NISE105-CNC Gateway

Industrial Internet of Machines Gateway

Main Features

- Plug-and-play CNC gateway to integrate controllers to the industrial internet of machines
- Support one-click connection to mainstream CNC controllers such as Fanuc, Mitsubishi, Heindenhain, Siemens
- Collect important machine information including position, coordinate offsets, alarm etc.
- Connecting max. 10 CNC controllers via TCP/IP.
- Connect to on-demand combination of controllers with one CNC gateway
- Transfer data to iAT2000 SCADA or MySQL/SQLite database
- Provide dashboard interface to monitor machine status

Product Overview

NISE105-CNC Gateway provides a convenient interface to integrate major CNC controllers into NEXCOM I4.0 Solution Network. The NEXCOM developed software contains APIs to gather data from the non-open CNC systems, and then use SQL software to actively transfer data to database. The Gateway is a once-for-all solution for all different CNC controllers in the market, which greatly reduce the effort required for system Integrators to develop various connection interfaces by their own. With the crucial device, SI can focus more on monitoring and analysis development; eventually maximize the effectiveness of factory automation.

Software Feature

Controller Connectivity

- A universal gateway to connect major of CNC controllers
- Fanuc: 0i-B/0i-C/0i-D/16i/18i/ 21i/31i/32i
- Mitsubishi: M70/M700/M80/M800
- HEINDENHAIN: iTNC530
- Siemens: 828D/840D

CNC Data Collection

- NC file
  - Support NC file transfer to and from CNC controller
  - Verify the part under production matches MES
  - Record the production history of every machine
- Controller status
  - Allow plant manager to have full awareness of all machine status
  - Record the complete status of all time for analysis
- Uptime analysis
  - Display uptime and graphical result to improve plant efficiency
- Alarm & history
  - Trace alarm history of each machine for review and optimization
- Servo spindle load
  - Monitor the reasonable working load to avoid excess temperature on machines, and elongate machine lifespan
- Maintenance management
  - Couple with CNC controller's self-detection function to predict maintenance schedule and prevent unexpected downtime
- Tool life management
  - Manage tool life to foresee the timing of tool replacement
  - Reduce number of defect parts cause by tool failure

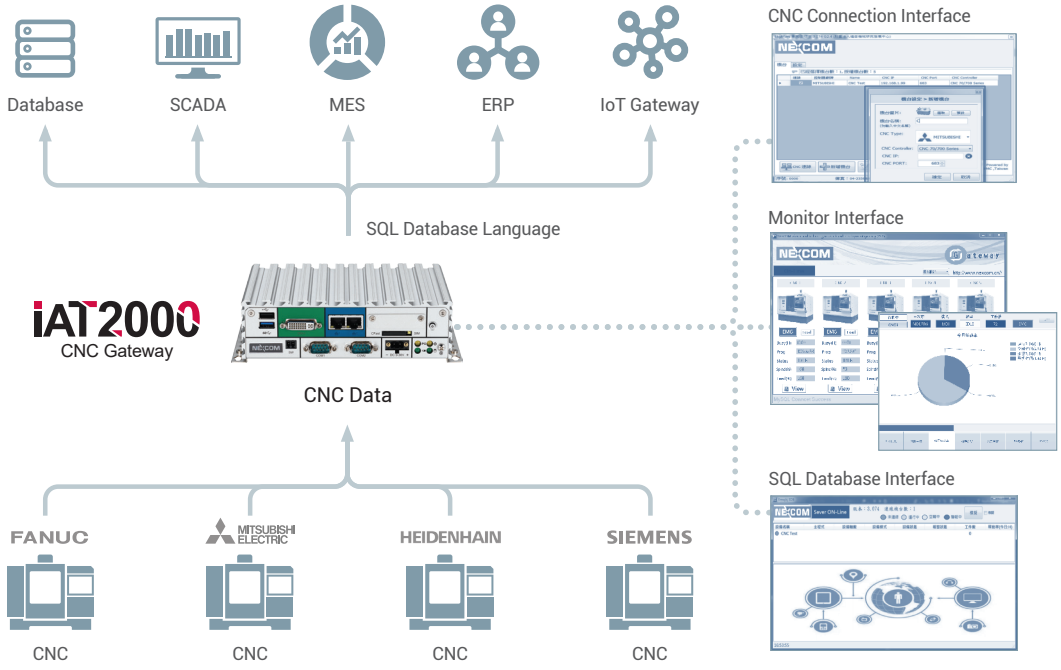
Internal SQL Interface

- Data management
  - Collected data is stored in CNC Gateway as a buffer database in SQL format
  - The buffer database is available for SCADA, main Database, and other applications to retrieve

Cloud Service

- Cloud service compatible with an additional IoT gateway

CNC Gateway Architecture



Hardware Specification

Communication Protocols
- CNC protocol
- SQL form database

System Configuration
- Intel Atom® E3826 dual-core 1.46GHz
- 4GB DDR3L system memory
- 128GB SATA3 SSD storage
- Windows 7 Pro 64-bit
- iAT2000 CNC Gateway software package
  - CNC protocol interface
  - CNC data SQL interface

I/O Interface
- 1 x External CFast socket
- 1 x SIM card holder
- 2 x Intel® I210-IT GbE LAN ports
- 2 x USB 2.0 (500mA per each), 1 x USB 3.0 (900mA)
- 4 x DB9 for COM1 ~ COM4
- 1 x 2-pin DC input, support + 9 to 30VDC input
- 1 x HDMI & 1 x DVI-I DisplayPort
- 2 x Antenna holes for optional Wi-Fi/3.5G antenna
- 1 x Optional mini-PCIe Wi-Fi/3.5G for wireless connectivity

Certification
- CE
- FCC Class A

Power & Dimension
- Power input: +9VDC to 30VDC, Max. 30W power consumption
- Dimension: 206 x 131 x 60

Ordering Information

- **NISE105-CNC Gateway_5 (P/N: 10105CNCGW5XR)**
  iAT2000 CNC-5 Gateway Windows software (P/N: 88J00010512X0)
  (connect up to 5 CNC controllers)