Challenge and Solution in Smart Community Network
• Smart Community Development Status in China
• Smart Community Applications and Challenges
• UNISOC Smart Community Solution
• ECO System Partnership
Real estate developers in China are motivated to pre-install smart appliances as standard product.

Country Garden, the biggest real estate developer in China, developed more than 600 smart communities since 2016 April.

Smart Community 3.0
- Security
- Convenience
- Intelligence
- 100+ Deployment
- 40+ Partners
- 1000+ Types of Smart Devices

Source: 2017-2023年中国智能家居行业深度分析与投资前景咨询报告
Country Garden 广州增城 - 凤凰城碧桂园 6.7 km²
Country Garden 惠州 - 潼湖生态科技小镇 8 km²
Country Garden 顺德 - 新能源汽车小镇 3 km²
Country Garden Malaysia - 森林城市 20 km²
Video Clip
Smart City Applications and Challenges

Smart City Platform
Security, Privacy protection and AOAC are the key areas to deliver Quality of Experience

Services
- Home
- Community
- Learning

Commerce
- Bank
- Office
- Exhibition
- Hotel

Intelligent
- AI
- Big data
- Cloud
- IoT

Traffic
- Rental
- Travel
- Security
- Control

Management
- Planning
- Construction
- Operation

Education
- School
- Online training
- E-learning

Energy
- Efficiency
- ECO
- EP
- Smart

Medical
- Healthcare
- Consulting
- Monitoring
Smart Community Applications and Challenges

Challenge: Management, maintenance and operation cost control

Challenge: Security

Challenge: Privacy protection

Challenge: Real time data collection

Challenge: Long range and Mesh communication

Challenge: 3rd Party System

Challenge: Electricity

Challenge: Water

Challenge: Air-Con

Challenge: Elevator

Challenge: Fire

Challenge: Smart and ease of use
Smart Community Applications and Challenges

- Challenge: Whole home signal coverage
- Challenge: Simple to connect
- Challenge: Intelligent
- Challenge: Privacy protection
- Challenge: Security
- Challenge: Long range communication
- Challenge: Service optimization
- Challenge: Mesh network
- Challenge: Long range communication
- Challenge: Service optimization
Smart Community Solution Overview

IoT Device
- Device Applications
- Cloud Client
- RTOS
- Wireless

IoT Gateway
- Internet Access
- Connection Manager
- Network
- Wireless

Cloud
- Secure Connectivity
- Device Manager
- Data Collection

Service Provider
- Secure Platform
- E-Business
- Medical Platform
- Industrial Application

Connectivity: Secure, Wireless, Internet Access, Connection Manager, Network, Wireless, Application Interfaces, Secure Connectivity, Application Connectivity, Wireless Connectivity, Deployment, Coverage, Maintainance
Challenges in Smart Community Solutions

- Coverage
  - Whole home coverage
  - Mobility
  - Low latency & emergency service

- Deployment
  - Easy setup
  - Privacy & security

- Maintenance
  - Firmware OTA
  - Remote trouble shooting
  - Data collection

- Fragmentation, ecosystem and standardization
  - Could a device handover between clouds?
Easy Connect enhances the user experience and security for the setup of Wi-Fi devices. Activities must include the replacement of the current static PIN mechanism to support the simple and secure configuration of headless Wi-Fi devices.

Simplify Connection and Enhance Network Security
EasyMesh allows multi-vendor interoperability for the essential core features of Multi-AP Whole Home Wi-Fi.

Optimize Connection and Service of Multi-vendor AP
Wi-Fi CERTIFIED Home Design™ is a certification program that enables new home builders to offer built-in high quality Wi-Fi networks with comprehensive coverage, throughput and capacity throughout the home and outdoor living spaces.

Optimize Smart Home Network Environment

- Home size, expected number of occupants, current bandwidth application needs, and forecasted growth in Wi-Fi demand
- Signal strength: Desired performance is maintained whether near an AP or in nearby outdoor living spaces
- Latency: Under 10 milliseconds latency for time-sensitive and bandwidth intensive applications
Wi-Fi Data Element is a set of standardized data models focused on the key performance indicators that are necessary for remote monitoring and troubleshooting of Wi-Fi.

