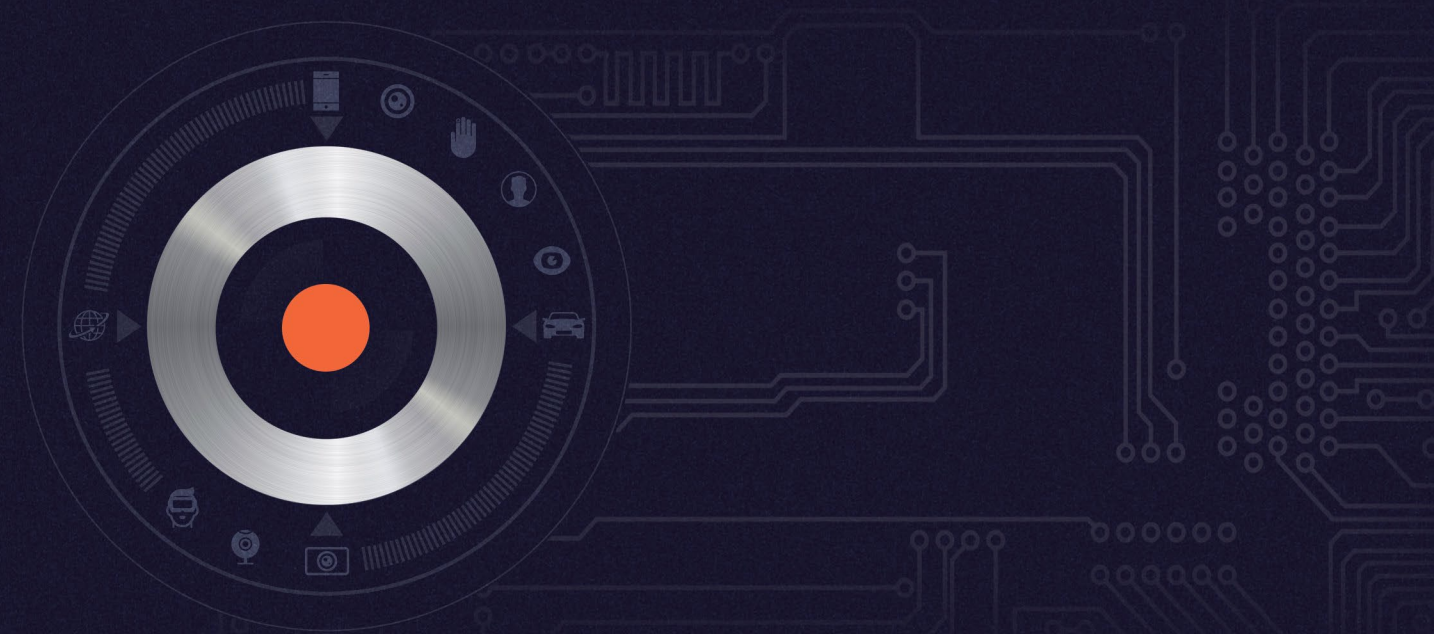


THE INVISIBLE CORE TECHNOLOGY OF **MCNEX**

MULTIMEDIA CORE OF THE NEXT. MCNEX

T H E E Y E O F I T W O R L D . M C N E X



MCNEX TOWER

13-39, Songdogwahak-ro 16beon-gil, Yeonsu-gu, Incheon, Republic of Korea

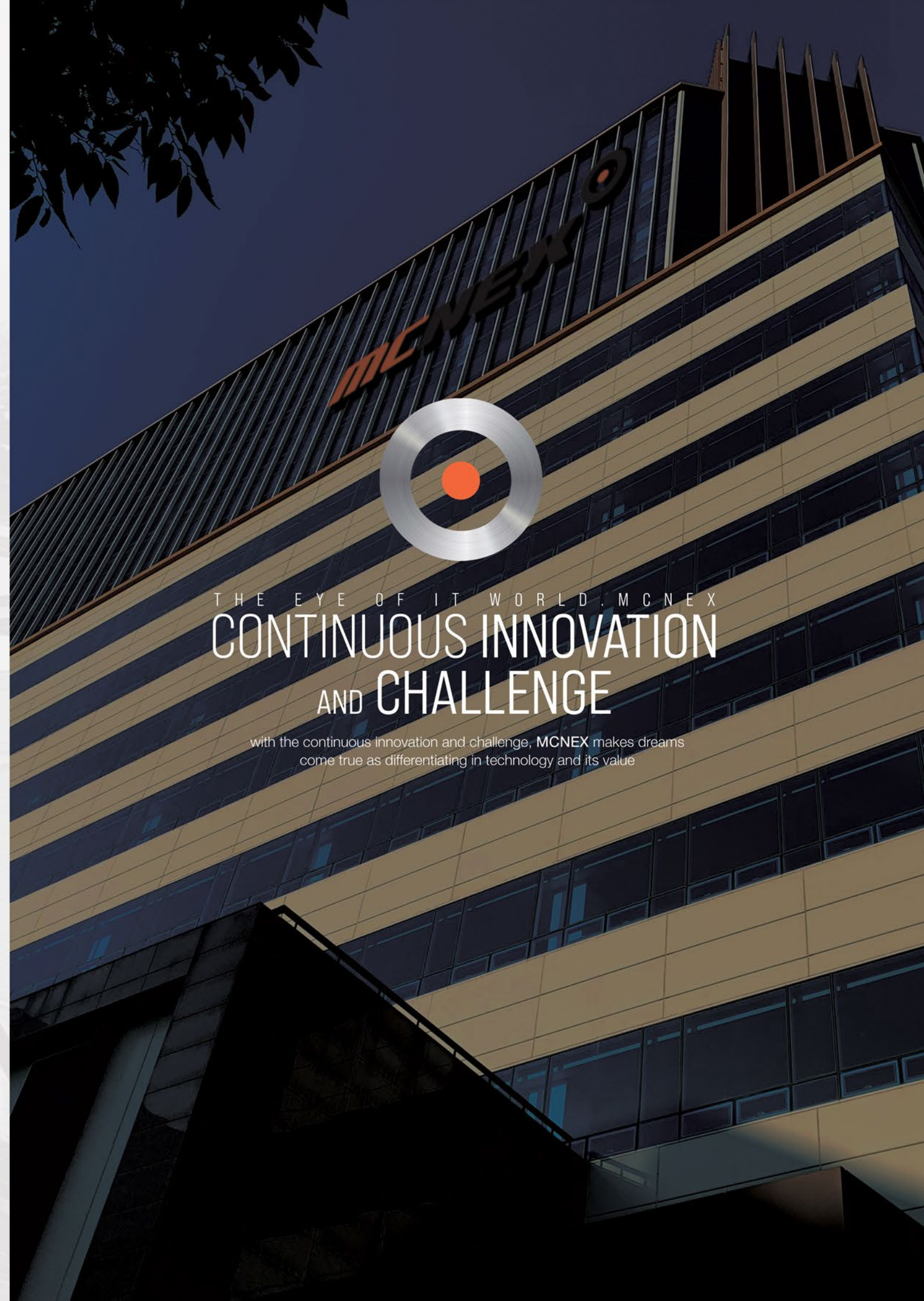
MCNEX PROFILE - KOREAN

MCNEX's 11 consecutive years of CES exhibition since CES2015



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84 SYSTEM SOLUTION
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106 CUSTOMER



THE EYE OF IT WORLD. MCNEX
CONTINUOUS INNOVATION
AND CHALLENGE

with the continuous innovation and challenge, MCNEX makes dreams come true as differentiating in technology and its value

R&D INNOVATION

By continuous technical development, we find our future and open the prosperous future from a little question. MCNEX is leading technology, change and innovation with incessant spirit of challenge



GREAT FUTURE

The change and innovation we pursue are making
dreams come true and create the future of everyone's
dreams of convenient future



GLOBAL PIONEER

With passion and innovation to the creation,
MCNEX will be with you to deliver the technical difference to
the world and to make prosperous human life.



COMPANY OVERVIEW
HUMAN TRUST

INNOVATION



MAKING TOMORROW BETTER WITH A PURSUING VALUE OF
INNOVATION ON A BASIS OF TRUST AND FAITH

CHALLENGE



CONTINUING THE CHALLENGE TO MAKE TOMORROW BETTER WITH
CREATIVE THINKING AND BOUNDLESS PASSION

HERE IS MCNEX AS A LEADER OF CHALLENGE AND INNOVATION, IS MAKING MORE CONVENIENT PROSPEROUS HUMAN LIFE.

Since founded in 2004, MCNEX is a leading manufacturer of global component and material specialized company as developing with 2M camera module and the smallest VGA camera module as well as high pixel auto focusing camera module for mobile and automotive camera and security applications.

As a manufacturer, dreaming of technical innovation by continuous research and development, MCNEX will grow to a global leader of camera module manufacturer which is ranked #1 in Korea, #5 in the world market.

MCNEX is doing its best to take the responsibility in social contribution such as job creation, industrial growth invigoration on the basis of continuous camera module market growth.

In order to be a creative and capable manufacturer which is contributing to the multimedia industry in the 21st century, all MCNEX executives and staffs will not be satisfied but will be their best to make the customer impression.

Please give us your big interests and supports

CEO. DONG UK. MIN



PRESIDENT OF LEADING ENTERPRISE LEADERS CLUB	
2017. Presidential Award – Je-in, Moon	2015. Excellent job creation award
2015. Presidential Award - Geun-hye, Park	2009 Presidential Award – Mr. Lee
2009. Excellent venture management award	2006. Presidential Award – Mr. Roh



AWARD

WITH A CONTINUOUS INNOVATION AND CHALLENGE,
MCNEX HAS BEEN ACHIEVING A CONTINUOUS GROWTH

2006. 10.	Electronics Industry Day Presidential Citation	President Roh, Moohyun
11.	Tower of Export Award for \$3M	Korea International Trade Association
2007. 11.	Tower of Export Award for \$10M	Korea International Trade Association
2009. 06.	Startup Business Expo Presidential Citation	President Lee, Myungbak
09.	The Trader of the Month	Knowledge Economy Minister Korea International Trade Association
10.	YES Leader appointment	Minister of SMEs and Startups
	Venture Enterprise Award	Minister of Knowledge Economy
11.	Tower of Export Award for \$50M	Korea International Trade Association
2011. 11.	Tower of Export Award for \$100M	Korea International Trade Association
2014. 12.	Tower of Export Award for \$200M	Korea International Trade Association
2015. 02.	Presidential Citation for Leading Enterprise for Job Creation	President Park, Geunhye
03.	Seoul Mayor Award	Mayor of Seoul Park, Wonsoon
10.	Korea Automotive Parts Industry Best Award	Foundation of Korea Automotive Parts Industry Promotion
11.	Designated World Class 300	Minister of SMEs and Startups
	Designated World champ Mentor	Korea Trade Investment Promotion Agency
12.	Tower of Export Award for \$300M	Korea International Trade Association
	Award Certificate (Job Creation)	President Park, Geunhye
2016. 12.	Dash Cam L5 PLUS Best Design Award	Commissioner of the Korean Intellectual Property Office
2017. 11.	Material Components Industrial Medal (Material Components Technology)	President Moon, Jaein

PRIDE

MCNEX PEOPLE

2006. 06.	Ministry of Trade, Industry and Energy Citation (Electronics Day)	Managing Director Lim, Jangho
2016. 10.	Ministry of Trade, Industry and Energy Citation	Director Lee, Seungoh
2018. 11.	Ministry of Trade, Industry and Energy Citation (2018 World Class 300 merit man prize)	Managing Director Lim, Jangho
12.	Industrial Medal (2018 Trade Day Medal)	Vice President Oh, Mingyo
2019. 12.	Presidential Citation (2019 Trade Day Prize)	Vice President Seo, Bohong
12.	Industrial Medal (2019 Korea Technology Awards Ceremony)	Managing Director Han, Jooyeol
2021. 12.	Presidential Citation (2021 Trade Day Prize)	Managing Director Choi, Soo-wook



GROW TOGETHER

GROW HARMONIOUSLY TOGETHER
In order to grow all together, we actively practice ethical management by establishing transparent management and continuous innovation

THE EYE OF IT WORLD CONTINUOUS INNOVATION AND CHALLENGE



MCNEX is growing as a reliable and believable partner of the clients in the world by continuous challenge and technical innovation

With Continuous research and development, MCNEX is becoming the leader in the future industry and contributing to the better human life

MCNEX, leading the technology and innovation with continuous research and development

COMPANY	MCNEX
CEO	DONG UK . MIN
ESTABLISH	22ND DEC 2004
HQ	13-39, Songdogwahak-ro 16beon-gil, Yeonsu-gu, Incheon, Republic of Korea

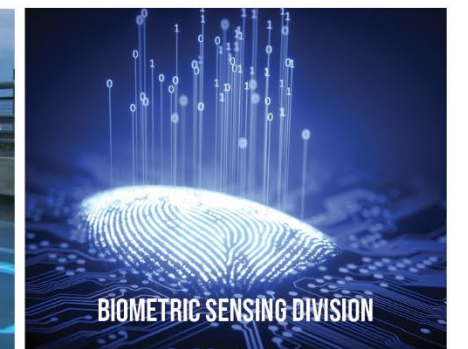
MCNEX BUSINESS DIVISION



MOBILE CAMERA DIVISION



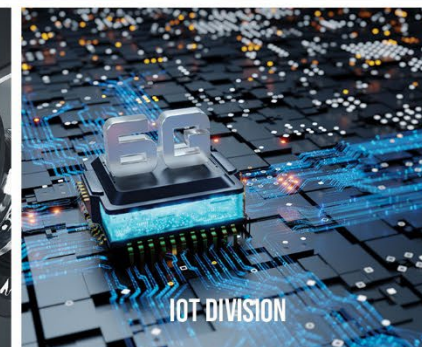
AUTOMOTIVE CAMERA DIVISION



BIOMETRIC SENSING DIVISION



ACTUATOR PART DIVISION



IOT DIVISION



VR / AR DIVISION

MANAGEMENT PRINCIPLES



PEOPLE ORIENTED MANAGEMENT



Pursuit of people-oriented and people first management

MCNEX's family will come together with company's growth

VALUE ADD MANAGEMENT



Pursuit of innovative value creation on basis of expert knowledge

MCNEX will contribute to the better human life as creating new value through continuous technical development and improving customer service.

ADVANCED TECHNOLOGY MANAGEMENT



Advanced technology Management

MCNEX will be the world leading technical company to satisfy the customer's requirement and to develop more advancing technology



THE EYE OF IT WORLD

MCNEX, OPENING NEXT GENERATION OF IT WORLD

An innovation with a challenge through ceaseless technological development thereby contribute to the development of human culture.



VISION

THE IMAGE SOLUTION COMPANY INCREASES CUSTOMERS' COMPETITIVENESS



SYSTEM

System management
Systematic organization
Reinforcing network with a customer



CORE VALUE

SPEED

Speedy decision
Speedy develop
Rapid respond to change

SATISFACTION

Customer satisfaction
Social contribution
Make an enterprise value



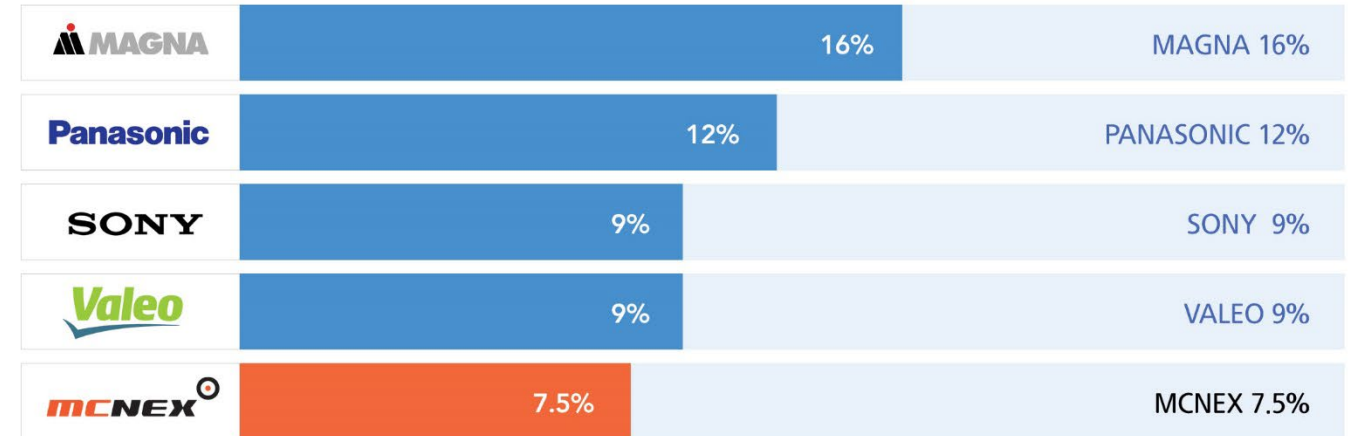
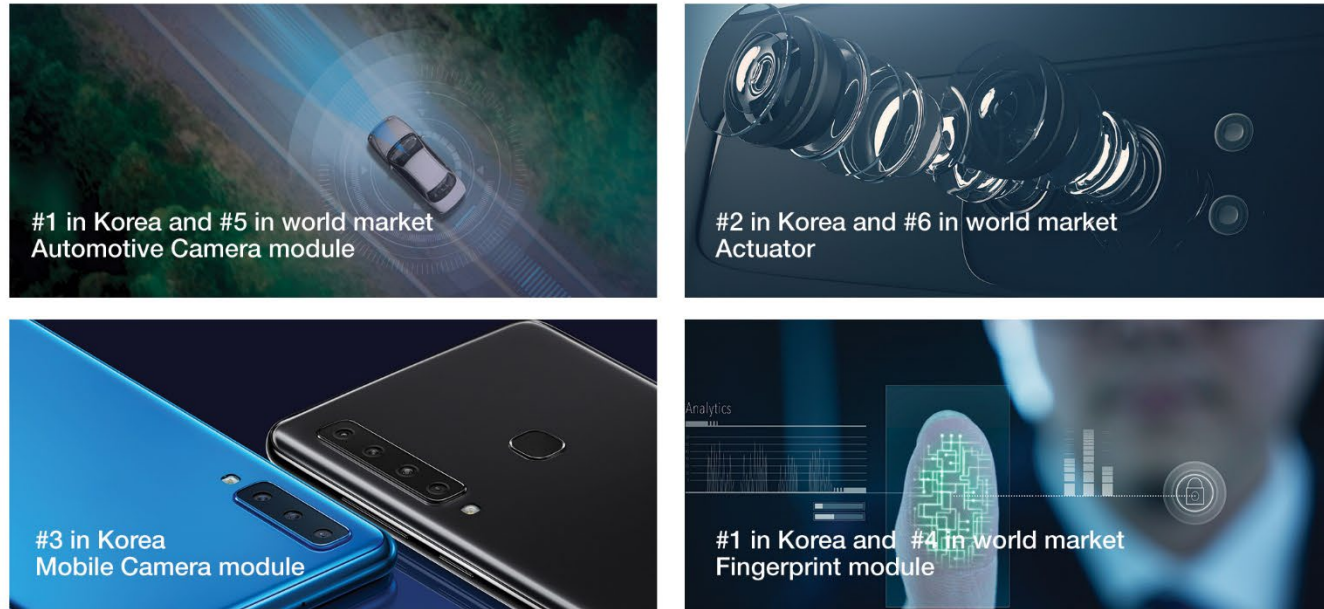
SUSTAINABILITY

MCNEX makes continuous growth and improvement with people-oriented, value creation and Technology leading management through ethical management for making prosperous future.

