# Comba

京信通信系統控股有限公司 Comba Telecom Systems Holdings Limited

股份編號 Stock Code: 2342

# 2019 Annual Results Corporate Presentation

Persistent • Focus

繼往開來 • 凝心聚力

Innovation

• Brilliant

創新發展•再創煇煌



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Financial Results

**Expenses Structure** 

Financial Position

Key
Financial
Operating
Indicators

Operating
Cash
Flow
Analysis

Gross
Gearing
Ratio
Analysis



**Financial Results** 

Expenses Structure Financial Position Key Financial Operating Indicators

Operating Cash Flow Analysis

Gross Gearing Ratio Analysis



	For the year ended 31 December		Change	For the six
HK\$'000	2019	2018	8	months ended 30 Jun 2019
Revenue	5,779,916	5,663,310	<b>↑116,606</b>	2,751,224
Gross profit	1,776,184	1,458,601	<b>↑317,583</b>	840,253
Gross profit margin	30.7%	25.8%	<b>↑4.</b> 9pp	30.5%
Operating profit/(loss)	234,688	(77,277)	<b>↑311,965</b>	117,252
Income tax	(61,853)	(48,402)	<b>↑13,451</b>	(24,535)
Profit/(loss) attributable to shareholders	151,749	(171,384)	<b>↑323,133</b>	82,214
Net profit/(loss) margin	2.6%	(3.0%)	<b>↑5.6pp</b>	3.0%
Basic earnings/(loss) per share (HK cents)	6.18	(7.07)	↑13.25	3.35





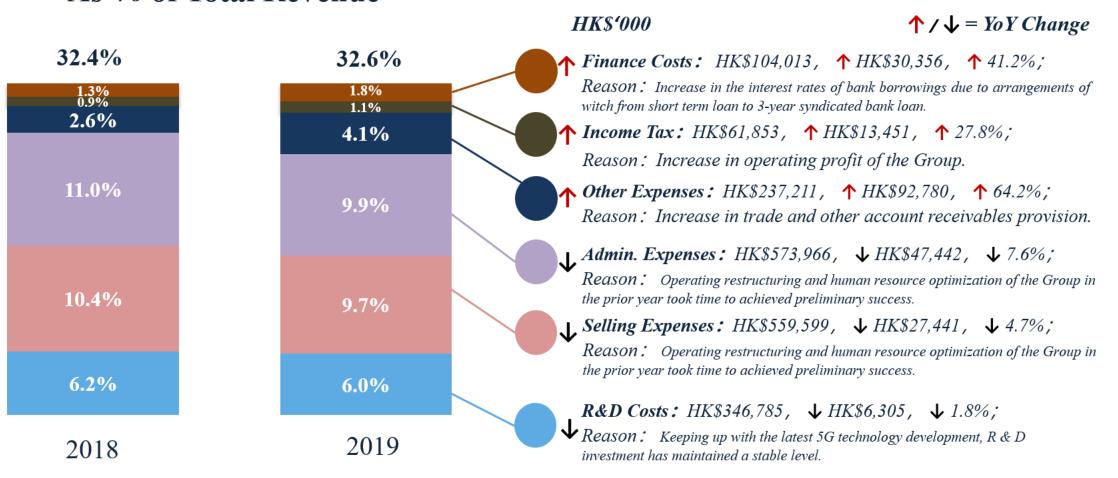
Financial Results Expenses Structure

Financial Position

Key Financial Operating Indicators

Operating Cash Flow Analysis Gross Gearing Ratio Analysis

## As % of Total Revenue





Financial Results Expenses Structure

**Financial Position** 

Key Financial Operating Indicators

Operating Cash Flow Analysis Gross Gearing Ratio Analysis

	For the year ended 31 December			For the six months ended
HK\$'000	2019	2018	Change	30 Jun 2019
Net cash/(debt)	349,772	179,310	<b>↑170,462</b>	(131,610)
Total assets	11,177,089	11,302,641	↓1.1%	11,372,743
Total liabilities	7,280,072	7,497,027	<b>\$\daggeq 2.9%</b>	7,490,629
Net assets	3,461,209	3,278,153	<b>↑5.6%</b>	3,402,539
NAV per share(HK\$)	1.39	1.35	<b>↑3.0%</b>	1.37



Financial Results Expenses Structure Financial Position

## **Key Financial Operating Indicators**

Operating Cash Flow Analysis Gross Gearing Ratio Analysis

	For the year ended 31 December			For the six
	2019	2018	Change	Jun 2019
Inventory turnover days	114	116	↓2 days	126
A/R turnover days	258	280	<b>↓22 days</b>	285
A/P turnover days	380	347	↑33 days	412
Cash conversion cycle	(8)	49	↓57 days	(1)
Gross gearing ratio	15.7%	17.7%	<b>↓2.0pp</b>	16.6%
Debt-to-assets ratio	65.1%	66.3%	<b>↓1.2pp</b>	65.9%
Return on average equity	4.5%	(4.9%)	<b>↑</b> 9.4pp	4.9%
Dividend payout ratio	35.6%	Nil	N/A	29.9%

