

BMW Head Up Display (HUD) Teardown

BMW ヘッドアップディスプレイ ティアダウン

FEATURES:

製品の特徴

- Head Up Display
- Socionext MB88F333BA
- 3.15-inch WVGA IPS LCD



Fomalhaut 分解調査データの詳細はこちら

Fomalhaut
Techno Solutions



Manufacturer	Nippon Seiki
Model Number	6230-9 367 800
Carrier	-
Assembled in	Japan
Retail Price	unknown
Product Release	unknown
Report Release	2016.09.02
Document ID	1053

SPECIFICATIONS

BASIC	Product Name	BMW HUD, 6230-9 367 800					
	Manufacturer	Nippon Seiki Co., Ltd					
	Minimum Size (mm)	315 x 185 x 205					
	Weight (g)	2100					
BATTERY TIME	Standby (hours)	3.9G: FDD-LTE: -	3.9G: TD-LTE: -	3G: WCDMA: -	3G: CDMA: -	3G: TD-SCDMA: -	2G: GSM: -
	Voice Call (minutes)	3.9G: FDD-LTE: -	3.9G: TD-LTE: -	3G: WCDMA: -	3G: CDMA: -	3G: TD-SCDMA: -	2G: GSM: -
	Video Call (minutes)	-					
	Digital TV (minutes)	-					
	Other	-					
	Battery (size in mm)	-					
SYSTEM	OS	unknown					
	CPU / ROM / RAM	CPU: Socionext MB88F333BA ROM: unknown RAM: unknown					
DISPLAY	Main Display	3.15-inch, 16,777,216 colors, 800 x 480 dot, WVGA IPS LCD					
	Sub Display	-					
COMMUNICATION	Protocol (MHz)	3.9G: FDD-LTE: - 3.9G: TD-LTE: - 3G: WCDMA: - 3G: CDMA: - 3G: TD-SCDMA: - 2G: GSM: -					
	HSDPA/HSUPA (Mbps)	3G: -			LTE: -		
	Wireless LAN	-					
	Bluetooth	-					
	GPS	-					
	Infrared	-					
	RFID/NFC	-					
CAMERA	Main Camera	-					
	Sub Camera	-					
SENSOR	Motion	Accelerometer: -	Digital Compass: -	Gyroscope: -	Barometer: -		
		Gesture Recognition: -	-	-	-		
	Ambient	Light Sensor: -	Proximity Sensor: -	RGB Sensor: -	Laser Auto Focus Sensor: -		
		Temperature Sensor: -	Humidity Sensor: -	-	-		
	Security	Fingerprint Sensor: -	-	-	-		
	Healthcare	Heart Rate Monitor: -					
	Touch Panel	-					
OTHER	HDMI	-					
	MicroSD (max capacity)	-					
	Waterproof/Anti-shock	-					

OUTLOOK / PRODUCT INFORMATION

Supplier : Nippon Seiki - the biggest HUD supplier in the world.
Max angle of view among all mass-produced HUDs.
Multi-colored and high resolution LCD implemented.
The sensitive part, the concave mirror, is produced in-house to secure quality.



