![Lokawiz logo](Smart IoT Gateway)

LOKAWIZ

Smart IoT Gateway

www.lokawiz.com

Smart devices and smart solutions

info@lokawiz.com

Secure ING Boards

Introduction

Secure ING

- Secure IoT Network Gateway
- Secure data broker between two ends
- Use cases
  - Secure communication with IoT network devices
  - Securing IoT network from external attacks
  - Secure software update to specific hardware
  - Protocol conversion (minor protocol changes)
  - Data reframing/remapping, secure bridge between two different interfaces (limited)

Secure Internal Network

Advanced IOs

External Interface

Flash Memory
Lock, Protect

In-System Programming
AES, FlashLock®

Programming Interface

DES

RNG

Controller

CRC

Smart Card IC

FPGA
Security, Automotive

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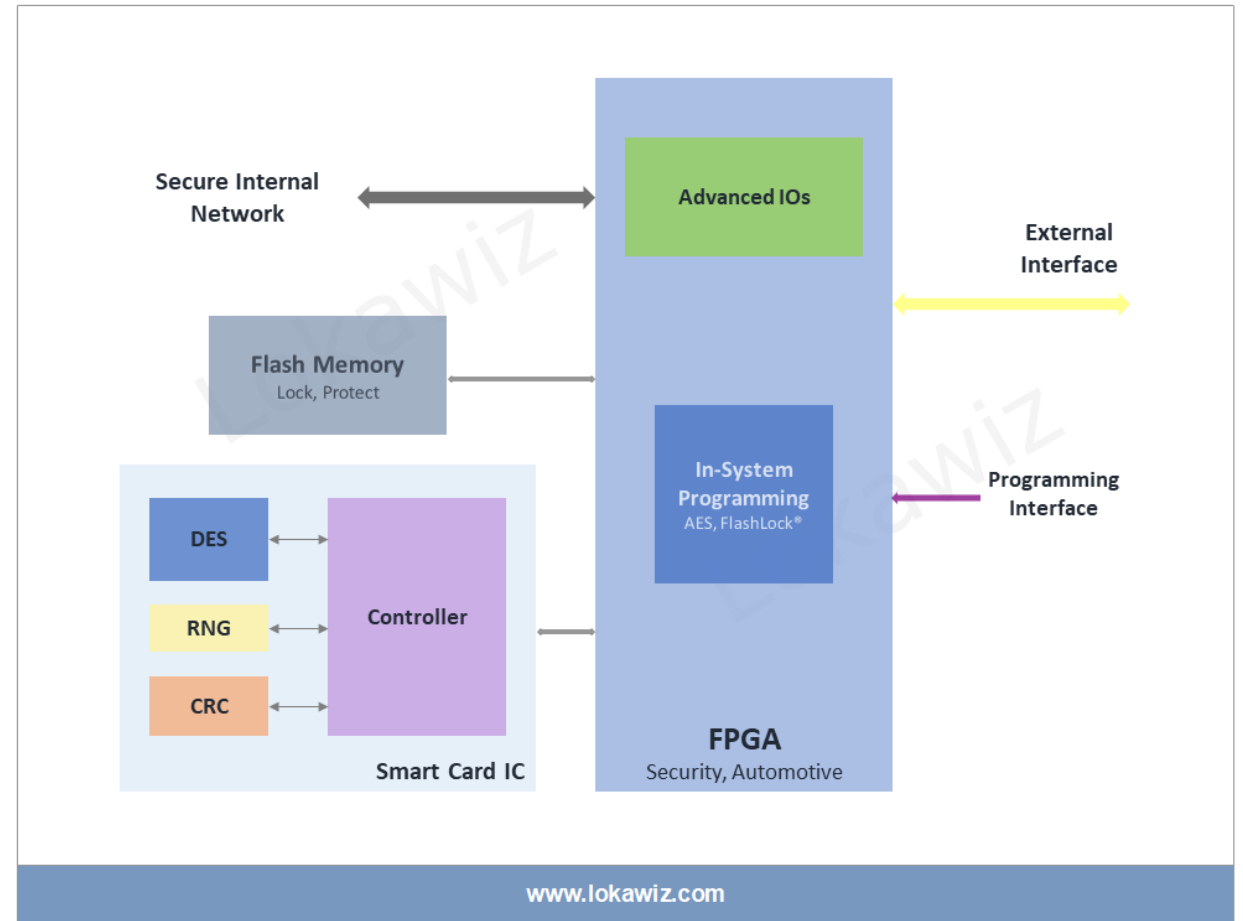
General

