IoTize : Supplier of configurable HMIs

IoTize™

www.iotize.com

1. *Mobiles devices will replace HMIs*

Camera

Omnipresent companion

HMI

Music

Internet

GPS

Payment

Calls

2. TapNLink enhances user experience

Ease	Efficiency	Comfort	Environment	Cost
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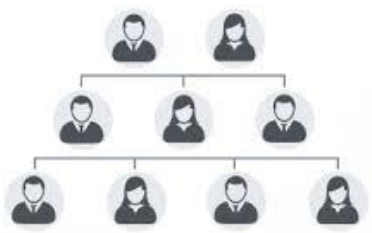
Example of an electric heater

3. A global connectivity solution for manufacturers



Hardware	Firmware	Radio/ antennas	Security	Certification	Mobile Apps	Cloud
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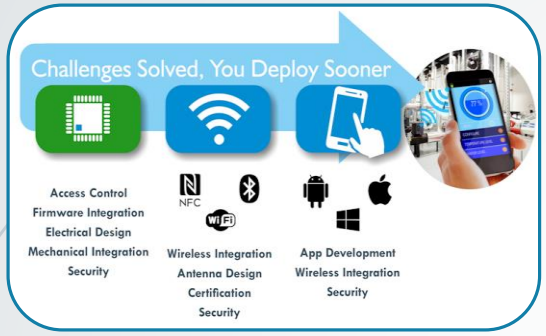
Innovations

4. Two very innovative characteristics



Instant wireless connectivity

A global solution:

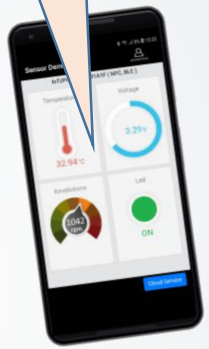
- Manage all aspects: software, antennas,…
- Dramatically reduces R&D effort
- Instant PoC
- Easy retrofit,
- Ready-for-market
- Certified (FCC,..) or pre-certified (RED,..)

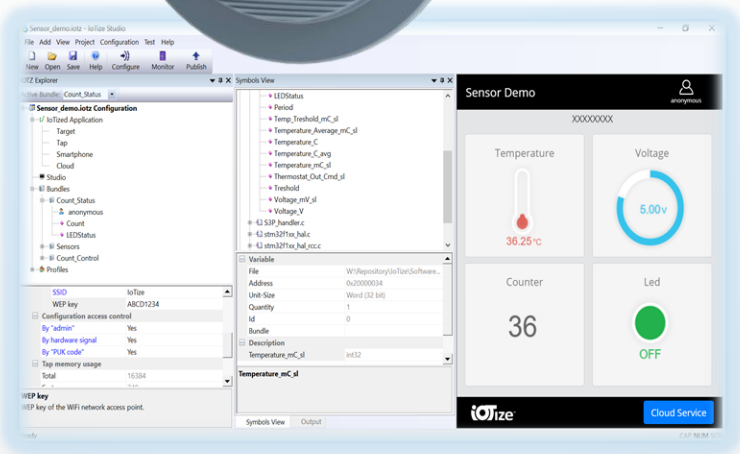
Mastery of NFC

- Intuitive app launcher
- Automatic pairing for BLE /WiFi
- Secure connection/authentication
- Low energy consumption
- Reduced radio emissions
- 3-stroke configuration
- Low-cost solution

5. "All aspects" - What does this mean?

Firmware | **Electronic** | **Mechanical** | **Radio** | **Apps** | **Cloud**





- No programmation
- Fits any microcontroller
- Secure firmware updates

- Standard connectors
- Only two signals
- Low energy consumption

- App generator
- Access control management
- APIs for iOS, Android, Win10…

- Cyber-security
- MQTT
- Open Source solution

- Size optimization
- Optional casing
- Customizable

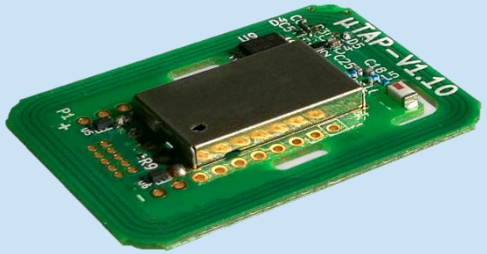
- Integrated antennas
- End-to-end security
- Certification