Front Panel



Inner Frame



PCB#1



LED Unit & PCB#3



Mirror & Holder



Rear Cover



PCB#2



Display Unit



Mirror Unit

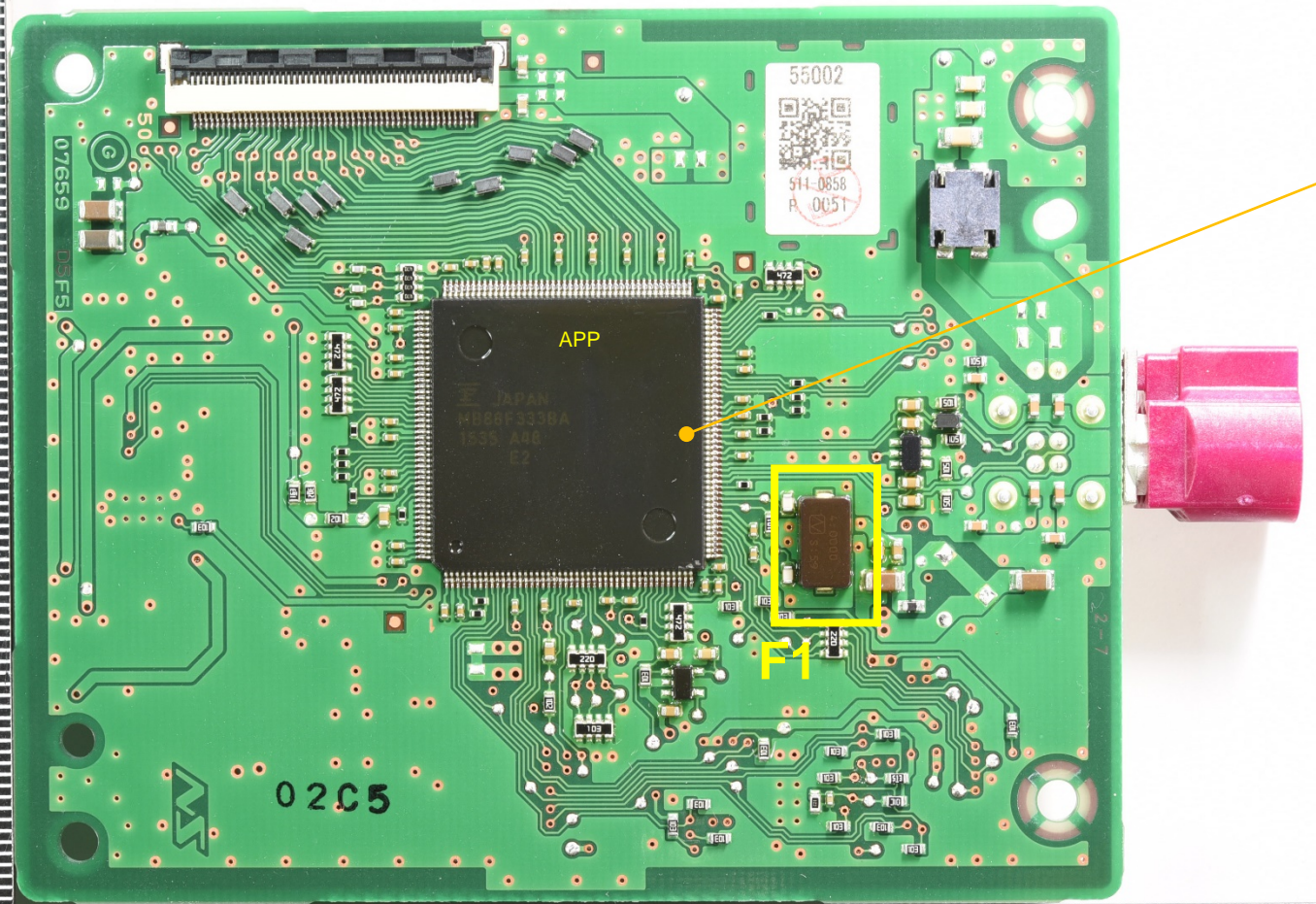
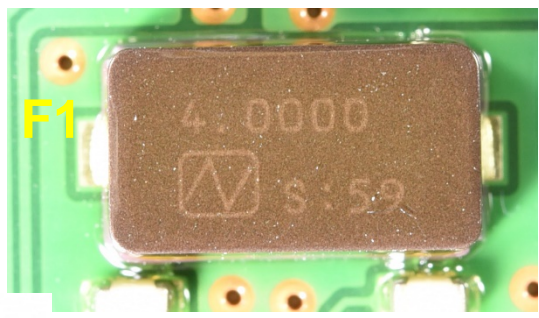