Features

- Size within 37x30mm^2
- Temperature Range -40-85°C
- On-board Modules
  - FPGA
  - Smart Card IC
  - Flash memory
  - Voltage Regulators
  - System Oscillators
  - Programmer connectors, Test points & Reset control
- Wide range of applications
  - IoT & Security
- Low Power (LP) Design

37 mm

30 mm

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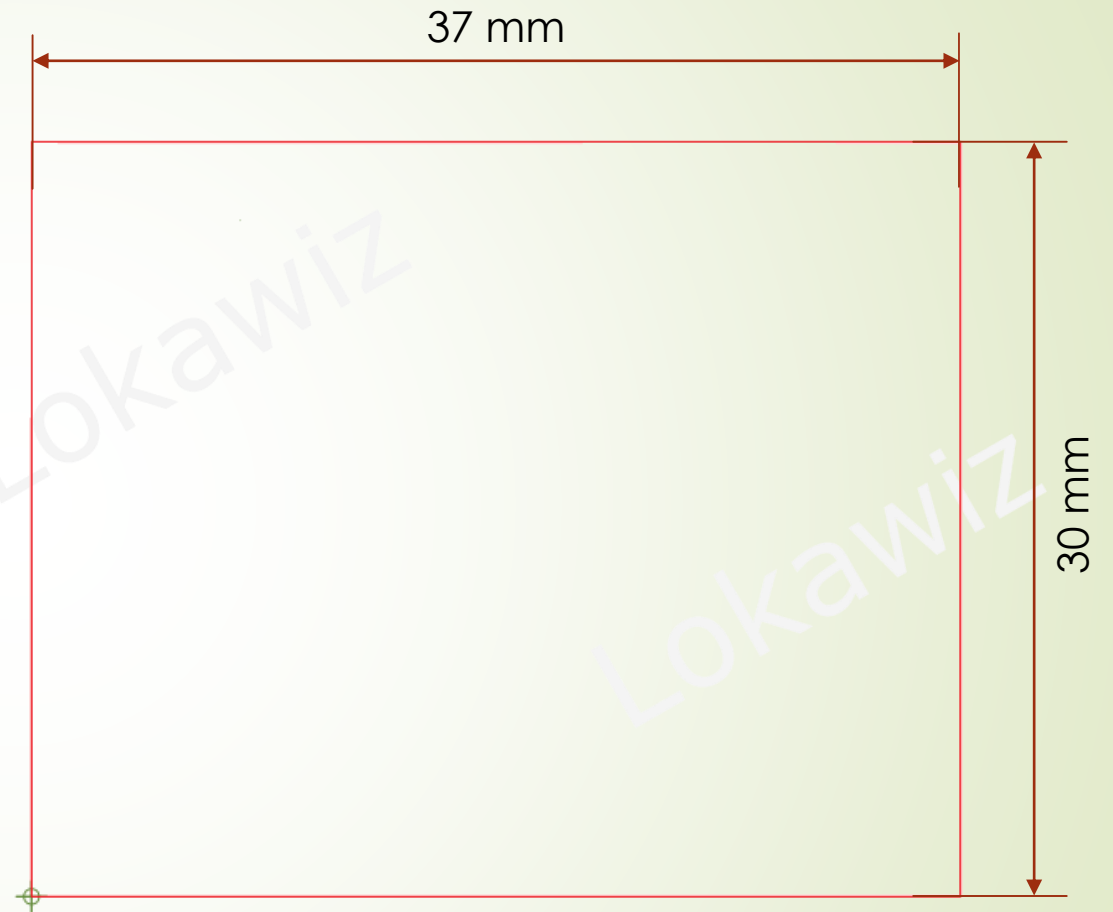
Modules