6. Valuable innovations

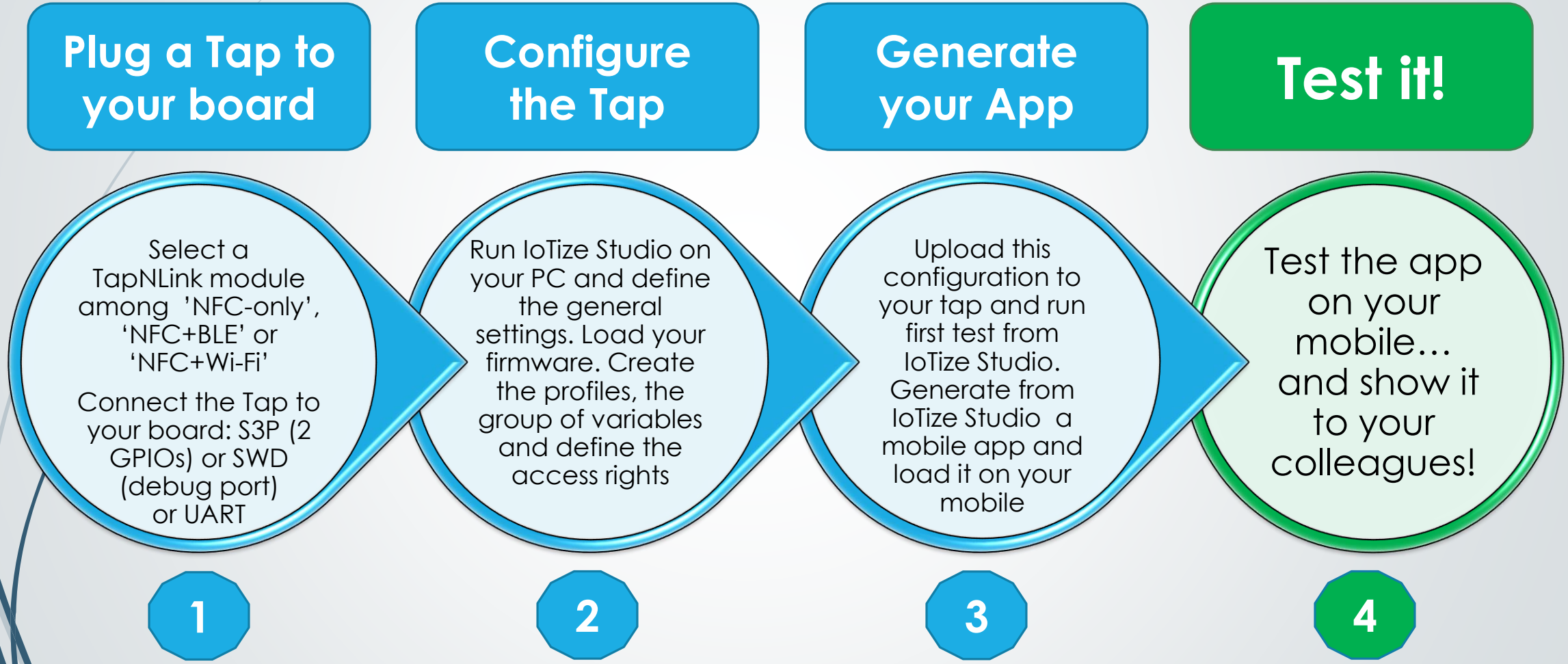
1. **Men-years gains for R&D**
2. **Time-to-market**
3. **Eliminates risks** linked to the overall complexity
4. **NFC** enhances users' experiences, reduces costs and environmental impacts
5. **Security** is adapted to needs, reinforced by NFC

Products that match market requirements

7. Two complementary products lines

TapNLink	TapNPass
	
• Connect to any microcontroller • Radio variants: BLE/WiFi/LoRa • Target connection: S3P/UART/SWD • For new designs or retrofit	• Retrofit for wire fieldbus systems • Interface RS-232, RS-485, USB serial • Embeds TapNLink • Fix or nomad casing

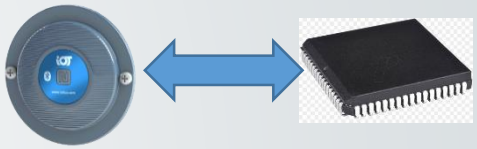
8. For (Almost) instant solutions!

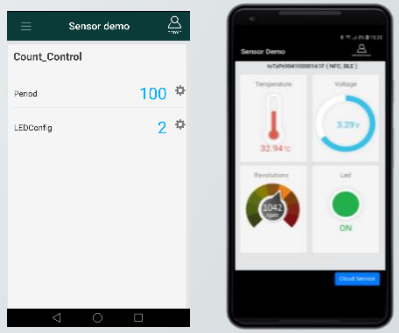


9. Complete and adaptable offer

All combinations are possible

Target Protocol	**SWD (S)** • For Cortex-M MCUs only • 5-minute PoC • Retrofit without modification	**S3P (P)** • Universal, • Secure • Two GPIOs only	**UART (U)** • With or without Modbus • Legacy solution for industry • Requires a UART
Host Protocol	**NFC-only (N)** • Ideal for configurations • Low cost solution • 3-stroke configuration • Zero power consumption	**NFC + BLE (B)** • Ideal for a local session • Efficient combination with NFC • Low power solution.	**NFC + Wi-Fi (W)** • Access point or station modes on existing Wi-Fi network • Alarm generation • Remote control via MQTT
Mobile Application	**HTML (H)** • Automatic generation • Enabled by'Tap Manager' (App Store et Play Store). • 5-minute solution	**Ionic (C)** • Automatic generation • Ready for publishing • Support: iOS/Android/Windows	**APIs (A)** • For existing apps • iOS, Android, Cordova. • APIs manage connections, security and communication.