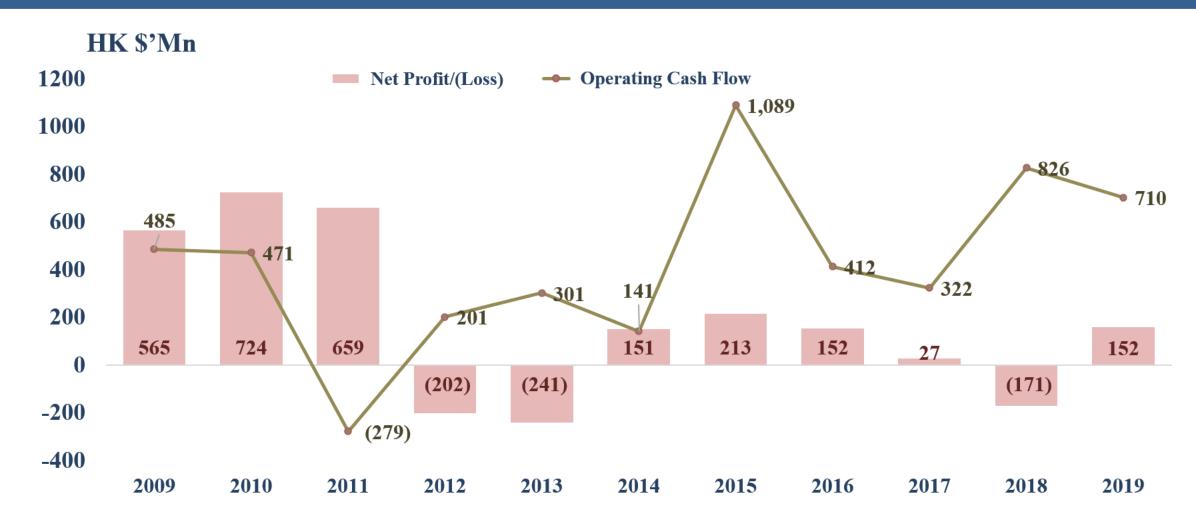


Financial Results Expenses Structure Financial Position

**Key Financial Operating Indicators** 

**Operating Cash Flow Analysis** 

Gross Gearing Ratio Analysis





Financial Results

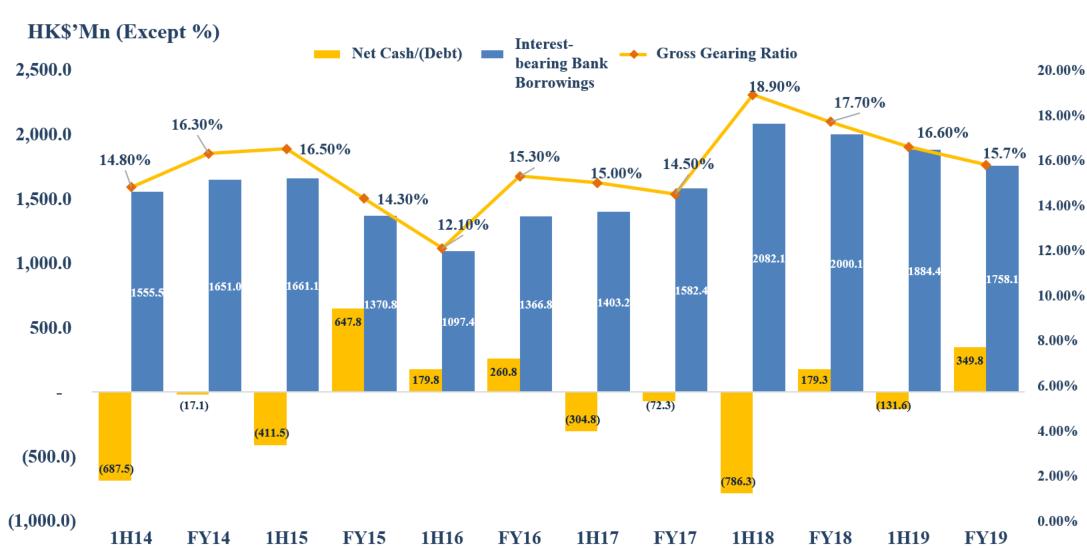
**Expenses Structure** 

**Financial Position** 

Key Financial Operating Indicators

Operating Cash Flow Analysis

**Gross Gearing Ratio Analysis** 





Revenue
Breakdown by
Customers



Revenue Breakdown by Business



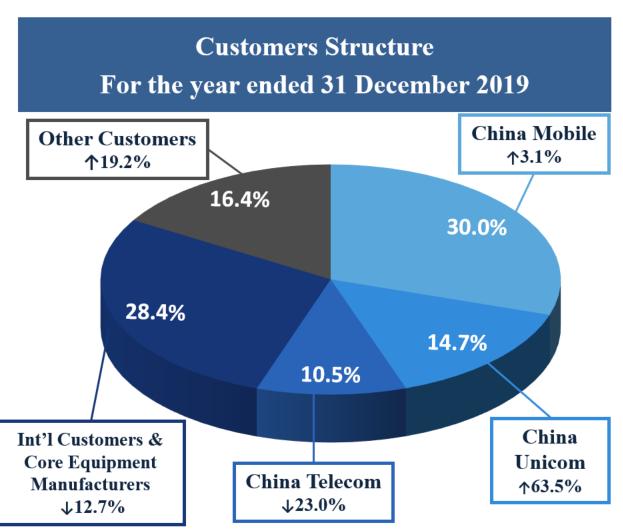
2010 - 2019 Financial Performance Analysis