FPGA Core

- Selectable FPGA (Automotive)
    - System Gates 60/125/250K; RAM 18/36Kb; W/ Cortex-M1
- 350MHz with 66MHz 64Bit PCI
- In-System Programming with 128-Bit AES & FlashLock®
- Embedded Flash ROM (1Kb)
- Advanced I/O
    - 700 Mbps DDR; LVPECL, LVDS, B-LVDS and/or M-LVDS
    - Hot-Swappable, Cold-Sparing, Weak Pull-Up/Down
    - Programmable Slew/Drive
- FPGA Reset Switch
- 34 pin, 0.5mm pitch FFC/FPC connector with 25 GPIOs

FPGA (Automotive)

Reset Switch

GPIOs
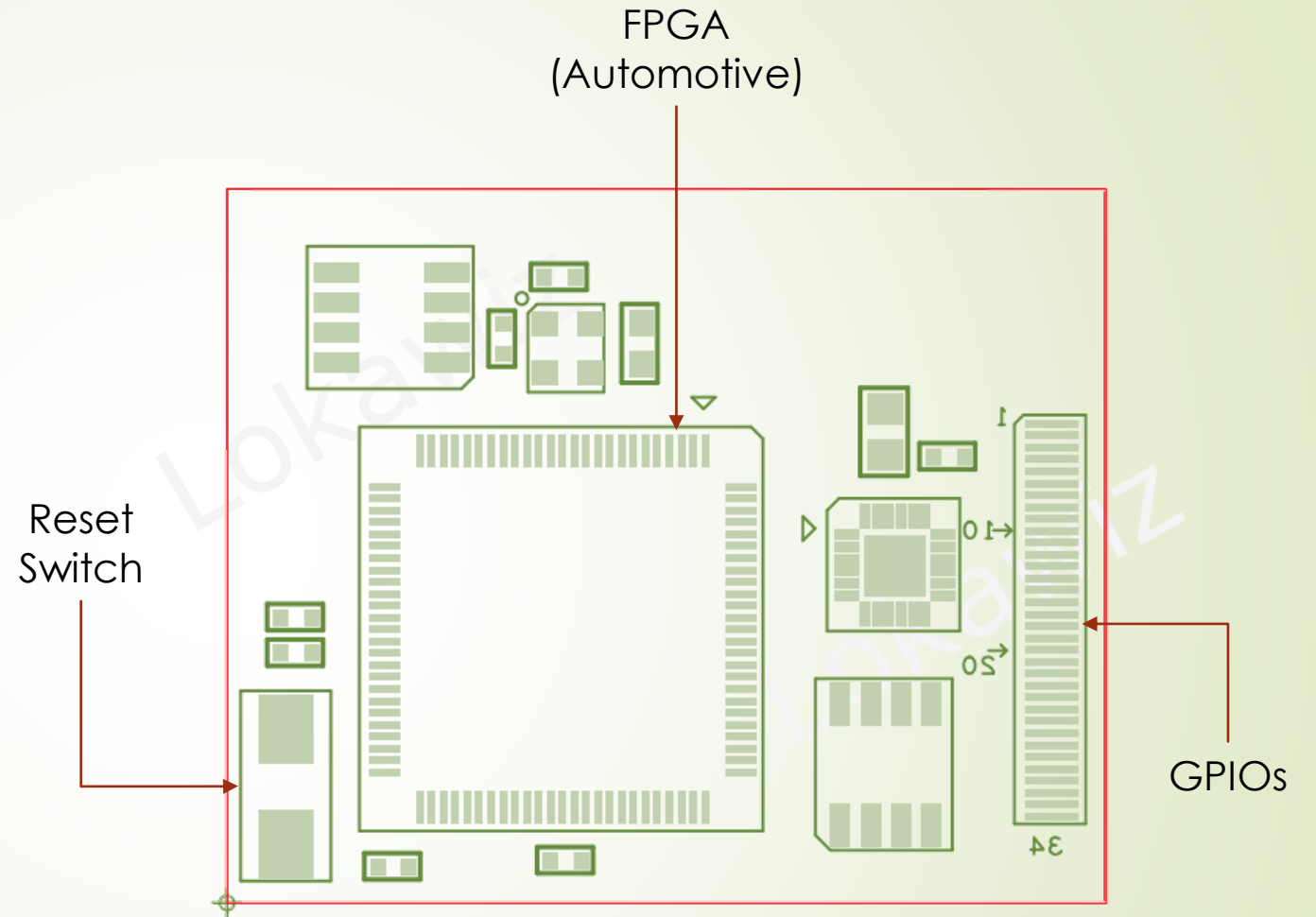
