

# Solar Inverter Gateways Made Simple with AM335x



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Solar inverter gateways are an important piece of the overall solar inverter solution; they provide a way for the system owner (who may be a home user or a large solar plant) to monitor production and panel efficiency, receive alerts about system health, and push firmware updates from manufacturers to the solar inverters themselves. Solar inverter gateways may even be used in the future to communicate with the grid through protocols such as [IEC61850](#), as discussed in [our blog for TI's On the Grid blog](#).

Solar inverter gateways are commonly found as standalone units and can also be built in to the inverters themselves, depending on the overall architecture of the photovoltaic system. Traditional solar inverters, which serve groups of solar panels, may benefit from integrated solar inverter gateways, where there is one gateway per inverter, since the overall number of inverters may be low. However, many photovoltaic systems are adopting micro-inverters, where there is one inverter per solar panel, due to their increased overall energy generation efficiency. With this model it would be costly and inefficient to have one gateway per micro-inverter, so standalone gateways which can connect to multiple inverters are the preferred solution. Some solar inverter gateways on the market today can connect to up to 600 micro-inverters. [The Solar inverter gateway development platform TI Design reference design \(TIDEP0044\)](#) featuring a [Sitara™ AM335x processor](#) is a good solution for either integrated or standalone solar inverter gateways, and describes how to quickly get started building a solar inverter gateway design using TI's [TMDXEVM3358](#).



Check out the [TI Design](#) for more information on how AM335x processors can be used in solar inverter gateway applications, and be sure to also watch the “[Green Power Grid: Measure, Control, Communicate](#)” webinar from TI and Nuvation, where we discussed challenges and solutions for the grid as it incorporates more and more renewable energy sources.

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