

HTT Electronic Module Introduction



Welcome to the **Analog Era.**

Bridging between the digital & quantum eras — HTT's brain-inspired
Analog In-Memory Computing & RISC-V technology.

DISCLAIMER

這個文件內所有信息、產品圖片和顯示內容僅供參考。實際產品功能、成本和規格等（包括但不限於外觀、顏色和尺寸）以及實際顯示內容（包括但不限於背景、UI和圖標）可能會因時間及實際情況有所差異。這個文件內所有數據及比較是在特定情況下對比市面部份同類產品，均為內部實驗室通過特定條件下進行的測試獲得的理論值，如實際充電時間及快充模式兼容性等是可能因客觀環境而變化，所有結果會因此出現差異。由於個別產品、軟件版本、應用條件和環境因素的差異，實際數據可能會有不同。所有數據因實際使用而有所不同。受條款及細則約束，請參閱上述產品詳細和規格。有關更多信息、文件內容、產品信息、價格等如有更改，恕不另行通知。
All data, images and content in this document are for reference only. Actual function, cost and specification etc. (included but not limited to appearance, color and size) as well as content shown (included but not limited to background, UI and icons) may be subjected to changes according to time and actual situation. All data included in this document are compared with market products under specific circumstances. Theoretical values were attained by test under specific conditions at internal laboratory. For example, actual charging time and compatibility of Fast Charging Protocol are subjected to changes under different conditions, thus may leading to differ in results. Different software updates, application conditions and environment factor in individual product may lead to differ in experimental results. All data may differ from actual application and subjected to terms and conditions, please refer to details and specifications herein. We reserve the right to make changes at any time, of any products or specifications herein, without further notice.

Content

Green High-Power USB Charging Solutions

- [GaN 65W Dual USB Type-C Charging Module](#)
 - [30W Dual USB Type-C Module for UK Wall Socket](#)
 - [65W Dual USB Type-C DC-DC Module for US Wall Socket](#)
 - [USB Power Supply Solution in Transportation](#)
-

LED Car Lighting Solutions

- [LED Head Lamp Driver Module](#)
 - [Signal Lamp LED Driver Module](#)
 - [Dashboard Backlight LED Matrix Module](#)
 - [Interior Ambient Light Module](#)
 - [Music Visualization Module](#)
-

AI Edge Device Solutions

- [Power Module for AI Camera](#)
- [Power Module for AI Voice Assistant](#)



芯高科技
HIGH TECH
TECHNOLOGY LIMITED

Green High-Power USB Charging Solutions

Green High-Power USB Charging Solutions

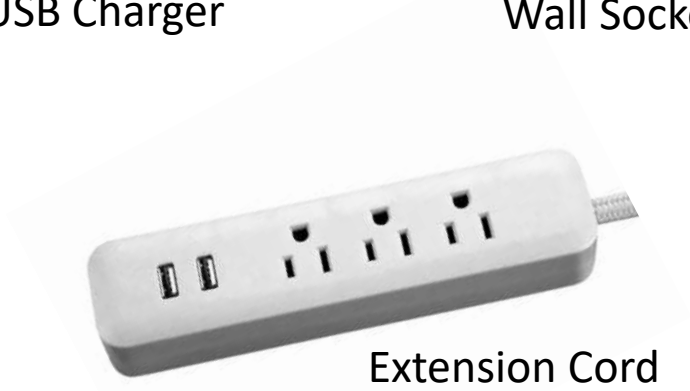
Consumer Products



USB Charger



Wall Socket



Extension Cord

Transportation



Land



Waterway



Air





GaN Technology.



fast
charge



small
size



Less
heat

GaN 3-PORT TRAVEL ADAPTER

Smart power distribution
for three devices.

2x USB-C and 1 x USB-A

65W



Customize
Your own
logo.



13x faster
than Apple's

5W USB-C charger.



Compact.
Universal.

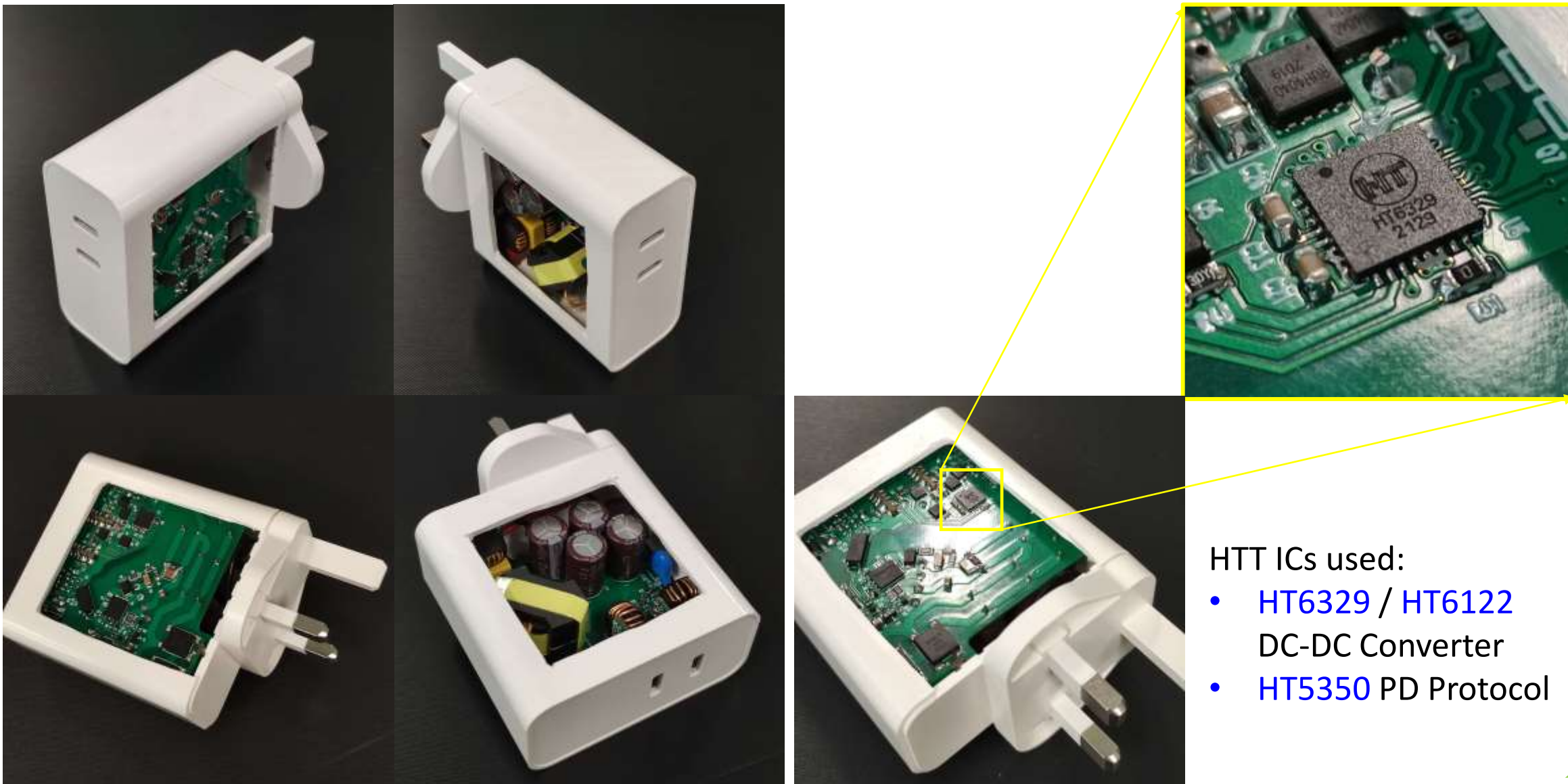
From semiconductor R&D
to product design —

all from Hong Kong.