Modules

Smart Card IC

- Contact less and Contact IF
  - ISO14443 A, B (106-847kbps)
  - ISO7816-3, 8+ clk/etu baud
- Core features
  - 30MHz 80X51 CPU, low power modes, Idle (<100uA) & Stop
  - 8/16 bits Timers/Counters
  - CRC16 module ISO3309,13239
- Security features
  - DES/3DES (ECB/CBC/MAC)
  - FIPS140-2 tested RNG
  - ISO14443-3 unique ID (1,7,10B)
  - Secure contact, contact less on-chip memory manager


Smart Card IC
Dual package
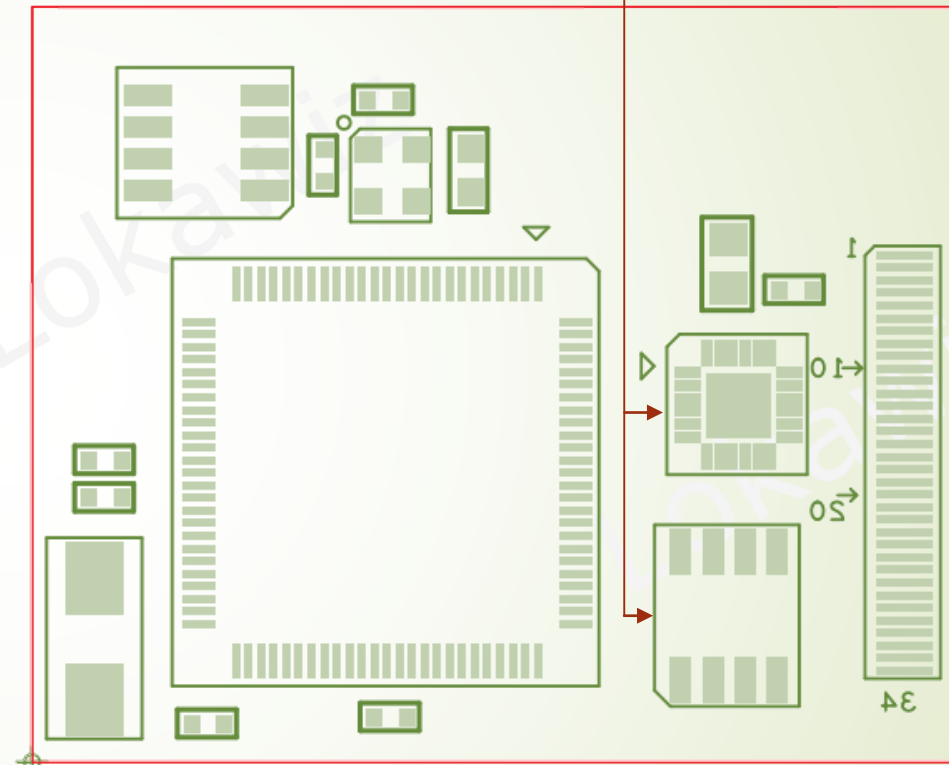
Modules

Smart Card IC (Cont.)