PCB#1 SIDE A: KEY COMPONENTS

Unit: millimeter otherwise specified

QUARTZ

(F1) AT-XTAL (NDK)
4.0000
(LOGO) S:59
8.10 x 4.67 x 1.87



Application Processor (Socionext)
MB88F333BA

PCB#1 SIDE B: KEY COMPONENTS

LED Driver (TI)
LM3492

Transient Voltage Suppressor (ON Semiconductor)
SMF28A

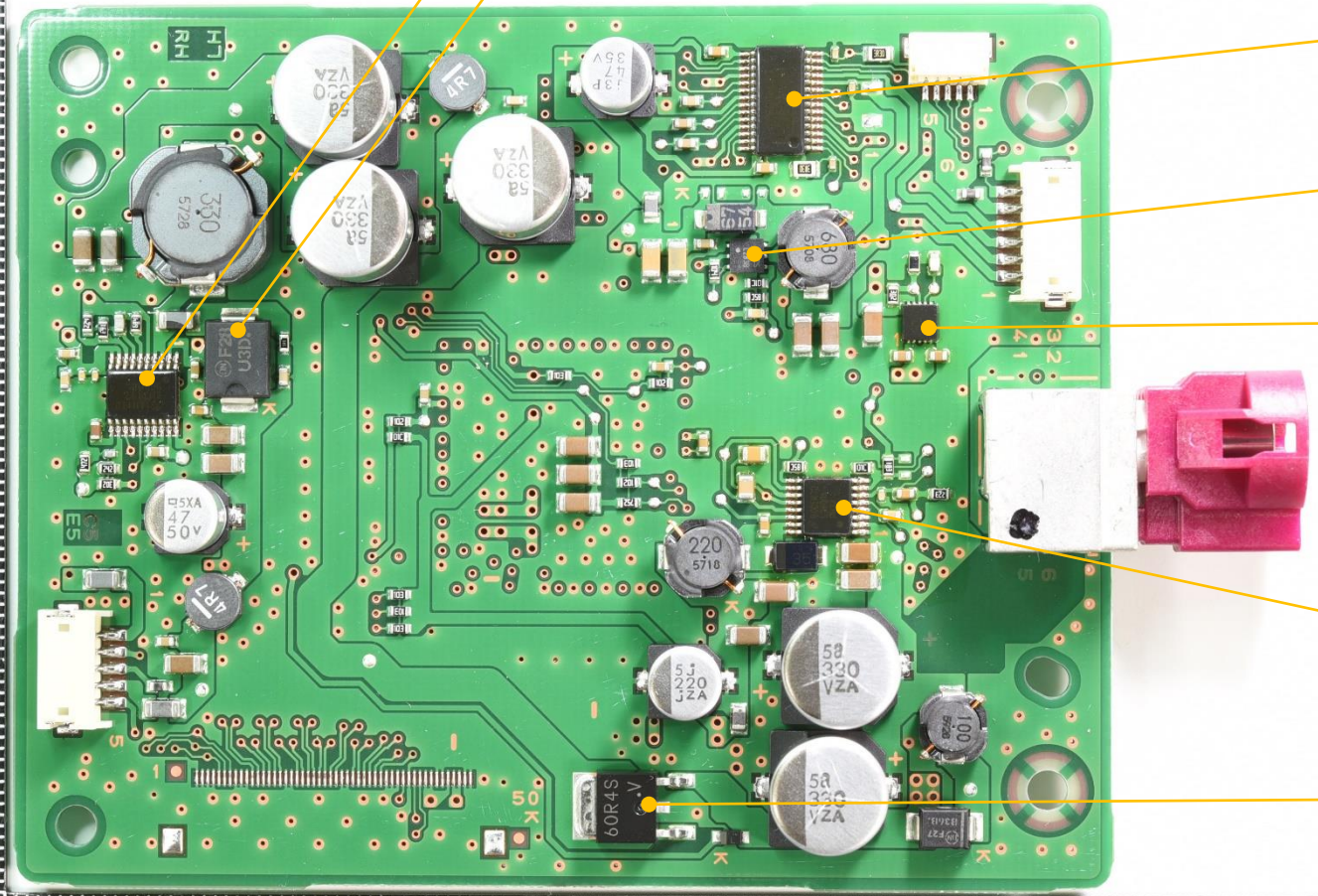
Programmable Stepper Driver (Allegro)
A4980

Unknown
55HC5
L283B

Low-Dropout Linear Regulator (TI)
TPS74801-Q1

Switching Regulator (TI)
LM26001

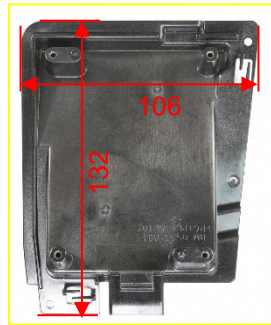
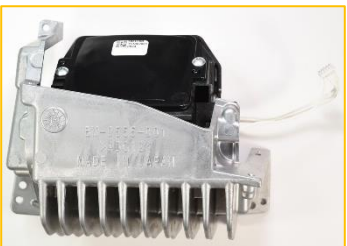
MOSFET (mnf. unknown)
60R4S
(assumption)