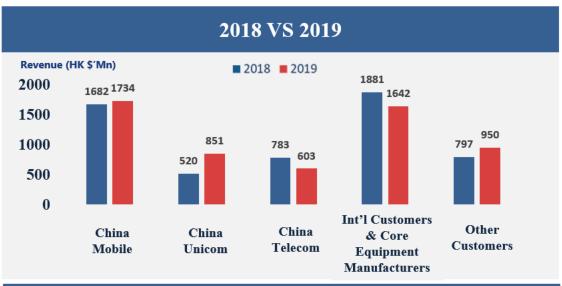
## Comba

**Revenue Breakdown by Customers** 

Revenue Breakdown by Business

2010 -2019 Financial Performance Analysis





#### **Customer Breakdown**

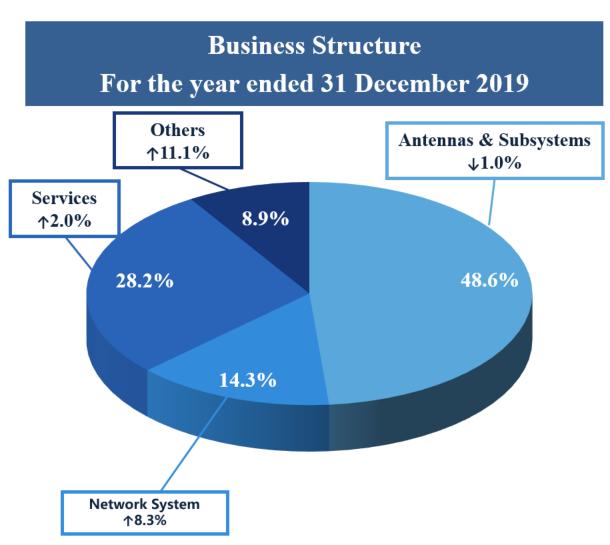
- Revenue of three operators accounted for 55.3% of total revenue in domestic customers, \$\\$\dagger\$6.8% yoy;
- Overseas customers mainly include Asia-Pacific, Europe, Middle East, America and so on, in which, Middle East market \$\gsigma11.2\%\$ yoy, America market \$\giangle11.7\%\$ yoy;
- Other Customers mainly include China Tower, Railway Transit and Telecom Operator ETL, in which,
  - ✓ Revenue of China Tower accounted for 5.1% of total revenue, ↑18.6% yoy;
  - ✓ Revenue of Railway Transit accounted for 4% of total revenue, ↑34.9% vov:
  - ✓ Revenue of ETL accounted for 2.7% of total revenue, ↓15.7% yoy;

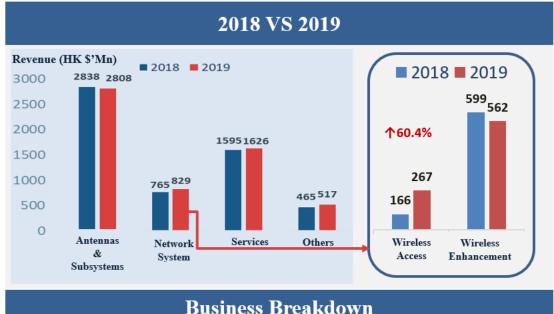


Revenue Breakdown by Customers

## **Revenue Breakdown by Business**

2010 -2019 Financial Performance Analysis





#### noss(including Wineless Access C Wineless Enhancement

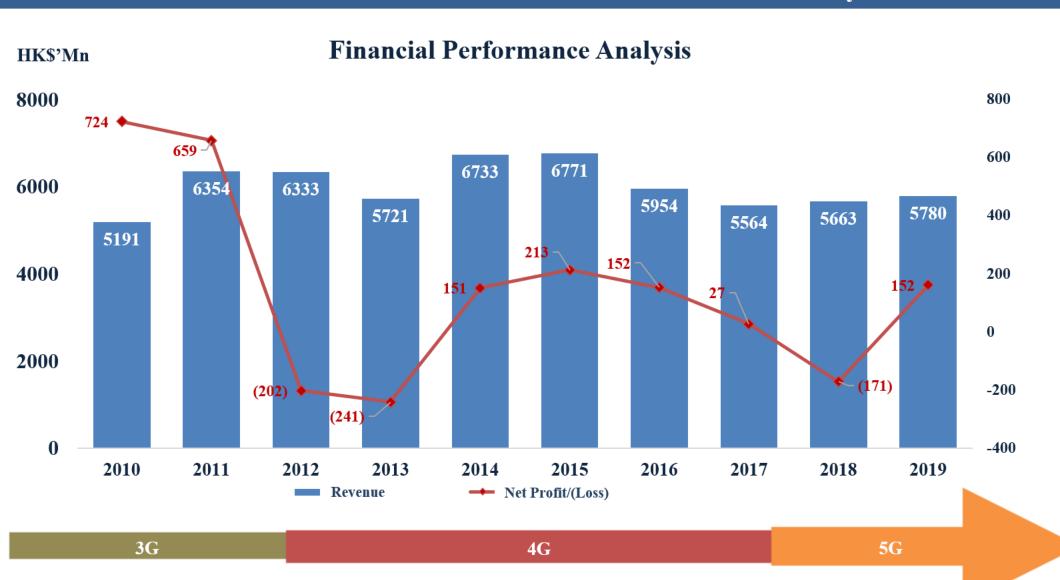
- Network System Business(including Wireless Access & Wireless Enhancement):
  - ✓ Revenue of Wireless Access, represented by Small Cell as typical product, accounted for 5% of total revenue, ↑60.4% yoy;
  - ✓ Revenue of Wireless Enhancement accounted for 10% of total revenue, ↓6.2% yoy;
- Others mainly include Wireless transmission, Railway Transit Communications, Telecom Operator ETL:
  - ✓ Revenue of Wireless transmission accounted for 3% of total revenue, ↑21.4% yoy;
  - ✓ Revenue of Rail Transit Communications accounted for 4% of total revenue, ↑34.9% yoy;
  - ✓ Revenue of ETL accounted for 2.7% of total revenue,  $\downarrow$  15.7% yoy;