PD3.0 65W

MACBOOK COMPATIBLE.

GaN 65W Dual USB Type-C Charging Module



GaN 65W Dual USB Type-C Charging Module Spec



Operating mode :	Single Channel	Dual Channel
Input Voltage	AC 110V-220V	
Output Voltage and Current (Max Output Power: 65W)	(5V 3A), (9V 3A), (12V 3A) (15V 3A), (20V 3.25A)	Max Total Output Current: 6A
Fast Charging Protocols Supported	PD 3.0, QC 3.0*	
Dimension	58mm (length) X 58mm (width) X 23mm (height)	
Max Output Power	65W	35W + 20W = 55W
Load Regulation Accuracy	Output voltage accuracy reaches 98 % under different loads #	
Max Power Conversion Efficiency	Vin 110V 88% / Vin 220V 90%	
Short Circuit Test	✓	

* QC3.0: Based on QUALCOMM webpage: Charge up to 4 times faster than conventional 5W chargers .

(<https://www.qualcomm.com/news/onq/2015/09/14/introducing-quick-charge-30-next-generation-fast-charging-technology>)

Definition: (Actual Vout / Target Vout) %

* Youtube Video Link: High Tech Technology GaN 65W Dual USB Type-C Charging Adaptor

(<https://www.youtube.com/watch?v=f2JRdtOp1GQ>)



香港本地
供電芯片



雙USB-C 插座



智能電源 15W+15W/30W



提供PD3.0, QC3.0快充

30W 6倍速度

由半導體至

製成品 R&D -

香港本地一手包辦

本地設計

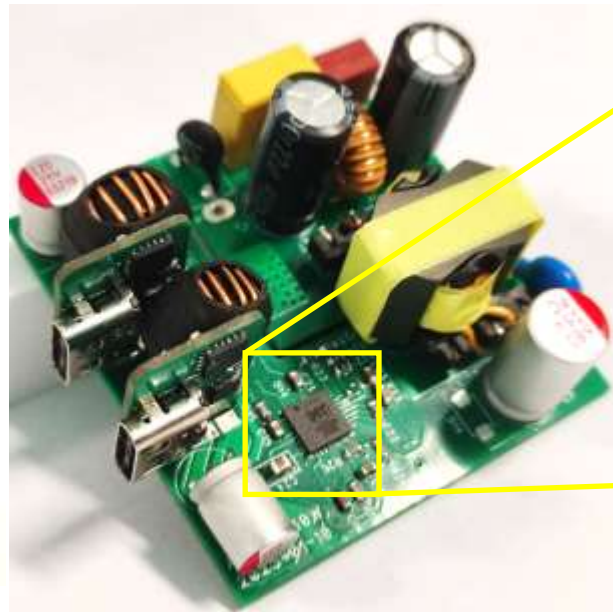
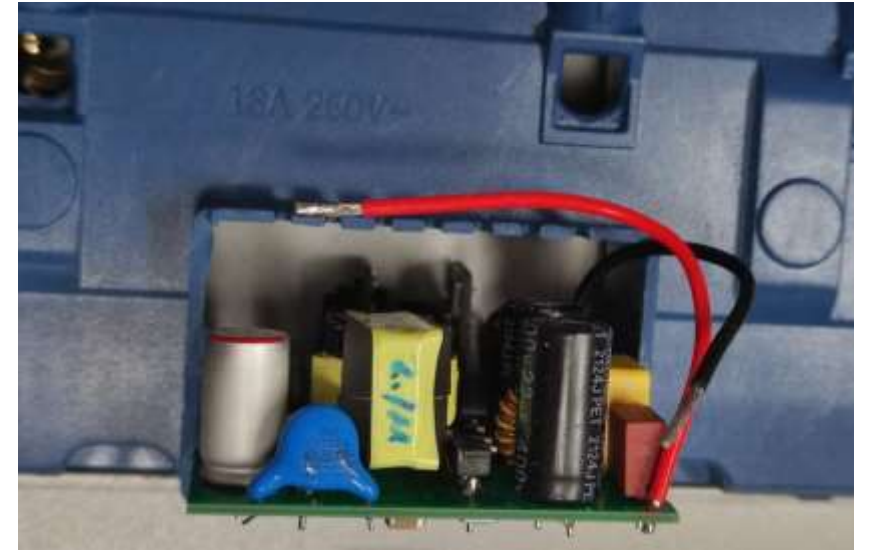
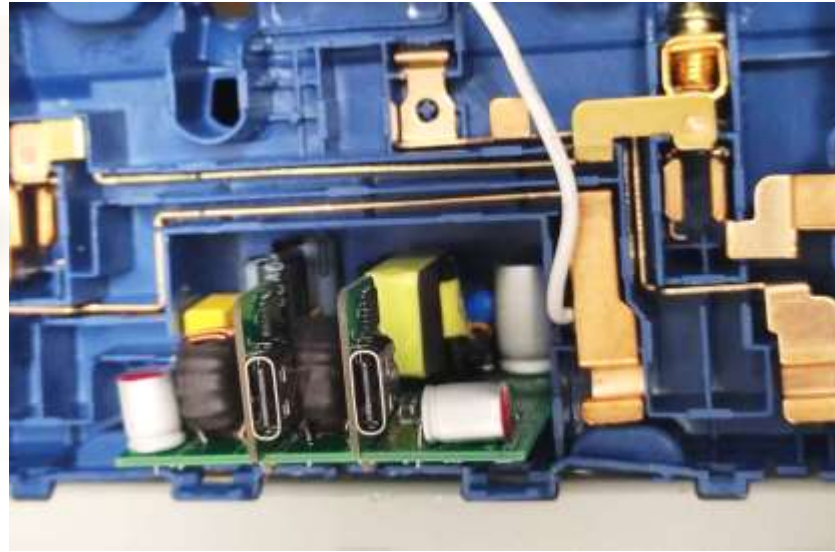


Macbook
/ 手提電腦



自定個人圖案

30W Dual USB Type-C Module for UK Wall Socket



Characteristic	Value
Input Voltage	200V~240V 50/60Hz
Single Output	5V 3A, 9V 3A, 12V 2.5A, 15V 2A, 20V 1.5A
Dual Output 1	5V 3A, 9V 1.5A
Dual Output 2	5V 3A, 9V 1.5A
Maximum Power	30W





30W Dual USB Type-C Module Demo Board

220V Input



Top view

Output 1

Output 2



Bottom View





30W Dual USB Type-C Module Spec

Operating Mode :	Single Channel	Dual Channel										
Input Voltage	AC 220V-240V											
Output Voltage and Current (Max Output Power: 15W + 15W)	(5V 3A), (9V 3A), (12V 2.5A), (15V, 2A), (20V 1.5A)	Max Total Output Current: 6A <table border="1" data-bbox="1972 464 2346 664"> <thead> <tr> <th>USB-C1</th> <th>USB-C2</th> </tr> </thead> <tbody> <tr> <td>5V/3A</td> <td>5V/3A</td> </tr> <tr> <td>9V/1.65A</td> <td>9V/1.65A</td> </tr> <tr> <td>12V/1.25A</td> <td>12V/1.25A</td> </tr> <tr> <td>15V/1A</td> <td>15V/1A</td> </tr> </tbody> </table>	USB-C1	USB-C2	5V/3A	5V/3A	9V/1.65A	9V/1.65A	12V/1.25A	12V/1.25A	15V/1A	15V/1A
USB-C1	USB-C2											
5V/3A	5V/3A											
9V/1.65A	9V/1.65A											
12V/1.25A	12V/1.25A											
15V/1A	15V/1A											
Fast Charging Protocols Supported	PD 3.0, QC 3.0*											
Dimension	45mm (length) X 45mm (width) X 23mm (height)											
Max Output Power	30W	15W + 15W = 30W										
Load Regulation accuracy	Output voltage accuracy reaches 98 % under different loads #											
Max Power Conversion Efficiency	85%	85%										
Short Circuit Test	✓											

