Intelligent Driver Console

GUANGZHOU TONGDA AUTO ELECTRIC CO., LTD

Stock code：603390

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Company

01

Company Introduction

- **Guangzhou Tongda Auto Electric Co., Ltd. Brand name: TONGDA ELECTRIC**

- **Established in 1994**

- **IPO：Listed on Shanghai Stock Exchange in Nov.25th 2019, Stock No.：603390**

- **High-tech Enterprises**

- **TONGDA has more than 500 intellectual properties**

- **TONGDA is a standard supplier for the top 10 bus manufacturers in China**

TONGDA Head Quarter
（Baiyun）

TONGDA Technical Center
（Huangpu）

1000+
Employees

40%+
Techincal Staffs

90%
First and Second Tire Cities
in China

30+
Countries and
Regions

TONGDA ELECTRIC

Timeline

2008

·The main supplier of bus cmponent parts for the 2008 Beijing Olympic Games

1994

·Company founded

2010-2012

·Obtained E-MARK certification.

·Obtained Certification of national high-tech enterprise

·Main supplier of bus cmponent parts for Guangzhou Asian Games, Shanghai World Expo, and Nanjing Youth Olympic Games.

Development

2016-2018

· Invested around 100 miliion US dollar in construction of Baiyun and Huangpu Tongda Industrial Park

2021-2022

·Headquarter industrial park lauchs production

·R&D Lab qualified obtained CNAS credential

2019-2020

Listed on Shanghai Stock Exchange, stock code:**603390**

TONGDA Technical Center（Huangpu） Industrial Park completed and started to use
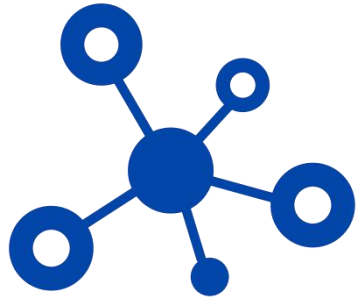
2023

Partners

TONGDA ELECTRIC has **high reputation in public transportation market** and is the **standard** components providers for many bus manufacturers, Offer technical solutions for the partners as well.

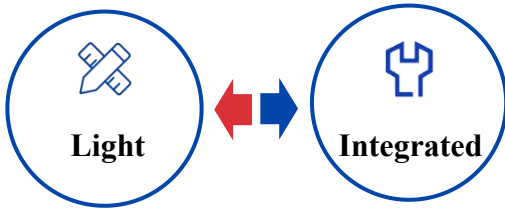**Driver Console**

02

TONGDA ELECTRIC 通达电气

Driver Console

Multiple construction

There are **at least 5** screens on vehicles for the drivers, such as reversing monitoring system, 360 system, radar display, tire system, dispatching system, ADAS, smoke alarm and so on. **It is not safe for drivers** to watch so many displays, and these system may have **repeated functions**.

The 12.3 inch display could provide all the functions on vehicles.

Monitoring   Tire pressure   Smoke alarm

Light ⟷ Integrated

light and integrated design

In addition, the development of vehicle nowadays is based on **light design, intelligent design, information construction design**. An intelligent display with integrated functions is required. The driver console design is becoming **integrated and simple** to use.

The buttons for all these functions could be integrated on driver console.

It is not suitable for vehicles to make all these buttons virtualization, **but the product could integrated buttons which are not frequently used like driver light, air conditioner, LED board ON/OFF.**

The X12 is a **12.3 inch smart touch driver console** based on **Linux system**. It has 4G communication, GPS/BD positioning, WiFi and blue tooth. The X12 **integrates vehicle control buttons** like driver lights, air conditioner, LED display etc. The X12 has 4 channels of AHD connectors, with **reversing, rear door, 360, driving records monitoring images**. It employs CAN to connect **gas leakage sensor, tire sensor** and other device to show information on the screen. The X12 could collect real time status of vehicles and show the information to users. X12 could also be used in **expanding public transportation like dispatching service**, and reserve 485 and 232 for following dispatching functions.