GROWTH STATUS

AUTOMOTIVE WORLD MARKET SHARE

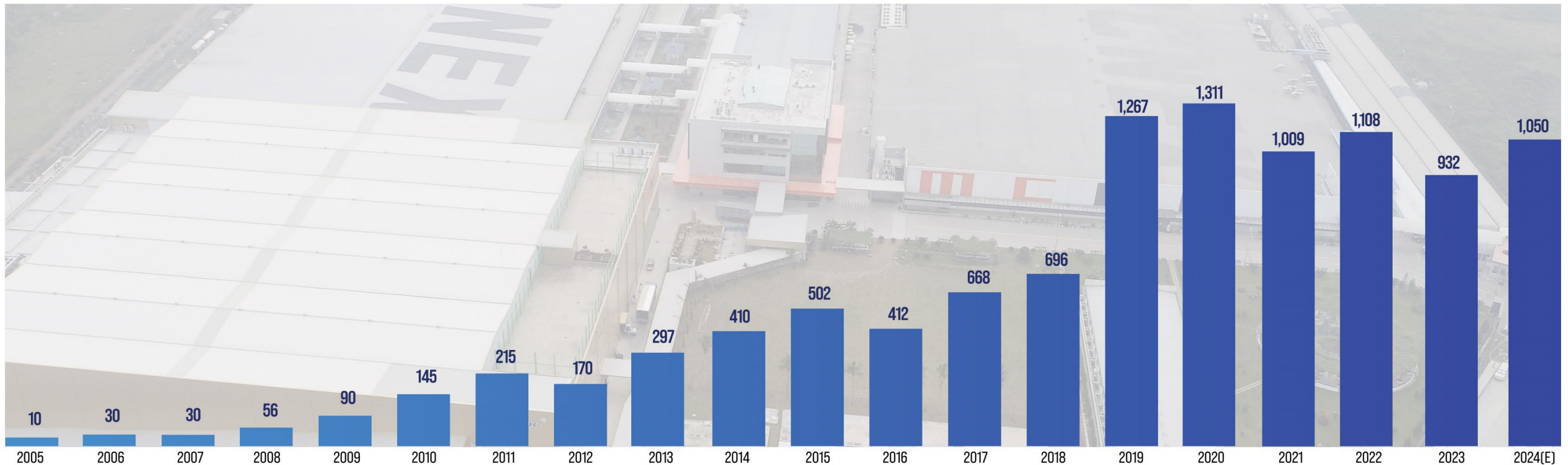
MCNEX-AUTOMOTIVE CAMERA #1 IN KOREA AND #5 IN WORLD MARKET



MARKET ANALYSIS BY TSR(FEBRUARY 2019)

REVENUE CURRENCY

\$ 1M



CAPACITY

UNIT: PCS

ITEM	TYPE	Q'TY
CAMERA MODULE	AF	20M
	FF	10M
TOTAL	MONTHLY	30M
	ANNUALLY	360M

ITEM	TYPE	Q'TY
ACTUATOR	VCM	3M
	OIS	5M
	ENCODER	3M
TOTAL	MONTHLY	11M
	ANNUALLY	132M

ITEM	TYPE	Q'TY
FINGERPRINT MODULE	Recognizing Fingerprint	3M
	Optical In-Display Type	6M
TOTAL	Monthly	9M
	Annually	108M

ITEM	LOCATION	Q'TY
AUTOMOTIVE	China	0.5M
	Vietnam	1.5M
TOTAL	MONTHLY	2M
	ANNUALLY	24M



MCNEX CERTIFICATES

PATENT
82 REGISTERED

MOBILE SOLUTION
AUTOMOTIVE SOLUTION
IOT / AR / VR / MR



INCHEON / KOREA HEADQUARTER

- ISO/TS16949:2009 Quality management system
- ISO14001:2004 Environment management system
- OHSAS18001:2007 Safety and health management system
- NEW technology certification

NINH BINH / VIETNAM

- ISO9001:2008 Quality management system
- ISO14001:2004 Environment management system

SHANGHAI / CHINA

- ISO/TS16949:2009 Quality management system
- ISO9001:2008 Quality management system
- ISO14001:2004 Quality management system
- IECQ HSPM Harmful substance process management system

PATENT 82 REGISTERED | MOBILE SOLUTION | AUTOMOTIVE SOLUTION | IOT / AR / VR / MR



MOBILE SOLUTION



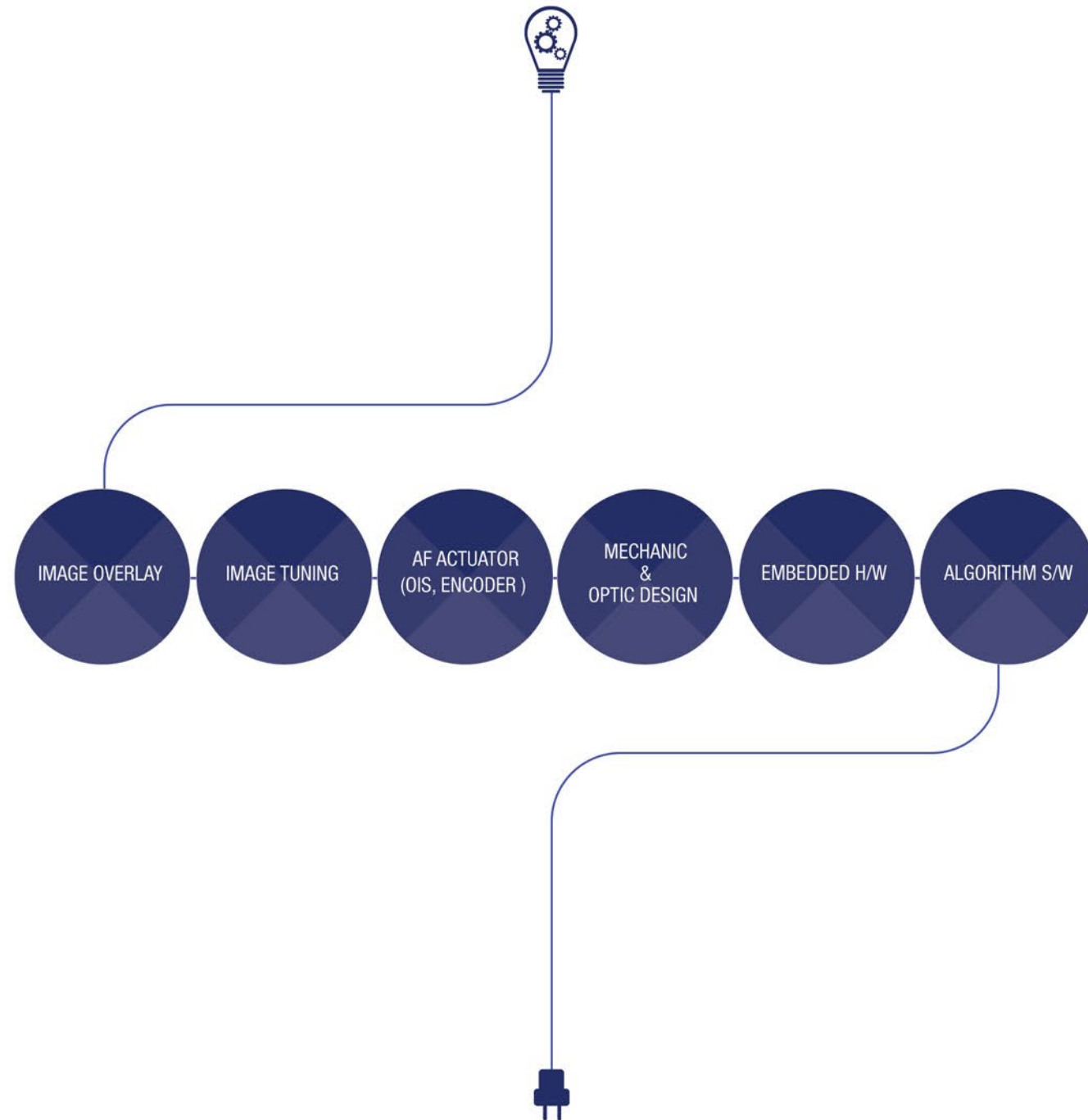
AUTOMOTIVE SOLUTION



IOT / AR / VR / MR

MCNEX R&D CENTER

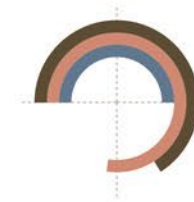
Continuous development of new technology with experience engineers



TOTAL SOLUTION

Provide total solution of image technology from H/W to S/W in house

QUALITY MANAGEMENT



CONTINUOUS QUALITY MANAGEMENT FOR CUSTOMER SATISFACTION

The primary value that MCNEX aims for is customers satisfaction. The best quality, engineers and experiences create the synergy to make a continuous innovation.

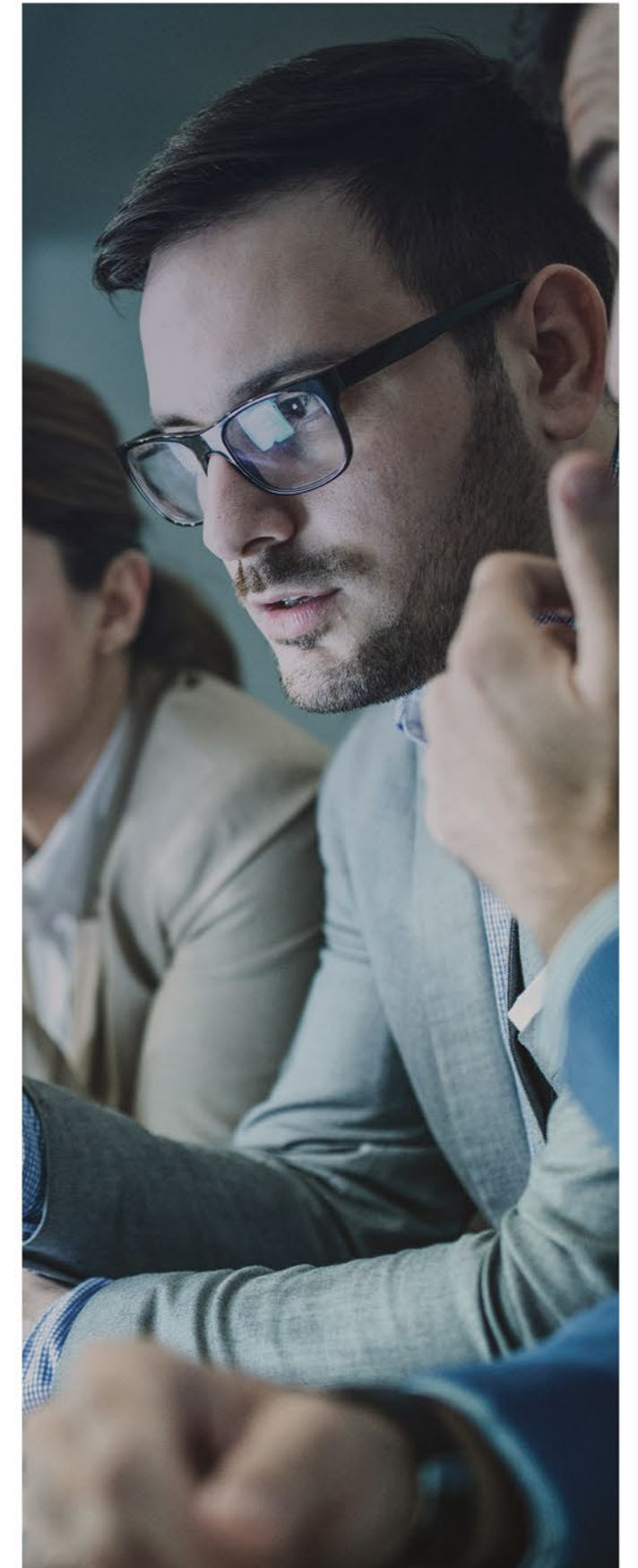
MCNEX promises to make the most innovative and stable solution as creating a future value Bring confidence over the satisfaction for the customers' choice.



DIFFERENTIATED COMPETITIVENESS BY EFFICIENT RESEARCH & DEVELOPMENT

Leading the camera module market by continuous research and speedy decision making that maximize the the future value

Continuous research & development make more innovative, comfortable future



JOURNEY OF MCNEX TO BE A GLOBAL LEADER

MCNEX is ongoing to make a history to lead the best camera module manufacturer with continuous enhancing competitiveness and innovative management.



- 2009.06 Designated a good manufacturing technical R&D center
- 2008.03 Built the 2nd factory in Shanghai
- 2007.12 Started supplying in Hyundai/Kia
- 2007.05 SQ certificate (Hyundai quality system certificate)
- 2007.01 ISO14001/TS 16949 certificate
- 2006.09 Established MCNEX Shanghai
- 2005.06 Registered venture company built R&D center
- 2004.12 Established MCNEX

- 2017.12 Established 2nd factory in Vietnam
- 2017.03 Producing of Dual camera module for Samsung
- 2017.03 Start to ship encoder
- 2016.11 Start to ship fingerprint module to Samsung
- 2015.12 Best partner of year for Samsung
- 2014.10 Listed in Samsung overseas supplier
- 2014.06 Registered SEV / SEVT



- 2013.12 Built the 1st factory in Vietnam
- 2012.07 Listed in KOSDAQ market
- 2011.12 Start a business with Samsung
- 2011.05 designated World Class 300
- 2011.04 Start to ship a camera to PSA
- 2010.12 Start to ship 8M actuator

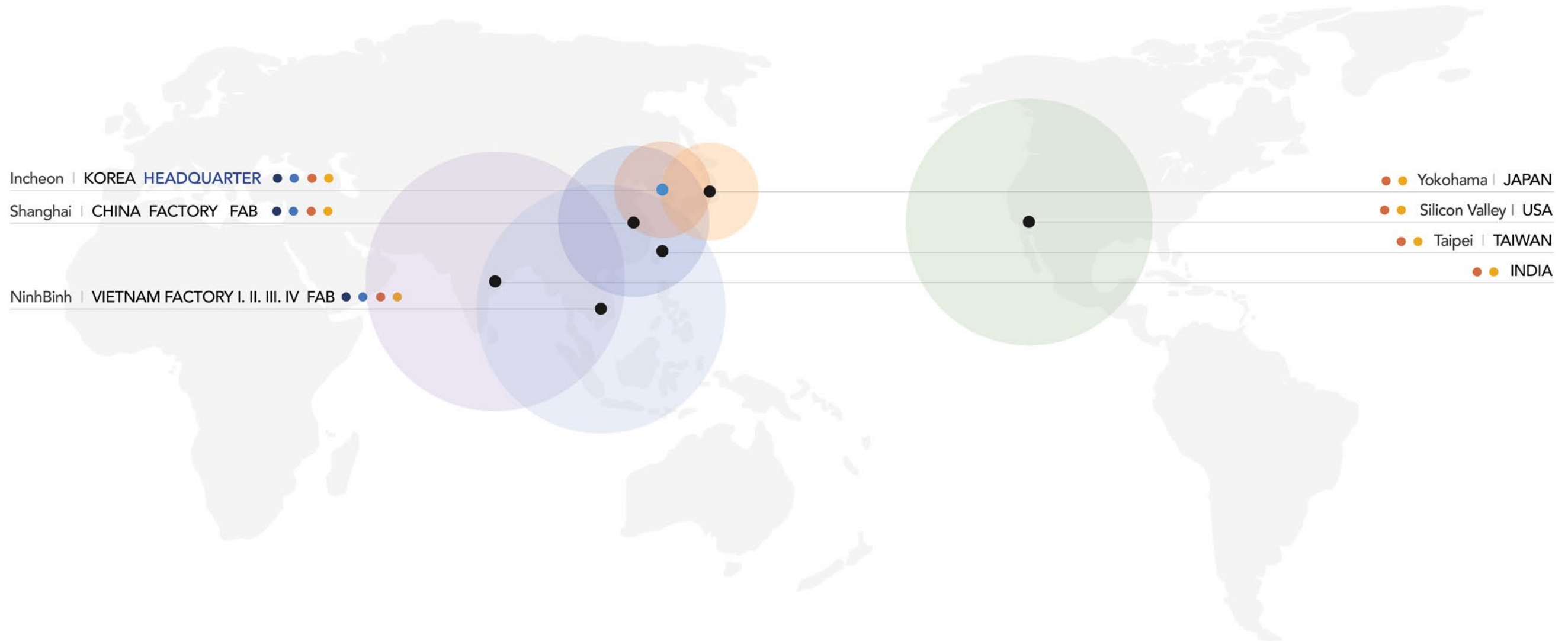
- 2018.06 Automotive line set-up in Vietnam 2nd factory
- 2018.04 IATF16949 certificate
- 2018.04 Samsung Best innovative partner of year
- 2019.12 Built the 3rd Factory in Vietnam
- 2019.10. IATF 16949 Certified (Vietnam Factory)
- 2020.01. Hyundai-Kia Motors' Tier1 Vendor
- 2020.01. Awarded "Outstanding technology" by Hyundai-Kia Motors
- 2020.11. Awarded "Galaxy best quality" by SAMSUNG
- 2021.07 Listed in KOSPI
- 2022.03 Headquarters relocated (MCNEX Tower, Songdo, Yeonsu-gu, Incheon)
- 2022.11 Selected as a lighthouse company in the new business field
- 2023.03 Selected as the best company in electrical/electronic sector
- 2023.03 Received the Grand Prize for Samsung Electronics' Outstanding Innovation Supplier

GLOBAL NETWORK

MCNEX IS EXPANDING ITS GLOBAL NETWORK ALL OVER THE WORLD.