Revenue Breakdown by Customers

Revenue Breakdown by Business

## 2010 -2019 Financial Performance Analysis



# Industrial Development



# **5G Global Development**

✓ Global 5G network construction and commercialization



# **5G Construction In China**

✓ 5G Layout: Parallel development of 4G and 5G and 2020 network construction plan of operators



# **5G Industrial Application**

✓ 5G+ driven industrial upgrade



# 1. Global 5G Development



## Global 5G Network Construction and Commercialization

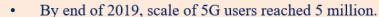
## Global 5G network construction will be widely proceeded in 2020, and Global mature 5G commercial plan will be deployed around 2021

- The US(2019~2020), China(2019~2020), Australia(2020), Europe(Czech(2019), France(SFR 2019/Orange 2020), Germany(DT), and Japan(DOCOMO 2020). Peak period of global 5G network will be accompanied with a large scale of commercial use;
- Up to now, a total of 84 operators in 51 countries have officially announced or planned to start 5G network construction. The countries that have launched or are deploying 5G networks are concentrated in Asia Pacific (China / Japan / Korea / Australia), North America and Europe, and some Middle East and South American countries;
- The estimated time may vary among various operators, fully commercial trial or use of 5G will be around 2021.

## Latest progress of 5G commercial use in the US, Japan, South Korea and Europe



• Key operators will deploy around 190K unit of 5G base stations, covering 85% of the city and 93% of population.





- AT&T will launch low frequency spectrum 5G service in mid 2020
- ❖ Verizon launched high frequency spectrum millimetre 5G services in 30 cities and expects to cover 60 cities by end of 2020
- ❖ T-Mobile US in 2019 launched low frequency spectrum 5G services

### Europe

• 20 Operators in Europe launched 5G commercialization

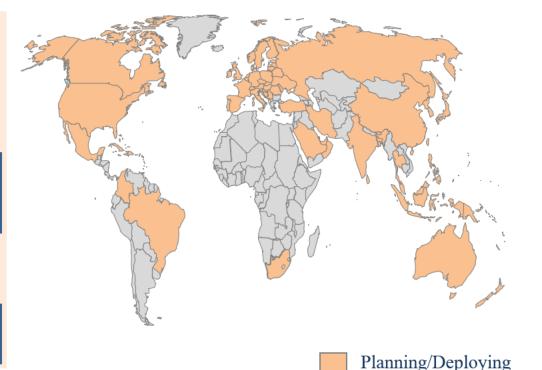


- The UK and Germany finished the bid of 3.5G spectrum
- France plans to start bidding spectrum in 2Q 2020

### Japan



- ♦ Ministry of Internal Affairs and Communications in April 2019 offered a license of 5G services and spectrum to NTT DoCoMo、KDDI、SoftBank and Rakuten Mobile
- Planning to cover 60% of population in 2023 and 100% of population by end of 2024.



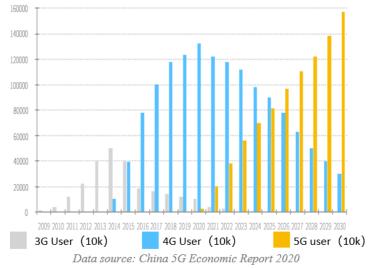
## 2. 5G Construction in China



## Network Layout: Coexistence development of 4G and 5G & 2020 Operators' Plan in 5G network construction

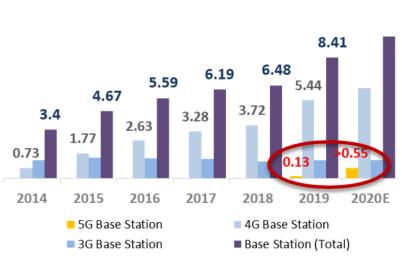
- In future 10 years, 4G is still a basic bearer network, while 5G will develop based on 4G foundation.
   5G and 4G will coexist for a long time.
- ✓ 5G Capacity/ Traffic layer: Sub 6GHz 5G network satisfies the needs of eMMB, uRLLC, mMTC, based on scenarios and demands to deploy.
- ✓ 4G Capacity/ Traffic layer: Sub 3GHz 4G/4.5G network, satisfies the needs of VoLTE and NB-IoT.
- 5G construction will be a giant part of basic investment, leading the proactive industrial chain development, forming industrialization effect.
- China Mobile, China Telecom, and China Union, will build at least 550k 5G base stations in 2020.

## Estimated number of 3G/4G/5G users in China (2020-2030)



The estimated time of 5G coverage reaching to same scale of 4G needs around 7-8 years. 5G users in 2025 will reach 816 million with 48% penetration rate, that will enhance to 85%, with 1.5billion 5G users in 2030.

### Accumulative Numbers of Macro Base Stations in 2014-2019



Data source: Ministry of Industry and Information Technology of China Note: The number of 5G base stations in 2019 is the aggregated data released by the three major operators.