- Memory
  - 128KB General Purpose Non Volatile Memory (GPNVM)
  - 15Yr data retention, endurance >100 cycles
  - 256B+2560B RAMs (I+X)
  - DMA (CRC, DES & Compare)
  - Secure Management, Fast Byte programming
  - LOG2PHY, Page Smart erase
- Development tools
  - Integrated with KEIL uVison3/4,
  - Emulator and ISO14443-3/4 Type A&B library (low level)
- IC package QFN/SO8/Both

Smart Card IC
Dual package
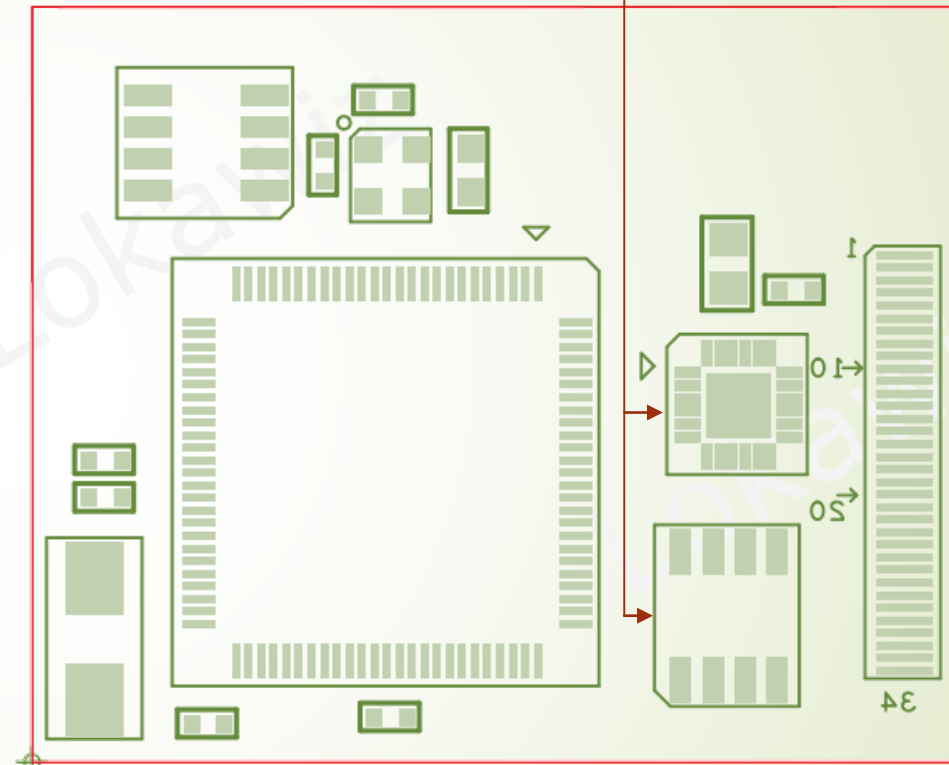
Modules

SPI Flash Memory

- Core Features
    - Standard/dual/quad SPI & QPI
    - 100K+ erase/program cycles, 20+Yr data retention
    - LP: 4mA active,<1μA off
- Advanced Security features
    - Unique ID, write protect, one time program lock/protection
    - Security registers, Power supply lock-down

Oscillator

- 40 MHz On-board Oscillator
    - Extremely low jitter
    - Frequency Resolution in μHz
    - Stabilities to ± 20 PPM