Contribute to human culture development by leading the IT industry.
We lead the changes for the future of the prosperous world

● R&D ● MANUFACTURING ● SALES ● FAE(FIELD APPLICATION ENGINEER)



Incheon | KOREA HEADQUARTER ● ● ● ●

Shanghai | CHINA FACTORY FAB ● ● ● ●

NinhBinh | VIETNAM FACTORY I. II. III. IV FAB ● ● ● ●

● ● Yokohama | JAPAN

● ● Silicon Valley | USA

● ● Taipei | TAIWAN

● ● INDIA

INCHEON . KOREA HEADQUARTER

13-39, SONGDOGWAHAK-RO 16BEON-GIL, YEONSU-GU, INCHEON, REPUBLIC OF KOREA
TEL : +82-2-2025-3600 /IP PHONE: 070-8630-6800
FAX : +82-2-2025-3606

NINHBINH. VIETNAM FACTORY I.II. III. IV

LOT CN5, PHUC SON INDUSTRIAL PARK, NINH BINH CITY, NINH BINH PROVINCE, HANOI, VIETNAM
TEL : +84-303-883-588
FAX : +84-303-880246

SHANGHAI. CHINA FACTORY

NO 5, BLOCK 275, QIANPU RD, SONJIANG DISTRICT, SHANGHAI CHINA
TEL : +86-021-6760-1668
FAX : +86-021-6760-1686

SILICON VALLEY. USA

3003 NORTH 1ST ST, SAN JOSE, CA 95134 USA

YOKOHAMA. JAPAN

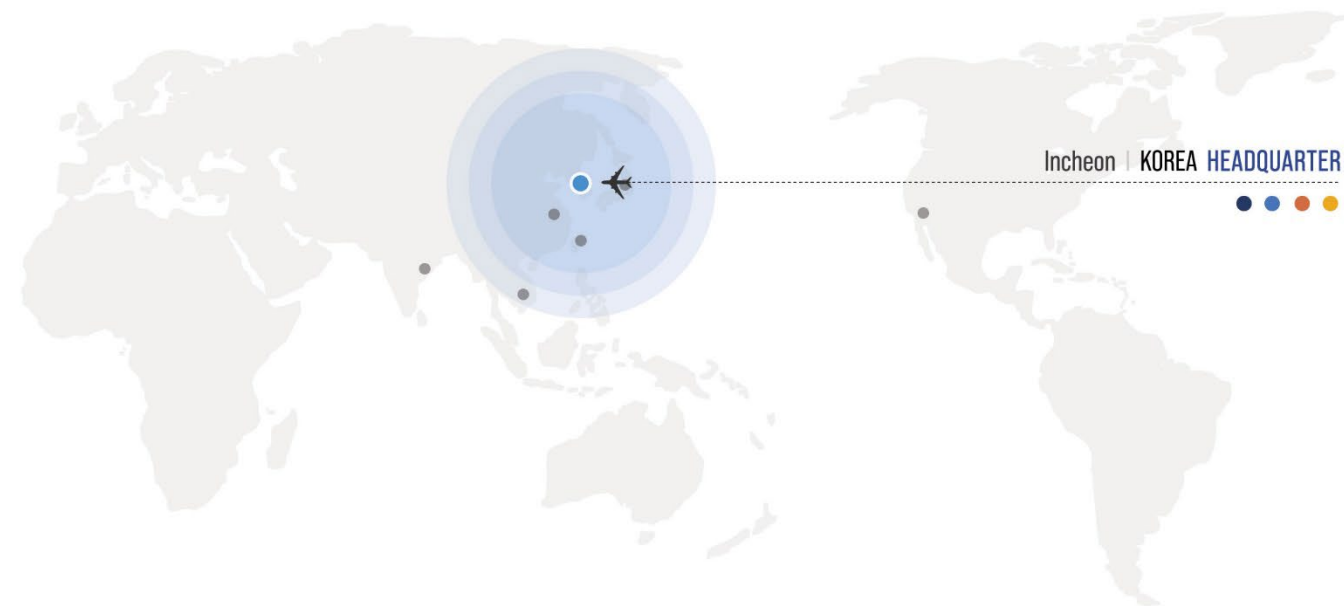
MA · CHERIE #601,3-19-6, SHINYOKOHAMA, KOHOKU-KU, YOKOHAMA-CITY, KANAGAWA, JAPAN, 222-0033
IP PHONE : 070-8630-6840

MCNEX keeps going into the World best company with incessant spirit of challenge and innovation

GLOBAL NETWORK

INCHEON. KOREA.

● R&D ● MANUFACTURING ● SALES ● FAE(FIELD APPLICATION ENGINEER)



INCHEON . KOREA

HEADQUARTER

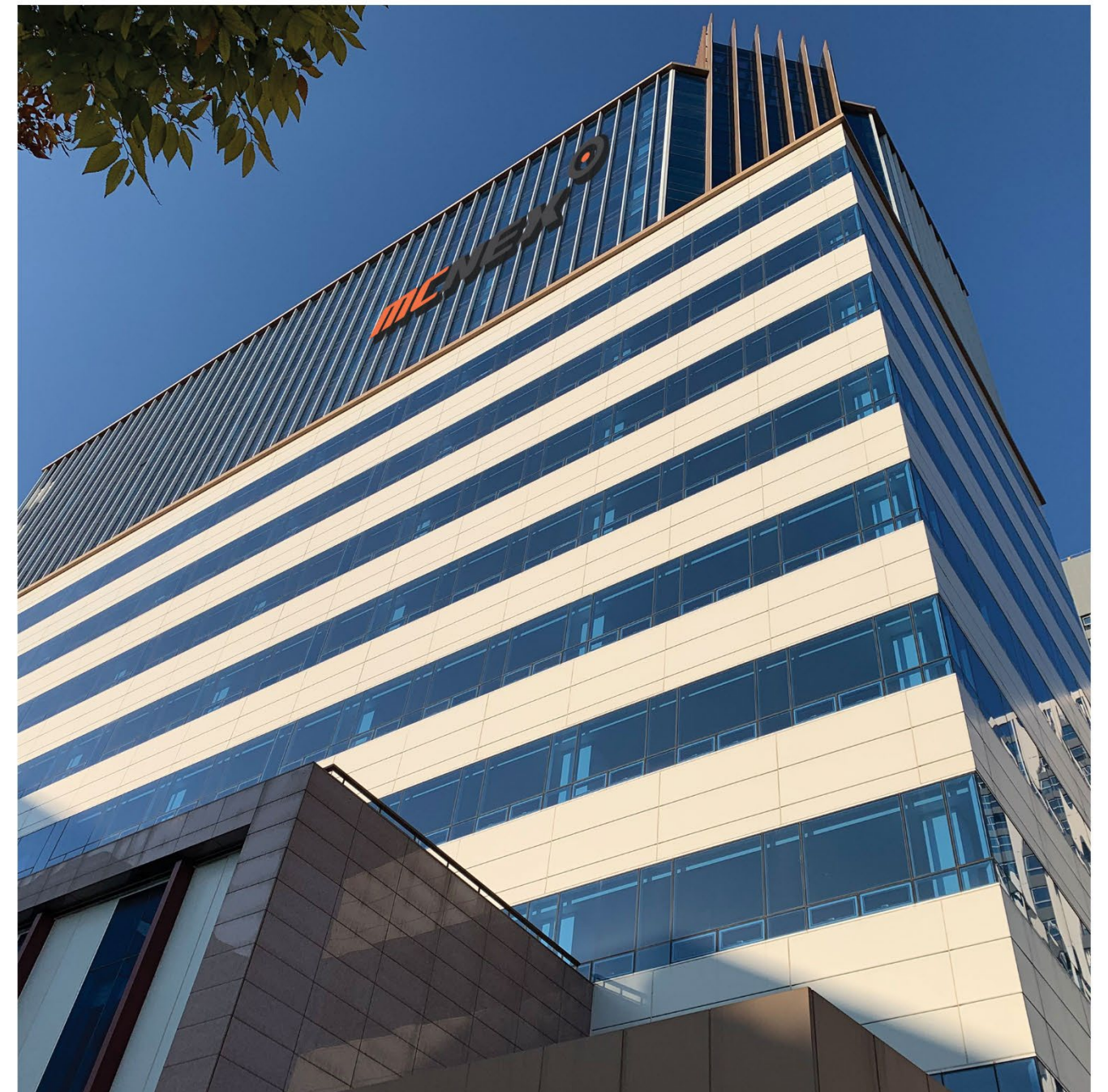
INCHEON. KOREA HEADQUARTER

ADDRESS . 13-39, Songdogwahak-ro 16beon-gil, Yeonsu-gu, Incheon, Republic of Korea

TEL . +82-2-2025-3600 / IP Phone: 070-8630-6800

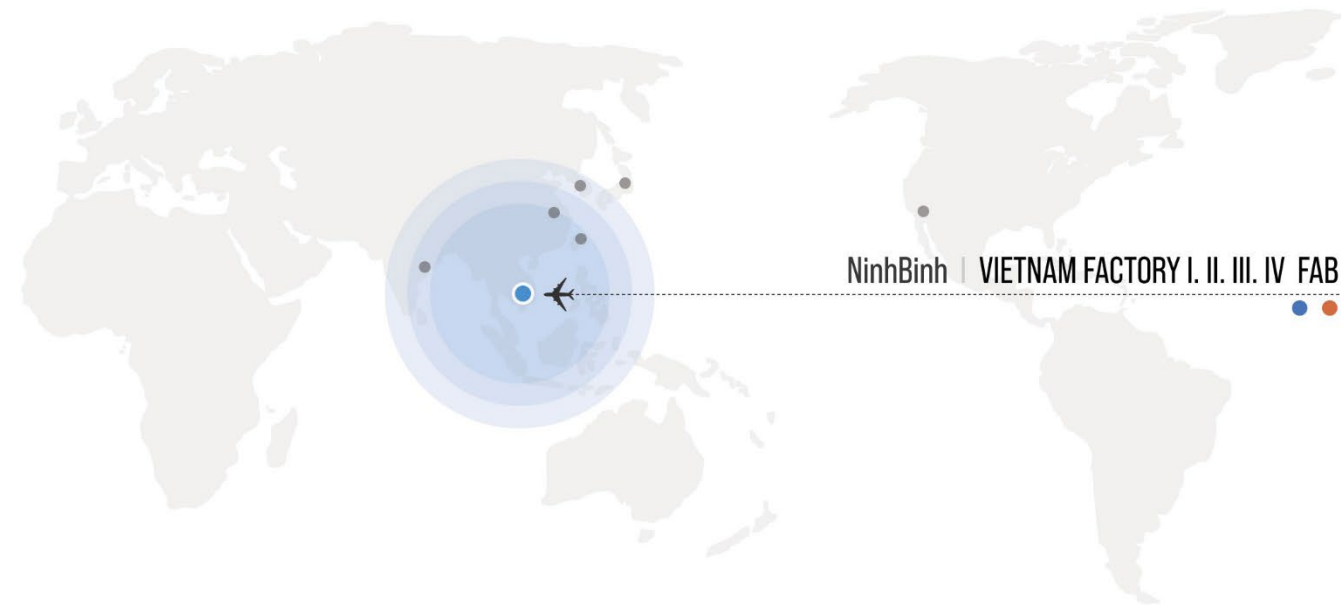
FAX . +82-2-2025-3606

MANUFACTURING / R&D/ RELIABILITY TEST LAB/ SALES



GLOBAL NETWORK
NINH BINH. VIETNAM.

● R&D ● MANUFACTURING ● SALES ● FAE(FIELD APPLICATION ENGINEER)



TYPE	Dependent on headquarter		LOCATION	Phuc Son Industrial Park, Ninh Binh City
TOTAL AREA	127,338m ²	BUILDING AREA	102,160m ²	

NINH BINH. VIETNAM
FACTORY I. II. III. IV

NINH BINH / VIETNAM FACTORY I. II. III. IV

ADDRESS . Lot CN5, Phuc Son Industrial Park, Ninh Binh City, Ninh Binh Province, Hanoi, VIETNAM

TEL . +84-303-883-588

FAX . +84-303-880246

MANUFACTURING / SALES

MAIN CUSTOMER



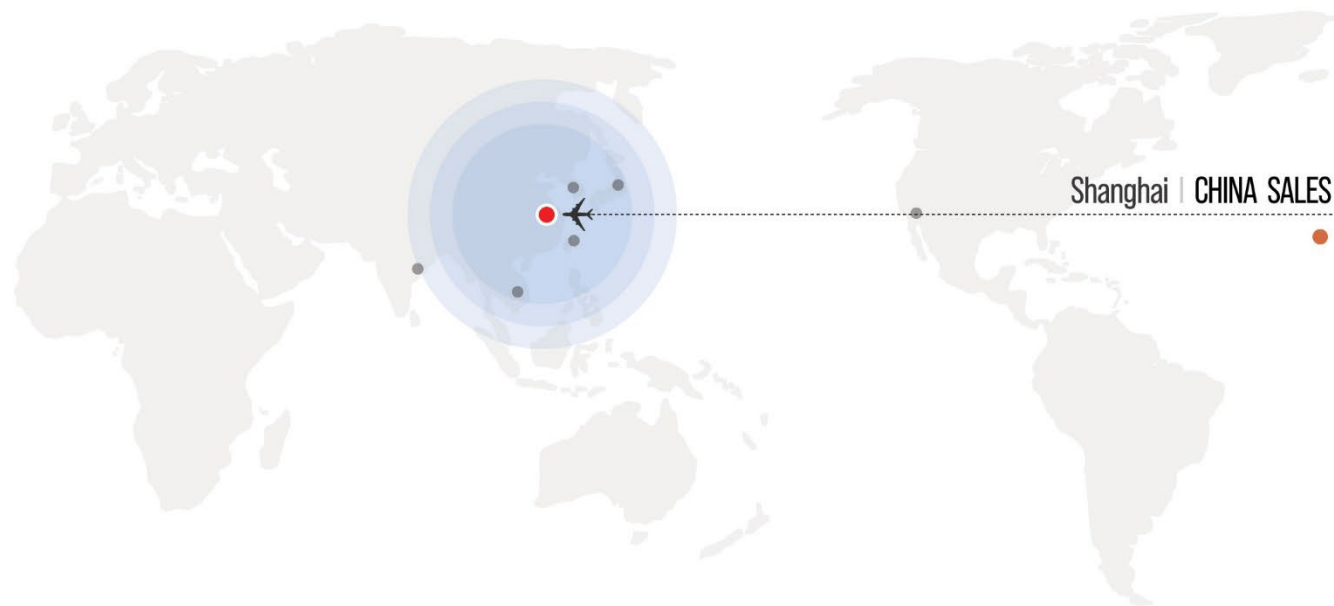
LIST OF PRODUCT / CAPACITY

CAP	Camera Module	Actuator	Fingerprint Verification	Automotive Camera
	30M / month	11M / month	9M / month	1.5M / month



GLOBAL NETWORK
SHANGHAI. CHINA.

● R&D ● MANUFACTURING ● SALES ● FAE(FIELD APPLICATION ENGINEER)



TYPE	Dependent on headquarter	LOCATION	Plant 275 Qianpu Road Songjiang District Shanghai
TOTAL AREA	7,061 m ²	BUILDING AREA	7,061 m ²

SHANGHAI. CHINA FACTORY

SHANGHAI / CHINA FACTORY

ADDRESS. No 5, Block 275, Qianpu Rd, songjiang District, Shanghai CHINA

TEL . +86-021-6760-1668

FAX . +86-021-6760-1686

MANUFACTURING / SALES / LOGISTICS / R&D

MAIN CUSTOMER

LIST OF PRODUCT & CAPACITY

CAP	Automotive Camera	1.5M / month
-----	-------------------	--------------



BUSINESS AREA
INNOVATIVE SOLUTION

GROWTH



BE THE GLOBAL NO.1 IMAGE SOLUTION LEADING COMPANY ON A BASIS OF
CONTINUOUS RESEARCH AND DEVELOPMENT

BUSINESS AREA



TOTAL MOBILE SOLUTION | AUTOMOTIVE SOLUTION | ACTUATOR SOLUTION | BIOMETRIC SOLUTION
IoT BUSINESS SOLUTION | VR. AR. 3D CAMERA

BUSINESS AREA

TOTAL MOBILE SOLUTION

Make a dream come true on a basis of change and innovation



SMART PHONE CAMERA

- SMART CAMERA
- WIDE CAMERA
- MACRO
- TOF
- SINGLE CAMERA
- DUAL CAMERA
- TRIPLE CAMERA
- QUAD CAMERA
- OIS CAMERA
- PDAF CAMERA
- TILT OIS CAMERA

BIOMETRIC MODULE

- IRIS SCAN MODULE
- FINGERPRINT SENSING MODULE
- FACE RECOGNITION MODULE

MATERIAL

- OIS
- ENCODER
- VCM
- TILT. OIS

LEADING MOBILE CAMERA & SECURITY SOLUTION PROVIDER



SMART PHONE CAMERA



BIOMETRIC MODULE



MATERIAL

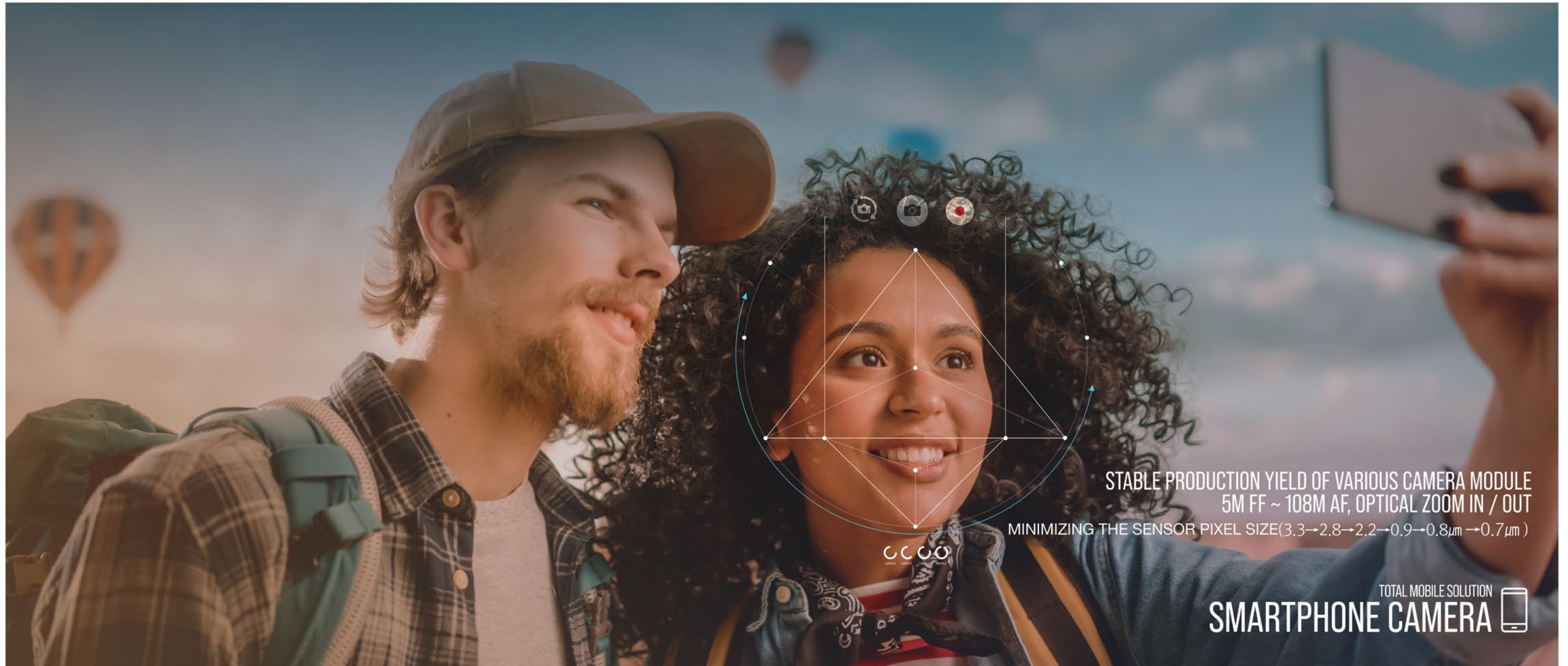
“ VARIOUS CAMERA MODULE (5M FF ~ 108M AF) WITH STABLE YEILD”