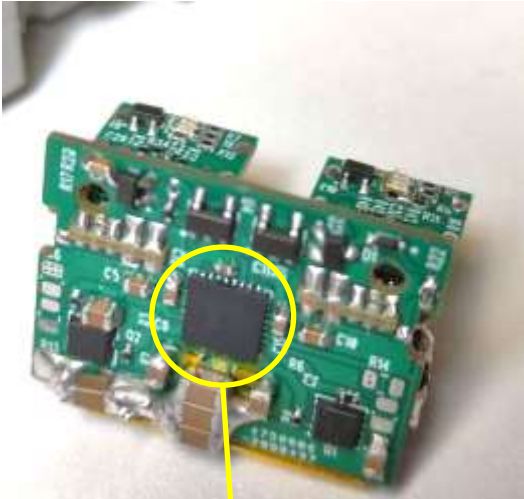
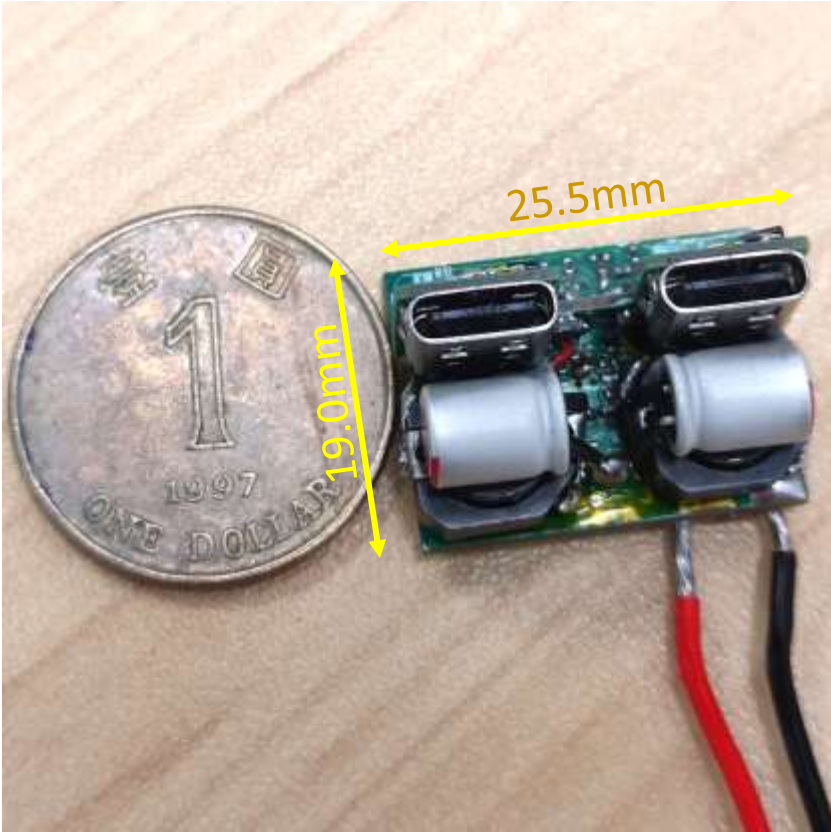
* QC3.0: Based on QUALCOMM webpage: Charge up to 4 times faster than conventional 5W chargers .
(<https://www.qualcomm.com/news/onq/2015/09/14/introducing-quick-charge-30-next-generation-fast-charging-technology>)

Definition: (Actual Vout / Target Vout) %





65W Dual USB Type-C DC-DC Module for US Wall Socket



Characteristic	Value
Input Voltage	24V
Single Output	5V 3A, 9V 3A, 12V 3A, 15V 3A, 20V 3.25A
Dual Output 1	5V 3A, 9V 3A, 12V 3A, 15V 3A
Dual Output 2	5V 3A, 9V 3A
Maximum Power	65W



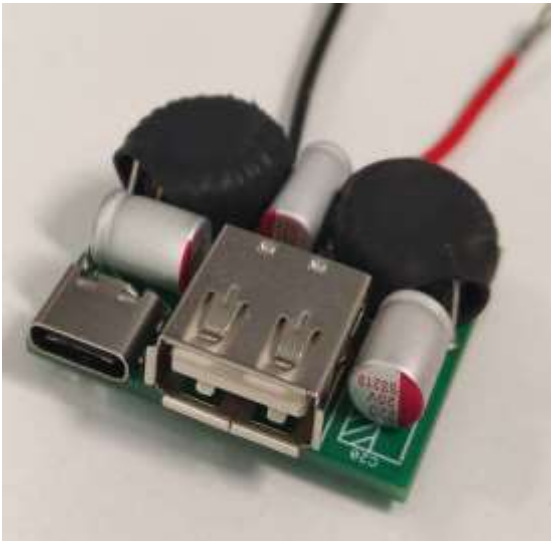
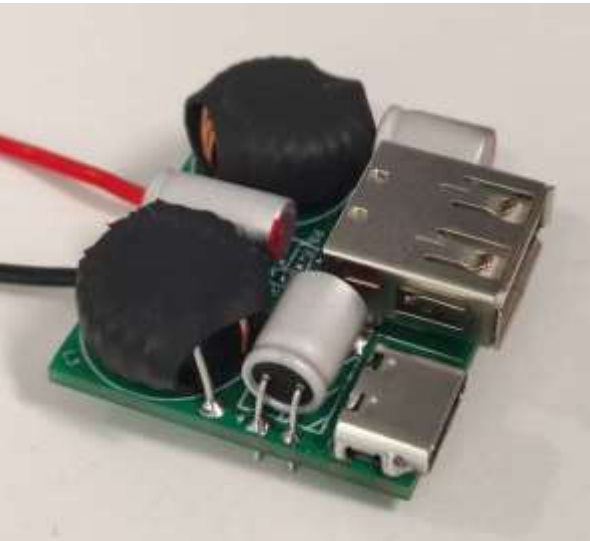
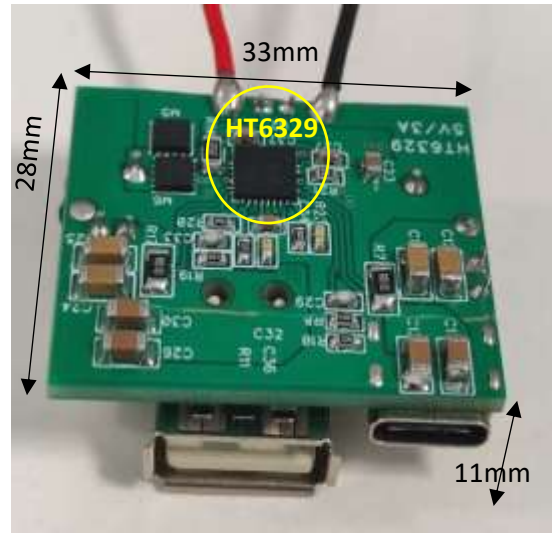
USB Power Supply Solution in Transportation