LED UNIT (1)

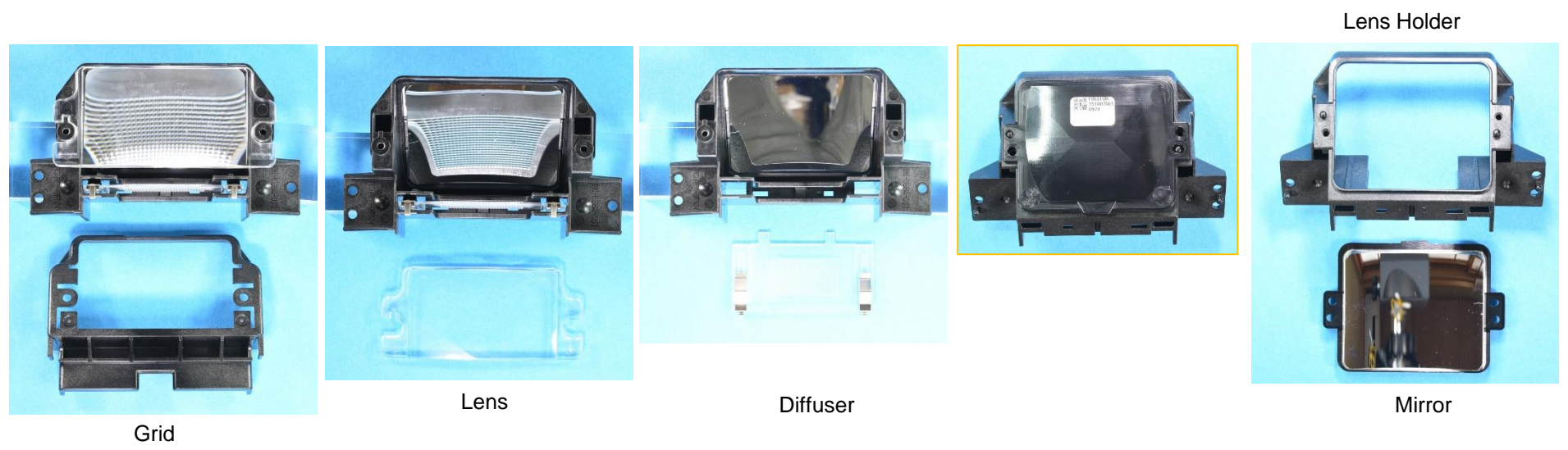
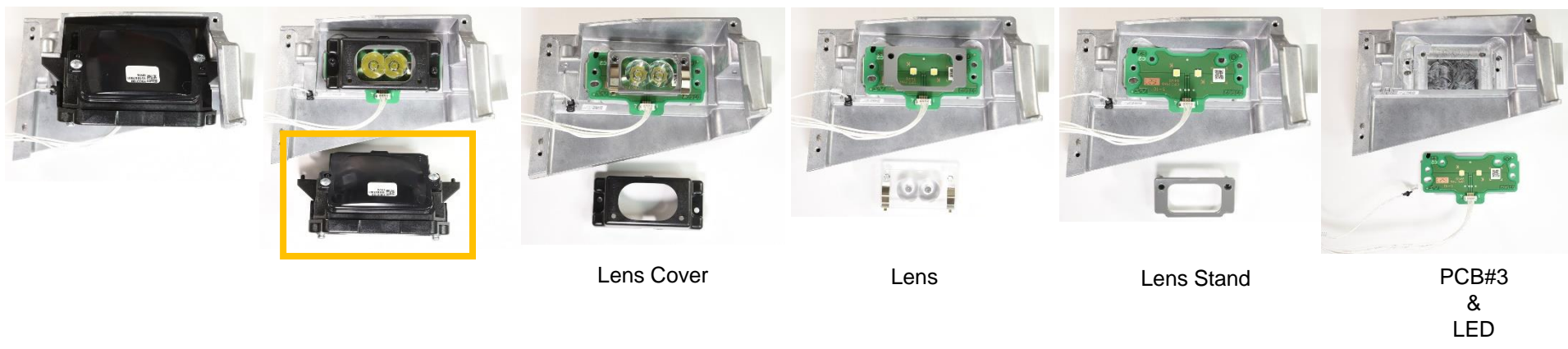


LED UNIT (2)



