Introduction to IT900

The Next Generation of IT700, DCSK Turbo up to 500Kbps

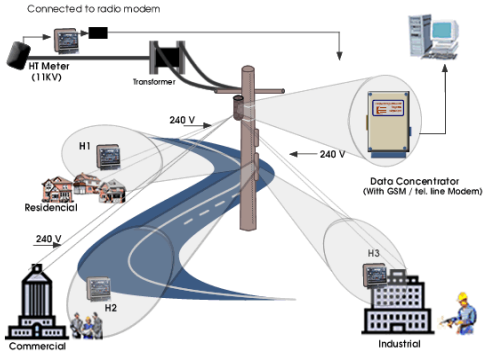
YITRAN COMMUNICATIONS

IT900 Main Features

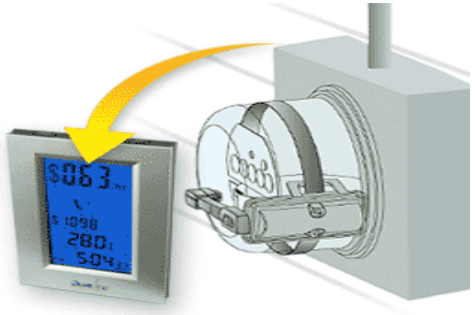
- Low-cost Powerline Communication (PLC) modem and application solution in a single chip
- Data rates up to 500 Kbps FCC and ARIB, 150 Kbps in CENELEC-A band and 50 Kbps in CENELEC-B
- Transparent interface for IPv6, IPv4, 6lowpan and support for SE 2.0 (future release)
- Implements DCSK and DCSK Turbo Modulation - Natural extension to DCSK based technology
- HomePlug® Command and Control ready - Fully backward compatible with IT700 and IT800 Series
- Incorporates Yitran's high performance Data Link Layer (DLL), Network Protocol (Y-Net) and extremely robust Physical Layer (PHY)
- High in-phase & cross-phase connectivity. Full coverage even under adverse line conditions.
- Embedded AFE (external Amplifier is not required!)

Target Applications

- **Smart Grid Applications:**
  - Automated Meter Reading (AMR)
  - Advanced Meter Management (AMM)
  - Demand Response & Real-Time pricing



- **Smart Home & Energy Management:**
  - Home & Building Automation
  - Home Appliance Control & Diagnostics
  - Security and Access Control
  - Environmental Control