USB Power Supply Solution in Transportation

HTT IC used: **HT6329 DC-DC Converter**

Characteristic	Value
Dimension	28x33x11mm
Weight	14.8g
Input Voltage	7-20V
Output Voltage	5.2V
Output Current	2 x 3A per channel
Output Power:	30W
Efficiency :	>95%



Behind Every End Product a Powerful Module



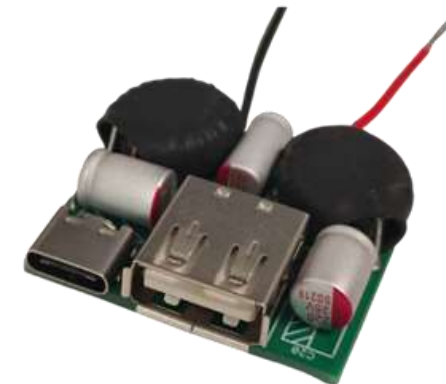
65W Dual USB Type-C module

Input Voltage	24Vdc
Single Output	5V 3A, 9V 3A, 12V 3A, 15V 3A, 20V 3.25A
Dual Output 1	5V 3A, 9V 3A, 12V 3A, 15V 3A
Dual Output 2	5V 3A, 9V 3A
Max Power	65W



30W Dual USB Type-C module

Input Voltage	200V~240V 50/60Hz
Single Output	5V 3A, 9V 3A, 12V 2.5A, 15V 2A, 20V 1.5A
Dual Output 1	5V 3A, 9V 1.5A
Dual Output 2	5V 3A, 9V 1.5A
Max Power	30W



USB Solution for Automotives

Input Voltage	7-20Vdc
Output Voltage	5.2V
Output Current	3A per channel 6A total output
Output Power	30W
Efficiency	>95%

These are sample modules — we offer a wide range of custom and standard solutions.





LED Car Lighting Solutions

LED Car Lighting Solutions

Exterior Lightings



Head Lamp



Rear Lamp



Indicator Lamp



Decorative Light

Interior Lightings



Dashboard Backlight



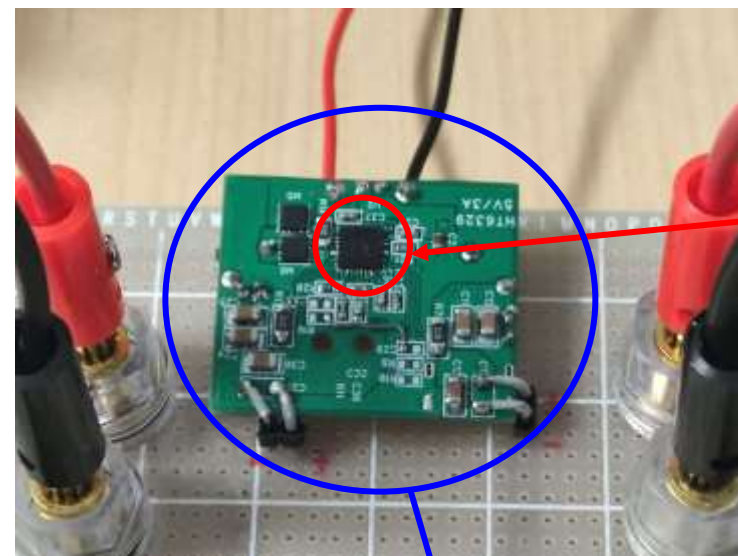
Ambient Lighting



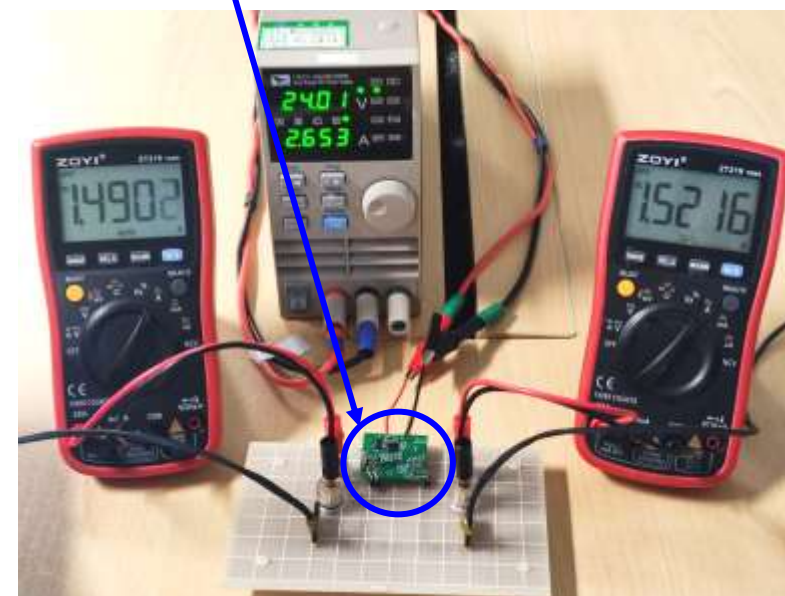
LED Head Lamp Driver Module



芯高科技
HIGH TECH
TECHNOLOGY LIMITED



HT6329



LED Head Lamp Driver Module Spec

	Power Management
Demo Board	HT6329 Constant Current Driver Module Connects to LED head lamp
HTT IC part	HT6329
Input voltage	DC 24V
Input current	~2.67A
Output channels	Dual channels
Output current	1.5A per channel
Total output current	3A
Voltage drop across head lamp	~20.5V
Efficiency	~97%