HIGH PERFORMANCE | MICROMINIATURIZATION | SLIM | AF APPLIED

※ CURRENTLY DEVELOPING HIGH PIXEL CAMERAS OF 64M, 108M, BIG PIXEL, ETC
SUPPLYING TO SAMSUNG’S PREMIUM PHONES

TOTAL MOBILE SOLUTION
SMARTPHONE CAMERA

WIDE CAMERA | MACRO | TOF | SINGLE CAMERA | DUAL CAMERA | TRIPLE CAMERA | QUAD CAMERA
 OIS CAMERA | PDAF CAMERA | TILT OIS CAMERA



WIDE ANGLE VT CAMERA
 90°, 120°, 135°, 145°, 182°
 8M FF ~ 32M FF

MACRO CAMERA
 5M FF

SINGLE CAMERA
 13M AF ~ 64M AF

DUAL CAMERA

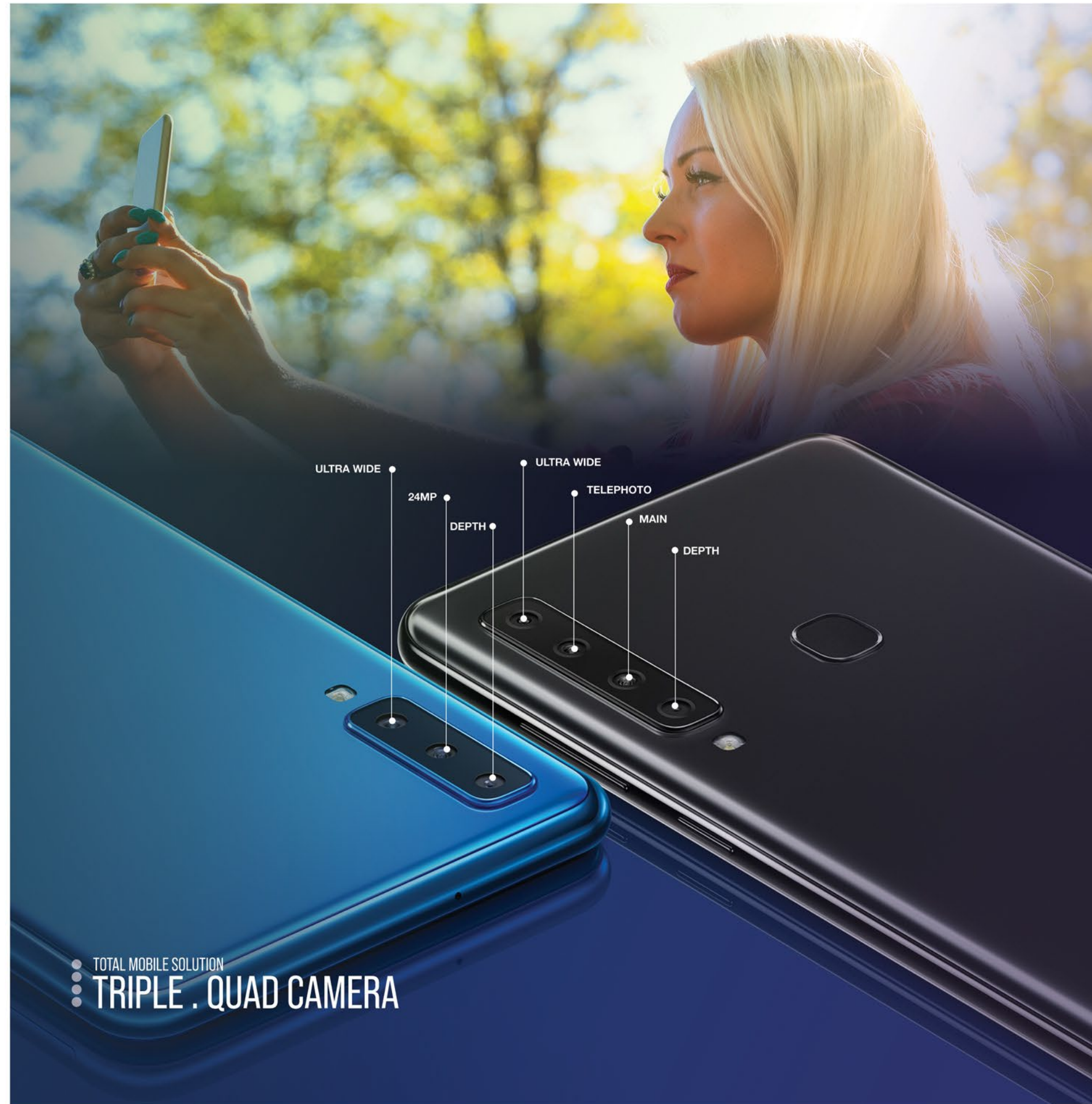
TRIPLE CAMERA

QUAD CAMERA

OIS CAMERA

PDAF CAMERA

TILT OIS CAMERA



TOTAL MOBILE SOLUTION
TRIPLE . QUAD CAMERA

Provide more various functions than single & dual camera like panorama, pro, beauty, live focus, auto exposure, slow motion, ar image, hyperlapse, etc.. As combining different resolution and features.

QUAD CAMERA

- 120 FOV LENS OF 8M
- TELESCOPIC LENS OF 24M
- ZOOM LENS OF 10M
- ZOOM LENS OF 5M



64M AF + 12M UW + 5M FF + 5M FF | ALL RGB SENSORS
 F# 1.8, 7P, 81°(D) | F# 2.2, 6P, 123°(D) | F# 2.2, 4P, 85°(D) | F# 2.4, 3P, 78°(D)

TRIPLE CAMERA

- 120 FOV LENS OF 8M
- TELESCOPIC LENS OF 24M
- DEPTH LENS OF 5M



24M AF+8M WIDE+5M FF | ALL RGB SENSORS
 F# 1.78, 6P, 77°(D) | F# 2.4, 6P, 125°(D) | F# 2.2, 4P, 85°(D)

TOTAL MOBILE SOLUTION
TRIPLE . QUAD CAMERA

TOTAL MOBILE SOLUTION
GIMBAL . TILT OIS

OUTSIDE VIEW AND FEATURE

Applying Module Tilt method result in NO Image Distortion

Stabilization angle is twice better than existing products (1.5 deg → 3 deg)

Module Tilt OIS : Vibration Reduction + External Tremors Reduction

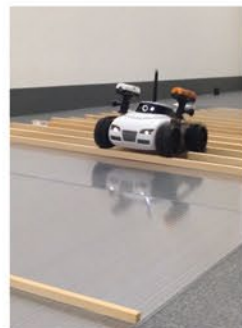
Module Tilt method applied for mobile devices (Patent held by MCNEX)



SPECIFICATION

ITEM	CONDITION
FOOT PRINT	A : 18.4 x 18.4 x 1.8H / B : 14.0 x 14.0 x 4.7H
STABILIZING ANGLE	± 3deg
MAX CURRENT	AF : 50mA / OIS : 100mA (TBD)
PIXELS	48M
SENSOR	SONY 1/2" 48Mega CMOS IMS586-AAJH5-S
SENSOR SIZE	4.504mm(H) x 5.659mm(V)
LENS	SUNNY 39256
LENS SPEC	Φ8.25/6P
AF STROKE	380~430um

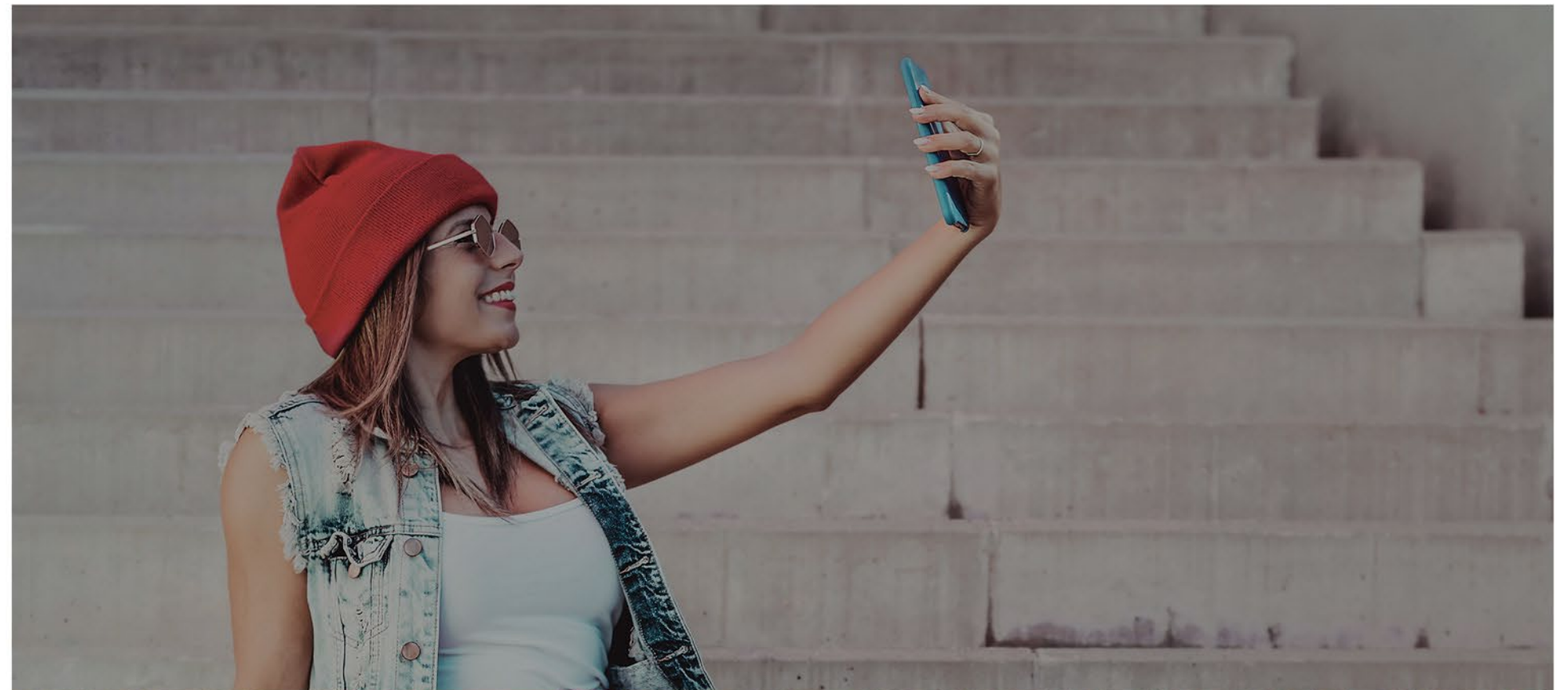
RC MODEL CAR



TILT. OIS OFF



TILT. OIS ON



GIMBAL . TILT OIS

OPTIMIZING VISUALIZATION BY REDUCING THE VIBRATION IN AN UNSTABLE & EXTREME SITUATION.

MAIN APPLICATIONS

Smartphone, Exploration robot, Broadcasting equipment, Heavy equipment, Military equipment, Drone, Action-cam

TOTAL MOBILE SOLUTION
OIS . ENCODER . VCM

OIS (OPTICAL IMAGE STABILIZATION)

OIS is a technology to prevent from image shaking or compensate for image shaking caused by unstable fixture or hand tremor.

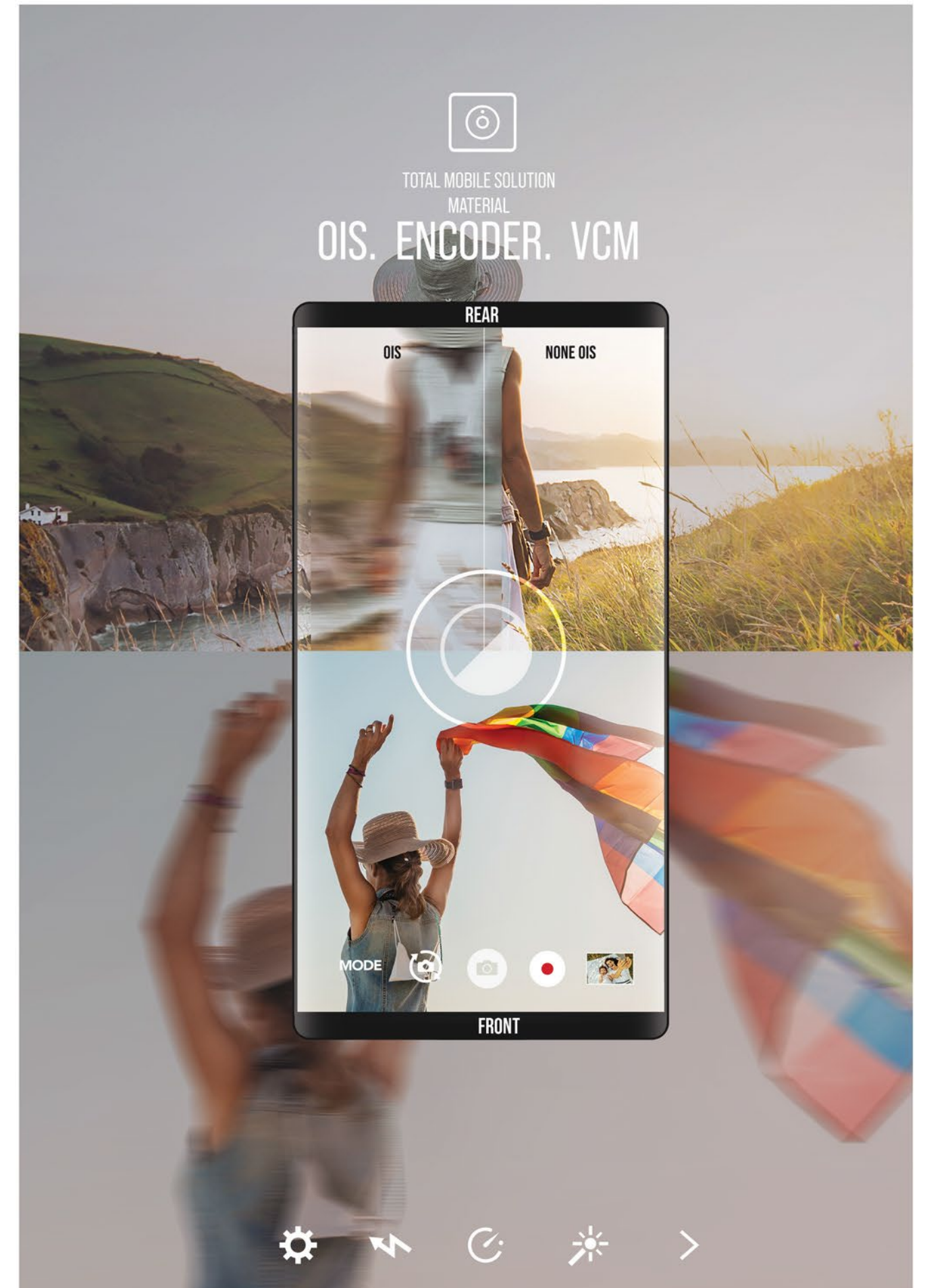
Generally if taking a picture right before or after sunset or sunrise or dark room without a flash, because of slow shutter speed, image comes out dimly. This is because of hand tremor during a taking a picture. OIS is to develop to reduce an image shake.

ENCODER TECHNOLOGY TO USE A BEARING, COIL AND AXIS

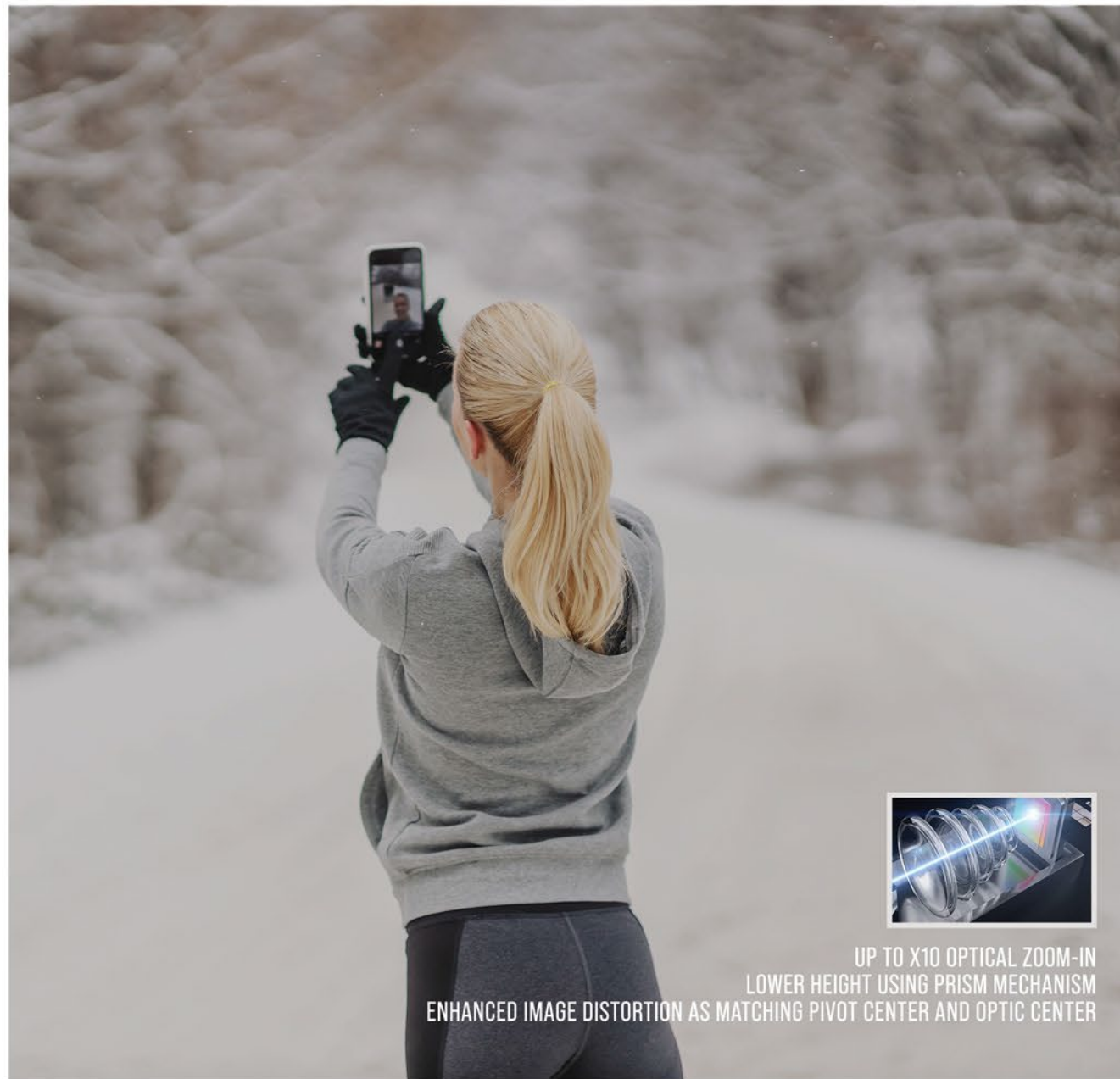
VCM TECHNOLOGY OF USING VOICE COIL

12M / 24M / 48M / 64M HIGH RESOLUTION AF ACTUATORS

ENCODER / OIS		
		
MCO-D114660 (OIS/12M)	MCO-B1150580 (OIS/12M)	
		
