

## A-Core Container

# Mexico grid-connected inverter



## Overview

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There is no Mexican production of grid-connected PV inverters. There are several battery manufacturers and three manufacturers of charge controllers. What is the control design of a grid connected inverter?

The control design of this type of inverter may be challenging as several algorithms are required to run the inverter. This reference design uses the C2000 microcontroller (MCU) family of devices to implement control of a grid connected inverter with output current control.

Can a grid connected inverter be left unattended?

Do not leave the design powered when unattended. Grid connected inverters (GCI) are commonly used in applications such as photovoltaic inverters to generate a regulated AC current to feed into the grid. The control design of this type of inverter may be challenging as several algorithms are required to run the inverter.

What is a grid-tied inverter?

The main constraint of grid-tied inverter is current and it is inserted at a certain range from the source of photovoltaic. With the help of DC/DC converter the photovoltaic array voltage is increased to the necessary level based on voltage intensity of grid.

How do I know if a grid connected inverter is working?

Observe the current that is shared on the load by the inverter, and the AC source. Spiking around the zero crossing can occur. These spikes may be mitigated by the user by selecting a different inverter configuration, or using a different modulation scheme. The verification of the grid connected mode of operation is complete.

What makes a good inverter design?

High-efficiency, low THD, and intuitive software make this design attractive for

engineers working on an inverter design for UPS and alternative energy applications such as PV inverters, grid storage, and micro grids. The hardware and software available with this reference design accelerate time to market.

How does a PV inverter state machine work?

The inverter state machine then sequences to checking for DC voltage. To feed current into the grid the DC voltage (which in case of PV inverters is provided from the panel or panel plus some conditioning circuit), it must be greater than the peak of the AC voltage connected at the output of the inverter.

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