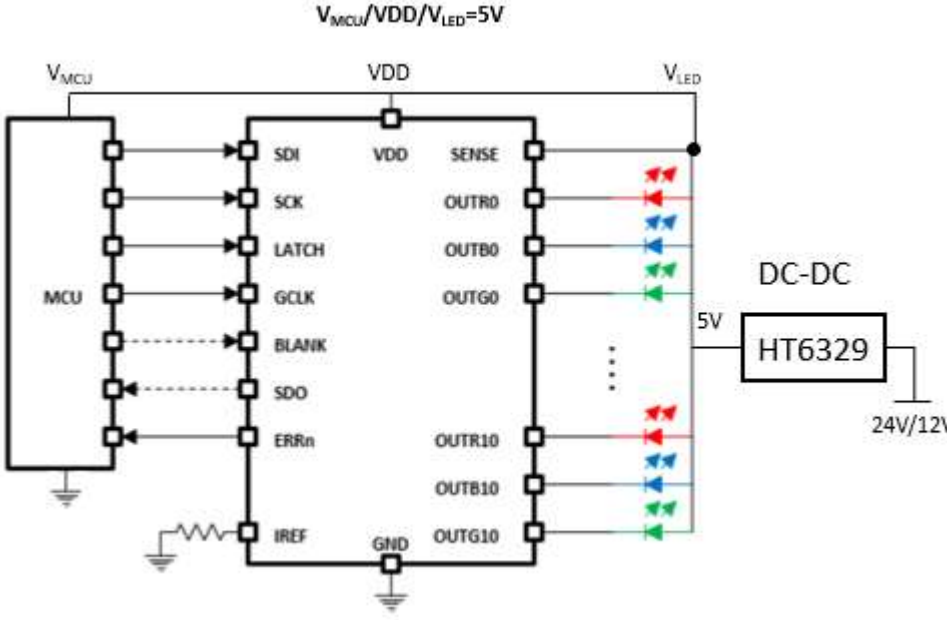
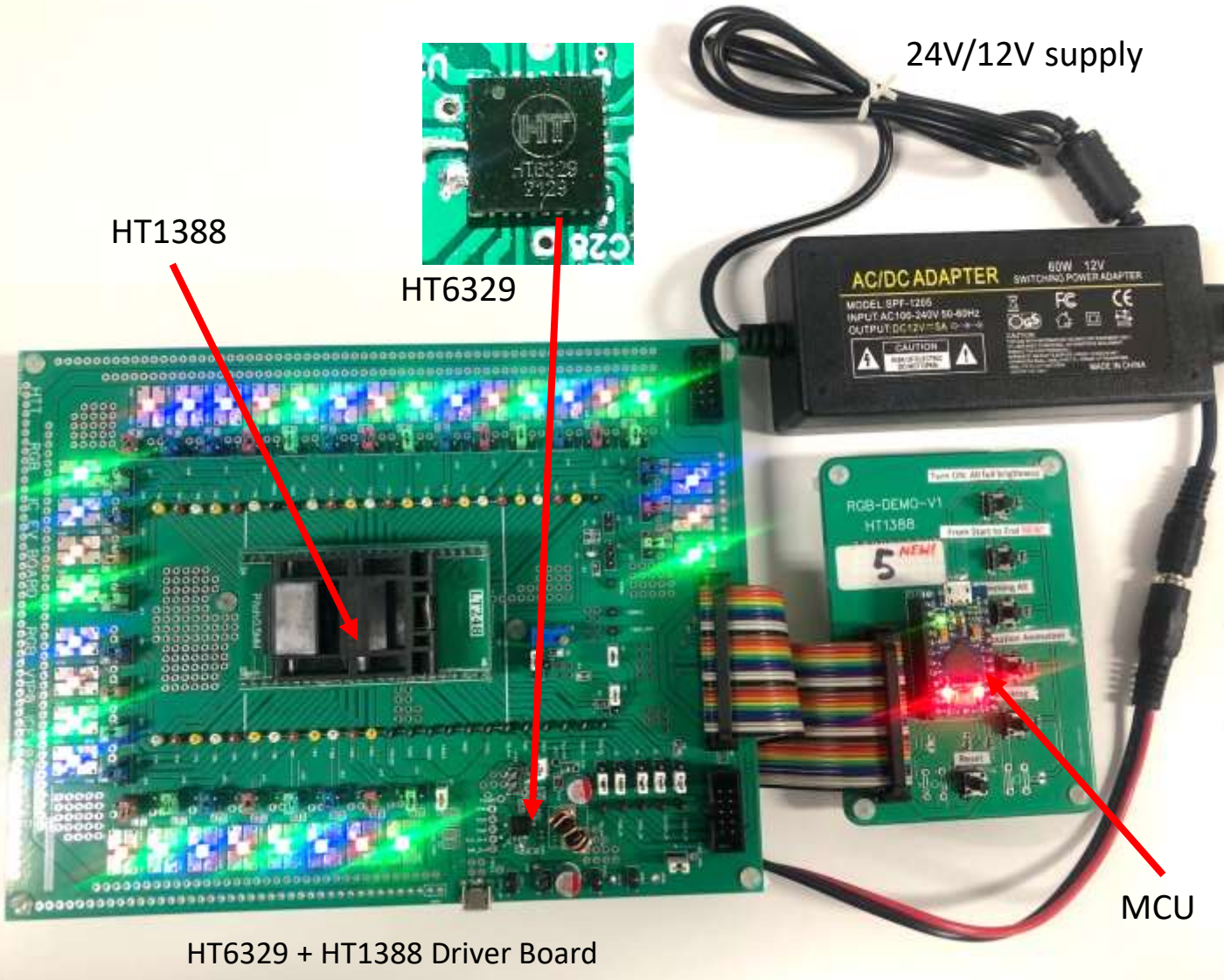


RGB gaming ambient light, keyboard and Speaker





Signal Lamp LED Driver Module



* Youtube Video Link: High Tech Technology LED Driver Module
(https://www.youtube.com/watch?v=l_gkj6RiO-0)



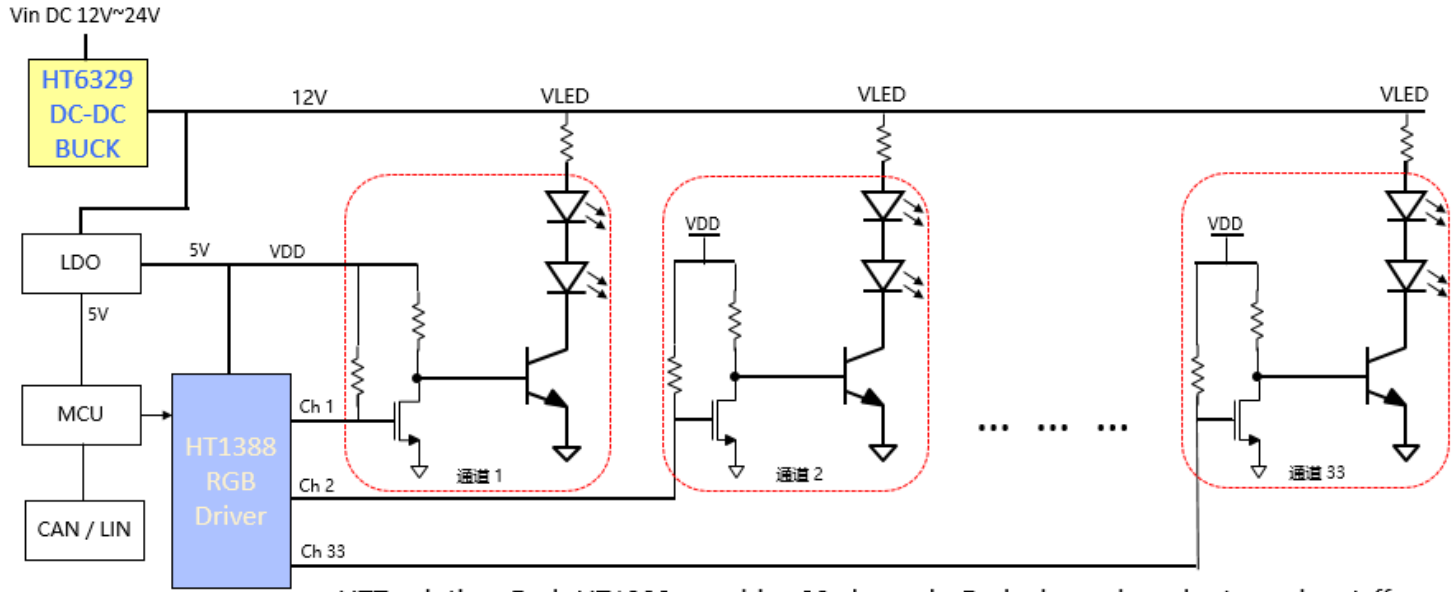
Signal Lamp LED Driver Module Spec (Reference Design – LEDs driven by Constant Current)



	Power Management	Lighting Control
HTT IC Part	HT6329	HT1388
Input Voltage	DC 12V – 24V	DC 3V – 5V
Output	Dual channels	33 channels
Output Voltage	5V - 12V	5V
Output Current	3A per channel	The maximum output current per channel is 30-40mA. For higher output currents, a maximum of 60mA can be achieved via combining two adjacent channels.
Demo Board	HT6329+HT1388 basic driver module, connects to 33 RGB single colour LEDs	
Hardware Features	<ol style="list-style-type: none">1) Up to 33 channels can be driven at currents of 30mA or less.2) With 40mA current, it can drive 18~25 channels.3) Combining 2 adjacent channels to drive 16 channels at 60mA.4) One HT6329 can be connected to up to 3 or more HT1388 demo boards to drive more LEDs.	
Software Features	Lighting patterns : rotational / directional indication / blinking. User-programmable.	