MCE99-B0 (ENCODER/10M)	MCA-10A9 (ENCODER/48M)	
		
MCE99-DA (ENCODER/10M)	MCE99-B2 (ENCODER/10M)	
VCM ACTUATOR		
		
MC9241 (16M AF)	MC9241-2 (24M AF)	MCO-5115076 (SHUTTER)



TOTAL MOBILE SOLUTION
FOLDED ZOOM ACTUATOR



UP TO X10 OPTICAL ZOOM-IN
 LOWER HEIGHT USING PRISM MECHANISM
 ENHANCED IMAGE DISTORTION AS MATCHING PIVOT CENTER AND OPTIC CENTER

AF SPEC

ITEM	UNIT	SPEC
RATED STROKE	UM	Min 2410
HYSTERESIS	UM	Max 12
LINEARITY	UM	Max 20
HOLDING CURRENT	MA	Max 40
ACTUATING TILT	MIN	Max 10

OIS SPEC

ITEM	UNIT	SPEC
RATED STROKE	DEG	Min 2.4 (±1.2)
HYSTERESIS	DEG	Max 0.10
LINEARITY	DEG	Max 0.11
MAX CURRENT	MA	Max 100
PHASE MARGIN	DEG	Min 25
LOOP GAIN	DB	Min 20

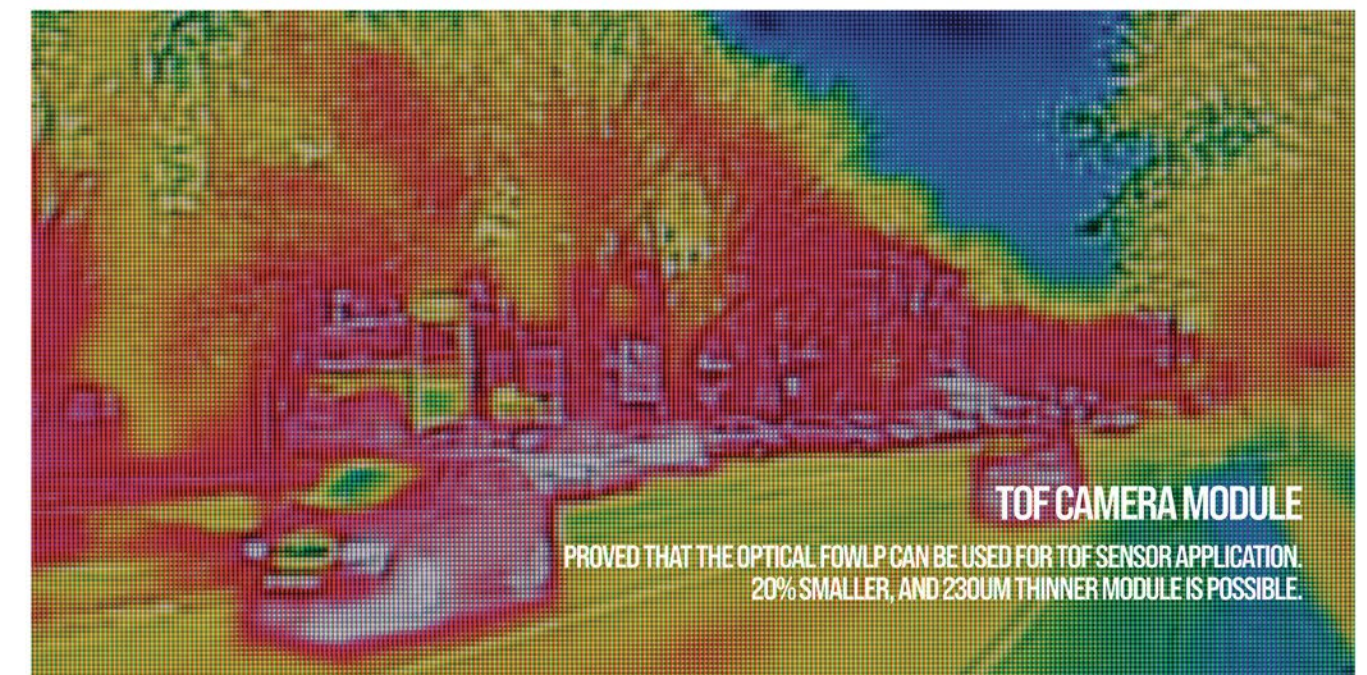
TOTAL MOBILE SOLUTION
TOF CAMERA

SPECIFICATION

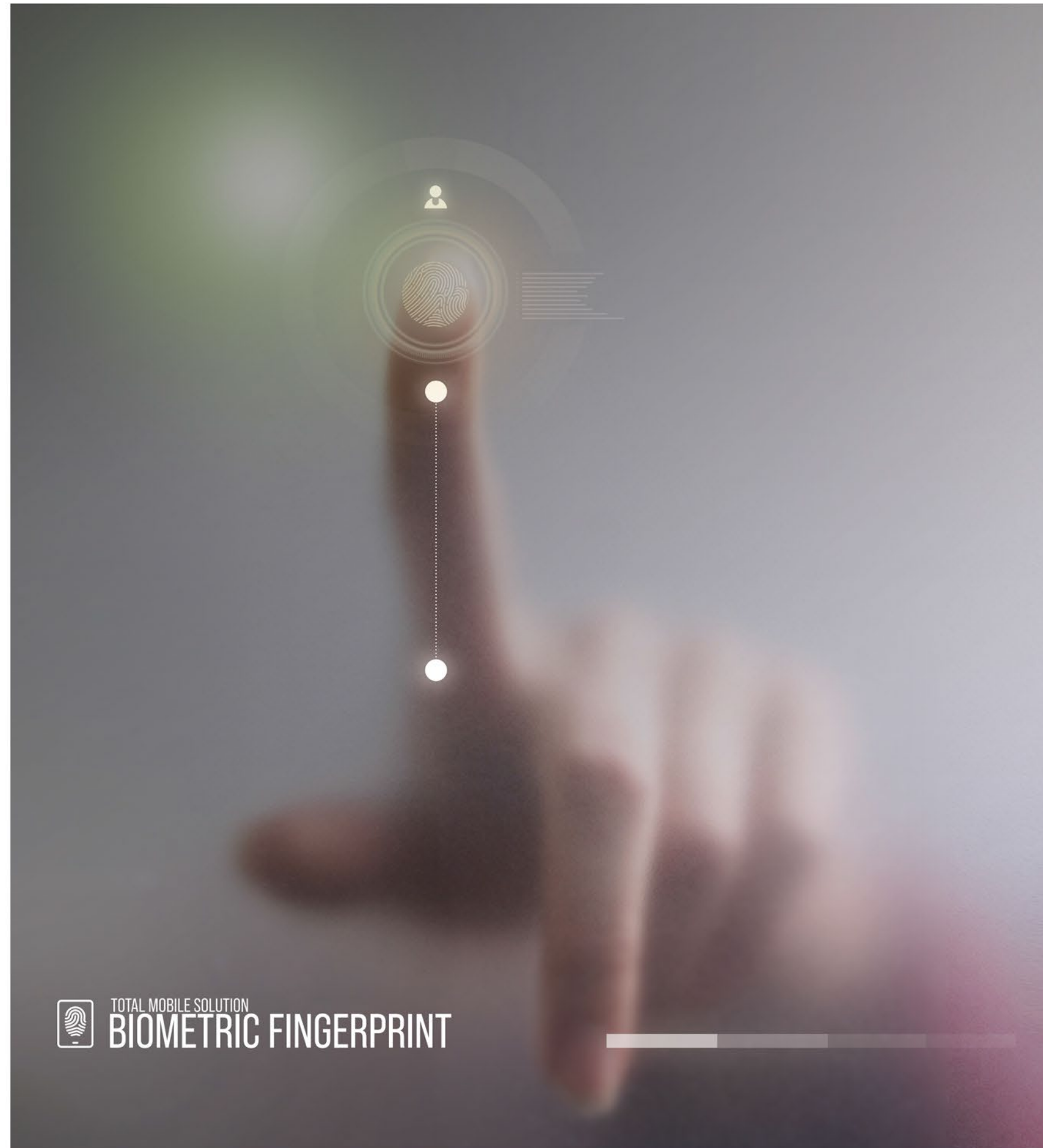
ITEM	MIN	NORMAL	MAX	UNIT	REMARK
PKG Height	222	270	318	UM	
Ball Pitch X	-	500	-	UM	
Ball Pitch Y	-	500	-	UM	
Total Ball Count	-	314	-	EA	
Resolution		320X240		PX	QVGA
Modulation frequency of VCSEL Driver	20		100	MHZ	
VCSEL wavelength		940		NM	

KEY FEATURES

SIZE	Removal of PCB, substrate-less
	3D stacking of TOF sensor and the driver IC
	Thickness reduction (>230um)/ Area reduction (>20%)
EASY MOUNTING	No Ceramic Carrier or substrate PCB needed
	Use ACF film or SMT process to electrically assemble the FOWLP onto the F-PCB
MASS-PRODUCTION	The optical FOWLP is fabricated by the wafer level process with mass-production capability.



TOF CAMERA MODULE
 PROVED THAT THE OPTICAL FOWLP CAN BE USED FOR TOF SENSOR APPLICATION.
 20% SMALLER, AND 230UM THINNER MODULE IS POSSIBLE.



TOTAL MOBILE SOLUTION
BIOMETRIC FINGERPRINT

TOTAL MOBILE SOLUTION

BIOMETRIC FINGERPRINT

What's biometric fingerprint technology?

Take a fingerprint digital image by specialized sensor to identify user

Classify capacitive overlay / optical mode / ultrasonic sensor

Biometric fingerprint module strengths

Fast recognition speed

High recognition rate (less than 0.002% error rate)

Easy to miniaturize (can be applied to various applications)

Various applications of BFM (Biometric fingerprint module)

Mobile & PC (smart phone)/Laptop

Automotive

Security devices (smart card/ private device/ door lock/ USB)

MCNEX STRONG POINT

Development Ability

Well-experienced engineers

Excellent development ability in H/W

Excellent development ability in instrument

SW F/U

Quick action on client's model development

MANUFACTURING environment

Clean environment construction
 (1,000 CLASS CLEAN ROOM)

Automatic technology
 (Package assemble process automation)

Mass-production ability (various factories overseas)

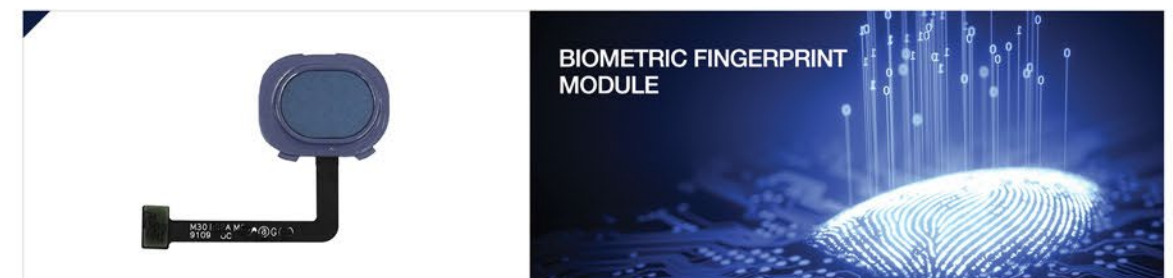
Manufacturing technology

SPECIAL COATING technology (NON-SPRAY COATING)

WIRE BONDING technology for Low Loop control

Specialized process for fingerprint sensor module

Great package processing and internalized package



TOTAL MOBILE SOLUTION

OPTICAL FINGERPRINT SENSING MODULE



WHAT IS OPTICAL FINGERPRINT SENSING TECH?

RECOGNIZING FINGERPRINT BY EMBEDDED CAMERA MODULE

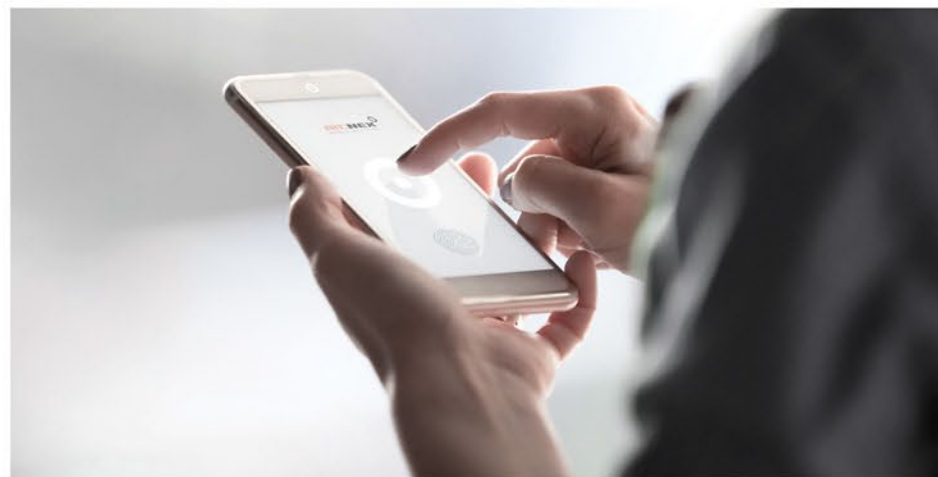
STRONG POINT

HIGH VISIBILITY BY IN-DISPLAY TYPE

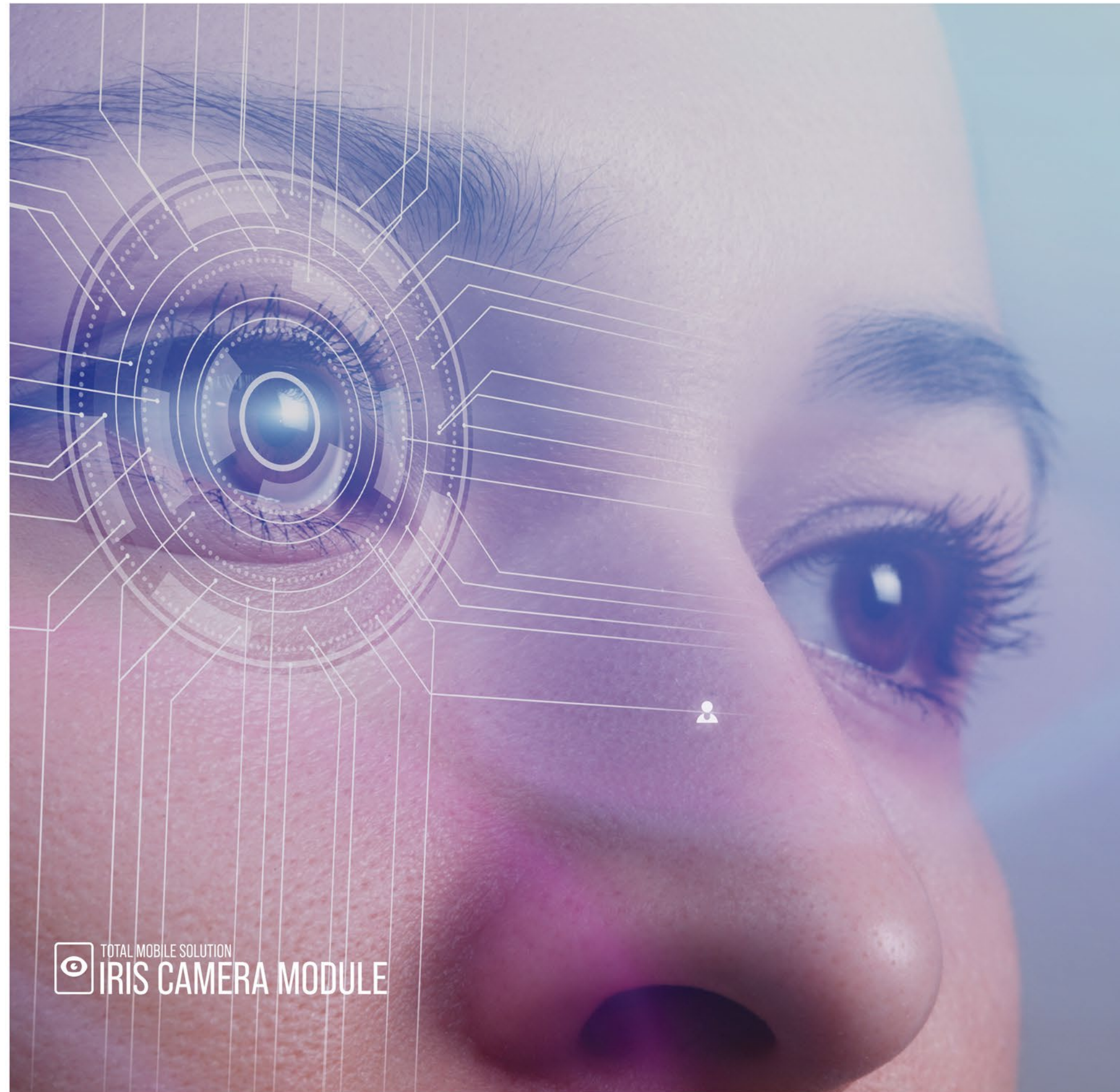
INSTINTIVE USAGE (DIRECT TOUCH TYPE TO OLED PANEL)

HIGHER RESOLUTION THAN CAPACITANCE TYPE: 750 DPI

NO EFFECT TO OLED YIELD BECAUSE MODULE IS NOT CONTACT TO A PANEL.



TOTAL MOBILE SOLUTION
OPTICAL FINGERPRINT SENSING MODULE 



TOTAL MOBILE SOLUTION
IRIS CAMERA MODULE

TOTAL MOBILE SOLUTION
IRIS CAMERA MODULE

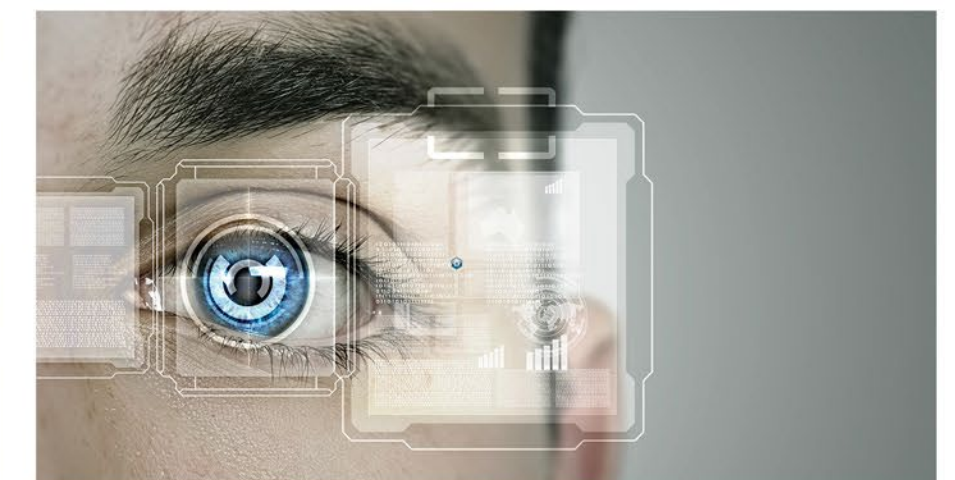
FEATURES

- Optimized Solution for "ALL EYE COLOR"
- Applied IR-LED & Band pass filter of 810nm wavelength range
- Running VT / IRIS Camera via Switching function
- High recognition rate regardless of light from indoor-outdoor

HIGH SECURITY / HIGH RECOGNITION RATE

- Unable to forge / falsify using photo, video, etc
- Low rate of error recognition
- Impossible to find same patterned iris
- After infancy, iris is no longer changed

SMART SECURITY



VT CAM (5M) IRIS CAM (5 M, IR PASS FILTER)



TOTAL MOBILE SOLUTION FACIAL RECOGNITION SYSTEM

Facial recognition is a technology which is capable of identifying or verifying a personnel face from a digital camera image.