SPI Flash Memory

Oscillator
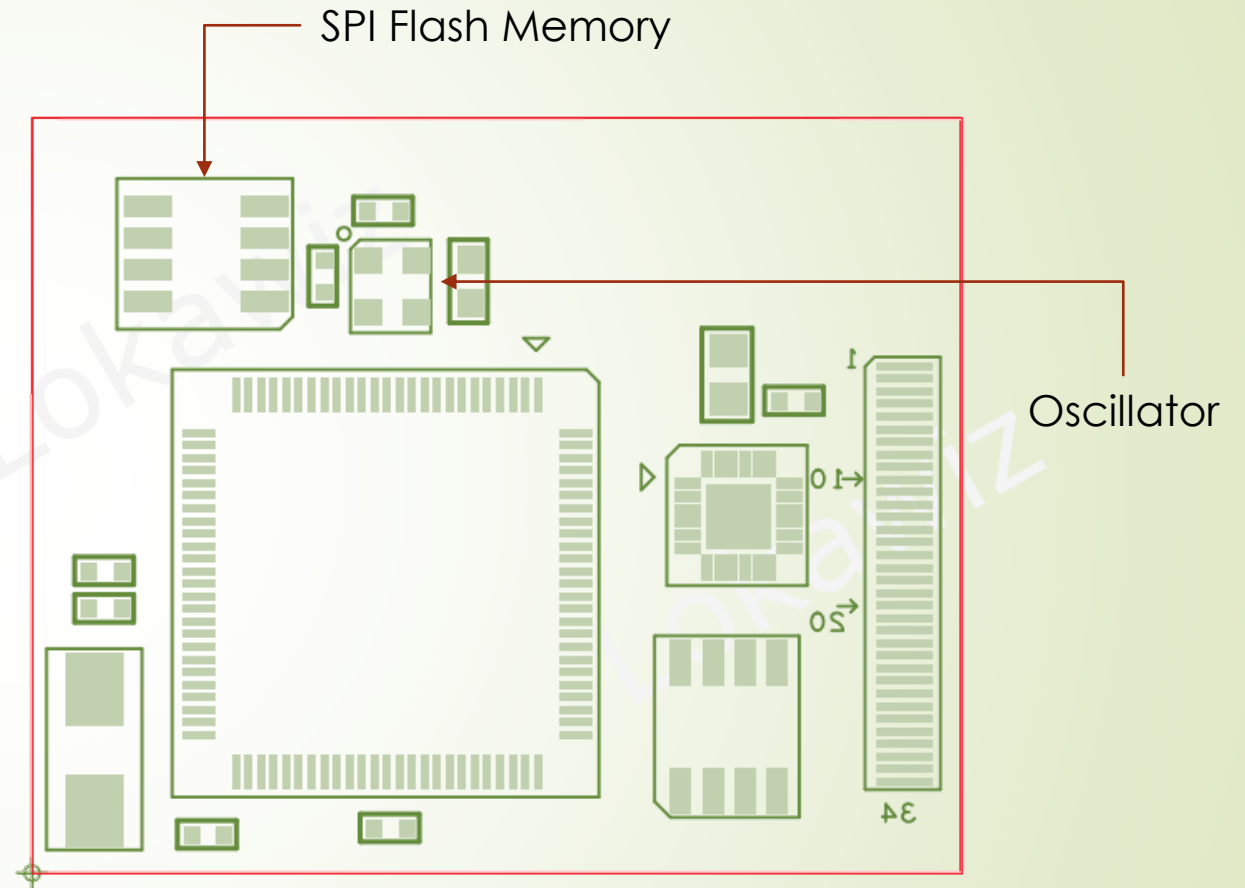
Modules

Miscellaneous

- FPGA JTAG Programmer Connector
- Smart Card IC Program and Test connector
- Voltage Regulators
  - 3.3V & 1.5V output
  - High precision, accuracy ±2%
  - Low Power: 1µA typ.
  - Low dropout: 250mV@100mA
  - Current limit protection
- SMD Test Points
  - 32 test points for FPGA Testing