Signal Lamp LED Driver Module Spec (Reference Design – LEDs driven by NPN Transistors)



HTT solution: Each HT1388 can drive 33 channels. Each channel can be turned on/off or PWM dimming controlled separately.



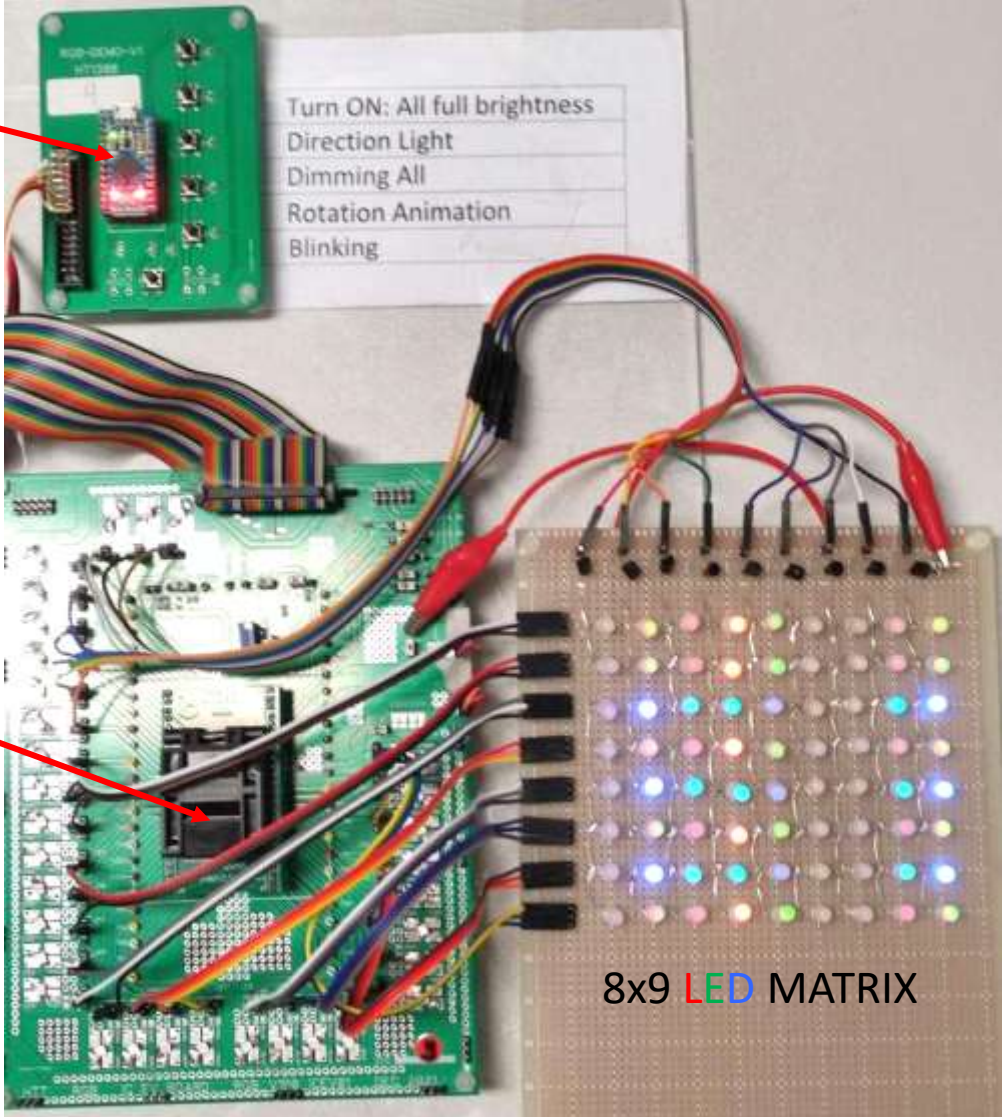
Signal Lamp LED Driver Module Spec (Reference Design – LEDs driven by NPN Transistors)



	Power Management	Lighting control
HTT IC Part	HT6329	HT1388
Input Voltage	DC 12V – 24V	DC 3V – 5V
Output	Dual channel	33 channels
Output Voltage	5V - 12V	5V
Output Current	3A per channel	30mA per channel
Demo Board	HT6329+HT1388 basic driver module, connects to 33 channels NPN-driven LEDs	
Hardware Features	<ol style="list-style-type: none">1) One MCU can drive several HT1388. Each HTT chip can drive 33 channels, and each channel can independently control LED on/off and PWM dimming.2) Each channel output will drive a transistor, e.g. 2N7002 as an adjustment to the HT1388 output.3) One HT6329 can connect up to 3 or more HT1388 demo boards to drive more LEDs.	
Software Features	Lighting patterns: rotational / directional indication / blinking User-programmable	



Dashboard Backlight LED Matrix Module

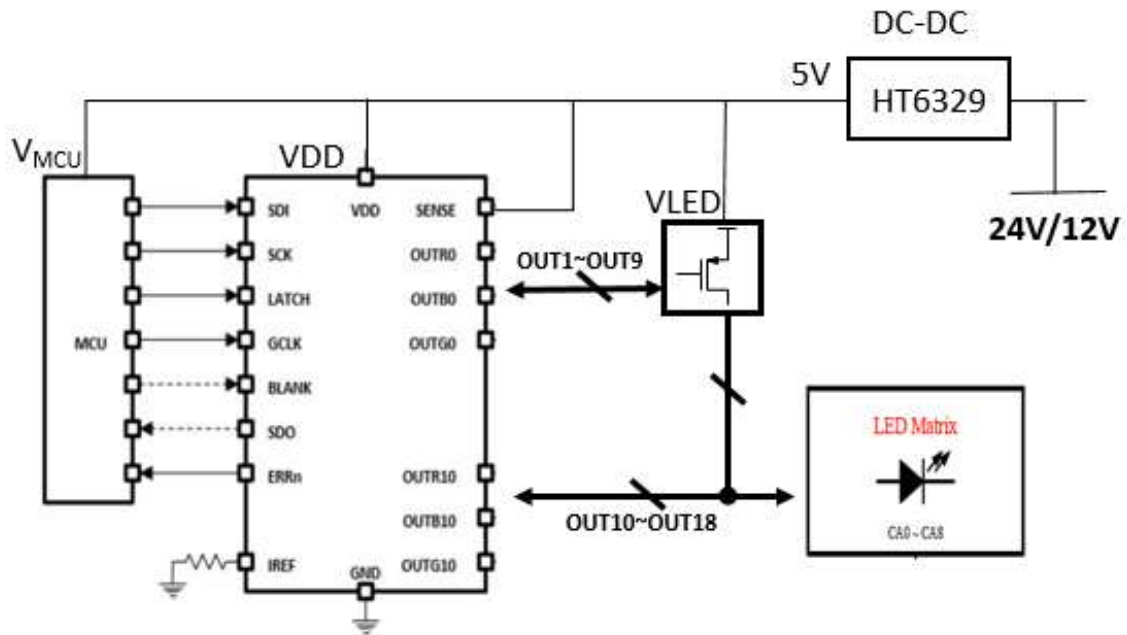


MCU

Turn ON: All full brightness
Direction Light
Dimming All
Rotation Animation
Blinking

HT1388

8x9 LED MATRIX



HT1388 applications block diagram
Can drive 8x9 LED MATRIX

* Youtube Video Link: High Tech Technology LED Matrix Module
(<https://www.youtube.com/watch?v=S4YYpyrTiHA>)