3D facial recognition is more accurate in comparison to 2D facial recognition

3D facial recognition is to reduce errors on 2D facial recognition algorithm such as difference in light, head direction, facial expression, cosmetic face, etc.



TOTAL MOBILE SOLUTION
FACIAL RECOGNITION SYSTEM 

TOTAL MOBILE SOLUTION
FACE AUTHENTICATION SOLUTION

CO-WORK WITH INTEL REAL SENSE



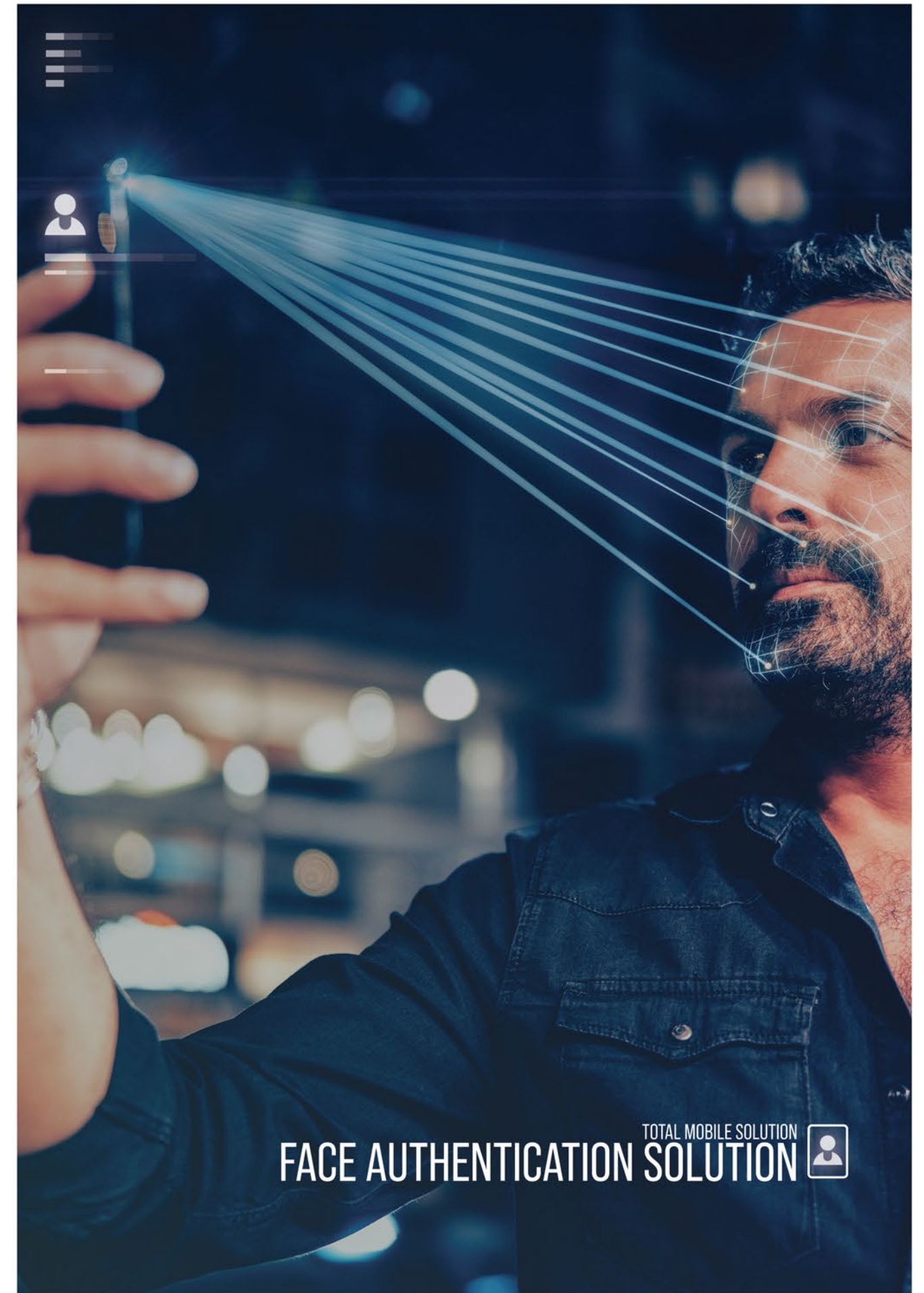
FEATURES

- 1:1M FAR (False Acceptance Rate)
- Highly Secure : Encrypted feature points
- Strong anti-spoofing
- Vast and Unique 3D & 2D IR databases
- Low cost design
- Working in all lighting condition : indoor, outdoor, dark etc.
- Passed Google Certification Test

CURRENT PERFORMANCE

- Face Recognition: FAR 1:1M, TAR 99.41%, FRR 0.59%
- Anti Spoofing : SAR (Spoof Acceptance rate)< 1%
- Distance: Max 70cm

ITEM	CONDITION
SIZE(mm)	12.7 x 7.2 x 3.25t (Focus 60cm)
PIXEL	2M
SENSOR	OV02A10 (1/5", 1.75µm)
Field of View	85.2 °
F#	F2.0
TTL	2.7mm



TOTAL MOBILE SOLUTION
FACE AUTHENTICATION SOLUTION

TOTAL MOBILE SOLUTION
BODY TEMPERATURE SENSOR MODULE

FEATURES

	SPEC
CH / FOV	4 Cell / 70°
OPERATING TEMPERATURE	-20°C ~ 85°C
MEDICAL ACCURACY	Satisfied
INTERFACE	I2C, VDD(3.3v),GND
MODULE SIZE (MM)	5.20 x 13.32 x 1.78(t)
DECO SIZE (MM)	4.20 x 4.32



Very small size (for wearable)	Accurate non-contact temperature measurement
Health tracker	Optimization of space utilization

HEART RATE SENSOR MODULE

The green light that penetrates the skin of the user's wrist is emitted, and the reflection of light is directed to the PD for supervision.



During contraction of the heart, the concentration of hemoglobin increases and the blood absorbs more green light, and during relaxation of the heart, the concentration of hemoglobin decreases. This is the principle that lowers and the blood reflects more green light.

TOTAL MOBILE SOLUTION
NEXT-GENERATION WEARABLES

NEXT-GENERATION WEARABLES
 MEDICAL DIGITAL TEMPERATURE SENSOR AND HEART RATE MONITOR



TWS. EARPHONE

SMART PHONE

SMART SKIN PATCH

SMART WATCH

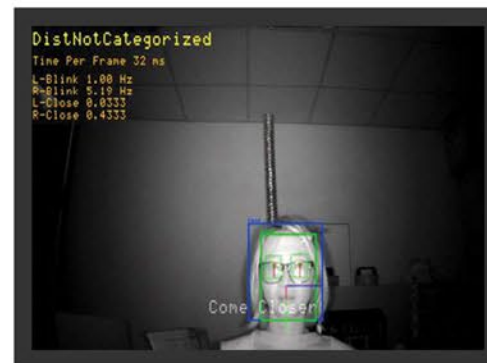
TOTAL MOBILE SOLUTION
FACE RECOGNITION CAMERA

Door opener and anti-theft camera with face recognition

FEATURES

ITEM	IR CAMERA
SENSOR	1MEGA(MONO)
OUTPUT DATA	POC
RESOLUTION	1280 x 720p
IR LED	940nm
WORKING VOLTAGE	DC 12V ± 0.5V

FACE RECOGNITION SYSTEM



SYSTEM CONFIGURATION



TOTAL MOBILE SOLUTION
FINGERPRINT SENSING SYSTEM

In-vehicle easy payment system



Capacitive Touch Fingerprint Sensor 적용

FRR 1%, FAR 1/10만 ↓

자동차 환경신뢰성, EMI/EMC 신뢰성 확보

CATEGORY	FRONT CAMERA
FINGERPRINT SENSOR	Capacitive Touch Fingerprint Sensor
IMAGE RESOLUTION	363 DPI (Dot-Per-Inch)
REGISTRATION	6 ↑
MCU	32bit RISC CPU
FRR/FAR	FRR 1%, FAR 1/100K ↓
OPERATION CURRENT	6.7V~ 18.3V

AVN DISPLAY

FINGERPRINT SENSOR MODULE



ICU



BUSINESS AREA
AUTOMOTIVE SOLUTION

As creative pioneer, leading innovation and technology by continuous research & development create safe and convenient world that everyone dreams of

IN-CABIN SYSTEM

- DMS CAMERA (DRIVER MONITORING SYSTEM)
- GESTURE CAMERA
- EYE-TRACKING SYSTEM
- FINGERPRINT SYSTEM
- BUILT-IN CAM(DASH CAM) SYSTEM

OUT-CABIN SYSTEM

- FRONT / REAR CAMERA
- 360DEGREE SVM CAMERA (SURROUND VIEW MONITORING)
- DSM CAMERA (DIGITAL SIDE MIRROR CAMERA)
- SRM SYSTEM (SMART ROOM MIRROR SYSTEM)
- BVM SYSTEM (BLIND SPOT VIEW MONITORING SYSTEM)

AUTONOMOUS DRIVING SYSTEM

- MFC / STEREO CAMERA
- TRI-FOCAL CAMERA
- MOD CAMERA
- NIGHT VISION CAMERA
- ULTRASONIC CAMERA
- FRONT CAMERA (WITH COREPHOTONICS)
- SVM(SURROUND VIEW MONITORING) SYSTEM
- LIDAR SYSTEM

ADVANCED DRIVER ASSISTANCE SYSTEM BY MCNEX

MCNEX ADAS is developing a various sensing technology which enhance safety and convenience to both driver and pedestrians



35 vehicle model	18 vehicle model	5 vehicle model	4 vehicle model	3 vehicle model	2 vehicle model
GENESIS G70, G80, G90	GENESIS EQ900	IG GRANDEUR	K9, STINGER		

TOTAL 820 CAMERA MODELS **ANNUAL SHIPPING 5.0 MIL MODULES**

820 model camera moduleS development (supplying for all premium vehicles in Hyundai, KIA)

MILITARY VEHICLE



HEAVY EQUIPMENT



AUTOMOTIVE SOLUTION

MCNEX OWNED TECHNOLOGY FOR AUTONOMOUS DRIVING

Korea 1st production: MEGA AVM / LVDS Camera
 Applying to all kinds of camera applications like front/back-up camera, dashcam, security camera , etc.
 Obtaining next cash-cow technologies through ADAS and advanced automotive technologies.



GENESIS G80, G90 | K9 SVM SYSTEM MOUNTED

4 EA OF 360 DEGREE AROUND VIEW CAMERAS LDWS 1EA

AUTONOMOUS DRIVING RECORDER

- Recording driving video
- Recording internal communication information
- Passed all automotive reliability and emc/emi test



BIND SPOT WARNING

Alarming a car in blind spot

BACK UP CAMERA

Detect object at the back & assist parking

FULL AUTO PARKING ASSISTANCE

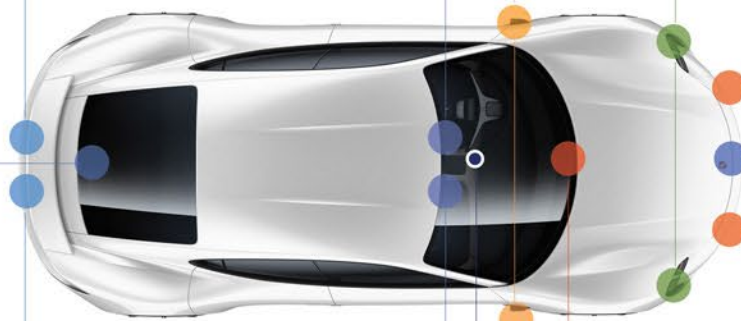
One button parking

MOD CAMERA (MOTION OBJECT DETECTION)

Detect motions

LDWS

Lane Departure Warning System



NIGHT VISION

Detecting a human or an animal by infrared camera

STEREO / LIDAR CAMERA SYSTEM

Recognize and measure the distance at the front

FRONT CAMERA

Recognize object at the front, then inform the driver

DRIVER STATUS MONITORING

Detect the drowsing driver

ADAPTIVE CAMERA

Output an image according to a turn signal.

ADVANCED DRIVING ASSISTANCE SYSTEM

LDWS (Lane Departure Warning System), FCWS (Forward Collision Warning System), Bind Spot Detection, Automatic emergency brake system, Detecting object and pedestrian, Night Vision, etc. Developing the promising futuristic technology, autonomous vehicle core solution



As creative pioneer, leading innovation and technology by continuous research & development create safe and convenient world that everyone dreams of

AUTOMOTIVE SOLUTION

AUTOMOTIVE ADAS SOLUTION

Solution for autonomous driving Level3, Level4 "Omni-directional Image Sensing System"

ITEM	FEATURE		
CAMERA	Tri-focal (120, 60, 30)	Side-dual (100)	
RESOLUTION	2M(FHD) @ 60 FPS		
FRONT FUNCTION	Pedestrian Detection	Vehicle Detectio	Cyclist Detection
	Lane Detection	Traffic light Recognition	
SIDE FUNCTION	Pedestrian Detection	Vehicle Detection	Cyclist Detection
	Lane Detection		

SYSTEM APPROACH



Autonomous Driving - Exp-way

Autonomous Driving - Urban



AUTONOMOUS VALET PARKING SYSTEM

AUTOMATIC VALET PARKING SYSTEM

ITEM	NO. OF INSTALLED PRODUCT	INTERFACE
Automatic valet parking controller	1	CAN,LIN,LVDS
2M SVM camera	4	LVDS
Ultrasonic Sensor	14	LIN
Radar	6	CAN



OMNI-DIRECTIONAL IMAGE SENSING SYSTEM

Forwarding image monitoring system for autonomous driving Level 3, Level4



AUTOMOTIVE SOLUTION

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AUTOMOTIVE SOLUTION

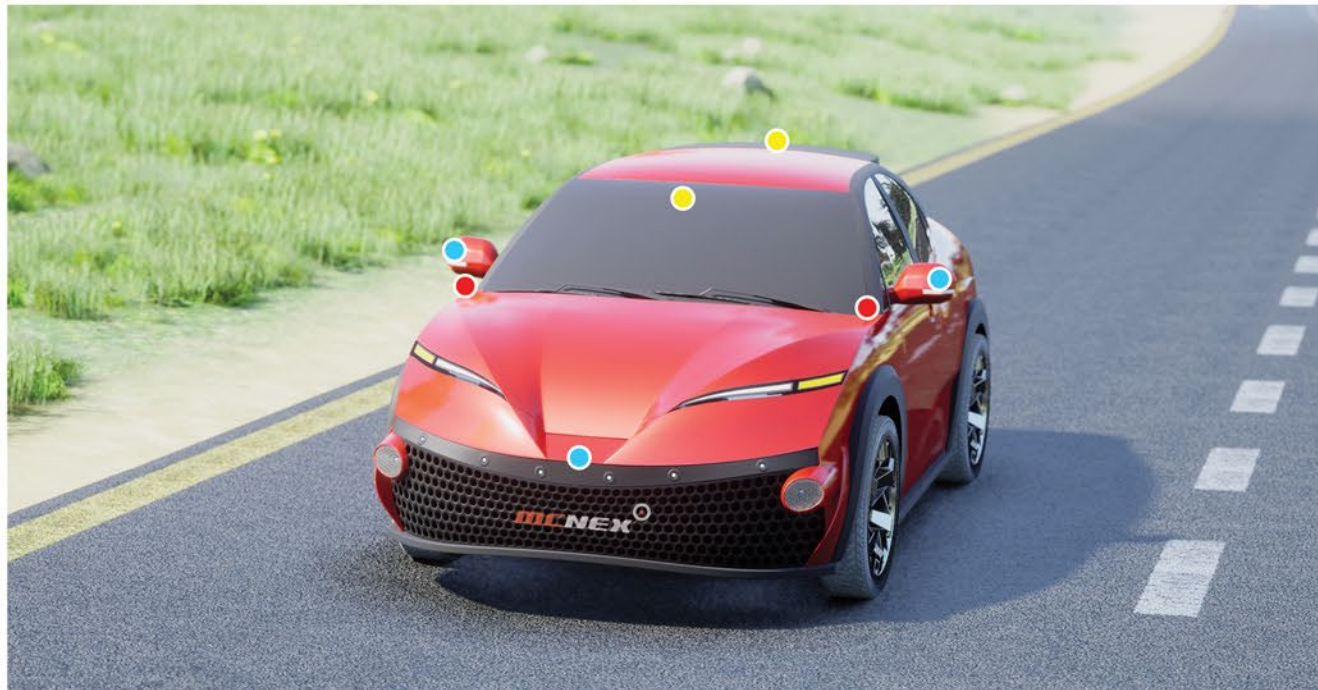
SVM . SRM. SYSTEM

SVM(SURROUND VIEW MONITORING) + SRM(SMART ROOM MIRROR)

TOTAL SOLUTION FOR PARKING/DRIVING SUPPORT

Parking assistance through combined image	Blind spot alert
Side & rear camera monitoring through room mirror	Lane departure warning

