About 3V Operation?

The DS1073 is a 3V device and is now available.

What Is The Range Of Master Frequencies Available For Complex Devices?

At the moment, the range is 60MHz to 110MHz. It is quite possible that we will extend this range later. Please contact us for specific requirements.

What Types Of EconOscillator Products Are In Development?

Dallas Semiconductor is developing interesting variations for the EconOscillator family including 2-wire program-on-the-fly Pulse Width Modulators and Frequency Synthesizers. Contact the factory for availability on these new parts. Also, if there is something you want we don't have, tell us about it. We're always open to new possibilities to consider for new designs.

Can I Get Any Frequency In The 30kHz· 10MHz Range?

No, but any one of many discrete frequencies within that range can be programmed using the development kit. These frequencies are integer sub-multiples of the reference frequency in the range 1· 13. If the on-chip prescaler is used, this range can be extended by a factor of two or four. An Excel spreadsheet is available that calculates the closest available frequencies to the one requested, and also has tables listing all the available frequencies. This spreadsheet is included in the software shipped with development kits.

What Development Tools Are Available?

The DS1075K Oscillator Evaluation/Programming Kit allows you to experiment and program the DS1065, DS1073, and DS1075 in a laboratory environment.

How Can I Get A Frequency Not Listed In The Tables (i.e., Not An Integer Sub-Multiple Of The Four Master Frequencies)?

Any frequency in the 30kHz· 10MHz range can be obtained by modifying the master reference frequency to the desired value. This can be programmed at the factory on a custom basis.

How Can I Program The Master Frequency Myself?

Due to temperature compensation requirements, different master frequencies can only be programmed by the factory. However, the user can program the values of the programmable divider, the prescaler, and various functional parameters (enable reference output, function of select pin, etc.).

More Information

DS1065: QuickView -- Full (PDF) Data Sheet -- Free Samples

DS1073: QuickView -- Full (PDF) Data Sheet -- Free Samples

DS1075: QuickView -- Full (PDF) Data Sheet -- Free Samples

DS1075K: QuickView -- Full (PDF) Data Sheet