Part: PCB Stand
 Size (mm): 106 x 191 x 45
 Weight (g): 40
 Material: PC+PET-GF10
 Finish: -

LED UNIT (3)

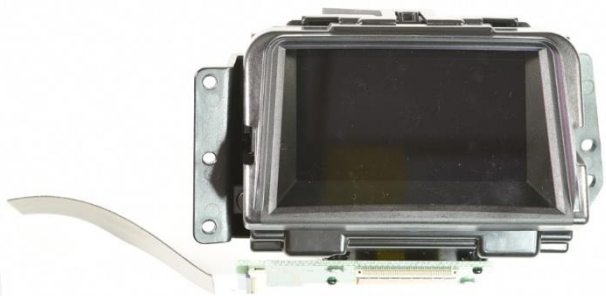
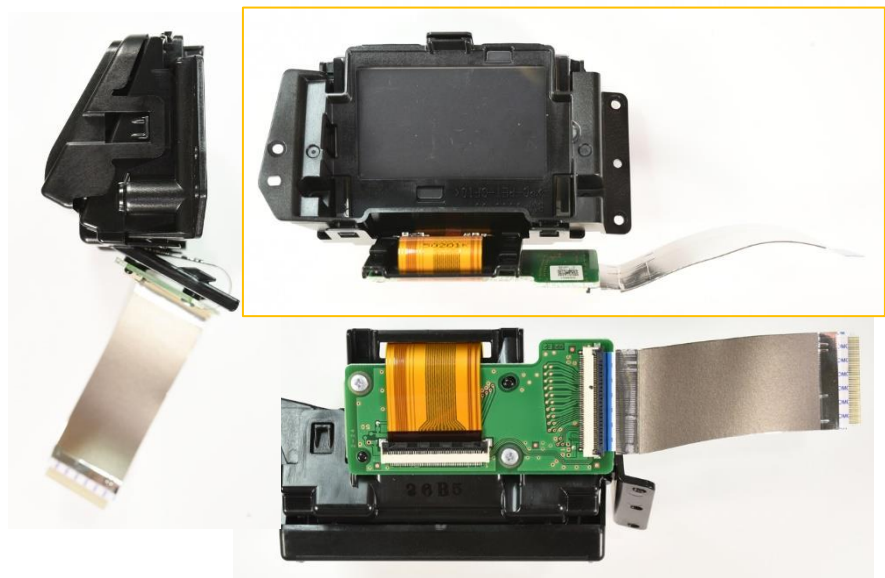
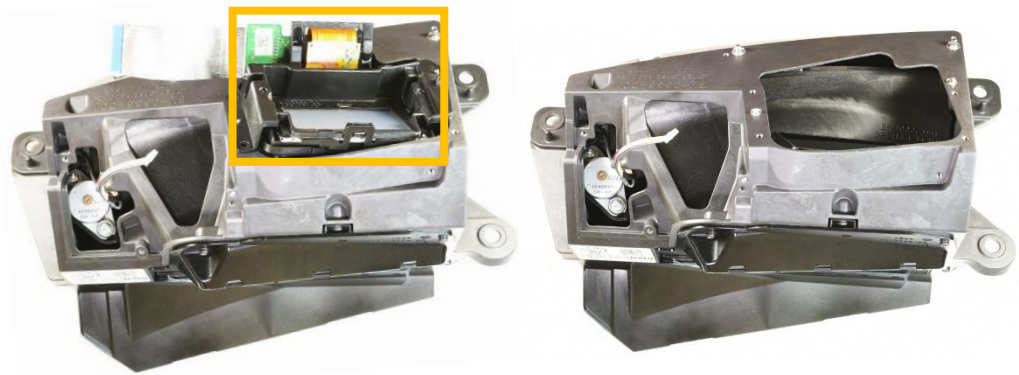


LED UNIT (4)