Smart control

- The light control, LED board switch, IC card switch and other buttons are integrated
- The buttons could be set in groups for linked control

Smart display

- The display **integrates** monitoring systems include revering, 360, radar, tire, dispatching, ADAS, smoke alarm.
- Each functions will be showed by tapping different buttons

Smart internet function

- It could be connected with platforms
- The dispatching function could be employed on the products, which could satisfy **intelligent and information** requirements

Smart control

The switch of vehicle channel light, LED display, LCD display, advertising light box and other buttons could be integrated on the driver console screen. The design of interface could be customized based on users requirements. They could set combination of buttons to realize one-button control. The virtual button are suitable for different types of vehicle designs. In this case, it **reduce the cost of vehicle designs** and **satisfy the light design for vehicles**.
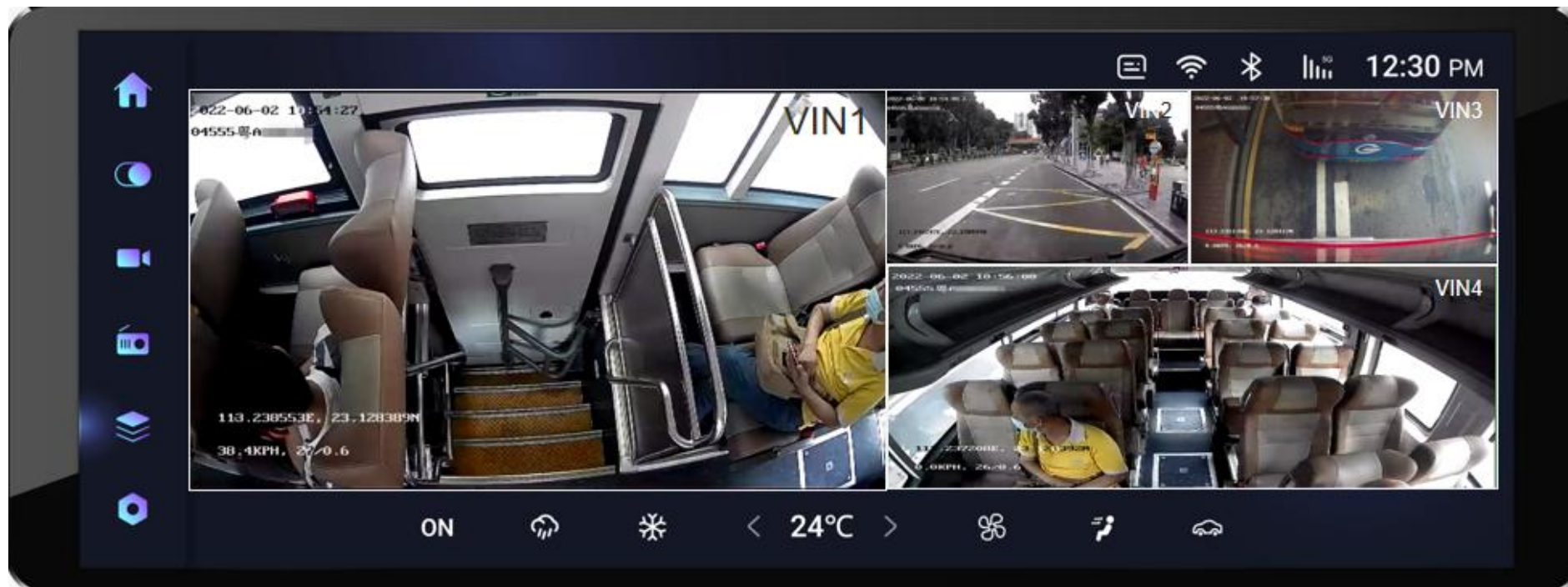
Air conditioner control

The X12 display could send air conditioner control signals by CAN, including ON/OFF, wind, temperature, model selection, circulation mode, error information etc. X12 has internet function, the cloud platform could be used to control the conditioner remotely.