Dashboard Backlight LED Matrix Module Spec

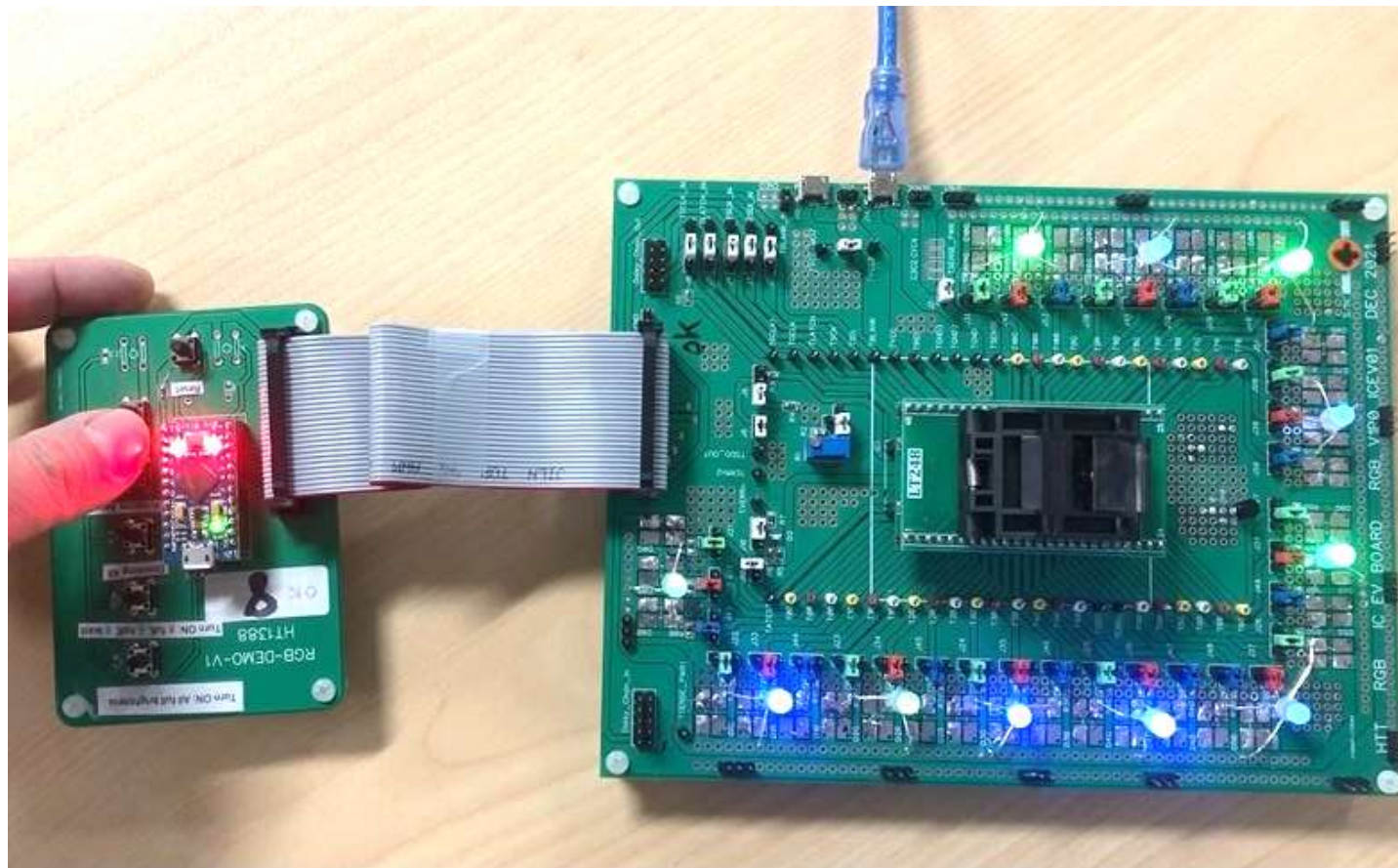


芯高科技
HIGH TECH
TECHNOLOGY LIMITED

	Power Management	Lighting Control
HTT IC Part	HT6329	HT1388
Input Voltage	DC 12V – 24V	DC 3V – 5V
Output	Dual channels	33 channels
Output Voltage	5V - 12V	5V
Output Current	3A per channel	3mA~40mA per channel 256 steps
Demo Board	HT6329+HT1388 basic driver module, connects to 8x9 LED Matrix	
Hardware Features	1) Display dots (Row × Column): 8 × 9 2) One HT6329 can connect up to 3 or more HT1388 demo boards to drive more LEDs.	
Software Features	1) 4096 levels of PWM grayscale 2) Fade in and fade out function 3) Auto scrolling 4) User programmable	



Interior Ambient Light Module



Interior Ambient Light Module Spec



	Power Management	Lighting Control
HTT IC Part	HT6329	HT1388
Input Voltage	DC 12V – 24V	DC 3V – 5V
Output	Dual channels	33 channels
Output Voltage	5V - 12V	5V
Output Current	3A per channel	The maximum output current per channel is 30-40mA. For higher output currents, a maximum of 60mA can be achieved via combining 2 adjacent channels.
Demo Board	HT6329+HT1388 basic driver module, connects to 11 RGB mixed colour LEDs	
Hardware Features	1) One MCU can drive several HT1388, each HTT chip can drive 33 channels, and each channel can independently control LED on/off and PWM dimming. 2) One HT6329 can connect up to 3 or more HT1388 demo boards to drive more LEDs.	
Software Features	1) Control the brightness, color and flickering beat of the light string through the MCU firmware. 2) IoT Bluetooth remote control function. 3) User programmable.	