10. Focus on the module types

Different modules for different use cases

Host Protocol	**NFC-only** *Ideal for "configuration only"*	**NFC + BLE** *Ideal for a local session (+monitoring)*	**NFC + Wi-Fi** *Local + remote access (+alarms)*
Use cases	• Low cost heaters • Mute equipments: fridge,… • Sensors • 'Configured once' equipments	• Replacement of PC by mobiles (protection relays) • Possible remote control via a relaying mobile (gas boiler)	• High end heaters, • Existing Wi-Fi network (white products),
NFC benefits	• Low cost • Zero power	• Launcher + pairing • Cybersecurity • Wakeup by NFC	• Network settings (SSID,…) • Launcher + pairing • Cybersecurity • Wakeup by NFC

11. Latest news (2019Q4)

- Automated mobile app generation
  - Based on Ionic/Cordova
  - Generated apps for iOS/Android/Windows.
- Firmware update and remote debugging
  - FW update for TapNLink.
  - Target FW updates and debug capabilities (STM32,…).
- TapNLink NFC/Wi-Fi
  - Sessions or single packets through MQTT
  - Support of popular IoT platforms
- TapNLink NFC only
  - Very Low cost, ideal for configuration.
  - iOS13 support (September 2019)

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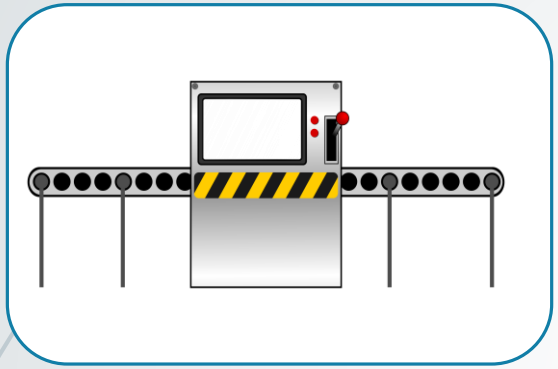
A mass market solution

12. A generic offer for multiple markets



Industry: machine tools, process control, …

Home: white goods, entertainment,…

Smart building: HVAC, access control,…

17. 1st Target: Replacement of LCD/keypad

18. ‘LCD + Keyboard’ vs TapNLink

	LCD+Keyboard	TapNLink
HW development	Specific tooling,… Complex interfacing	None Possible retrofit
FW development	Complex (menus/languages/…)	None
Security	None… or weak (keypad..)	Strong authentication
Robustness	Low (screen) Wear (keyboard)	High
User experience	Poor Uncomfortable	Friendly Powerful

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19. 2nd Target: Add HMI to mute equipment

20. TapNLink makes sense when LCD+Keyboards do not

	LCD+Keyboard	TapNLink
Size	Too large	✓
Robustness	Too delicate	✓
Security	Too sensitive	✓
Long text fields	Too slow	✓
Price	Too expensive	✓
Use (unfrequent…)	Too ‘much’…	✓

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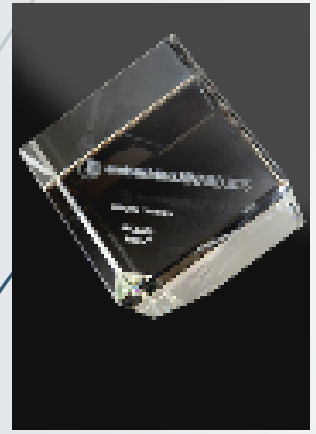
Opportune commercial context

21. International recognition



Embedded World
Nuremberg
Hardware innovation of the year

Salon Cartes
Cannes
IoT Solution of the year

NFC Forum
Londres
Best emerging concept

22. Today: NFC boom

- New apps for payment and transport make NFC familiar
- Most Android devices now support NFC
- **September 2019 :**
  - 19/09: iOS13 => IoTize products now on iPhone!
  - 24/09: Paris metro adopts NFC ticketing

23. Fragmented competition: no global alternative

OEM boards

For hobbyist : Arduino, Raspberry Pi, …

Connectivity components

Chipset BLE + NFC + LoRa + SE

Software stacks logicielles (TCPIP, MQTT,…)

Proprietary boards and modules

Sensors / transmitters

Sensors

Transmitters

Antennas

24. Real competitor in 2020: Dedicated development