X12 has 4 channels of 1080P video input. The X12 has video storage, searching and video output. The storage could be 512G in total. The functions like reversing, rear door, 360, driving records and other monitoring images could be integrated in this product. The video functions could be triggered by manually or linked operation: when the reversing or rear door signal received, the relevant windows will be showed automatically. When the signals finished, the windows will be closed. The cold boot could showed the reversing page in 5s maximum.
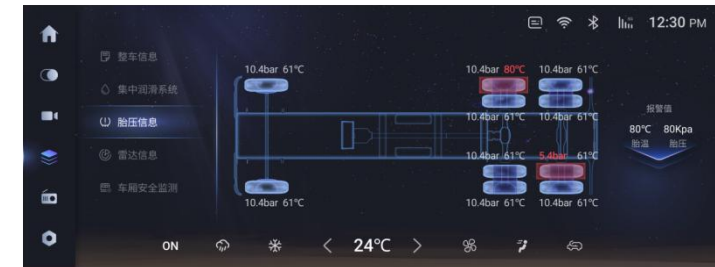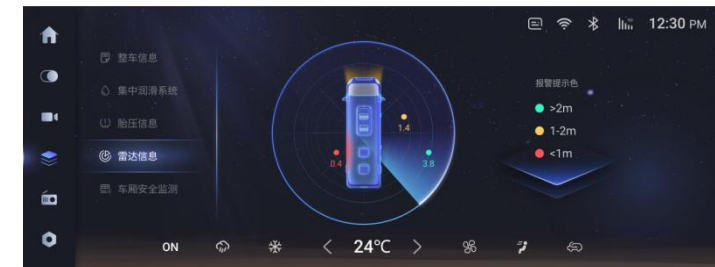
X12 could be connected with flammable gas detect sensor, tire sensor and other device to show information on the screen. The **12.3 inch large screen could show multiple images** in the same page, it is convenient for drivers to check the display and avoid repeat construction of functions. This could satisfy the **all in one design**. The front page could be customized based on users habit, it could simultaneously display 2 or 3 images.

Ordinary interface (3 functions integrated)