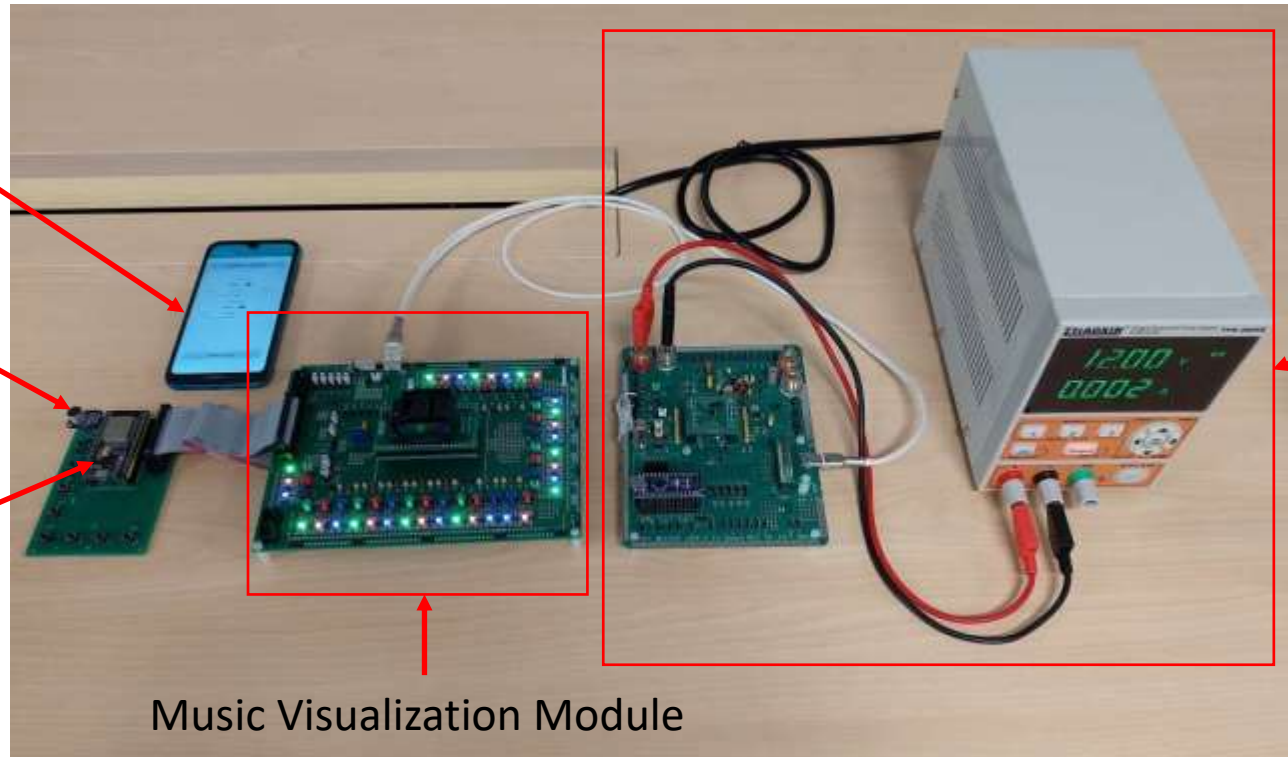


Music Visualization Module

Phone for
Bluetooth control

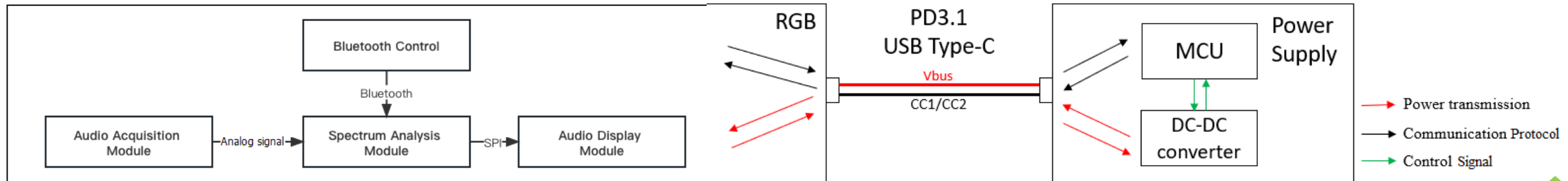
Microphone

MCU for
analyzing
music



USB-C Power supply for
Music Visualization
Module

Music Visualization Module



Music Visualization Module



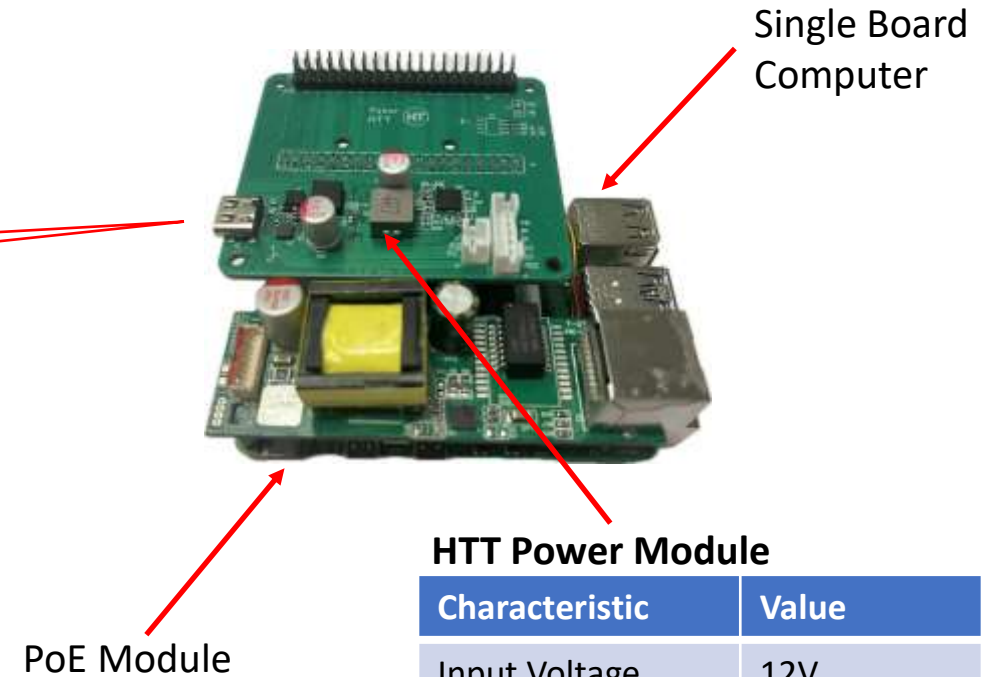
	Power Management	Lighting Control
HTT IC Part	HT6329	HT1388
Input Voltage	DC 12V – 24V	DC 3V – 5V
Output	Dual channels	33 channels
Output Voltage	5V - 12V	5V
Output Current	3A per channel	The maximum output current per channel is 30-40mA. For higher output currents, a maximum of 60mA can be achieved via combining 2 adjacent channels.
Demo Board	HT6329+HT1388 basic driver module, connects to 11 RGB mixed colour LEDs	
Hardware Features	1) One MCU can drive several HT1388, each HTT chip can drive 33 channels, and each channel can independently control LED on/off and PWM dimming. 2) One HT6329 can connect up to 3 or more HT1388 demo boards to drive more LEDs.	
Software Features	1) Control the brightness, color and flickering beat of the light string through the MCU firmware. 2) FFT music display function. 3) IoT Bluetooth remote control function. 4) User programmable.	





AI Edge Device Solutions

Power Module for AI Camera



HTT Power Module

Characteristic	Value
Input Voltage	12V
Output	5V 5A
Maximum Power	25W





Power Module for AI Voice Assistant



HTT Power Module

Characteristic	Value
Input Voltage	12V
Output	5V 5A
Maximum Power	25W





芯高科技
HIGH TECH
TECHNOLOGY LIMITED

芯度技術 高度品質

用「芯」為您創出科技高峰
hightt.com

聯絡我們 Contact Us (Hong Kong Office)

Tel: (852) 36195375 Address: Unit 713, 7/F, 12W, 12 Science Park West Avenue,
Email: httadmin@hightt.com Hong Kong Science Park, Shatin, Hong Kong

DISCLAIMER

這個文件內所有信息、產品圖片和顯示內容僅供參考。實際產品功能、成本和規格等（包括但不限於外觀、顏色和尺寸）以及實際顯示內容（包括但不限於背景、UI和圖標）可能會因時間及實際情況有所差異。這個文件內所有數據及比較是在特定情況下對比市面部份同類產品，均為內部實驗室通過特定條件下進行的測試獲得的理論值，如實際充電時間及快充模式兼容性等是可能因客觀環境而變化，所有結果會因此出現差異。由於個別產品、軟件版本、應用條件和環境因素的差異，實際數據可能會有不同。所有數據因實際使用而有所不同。受條款及細則約束，請參閱上述產品詳細和規格。有關更多信息、文件內容、產品信息、價格等如有更改，恕不另行通知。
All data, images and content in this document are for reference only. Actual function, cost and specification etc. (included but not limited to appearance, color and size) as well as content shown (included but not limited to background, UI and icons) may be subjected to changes according to time and actual situation. All data included in this document are compared with market products under specific circumstances. Theoretical values were attained by test under specific conditions at internal laboratory. For example, actual charging time and compatibility of Fast Charging Protocol are subjected to changes under different conditions, thus may leading to differ in results. Different software updates, application conditions and environment factor in individual product may lead to differ in experimental results. All data may differ from actual application and subjected to terms and conditions, please refer to details and specifications herein. We reserve the right to make changes at any time, of any products or specifications herein, without further notice.