Yitran Technologies Ltd.

Bringing Powerline Communication (PLC) chips & solutions for the Solar Panel & Microinverters

The presentation outline

- Introduction to Solar Microinverters and Powerline Communication
- Solar Microinverters and the Role of Powerline Communication (PLC)
- Introduction to modern solar power technology.
- A shift from traditional central inverters to microinverters, where each solar panel has its own inverter
- Highlight the importance of communication in solar systems for monitoring and control.

From Central Inverters to Microinverters

- **Traditional Approach**: Central inverter serves multiple solar panels, consolidating power from an entire solar array.
- **Modern Approach**: One **microinverter per solar panel** to convert DC to AC at the panel level.
- **Benefits of Microinverters**: Increased system efficiency.
- **Fault tolerance:** A failure in one panel doesn't affect the entire system.
- Individual monitoring and control of each panel for optimization.

Microinverters: Ideal for Single-Home Solar Systems

- Single-home solar installations are the main application for microinverters.
- Each panel operates independently, making it easier to adapt to shade, dirt, or panel issues. Benefits of Microinverters: Increased system efficiency.
- Microinverters optimize power production for each panel, leading to better energy yield.

The Role of Communication in Solar Microinverters

- **Monitoring:** Need to track the performance of each panel.
- **Control:** Ability to manage and adjust energy production remotely.
- Each microinverter requires data communication to provide real-time feedback on:
  - ✓ Power output.
  - ✓ Panel status.
  - ✓ Fault detection.

Challenges in Microinverter Communication

- Solar panels and microinverters are often far apart.
- **Power wiring** carries both electricity and data signals, creating a challenging environment for communication.
- Traditional communication methods struggle with the **noise** and **interference** in power lines.
- **Key challenge:** Ensuring reliable data transfer over the same powerlines used for energy transmission.

Powerline Communication (PLC) as a Solution

- Powerline Communication (PLC) leverages existing power wiring to transmit data.
- Microinverters generate significant **electrical noise**, making reliable communication difficult.
- **Why PLC?**
  - Eliminates the need for additional wiring, simplifying installation
  - Efficient use of existing infrastructure.
- However, not all PLC solutions are equipped to handle the harsh powerline conditions found in solar microinverter systems.

Yitran Technologies: Tailored PLC Solutions for Solar Microinverters

- **Yitran Technologies** offers advanced PLC chips and solutions specifically designed for tough powerline environments.

- Yitran's DCSK Technology Proven expertise in dealing with **challenging power grid media.**

Yitran's DCSK Advantages:

✓ High-performance data transfer through noisy powerlines.
✓ Designed to handle harsh power grid conditions, making it suitable for solar microinverter applications.
✓ Low-Cost solution, enabling more affordable deployment of solar microinverter systems.

Yitran PLC: Designed for the Toughest Power Grids

- **DCSK Key Features:**
  - Robust noise immunity.
  - Low power consumption, suitable for energy-efficient devices like microinverters.
  - A cost-effective solution suitable for both small and large-scale solar installations.

- **Applications:**
  - Reliable communication between each microinverter and the central monitoring system.
  - Ensures accurate real-time data for optimized solar panel performance.

Conclusion: Yitran's PLC - The Best Communication Solution for Solar Microinverters

- The transition to microinverters demands reliable, efficient communication systems.
- **Powerline Communication (PLC)** is the most efficient solution, using existing wiring.
- **Yitran Technologies** provides advanced PLC chips that overcome the challenges of noisy powerlines, ensuring reliable communication for microinverters.
- **DCSK PLC** is a **Low-Power** and **Affordable** solution that makes solar power systems both efficient and cost effective
- **Summary**:
  - Microinverters increase efficiency in solar systems.
  - Communication is essential for monitoring and controlling solar systems.
  - **Yitran's DCSK PLC technology** is the perfect match for solving communication challenges in solar

Thank You