Simplify Management and Reduce Maintenance Cost
China Smart Home Certification

10M new homes annually in China

UNISOC is working with CCSA, SRTC, Wi-Fi Alliance, CREA, CHEARI, Midea, Haier, etc. to develop China Smart Home Certification
UNISOC “Intelligent Wi-Fi/BT” provides IoT innovation platform for Smart Community
## High performance Wi-Fi/Bluetooth Combo SoC

<table>
<thead>
<tr>
<th></th>
<th>UWP5661</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>ARM Cortex-M4 416MHz DFS 64KB cache</td>
</tr>
<tr>
<td><strong>SRAM</strong></td>
<td>512KB</td>
</tr>
<tr>
<td><strong>Flash</strong></td>
<td>Up to 32MB</td>
</tr>
<tr>
<td><strong>Wi-Fi</strong></td>
<td>IEEE 802.11a/b/g/n/ac Dual Band with Offloading Co-Processor</td>
</tr>
<tr>
<td><strong>Bluetooth</strong></td>
<td>Bluetooth 5 with Offloading Co-Processor</td>
</tr>
<tr>
<td><strong>Interfaces</strong></td>
<td>I2C/JTAG/WCI-2/UART/I2S/SPI/GPIO/SPI</td>
</tr>
<tr>
<td><strong>Applications</strong></td>
<td>Easy Connect, EasyMesh, Data Element, Mesh, BT High Power Mode, BT Long Range, BT and Wi-Fi Indoor Positioning</td>
</tr>
</tbody>
</table>
High performance Wi-Fi/Bluetooth Solutions

- Wireless Repeater
- White Goods
- IoT Gateway
- Smart Lock
- Smart Thermostats
- Coffee Maker
- Smart Scale
## Wi-Fi/Bluetooth Audio SoC

<table>
<thead>
<tr>
<th></th>
<th>RDA5981 + RDA5856</th>
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</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>ARM Cortex-M4F 160MHz</td>
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<tr>
<td><strong>SRAM</strong></td>
<td>448KB</td>
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<tr>
<td><strong>Flash</strong></td>
<td>4MB</td>
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<tr>
<td><strong>Wi-Fi</strong></td>
<td>IEEE 802.11 b/g/n HT20/40</td>
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<tr>
<td><strong>Bluetooth</strong></td>
<td>Bluetooth 4.2 BR/EDR BLE</td>
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<tr>
<td><strong>Interfaces</strong></td>
<td>USB/UART/I2S/I2C/PWM/SPI/SDIO/GPADC</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>M4A/AAC/MP3/AMR/WAV/MP4/Speex</td>
</tr>
<tr>
<td><strong>Applications</strong></td>
<td>Easy Connect, DUER OS, Mesh</td>
</tr>
</tbody>
</table>
### Low Power Consumption Bluetooth Audio SoC

<table>
<thead>
<tr>
<th></th>
<th>RDA5841S</th>
<th>RDA5842/RDA5845L</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>178 MHz RISC MCU and 178 MHz Voice Co-Processor DSP</td>
<td>197 MHz RISC MCU and 197 MHz Voice Co-Processor DSP</td>
</tr>
<tr>
<td><strong>SRAM</strong></td>
<td>140KB</td>
<td>154KB</td>
</tr>
<tr>
<td><strong>Flash</strong></td>
<td>8Mb in-package</td>
<td>4Mb in-package Up to 512Mb External Nor Flash</td>
</tr>
<tr>
<td><strong>Bluetooth</strong></td>
<td>Bluetooth v4.2 compliant, supports BR/EDR</td>
<td>Bluetooth 5 compliant, supports BR/EDR, BLE and BLE 2M</td>
</tr>
<tr>
<td><strong>Infrared</strong></td>
<td>Rx</td>
<td>Tx/Rx</td>
</tr>
<tr>
<td><strong>Interfaces</strong></td>
<td>I2C/SPI/SD Card/SSP/5x4 keypad/PWM/I2S</td>
<td>I2C/SPI/SD Card/SSP/5x4 keypad/PWM/I2S</td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>MP3/SBC/WMA/AAC/mSBC decoder TWS audio and AMIC/DMIC</td>
<td>MP3/SBC/WMA/AAC/mSBC decoder TWS audio and AMIC/DMIC</td>
</tr>
</tbody>
</table>
Q and A

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