The number of 5G base stations in 2020 is the forecast data based on

the network construction goals of operators

### **Major Cities in China 5G Planning**

No	City	5G Coverage Plan
1	Beijing	5G network coverage in key functional areas by 2021
2	Shanghai	5G full coverage in 2020
3	Guangzhou	Continuous coverage of 5G networks in main urban areas and key areas by 2021
4	Shenzhen	5G city-wide coverage by the end of August 2020
5	Chongqing	The main urban area is expected to achieve 5G full network coverage by 2022
6	Hangzhou	Full coverage of 5G signals in Hangzhou city by 2020
7	Suzhou	By end of 2021, achieved over 85% of citywide coverage
8	Wuhan	In 2021, full coverage of 5G in cities will be achieved
9	Zhengzhou	5G full coverage initially achieved in early 2019
10	Shenyang	Achieved 5G network coverage in Shenyang and Shenfu New District in 2019

# 3. 5G Industrial Application



## 5G+, Innovation drives industry upgrade.

## 5G accelerates network speed and changes the industrial production way.

- The 5G business success depends on integration level of 5G and industrial applications, including:
  - eMBB drives video and VR to boost and improve efficiency and user experience.
  - ✓ IoT application with high value become popular, improving social productivity.
- 5G+AI, drives a new round of industrial upgrade and digital transformation to various industries:

Smart Office, Smart Learning, Smart Commerce, Smart Workshop, Cloud Gaming, 8K high-resolution/VR live broadcasting, Driverless Car, Intelligent Manufacturing, Telemedicine, Smart Mining and so on; Following applications widely used in the COVID-19 epidemic Period, contributing to national economy.



During the COVID-19 period:

- ✓ Number of people learning online each day up 46%.
- 127 million online education users.

- During the COVID-19 period: 

  60% of work online.
- More than 300 Mn use remote office software.

In 2019 Nov, 5G+ video ringtone come out. In 2020 Mar, number of China mobile video ringtone reached 100 Mn.

# Company Outlook







## **Antenna Products**

- ✓ Antenna Product Forms
- ✓ Macro Base Station Antenna Technology/Product/Market Development
- ✓ Broad Indoor Coverage Scenario Solution

## **Network System**

- ✓ 5G Small Cell Market
- ✓ 5G Small Cell Product Introduction and Progress
- ✓ 5G Small Cell & Industrial Internet
- √ 5G Small Cell Industrial Application
- ✓ OpenRAN Network Solution

## **Business Operation**

- ✓ Market Outlook
- / New Business
- ✓ Operating Strategy

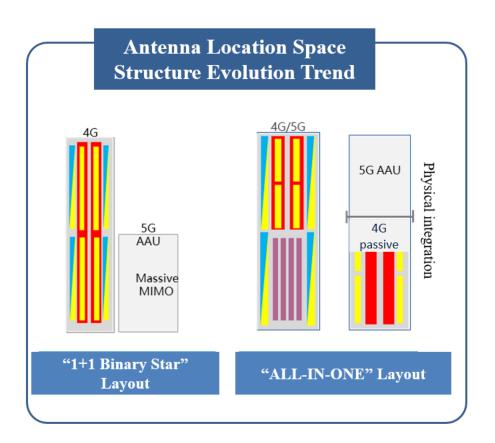


**Antenna Product Forms** 

Macro Base Station Antenna Technology/Product/Market Development

Broad Indoor Coverage Scenario Solution

Antenna location space will be a scarce resource, where dual and single antenna location space will be the main forms of antenna location space architecture in 5G era globally, driving multiple demands of base station antenna.



4G Antenna Product

**5G Antenna Product** 

FDD Ultra Multi-Port Multi-System Common Antenna

FDD/TDD Hybrid Multi-System Shared Antenna

FDD Hybrid Beam Multi-System Shared Antenna

**AAU Antenna Module** 

4G/5G (≤16TR) Integrated Convergent Antenna

**BSA/AAS Integrated Convergent Antenna** 



Antenna Product Forms

Macro Base Station Antenna Technology/Product/Market Development:5G Antenna

Broad Indoor Coverage Scenario Solution

#### 5G Antenna:

- Equipped with more than 50 core technology patents in sub arrays, full arrays, AFU, etc.
- Comba is one of the rare manufacturers with **independent R&D** and **manufacturing capabilities** in BSA, AAS, AFU, dielectric filters and cavity filters.

### AAU Antenna Module (AAS, AFU, CWG)

- AAS: Products were applied in global 5G network in bulk supply, accumulative shipments of over 200k pairs of AAS in 2019, contribution of 9.1% of total antenna business, and antenna orders of 200k pairs have been obtained so far in 2020.
- AFU: Cooperated with core equipment manufactures and delivered bulk supply.
- CWG: Production line and plant preparation was completed in 2019, and enter in scale production stage.

## 4G / 5G((≤16TR)) Integrated Convergent Antenna

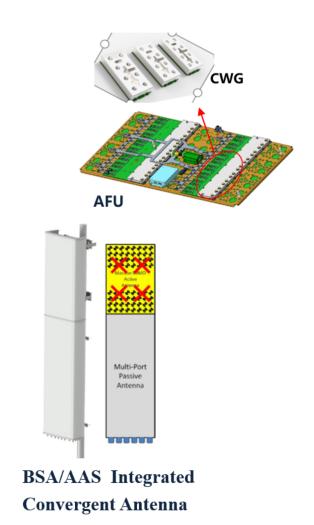
Cost-efficient solution for 5G.

Stage: Complete pilot application in China, Europe and South America and it is estimated that large-scale deployment will be launched in Europe, South America, South Asia, Southeast Asia and other regions, and Chinese operators will start central procurement on it soon.

## **BSA/AAS Integrated Convergent Antenna**

Single location space solution with high technical requirements for 5G.

Stage: Cooperate with core equipment manufactures in R&D.





Antenna Product Forms

Macro Base Station Antenna Technology/Product/Market Development:4G Antenna

Broad Indoor Coverage Scenario Solution

### 4G Antenna:

Won 3 China Patent Gold Awards for consecutive four years with growing technology advantage.