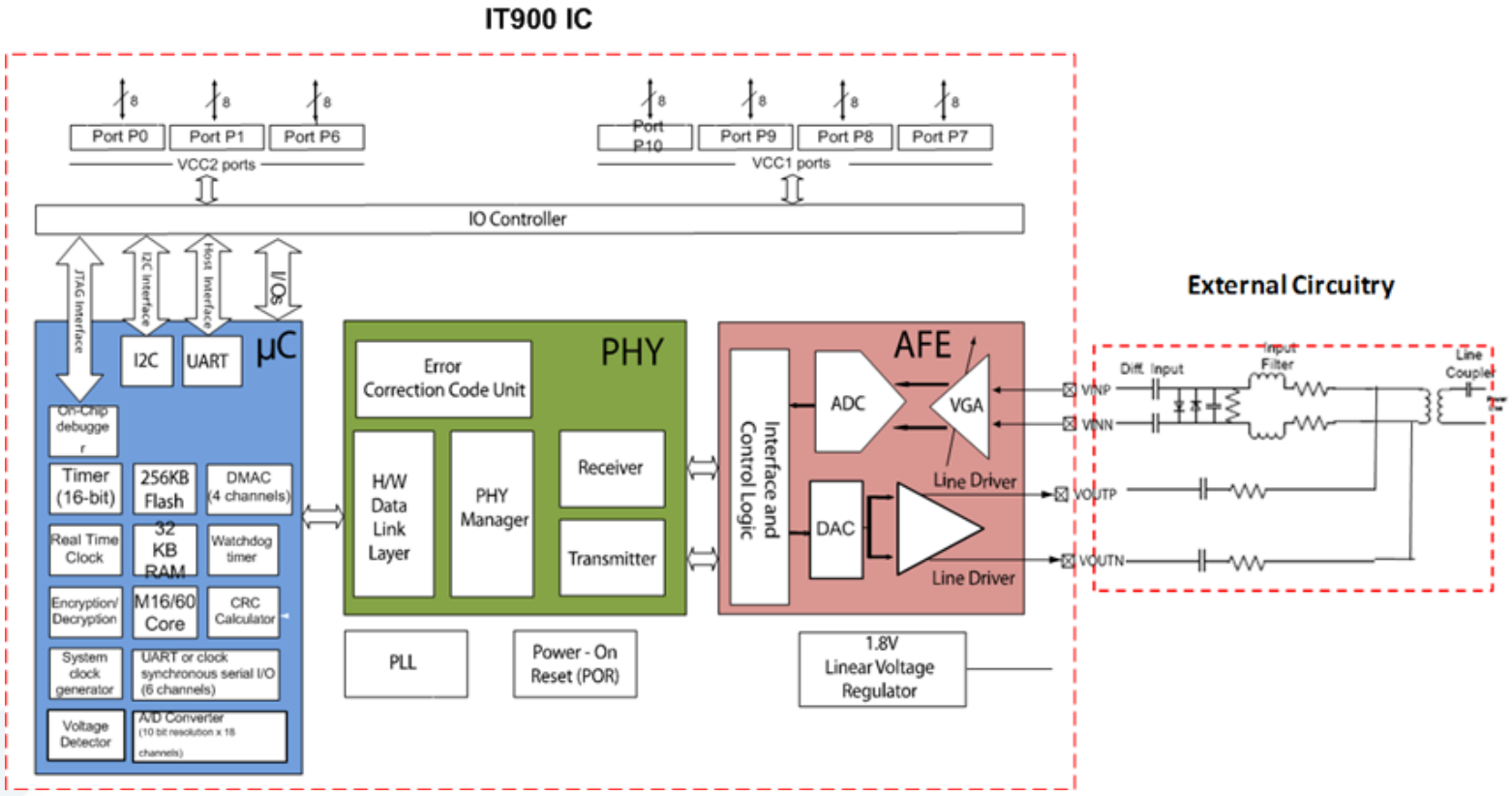


- **Commercial Applications:**
  - Street Light Control
  - Solar Panels Monitoring
  - Vending Machine Control
  - Signage Control

IT900 - DCSK Turbo Specification

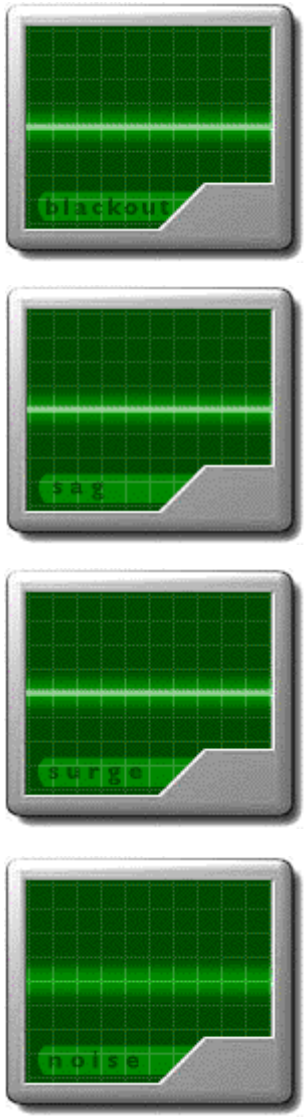
- Physical Layer Rate: 500 kbps FCC,150 kbps CA and 50 kbps CB
- Dynamic Range: >100dB
- SNR for AWGN < -7dB
- SNR for CW Noise < -40dB
- House Coverage ~ 100%
- Range > 2 Km
- Network Size: 2000 nodes
- Number of Networks: 1000
- Power Consumption in Rx < 300 mW
- Single supply voltage: 3.3V
- Package: 100pin LQFP with heat sink fin

IT900 Block Diagram



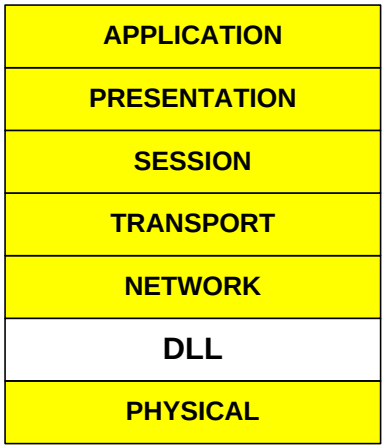
Physical Layer Basics

- Modulation: Spread Spectrum with QPSK/QAM
- Symbols: Spread Spectrum, fully compliant with worldwide regulations (FCC, CENELEC A&B, ARIB)
- Preamble: HomePlug C&C based variable length preamble
- Detector – Symbol Correlation
- Interleaving – Similar as HomePlug C&C block interleaver
- Coding/Encoding – Similar as HomePlug C&C block coder/encoder



