IoT Gateway

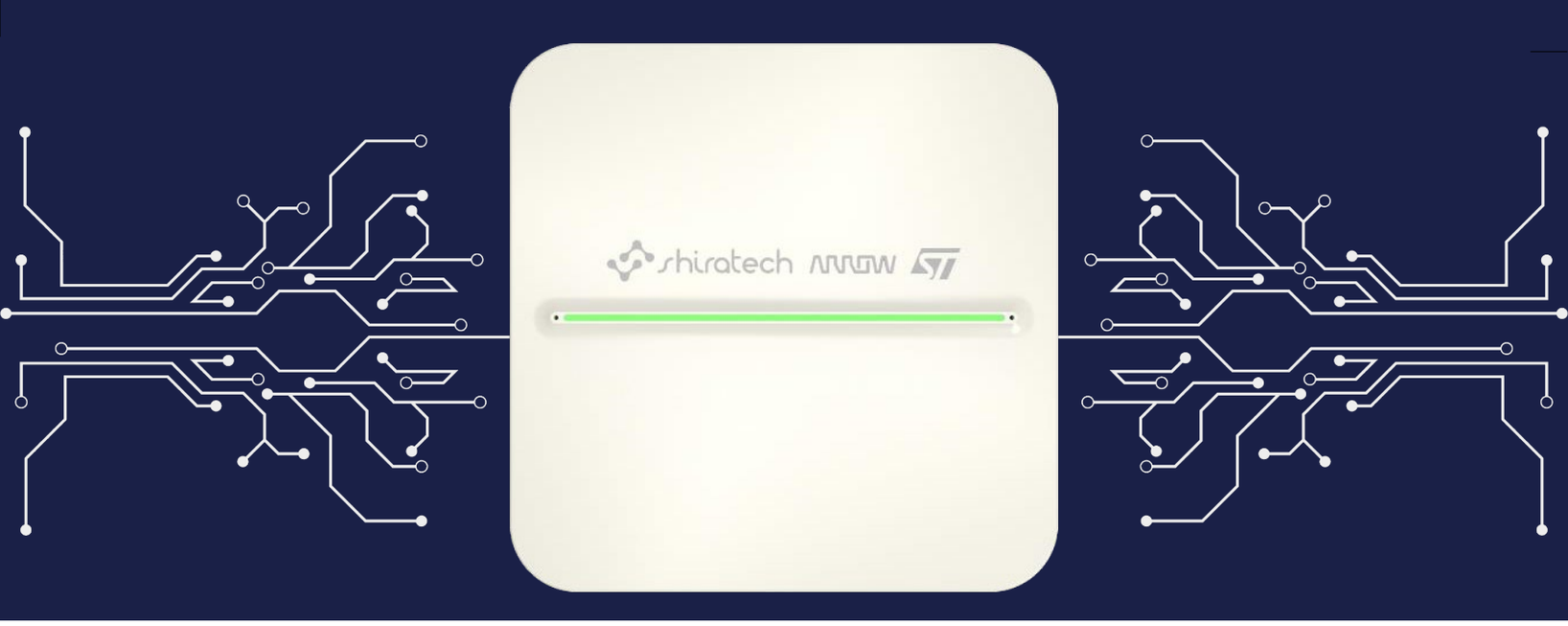
A fast and reliable IoT gateway with integrated sensors and high-performance microphones for monitoring air quality, which also enables you to connect your own sensors and devices directly to the IoT Cloud over various standardized interfaces.

Connectivity **Built-in LTE & WIFI**
Memory **256 mb**
Operating System **Linux (Linaro Debian)**
CPU **32-bit dual-core Arm® Cortex®-A7**
+ 32-bit Arm® Cortex®-M4 with FPU/MPU

KEY FEATURES

1. CPU - STM32MP157 MPU
2. LTE - Quectel BG96
3. WIFI/BLUETOOTH – Murata LBEE5KL1DX RF TXRX MOD
4. Air Quality Sensor – CCS811 – (By AMS) - Ultra-Low Power Digital Gas Sensor for Monitoring Indoor Air Quality
5. 2 x Microphones IM69D130 (Infineon) High-Performance Digital XENSIVTM MEMS Microphone
6. Built-in Rechargeable Battery Li-Ion 1 AH
7. External Sensor Interface
   1 x USB OTG Interface (For charging and communication)
   1 x I2C
   1 x SPI (4 Wire)
   1 x UART
   2 x DI (OPTOISOLATOR 3.75KV)
   2 x DO (250VAC, 220VDC – Max, 1A)
   2 x AI (4mA-20Ma)

SHIRATECH KNOWTION



APPLICATIONS

1. **Home Appliances**
2. **Air Quality Monitoring**
3. **Safe City/Smart City Application**
4. **IoT Solutions**
5. **Voice Sensing Applications**

CPU MAIN FEATURES

CORE

- 32-bit dual-core Arm® Cortex®-A7
  - Up to 650 MHz (Up to 4158 CoreMark®)
  - L1 32 Kbyte I / 32 Kbyte D for each core
  - 256 Kbyte unified level 2 cache
  - Arm® NEON™ and Arm® TrustZone®
- 32-bit Arm® Cortex®-M4 with FPU/MPU
  - Up to 200 MHz (Up to 673 CoreMark®)

MEMORIES

- External DDR memory – DDR3 – 64M X 32Bit (2 Gbit)
- 708 Kbyte of internal SRAM: 256 KB of AXI SYSRAM + 384 KB of AHB SRAM + 64 KB of AHB SRAM in backup domain and 4 KB of SRAM in backup domain
- NAND Flash - SLC NAND Flash Parallel 1.8V 8Gbit 1G x 8Bit 63-Pin VFBGA

SECURITY

- Secure boot, TrustZone® IPs, active tamper

BG96 MAIN FEATURES

- Quectel BG96 LTE CAT-M1 Modem
- Modem speed 300Kbps DL / 375Kbps UL
- Built-in GPS
- Industrial grade
- Low Power
- Compatible with 96Boards CE and EE boards
- I2C, UART, GPIO for modem operation

WIFI/BT Module Main Features

Interface	SDIO (WLAN), UART
IC/Firmware	(BT) Cypress/CYW4343W
Reference Clock	Reference clock is embedded
Frequency	2.4GHz
Frequency MHz (min)	2400
Frequency MHz (max)	2483.5
Modulation	DSSS / CCK / OFDM
Transmit Power	+17dBm / 11Mbps
Data Rate WLAN	11, 54, 65 Mbps
Data Rate Bluetooth	3Mbps
WLAN	802.11b/g/n
Bluetooth	v4.1+EDR
Power Class	Class 1 (10 dBm max)
Technology	Wi-Fi + Bluetooth 4.1 EDR
Network	AP & STA dual mode
Host Interface	SDIO

MECHANICAL

- 97mm x 97mm x14.5mm

OPERATING SYSTEM

- LINUX - Linaro Debian

SHIRATECH KNOWTION

www.shiratech-knowtion.com

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