Tire monitoring
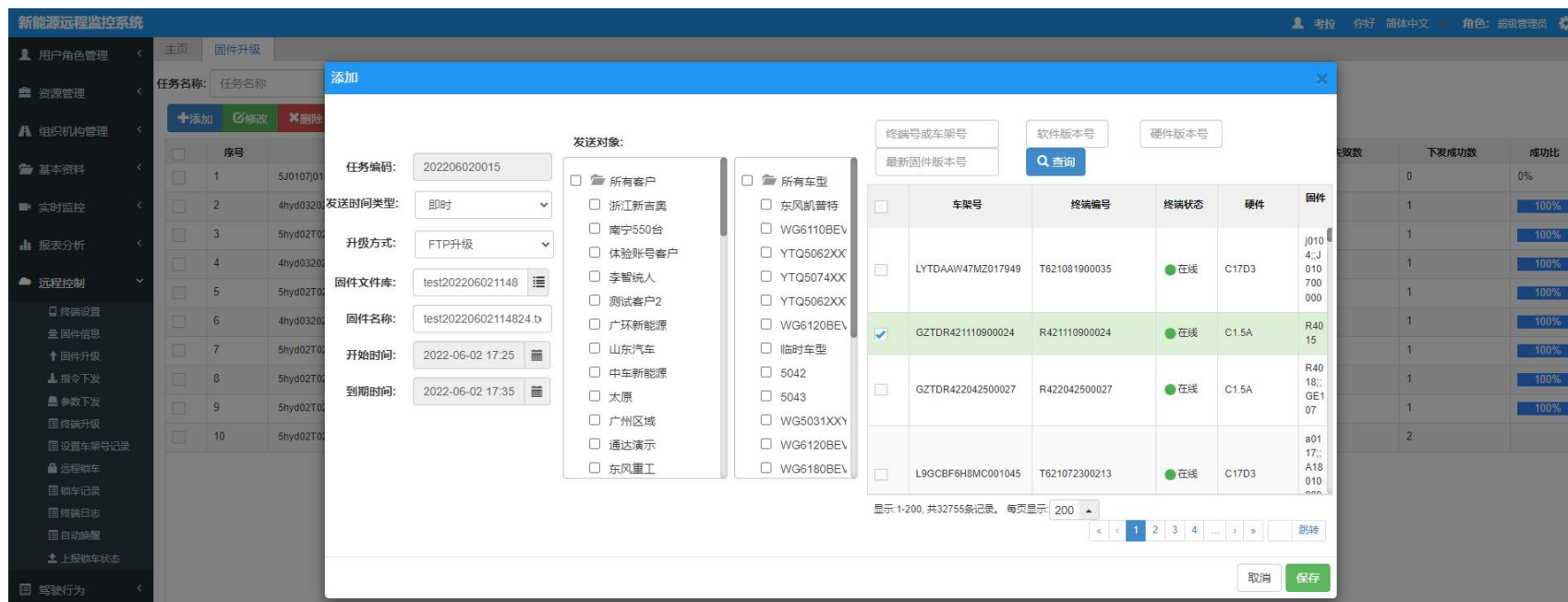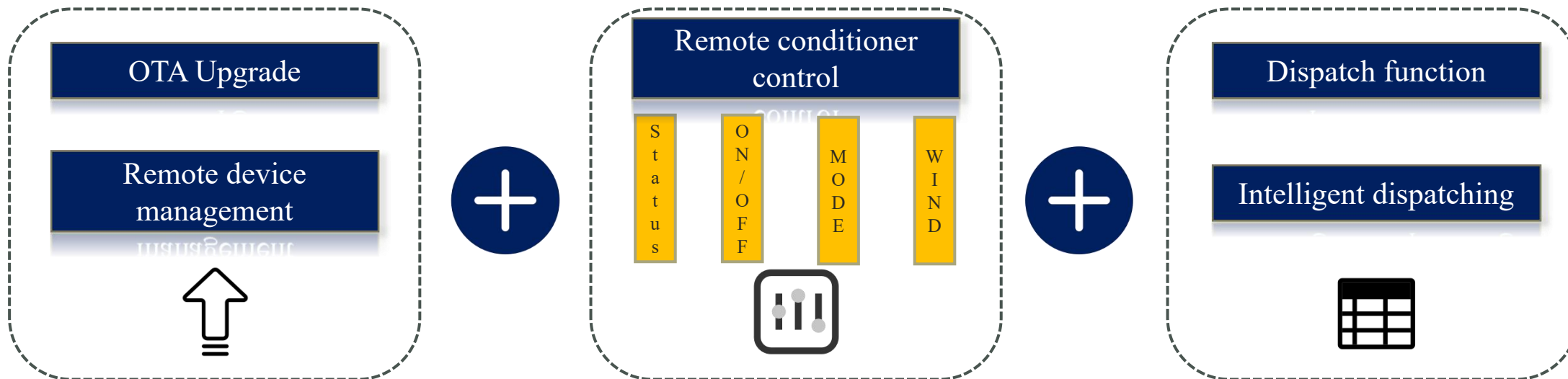
Radar

Vehicle information

Users could check specific vehicle parts information on vehicle status page, like motor and battery extreme value. The error identification functions could be customized in order to find out the problems immediately.

Alarm information

When the X12 received the alarm signals, the display could provide pop-up windows and voice announcement based on customers' setting. The alarm could be set with different levels and strategies. The alarm information could be upload on the cloud platform.

Internet manage

OTA Upgrade

Remote device management

Remote conditioner control

| Status | ON/OFF | MODE | WIND |

Dispatch function

Intelligent dispatching

Product specifications

Project		Specifications
System	Linux	Linux4.19
Network	4G/3G	LTE-FDD/LTE-TDD/WCDMA/TD-SCDMA/CDMA/GSM
WIFI	Two channels WiFi	2.4GHz & 5.8GHz two channels
Performance	Quick reversing	Cold boot could provide 5s reversing images
	Cold boot	Cold boot could offer 10s turn on service
Storage	SD Card Storage	MAX 512GB
Display	Size	12.3 Inch
	Resolution	1920*720
	Type	Capacitive touch screen
Connector	Video input	4 Channels 1080P AHD
	Power amplifier output	2 channels power amplifier output, 1 channel output rate 20W@24V. Every single channel is independently control.
	MIC input	MIC input，exterior speaker
	Serial port	2 channels standard 232；2 channels standard RS485
	CAN	2 channels standard CAN
	SIM	1 channel SIM card connector；eSIM
	Ethernet	1 channel 100M connector
Other	Position	GPS/BD Position
Power	Power input	DC9-32V