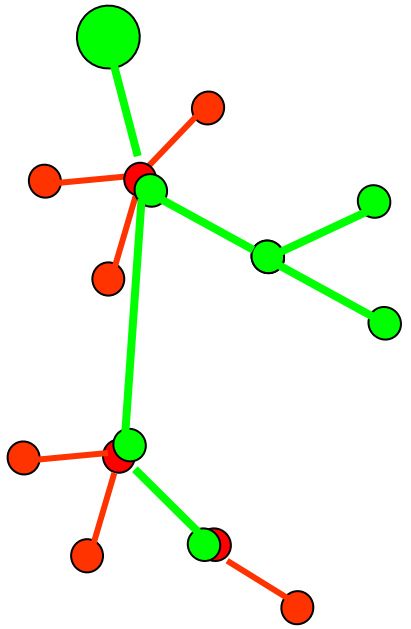
MAC Layer Basics

- Channel Access:
  - Adaptive Optimized CSMA/CA with Transmission Priority and Delay Control Mechanism.
- Auto Rate Control:
  - Selects Optimal Communication Rate Automatically
- Transmission Services:
  - Internetwork Unicast & Broadcast.
  - Intranetwork Unicast & Broadcast.
- Upper Layer Channel and Packet Monitoring
- Optional Security Suite (depending on layer model)
- Maximum Payload Length – 1760 bytes

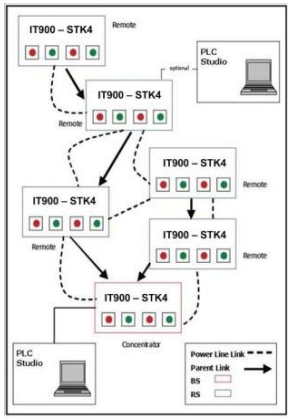


Network Layer Basics

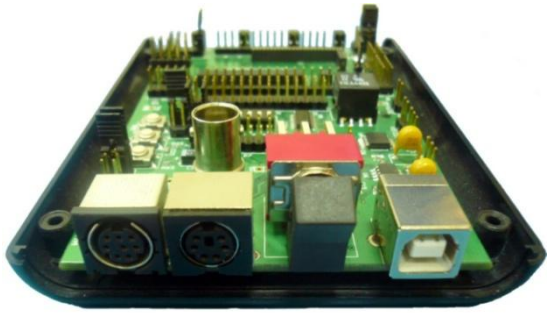
- Plug & Play Network Setup
- Selective and Secure Participation of Nodes
- Automatic Logical Network Creation
- Automatic Node Address Allocation
- Supports Multiple Networks
- Supports Mesh and Tree Topologies
- Master-Slave and Peer-to-Peer Network Configurations
- Automatic and Adaptive Routing Service
- Failure Detection

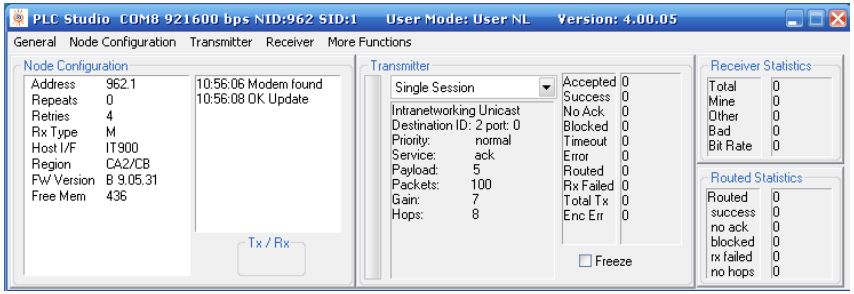


Development Tools



- YNET Evaluation & Development Kit
  - Allows seamless evaluation of PLC technology
  - Supports a variety of evaluation options
  - Available for FCC, CENELEC-A&B and ARIB bands
  - Full documentation package
  - Easy to use (5 minutes setup)
  - Provides enhanced platform for product development and verification
- PLC Studio PC application
- Application Code Reference
- Application HW Reference





Availability

1. IT900 is available **today** !
2. IT900 PIMs are available **today** !
3. STK available for evaluation and development.

Summary

- DCSK-Turbo Advantages:
  - Designed for PLC media.
  - Proven **best** performance for PLC.
  - Interoperates with HomePlug C&C.
  - Complies with world wide regulations.
- Narrow Band Advantages:
    - **Low** cost.
    - **Best** solution for low cost, low power and high performance.
- Natural Choice for both Command and Control and IP Applications.


Thank
Thank
You!
THANK You