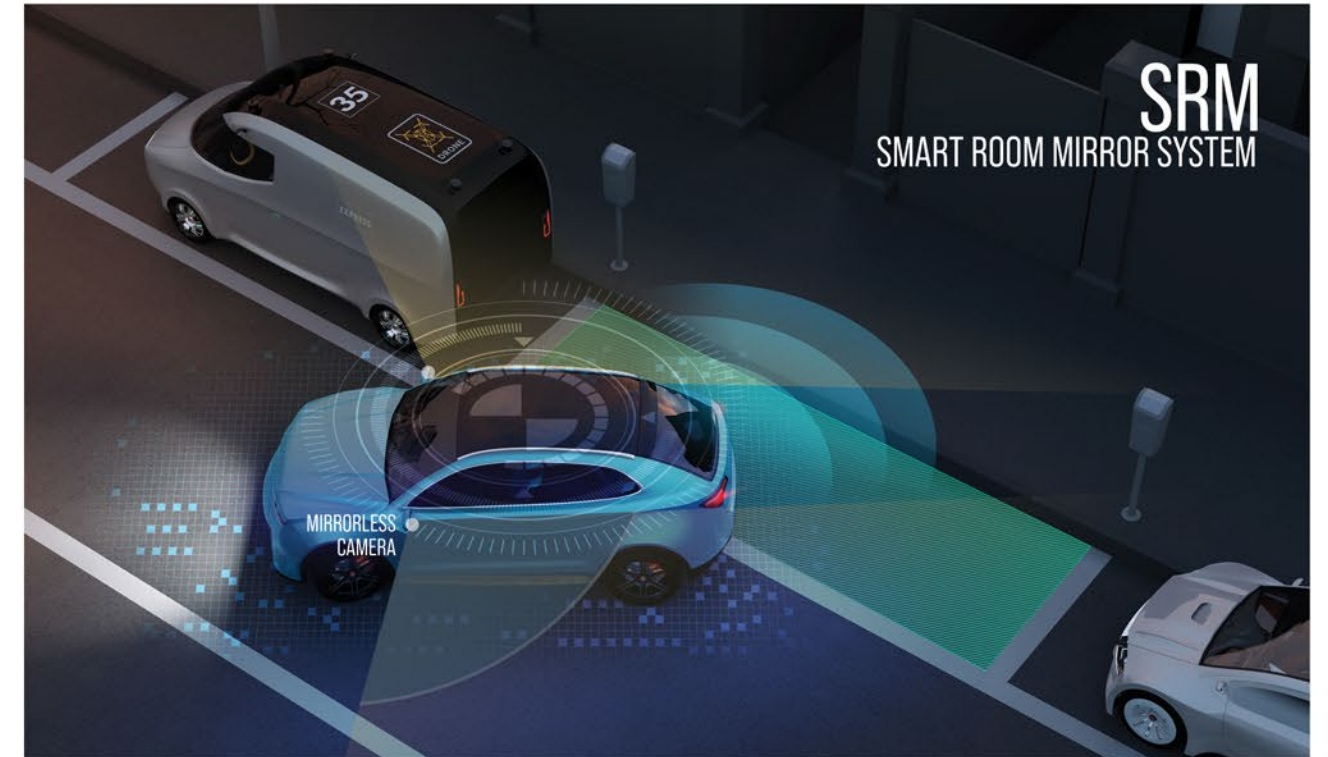
SVM SURROUND VIEW MONITORING - UP TO 8CAMERA + SYSTEM



● **AVM CAMERA** - AROUND VIEW MONITORING ● **CMS CAMERA** - CAMERA MONITORING SYSTEM ● **BUILT-IN CAM** - BUILT-IN CAMERA

FEATURES

DIVISION	SPECIFICATION
Operation status	ACC ON, Start
Input Image Size	SVM : HD[1280 x 720], CMS : HD[1280 x 720] YUV Image
Frame Rate	30FPS
View Angle	190° /80° [H]
Adjust mode	2D/3D Parking, Dynamic View
Display	2D/3D Parking, Dynamic View, Side view [Left/Right]
Object Detection	BSD, MOD



SRM
SMART ROOM MIRROR SYSTEM



Camera monitor system
Object detection distance [~100m]
OLED applicable display

SIDE MIRRORLESS CAMERA

FHD, 60 fps, Auto grade	Better productivity + Additional options (Object recognition)
Wide angle - Minimizing blind spot	Viewing+ Sensing function



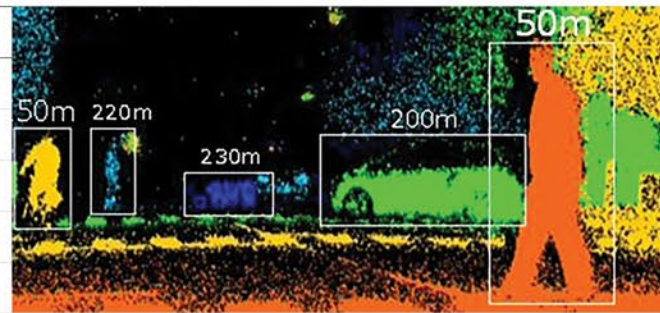
AUTOMOTIVE SOLUTION

IN - CABIN CAMERA

TOF CAMERA

People, Animals and Objects Surveillance Cameras

CATEGORY	TOF CAMERA
Sensor	QVGA (TOF)
Out-put Data	POC
Resolution	320 x 240p
IR LED	940nm
Operating Current	DC 12 V ± 0.5 V



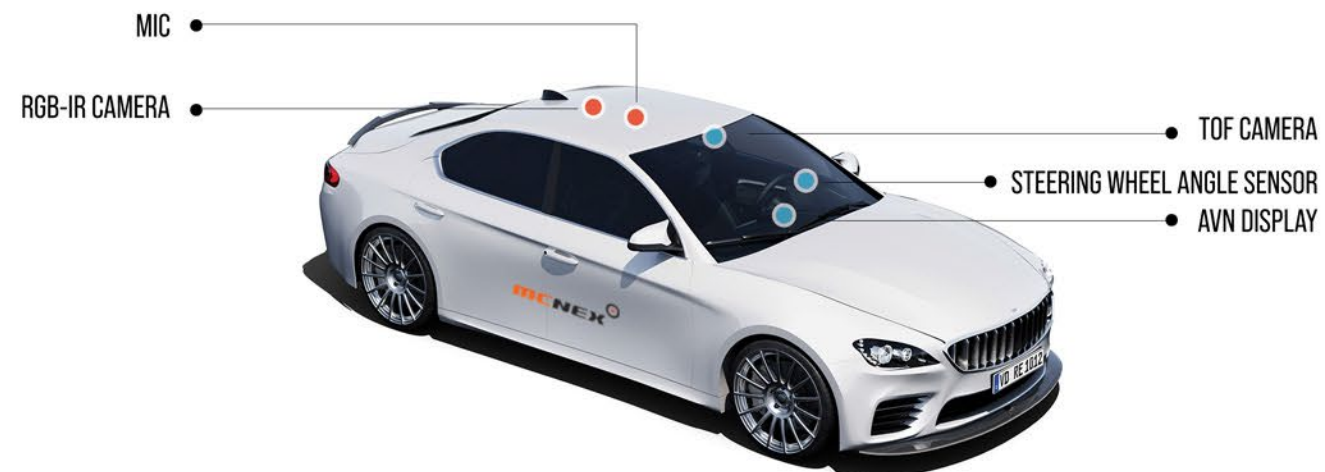
RGB-IR CAMERA

In-vehicle monitoring camera

CATEGORY	RGB-IR CAMERA
Sensor	1MEGA(RGB-IR)
Out-put Data	POC
Resolution	1280 x 720p
IR LED	940nm
Operating Current	DC 12 V ± 0.5 V



SYSTEM CONFIGURATION

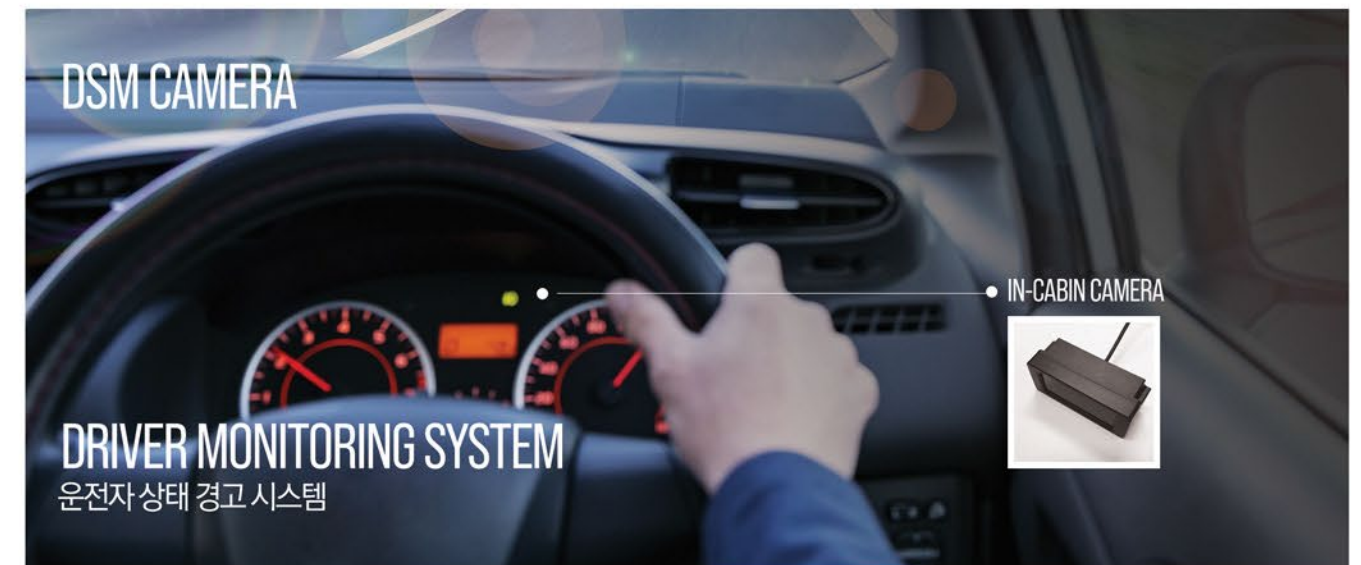


MCNEX GESTURE RECOGNITION CAMERA

View angle of 130 ~ 180° HD Camera, System control within 1m

Stabilizing backlight & OIS

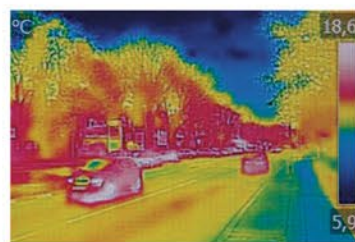
High-recognition rate even at Night & Low light circumstances



CATEGORY	DMS CAMERA
Sensor	1MEGA(MONO)
Out-put Data	POC
Resolution	1280 x 720p
IR LED	940nm
Operating Current	DC 12 V ± 0.5 V

AUTOMOTIVE SOLUTION

THERMO-IMAGING CAMERA



COLOR AND THERMO-IMAGING DATA



3D DEPTH EXTRACTION



OBJECT DETECTION BASED ON 3D DEPTH



APPLY AI TECHNOLOGY

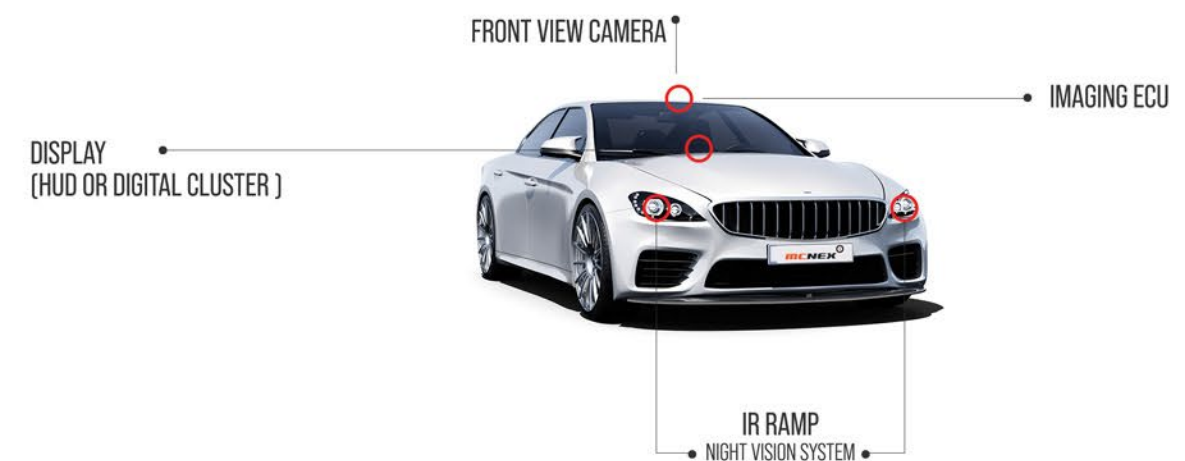


DETECT DRIVEABLE AREA BASED ON PREDICTION AND RESTORATION

FEATURE DESCRIPTION



CATEGORY		SPECIFICATION
CAMERA SPEC	Image Sensor	MLX75411
	Optical Format	1/4 INCH
	Resolution	1024(H) X 512(V)
	View Angle	D 20 ° (H 16)
	Lens Structure	4~5 GLASS, VISUAL/IR PASS
	Module Size	(IP PASS BAND: 800~1000NM)
ECU SPEC	Detectable distance	31MMX16MMX25MM (W X H X D) 3 ~ 150M
	Warning	PRESENT AND WARN PEDESTRIANS OR VEHICLES AHEAD
	ECU	FIX BOTH OF CAMERA AND ECU
	APPLICATION	VEHICLE, SECURITY, MILITARY, DRONE,



AUTOMOTIVE SOLUTION

AUTOMOTIVE CAMERA INTERFACE SOLUTION

ETHERNET CAMERA | LVDS CAMERA | AHD CAMERA | NTSC CAMERA | C2B CAMERA | IN-CABIN CAMERA

1. ETHERNET CAMERA

ITEM	SVM Camera
Recognition type	Surround View Monitor Rear View Monitor
Output Data	Ethernet
Resolution	1280 x 944p
Operating Voltage	DC 6.5 V ± 0.5 V
HfOV	H:192±3 ° V:137±3 °



4. NTSC CAMERA

ITEM	RVM Camera
Application type	Surround View Monitor Rear View Monitor
Output Data	NTSC
Resolution	1024 x 960 -> 720 x 480
Operating Voltage	DC 6.5 V ± 0.5 V
FoV	H:192±3 ° V:137±3 °



2. LVDS CAMERA

ITEM	SVM Camera
Application type	Surround View Monitor Rear View Monitor
Output Data	LVDS
Resolution	1280 x 720p
Operating Voltage	DC 6.5 V ± 0.5 V
FoV	H:192±3 ° V:137±3 °



5. C2B CAMERA

ITEM	RVM Camera
Application type	Surround View Monitor Rear View Monitor
Output Data	LVDS
Resolution	1280 x 720p
Operating Voltage	DC 6.5 V ± 0.5 V
FoV	H:192±3 ° V:137±3 °



3. AHD CAMERA

ITEM	RVM Camera
Application type	Rear View
Output Data	AHD
Resolution	1280 x 720p
Operating Voltage	DC 6.5 V ± 0.5 V
FoV	H:192±3 ° V:137±3 °



6. IN-CABIN CAMERA

ITEM	DSM RGB-IR Camera
Sensor	2MEGA (RGB-IR)
Output Data	POC
Resolution	1920H x 1080V (2.0Mp)
IR LED	940nm
Operating Voltage	DC 6.5 V ± 0.5 V



AUTOMOTIVE SOLUTION

SENSING CAMERA SYSTEM

DSW / SHARK ANTENNA CAMERA SYSTEM

System Approach
Camera based Rear Collision Warning
Camera base Blind Spot Detection
Driver Status Warning
E-Mirror View



AUTOMOTIVE SCANNING DUAL CAMERA

System Approach
Dual camera solution based on wide and narrow FoV
Unidentified small object on the road
Long distance object classification



REAR SENSING CAMERA SYSTEM

System Approach
Rear View Monitor and Sensing Camera
Blind Spot Detection (RBSD, MOD)



IN-CABIN GESTURE CAMERA SYSTEM

System Approach
Gesture Interactions System



TRI-FOCAL SYSTEM

System Approach
Self Driving Car for LvL3



7.4/8M HIGH RESOLUTION CAMERA

System Approach
Font Sensing System & Object Detection



AUTOMOTIVE SOLUTION
SMART CAR IMAGE SYSTEM



STEREO CAMERA



360° ROTATING LASER SCANNER



GPS



VIEWING, SENSING, AVM CAMERA



AUTONOMOUS DRIVING CAR

- Image tuning tech
- Decision of Driving condition
- Laser signal control tech
- Driving route creation
- Vehicle control tech
- Detect of pedestrian, objects & distance calculation



UPCOMING AUTONOMOUS DRIVING ERA

Future driving solution (EV-Car sharing-Auto driving-Wireless charging)
 Entering into autonomous driving industry of global big IT company (Apple, Google)

As creative pioneer, leading innovation and technology by continuous research & development
 create safe and convenient world that everyone dreams of

BUSINESS AREA

SYSTEM SOLUTION

As creative pioneer, leading innovation and technology by continuous research & development create safe and convenient world that everyone dreams of

IOT BUSINESS SOLUTION

- IMAGE SYSTEM
- DASH CAM
- NETWORK CAMERA
- SMART MEDIA(SMART DID)
- METAVVERSE
- 6G
- AR, VR, MR, XR SOLUTION



IMAGE SOLUTION
+
6G. ICT

MCNEX, with the technical convergence based on IOT, is leading the image system solution and connected future industry by continuous research and development in the fourth industrial revolution which focuses on turning the situation awareness into autonomous intelligence technology. MCNEX has been launching a number of products in CES which is being held in Las Vegas since 2015.

MCNEX will keep the continuous research and development with its products in order to create the world more convenient on a basis of convergent service.

MCNEX'S 6 CONSECUTIVE YEARS OF CES EXHIBITION SINCE CES2015



MCNEX's core value is to let the world experiencing the best image system solution for more convenient world Eyeclon is the brand made by MCNEX Co. Ltd. with the technical competence in the camera module industry.

SYSTEM SOLUTION
BLACK BOX

MCNEX with No.1 camera module technology in Korean market, is the first brand that launching LTE connection based dashcam to deliver a driver a chance to monitor owned vehicle by a smart phone as well as other functions such as ADAS for driver's safety and convenience.



IOT BASED LTE COMMUNICATION TYPE **DASH CAM L7PRIME**

LTE DASHCAM IMPLEMENTING **WORLD FIRST SOUND PRESSURE SECURITY TECHNOLOGY FOR WARNING THEFT PROTECTION**

INTRUDING PROTECTION	Detecting sound wave when intruding
THEFT PROTECTION	Warning when intruding into a car
ALRAMING CAR FIRE	Alarming when car is firing
IDENTIFYING PARKED LOCATION	Texting a parking location when parked
MANUAL RECORDING	Check the recorded video after manual recording by smart phone app.
DUAL BAND	LTE & WCDMA
CONTROLLING LOCATION/VIDEO/ STATUS	Check location and recorded video remotely



TECHNOLOGY FOR PERFECTION

Harsh quality test (344 items) for making seamless qualified product

VALUE CREATING DESIGN

Stylish and simple UX design for combination of performance and convenience.