Leading position in domestic antenna industry.

Core antenna supplier for most of top 20 overseas operators.

### FDD Ultra Multi-Port Multi-System Common Antenna

Advanced 15 frequencies 30 band antenna product.



#### FDD/TDD Hybrid Multi-System Shared Antenna

■ Won the first prize of science and technology of China Communications Society, meaning the highest technical level of china mobile antenna in 4G and 5G era.



#### FDD Hybrid Beam multi-system shared Antenna

■ Important solution for network expansion.



- Main product for FDD network.
- FDD antenna shipments reached nearly 400k pairs in 2019, accounting for 45% of revenue.
- I The unique solution for shared network, widely used by global operators.
- 110k pairs shipped in 2019, accounting for 26% revenue of antenna business.
- In 2020, VF, TF, and OG, have planned large-scale deployment and released batch purchase requirements. large-scale deployment will start in Europe, the Middle East, India, Southeast Asia and other regions.
- Currently this type is applied in Brazil, India, Indonesia, Thailand and other regions and it is expected that the scale of deployment in South America, South Asia, Southeast Asia and other regions will continue to grow in the future.



Antenna Product Forms

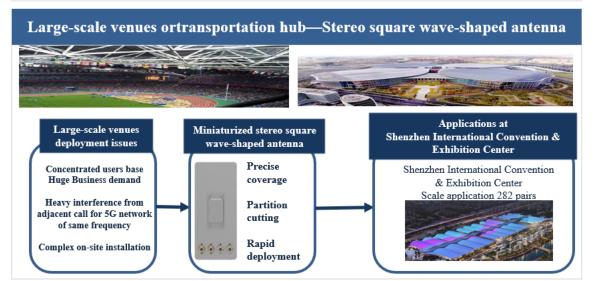
Macro Base Station Antenna Technology/Product/Market Development:4G Antenna

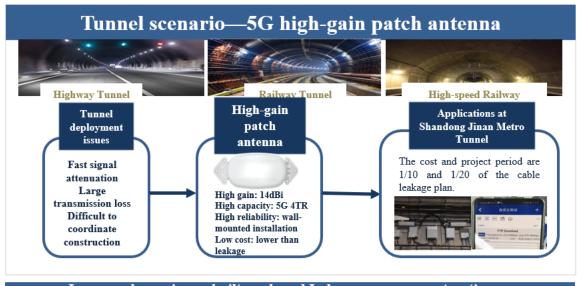
**Broad Indoor Coverage Scenario Solution** 

Provide solutions for 5G broad indoor coverage in scenarios with hotspot coverage

Stage: Complete product preparation, demand incubation and scale trials, and enter in bulk supply period



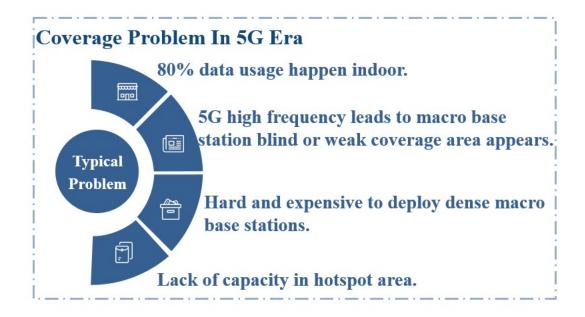




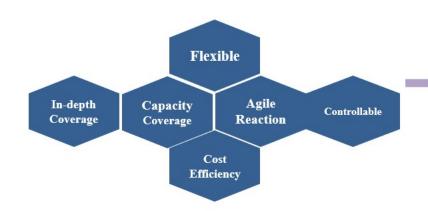




In the 5G era, diversified network construction is a trend. Small cell enters in a broad market with solving the indoor coverage problem.



## Advantages of Small Cell Solution in 5G Era





#### **Market Chances for Small Cell**

Growing Investment in 5G infrastructure:

"China 5G Economic Report 2020" pointed out that according to incomplete statistics of the Institute of Investment Research, the current target size of industry funds related to the 5G theme has reached nearly 100 billion. Enterprises with industrial background work closely with market-oriented investment institutions (the National IC Industry Investment Fund Phase II has reached 200 billion yuan, some of which will be invested in 5G).

Industry Authority Predictions:

It is publicly predicted that market of 5G Small Cell in China should have tens of millions of magnitude.

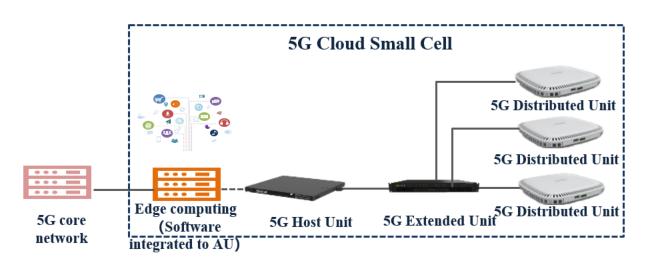


## Comba 5G Cloud Small Cell Development

- Progress made after world's 5G cloud small cell with China Mobile and Intel launched,
- Lab tests were completed in China Mobile, China Telecom and China Unicom.
- Work with China Telecom (Guangdong) to launched the nation's first commercial 5G white box cell, and released the country's first commercial 5G SA white box active indoor coverage.
- Pilot trial was completed in cities including Guangdong, Beijing, Zhejiang, Jiangsu, and Henan etc.. The results of the trials have met the requirements of the specification, and the business experience has reached theoretical values (see table belowed);

  Comba "5G Cloud Station + Industrial Internet Application" was selected as the first batch of "5G + Industrial Internet Application Demonstration Park" by the Ministry of Industry and Information Technology of Guangdong Province;
- Promote the 5G cloud small cell specifications into the digital indoor coverage industrial standard;
- 1H20 Plan:
- Promote China Mobile, China Telecom, and China Unicom 5G cloud small cell products series to enter productions stage.
- Form commercial orders for 5G cloud stations.
- Released "5G Cloud Station + Industrial Internet" industry solution.