1 notch = 1mm



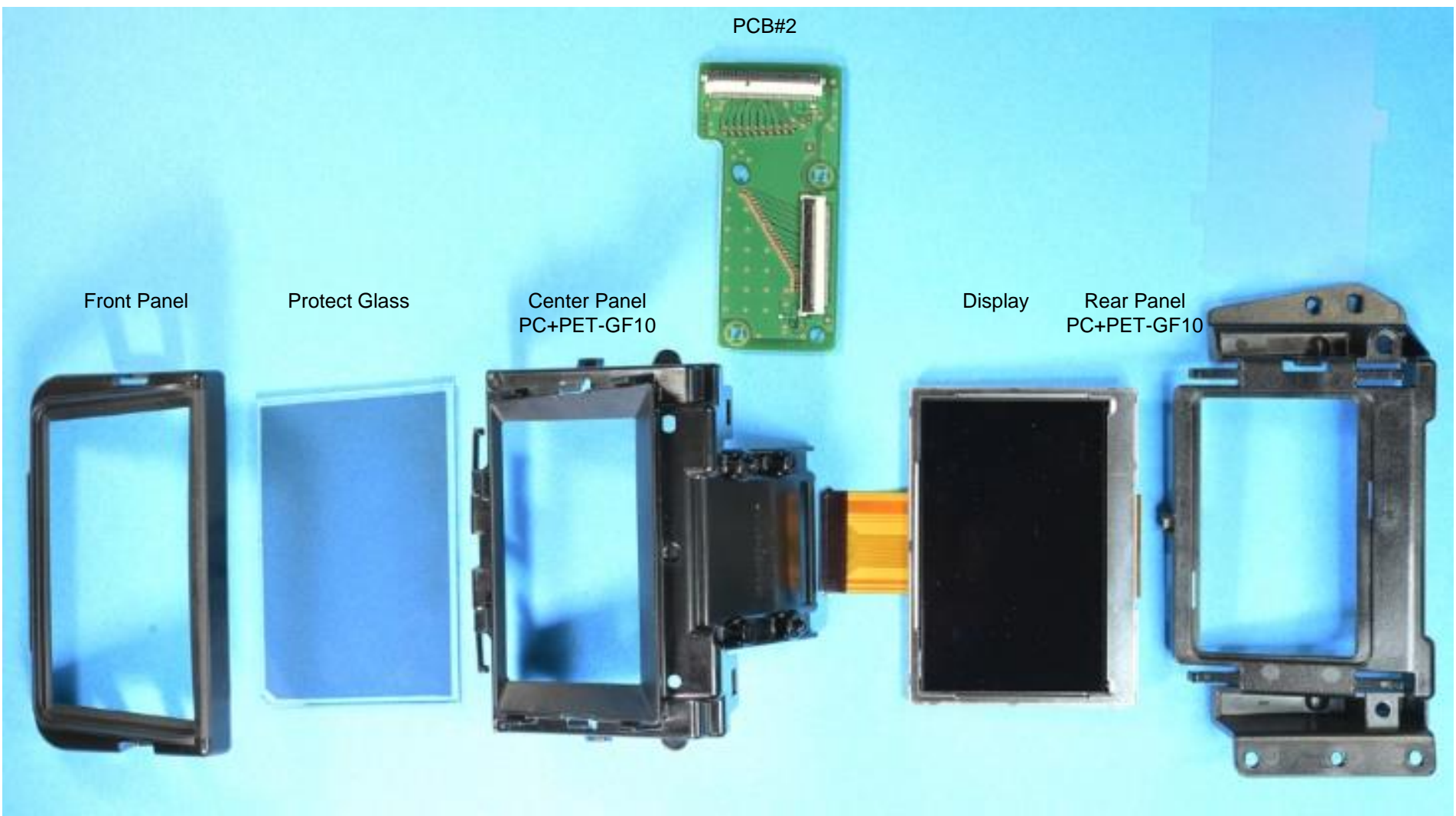
DISPLAY UNIT (1)



DISPLAY UNIT (2)

1 notch = 1mm

Diffuser



MAIN DISPLAY DIMENSION

Unit: millimeter otherwise specified

Display Module Size		73.05 x 50.75 x 1.66
Display Marking (location)		LPM0313623B N01A50378225907 (ID Sticker)
Display Panel Manufacturer		unknown
Display Diagonal Size (inch)		3.15
Display Mode (alignment)		IPS (stripe alignment)
Pixel Count (dot)		800 x 480
Resolution (pixel per inch)		297
Peripheral Margin (from reverse side)	Left	2.25
	Top	2.23
	Right	2.22
	Bottom – up	1.14
	Bottom – low	4.78
Seal marking: Y/N (length in mm)		No
Display Component Thickness	1a: LCD Top Polarizer	0.15
	1b: LCD Panel	1.21
	1c: LCD Lower Polarizer + Reflector	0.30
	2: Diffuser	-
	3: Brightness Enhancement Film	-
	4: Brightness Enhancement Film	-
	5: Diffuser	-
	6: Light Guide	-
	7: Reflector	-
	Display Component Total Thickness (clearance)	n/a
Display Backlight LED Count (size)		2 (4.02 x 4.00 x 0.82)
Display Cable Width (mm) / Pin Pitch (mm) / Pin Count		25.43 / 0.50 x 50