FPGA Programmer Connector

Smart Card IC Program/Test Connector

Voltage Regulators

SMD Test Points
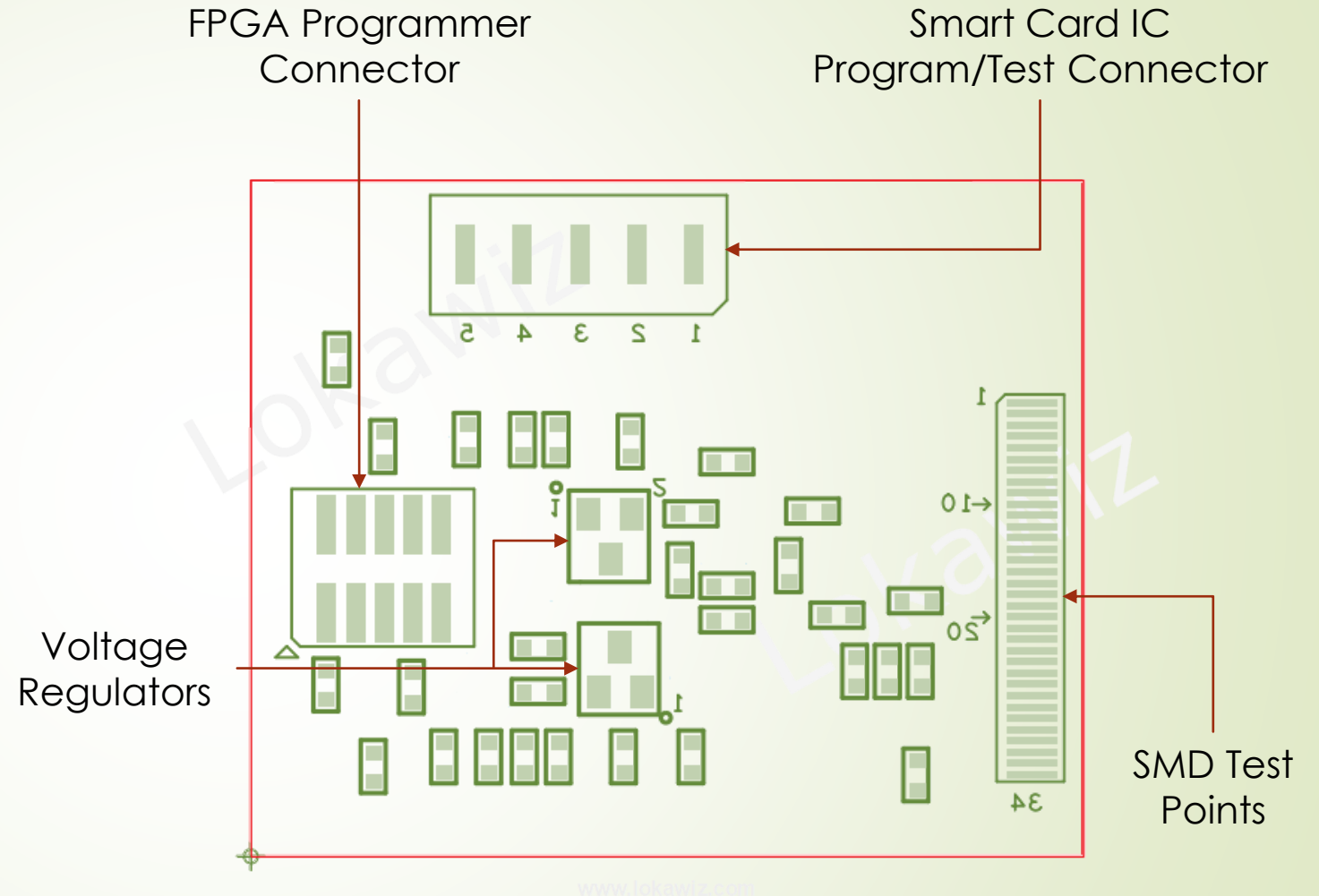
Contact

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Thank You