#### **5G Cloud Small Cell Product Structure**



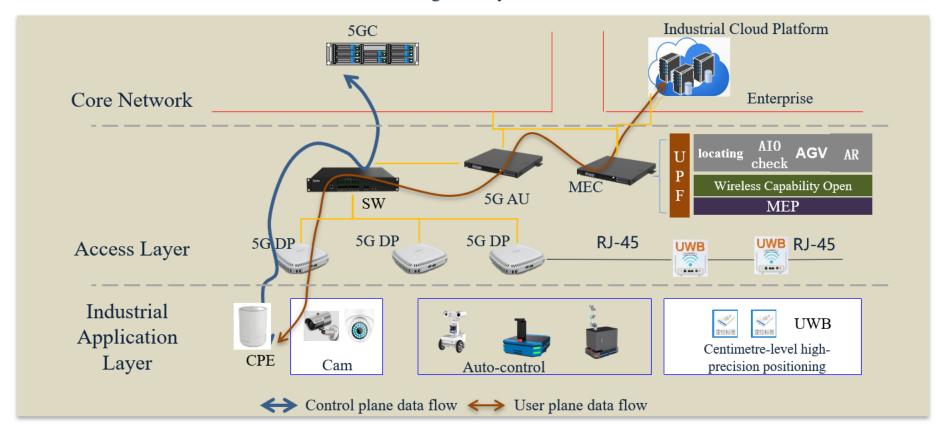
## **5G Cloud Small Cell Testing Results**

Item	Peak rate/Mbps
NR_100MHz downloading (4T4R)	1420
NR_100MHz uploading (4T4R)	275
NR_100MHz downloading (2T2R)	843
NR_100MHz uploading (2T2R)	178



## **Create a competitive 5G Cloud Station + Industrial Internet Platform solution**

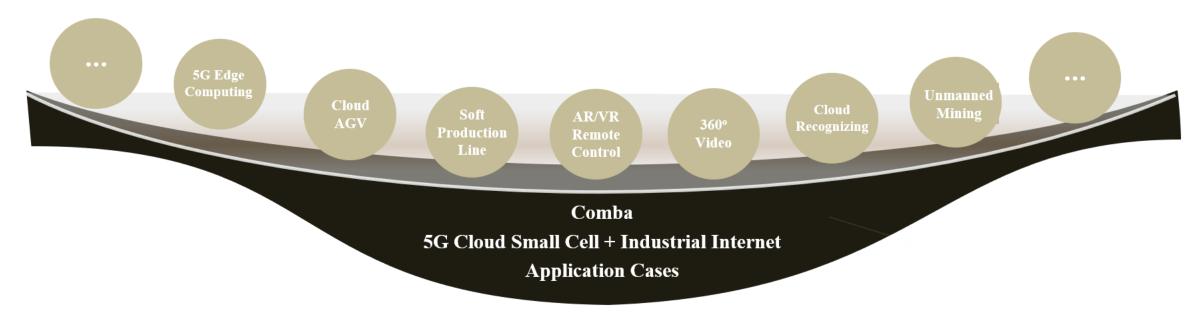
- With the characteristics of openness, flexibility, and agility of vertical industry scenarios, small cell will be more adaptable to achieve deep integration with the industry.
- Comba "5G Cloud Station + Industrial Internet Platform" is committed to becoming the industry's first cloud-based architecture and an open 5G application platform, providing basic network and platform solutions that adapt to the needs and applications of the target industry.
- Composed of 5G core network, MEC, 5G cloud small cell, and industry CPE, the solution carries various applications of the Industrial Internet and provides E2E solution for customers in the industrial manufacturing industry.





## Comba 5G Cloud Small Cell has made substantial progress in 5G industry applications such as smart manufacturing and smart mining.

- Based on the industry-leading 5G Cloud Station + Industrial Internet Platform, Comba cooperated with China Mobile Industry Research Institute, Guangzhou Mobile, Yankuang Group to develop 5G + industry applications, and made progress in 5G + Intelligent Manufacturing, and also had discussion on cooperation in 5G + Smart Commerce and 5G + Smart Park:
- 5G+ Industrial Internet Demonstration Park
- ✓ Comba collaborated with China Mobile(Guangzhou) to build a 5G + Industrial Internet Application Demonstration Park, applying the application of 5G cloud small to the industrial manufacturing system.
- ✓ 5G+ Smart Mining
- ✓ Comba and Yankuang Group reached a strategic cooperation agreement to jointly develop underground 5G + unmanned mining solution.





## Comba is one of the competitive manufactures in OpenRAN.

- As the first batch to join the OpenRAN and TIP alliance manufacturers, Comba was committed to develop product based on the O-RAN concept.
- Developed the industry-leading OpenRAN RRU platform and series of products, and cooperated with mainstream OpenRAN BBU manufacturers closely.
- As one of the 15 invited vendors all over the world, Comba entered the RFQ stage of Vodafone's OpenRAN tender with a quantity of 100k.
- Participate in the work of ORAN organization, such as technical and test specification formulation, system integration, and commercial evaluation, etc...
- On November 9, 2019, China Mobile, China Telecom, and China Unicom jointly established the Open Wireless Network Testing and Integration Center (OTIC). Comba was invited to attend the conference and deliver a speech as a representative of a competitive manufacturer.