QHD 3CH DASH CAM
MD - Q

WIFI 2.4GHZ WIRELESS CONNECTION
RADAR SENSOR
CAPACITIVE TOUCH
GPS+GLONASS+QZSS

GPS+Glonass Satellite Support | Radar Sensor Module Application | H.265 Encoding | Capacitive Touch Support
PC, MAC Viewer Support | Structure without body line connection

SYSTEM SOLUTION

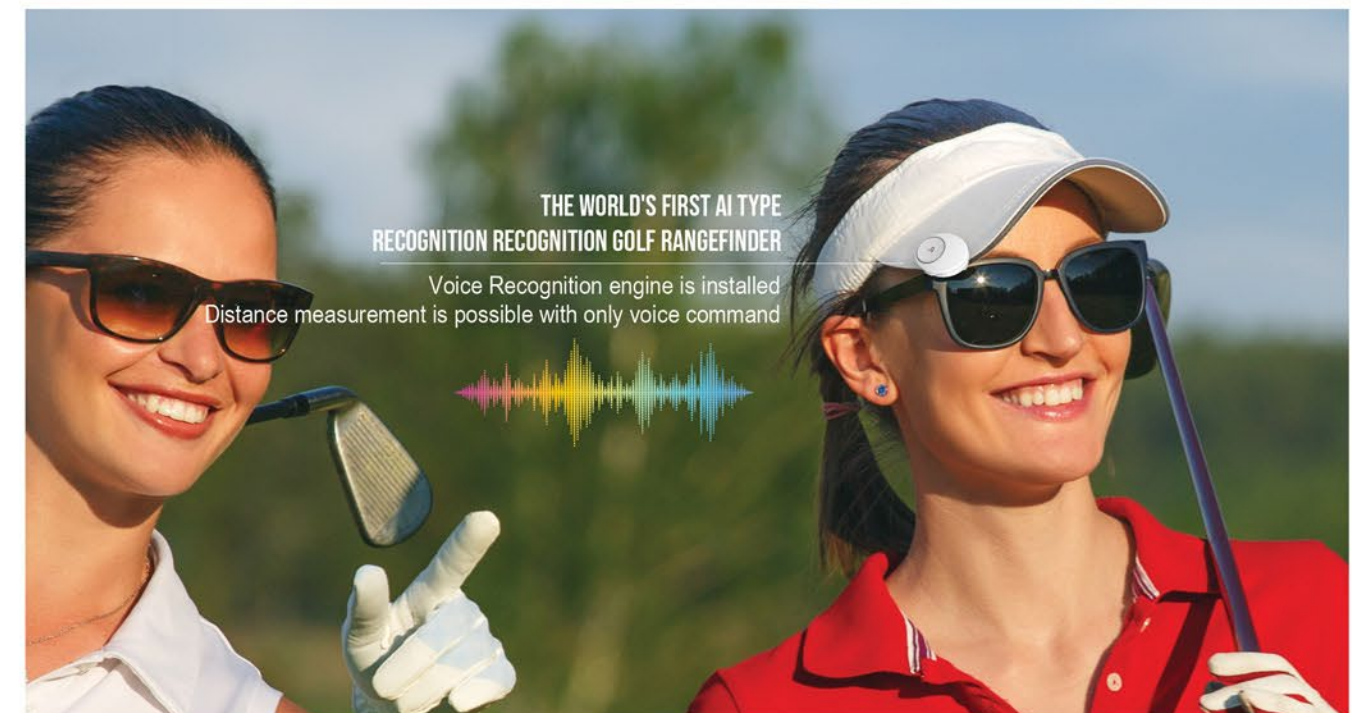
GOLF BRAND BUDDYCLON

Buddy Clone is an MCNEX brand that develops products necessary for a round of golf. By launching 'BUDDYCLON', a professional brand for measuring golf distances combined with IT, we are conducting R&D on golf rangefinders with camera technology as a strategy to pioneer a market area by differentiating it from existing products.



SYSTEM SOLUTION

VOICE RECOGNITION GOLF RANGEFINDER

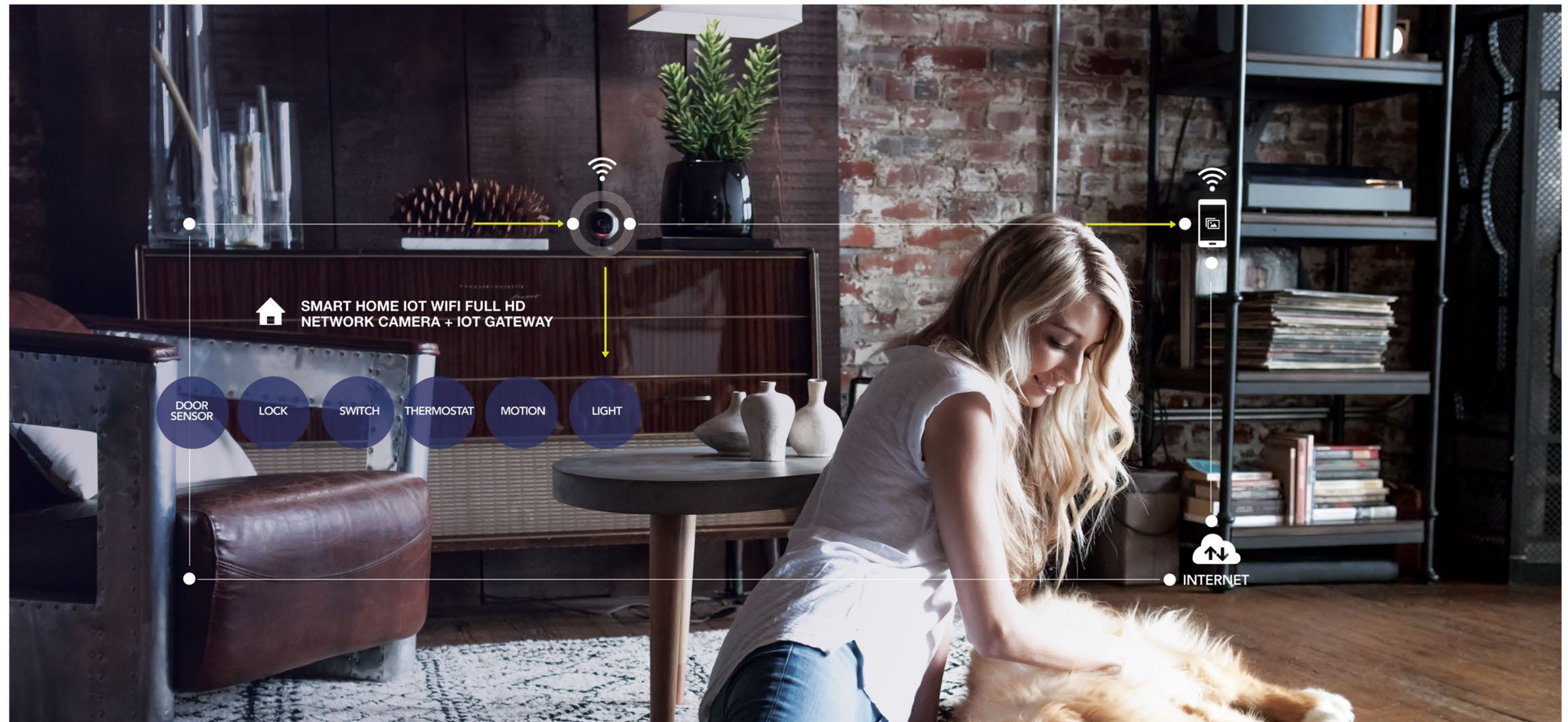


SYSTEM SOLUTION NETWORK CAMERA . E1. E3

RESOLUTION : FHD (1920X1080)
IMAGE SENSOR: SONY EXMOR 1/2.9" 2M CMOS
LENS: F2.0, FOV 125DEGREE
STORAGE MODE: MICRO SD CARD/ CLOUD
WIRELESS: WIFI 802.11 B/G/N (2.4GHZ/5.0GHZ)

NIGHT VISION: TRUE D/N FILTER (MAX 10M)
MOTION DETECT
DOOR SENSOR
TWO-WAY AUDIO
POWER: MICRO USB-B TYPE/ 5V/ 1.5A

SMART HOME IOT WIFI FULL HD NETWORK CAMERA + IOT GATEWAY



SYSTEM SOLUTION
STABILIZE CAMERA. DEVICE

ACCESSORY TYPE MOBILE PHONE DEVICE



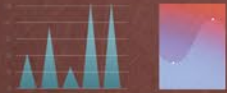
- Camera: 12MP
- SIZE: 26.2x69x9.8mm
- Weight: 30g
- Encoding: 4K @60fps, 1080P @240fps
- Audio: AAC
- USB 3.0 Support
- OIS/TILT 3 Axis Support
- Main Features: Time Lapse, Time Warp, Slow motion(x8), Snapshot, Mobility of Selfie
- Attachable Clip Provided



BUSINESS AREA

METaverse 6G AR. VR. MR. XR SOLUTION

- VR. AR CAMERA
- SMART GLASS
- 3D CAMERA MODULE
- SMART TELEMEDICINE SYSTEM
- SMART DID



LOREM IPSUM

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MCNEX

BUSINESS

LOREM IPSUM

SHOPPING

LOREM IPSUM

MUSIC

LOREM IPSUM

SEARCH

GO

TECHNOLOGY

LOREM IPSUM

VACATION

SYSTEM SOLUTION
VR. AR CAMERA



PRECISE HAND - TRACKING SOLUTION

HAND TRACKING

Detects joint and movement of hands by Stereo Camera
 Super delicate detection of each hand joints
 Precise operation under low light through IR LED
 Wide FOV enables detecting entire movement of arm and hands

CES BOOTH IN 2019



VR CAMERA



MODULE SIZE	105 X 10 X 6.5	PIXEL SIZE	1/4" CSP
RESOLUTION	1M	I/F	USB3.0 & MIPI
FOCUS TYPE	FIXED FOCUS	F#	2.0
VIEW ANGLE	180°	IR LED	850NM 150°

AR CAMERA

AR CAMERA IMPLEMENTING INTO REAL LIFE

AR technology for game, entertainment, medical, sightseeing, manufacturing, construction, building, etc.. Easy to find a problem as using fluoroscopic technology applying ar technology.



TOTAL MOBILE SOLUTION
SMART GLASSES

HIGHLY SIMPLIFIED OPTIC STRUCTURE TO ENSURE

1. High efficiency of image data transmitting
2. Unique system lens to deliver 2D and 3D images
3. Lighter and smaller smart glass device

CENTER-MOUNTED OPTIC MODULE TO PROVIDE

1. Wider view angle compared to side-mounted ones
2. Unique system lens to deliver 2D and 3D images
3. Fit in any stylish design for any application

CENTER-MOUNTED OPTIC MODULE

Our center-mounted optic module enables wide view angle for our glasses, solving one of the most difficult challenges faced by other smart glasses

Center-mounted optic module also allows us to design our glasses more stylish, compared to other models that are bulky and inconvenient to handle

BEST-IN-CLASS OPTIC DESIGN

Our patented technology enables us to use extremely thin beam splitter (2mm) as part of the optic module, making our glasses light weight and more comfortable to wear

Even with our minimum-sized optic module, the virtual images are created far enough from your eyes which makes refocusing of your eyesight unnecessary in order to view images

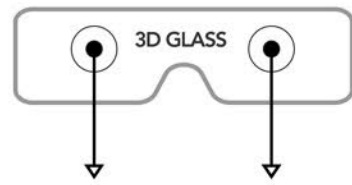


TOTAL MOBILE SOLUTION
SMART GLASSES
 INNOVATIVE OPTIC SYSTEM OPENS THE NEW ERA OF SMART GLASSES

TOTAL MOBILE SOLUTION

3D DEPTH CAMERA

2 cameras can be actuated by one controller. This controller can mix 3D image without any other software 2D or 3D is optional.



SIDE BY SIDE (SHUTTER GLASS) IMAGE

As displaying right&left frame side by side, open and close a crystal shutter side by side to balance both sides of the frame timing



TOTAL MOBILE SOLUTION
3D DEPTH CAMERA **3D**

SYSTEM SOLUTION
SMART TELEMEDICINE SYSTEM

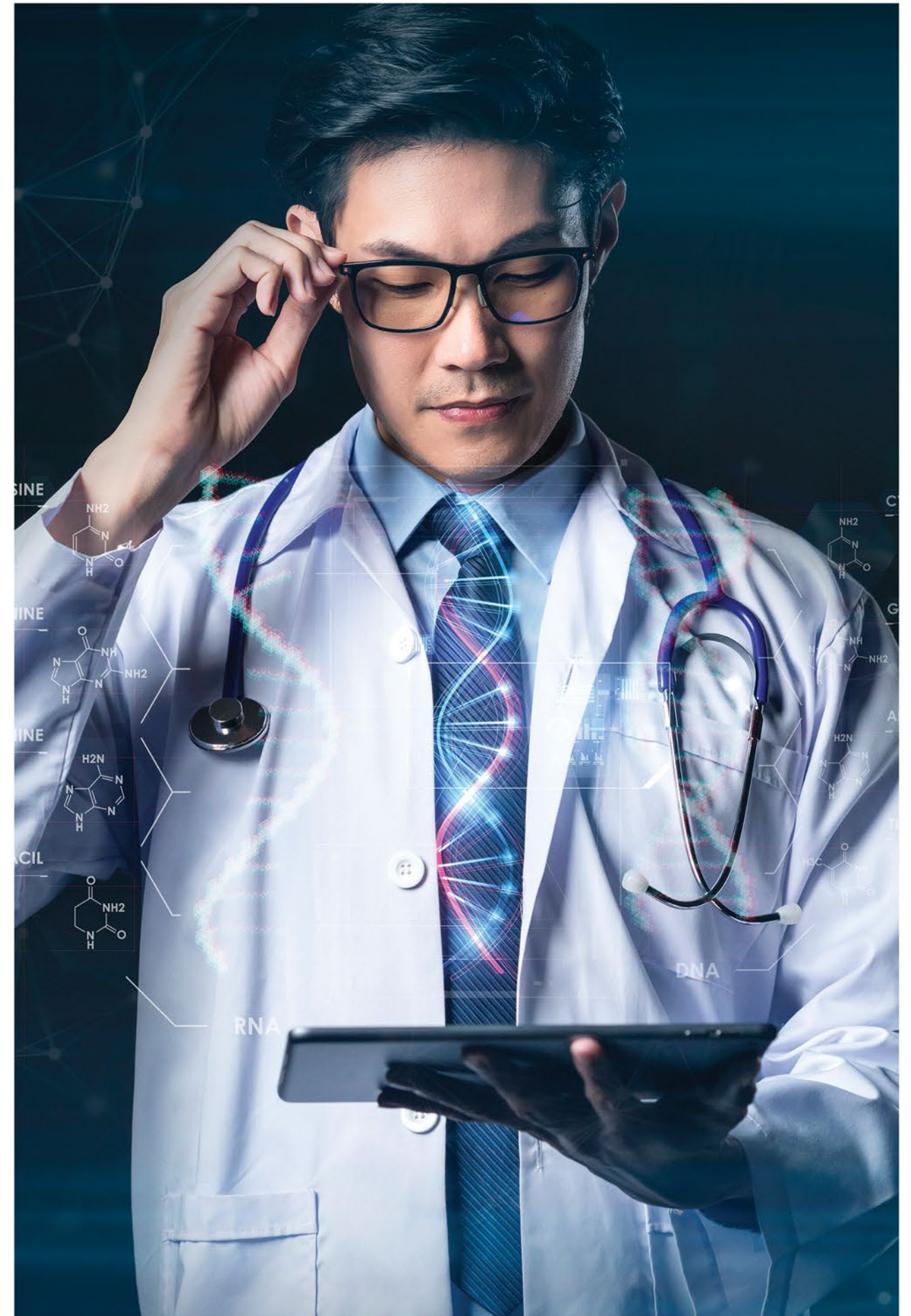
Smart medical technology uses standards to connect people, machines, sensors, etc. to each other and utilizes Information & Communication Technology (ICT) for smart healthcare that allows health supervision to be received anytime, anywhere. Smart medical technology is a convergence technology that grafts AI, big data, cloud computing, and Internet of Things (IoT), the core ICT of the 4th Industrial Revolution, with healthcare.



DEVICE (IMAGE SOLUTION)	DATA PLATFORM	SERVICE
<p>Components Sense module—optical sensors, pressure sensors, ultrasonic sensors, optical image sensor medical devices and equipment, wearable, personal health management de-</p>	<p>Medical/Health management content, health management platform</p>	<p>Medical diagnosis service Health management and remote treatment service</p>



SMART SENSING	SMART MEDICAL DEVICE	SMART HOSPITAL
SMART HOME	SMART MOBILE HOSPITAL	STANDARD CERTIFICATION AND CONFORMANCE



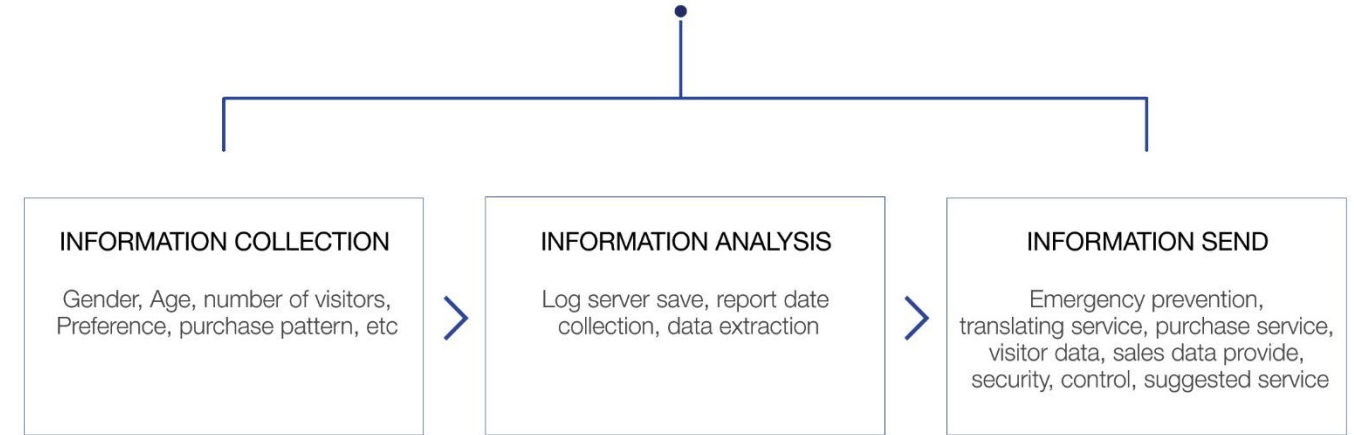
SYSTEM SOLUTION
SMART MEDIA

Create a new value with service platform based on the multimedia which is converged of ICT and Image Solution

SMART DID | CES BOOTH IN 2019



IOT. ICT
CONVERGENCE OF IMAGE SOLUTION AND ICT TECHNOLOGY



**2018 CES EXHIBITS
SMART DID (RETAIL BIG DATA CMS SOLUTION)**

Customer analysis through facial recognition actuating system and linkage to payment system through gesture recognition.

MCNEX makes tomorrow better with public media and service platform which are creating new value for the social needs and cultural desire. MCNEX develops the fusion of image solution and communication technology to make our dreams come true

RELIABLE CORE TECHNOLOGY AND SOLUTIONS



MOBILE SOLUTION CUSTOMERS

KOREA	OVERSEAS			

AUTOMOTIVE SOLUTION CUSTOMERS

KOREA		OVERSEAS			



THE EYE OF IT WORLD. MCNEX
**THE INVISIBLE CORE TECHNOLOGY
OF MCNEX**

“ THE INVISIBLE CORE TECHNOLOGY IS CLOSED TO OUR LIFE. ”
The invisible core technology of MCNEX is unseen but to turn everyone's imagination into reality,
is always closed to our life every time and everywhere



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