#### **Openness** is the trend for global wireless network.

There are two influential industry alliances promoting the openness of mobile networks. TIP was initiated by Facebook in 2016, and ORAN was initiated by China Mobile in 2018.

#### 15 SUPPLIERS





























JA-BIL

Open and intelligent wireless network evolution is the most important goal of the OpenRAN Industry Alliance.

# 3. Business operation



### Market Outlook

New Businesses

**Business Operation Strategy** 

Revenue of domestic market for 2019 grew by 10.7%, benefited from continuous in-depth coverage and expansion of network and commencement of 5G scale construction.

In 2020, Antenna business: Promote the industry's development and ensure the leading position.
5G: Seize the opportunity of 700M, 2.1G, and 2.6G 8TR macro station networking, and achieve incremental revenue from innovative products in the four broad indoor coverage scenario.

4G: Won large share three operators central procurement, and seize the opportunity of 5G construction integration.

In 2020, Network products business:

4G: Focus on in-depth urban coverage and rural wide area coverage to keep the absolute leading position in market segments.

5G: Promote the commercialization of products for operator infrastructure and vertical industries.

In 2020, the three operators will formally deploy 5G networks on a large scale. In addition to 5G macro base stations, the demand for 5G indoor coverage networks will also be valued.

The Group will vigorously promote 5G related products and 5G innovative scenario solutions.







Revenue of overseas and OEM market dropped by 12.7%. Although 4G network construction slowed down in some regions, but Comba still made a breakthrough in some areas, such as Asia-Pacific, Europe, Middle East, in which, Middle East market grew by 71.2% yoy, America market grew by 11.7% vov;

In 2020, Antenna business:

Target: Form a comprehensive strategic partnership with the main equipment suppliers, and achieve the revenue of 5G antennas and dielectric filters substantial growth.

Cooperate with overseas operators in key markets, seize the European market.

Leverage S&OP capabilities and seize the construction chance market of India, the Middle East, and South America. Increase technology and marketing invest on  $4G/5G (\le 16TR)$  BSA and BSA / AAS integrated convergent antenna.

In 2020, Network systems business:

Continue to promote cooperation with leading global vendors, develop strategic partners, and promote commercialization in the OpenRAN field.

Promote the business of co-build co-share of 5G indoor coverage with multi-operator.

Consolidate DAS, repeater and private network coverage services in traditional markets:



# 3. Business operation



Market Outlook

**New Businesses** 

**Business Operation Strategy** 

Rail Transit



- Committed to fully and effectively provide professional rail transit communication system solution for customers including one-stop service such as technical solution design, equipment supply, project installation and integration service and so on.
- In 2019, revenue from rail transit communication increased by 34.9% YoY, and successfully won the bid of various rail transit projects in Beijing, Shanghai, Guangzhou, Chengdu, Hangzhou and Nanjing City, and the sales scale continuously increase in a fast speed.

Derator ET



- At the end of 2017, the Group announced to invest in the construction of ETL's 4G network.
- In 2018, ETL has completed the construction of backbone optical fiber bearer network, core network, and integrated billing system.
- In 2019, the Group has realized the full commercialization of 4.5G network across Laos, laying the foundation for the future 5G, and the performance are expected to reverse gradually.

mremgent anufacturing



- Committed to providing flexible intelligent manufacturing, digital factory and industrial internet solutions for manufacturing enterprises and industrial.
- In 2020, the Group will increase market development and actively explore industrial customers.

# 3. Business operation

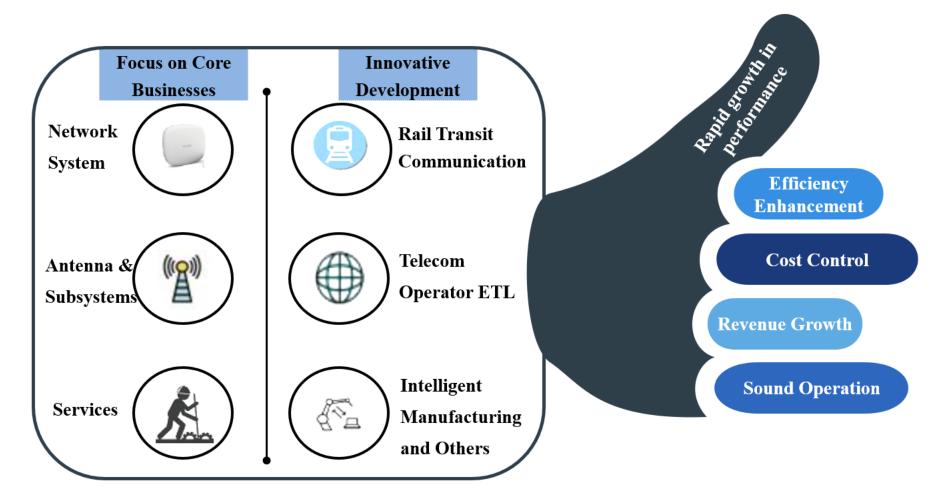


Market Outlook

New Businesses

## **Business Operation Strategy**

In 2020, the Group's core business philosophy: while consolidating operational achievements in 2019 and ensuring effective promotion of management reform, the group will seize the opportunity of 5G development and strive for enhancing product competitiveness, market share and brand influence in order to secure the leading position in the industry. Meanwhile, the Group will actively explore new development paths and seek new business growth points at the same time.





# Thank you!