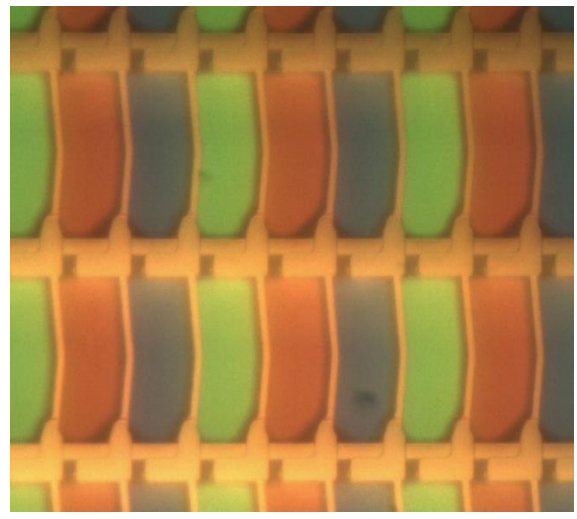
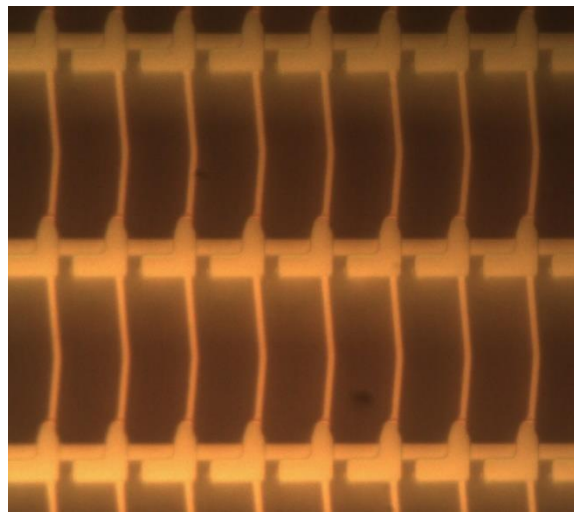
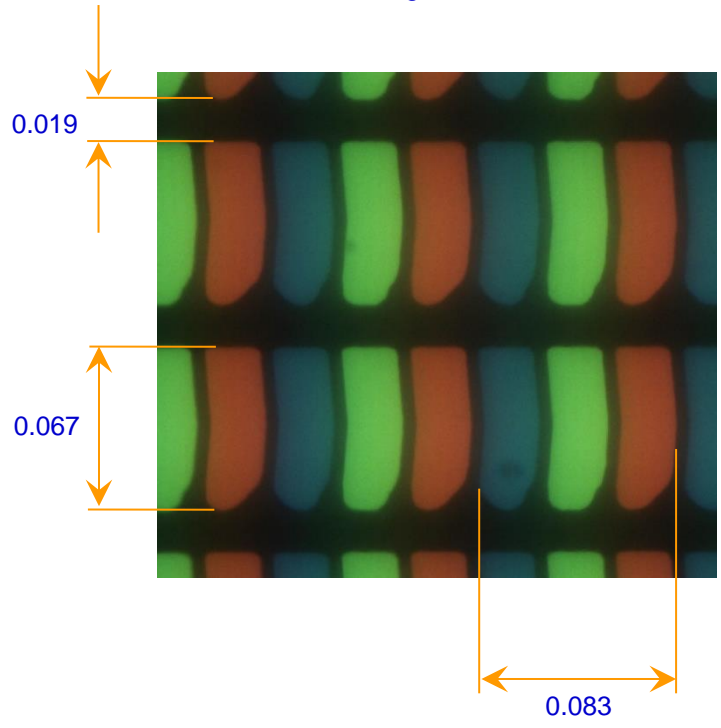
MAIN DISPLAY: PIXEL & FOOTPRINT

Unit: millimeter otherwise specified

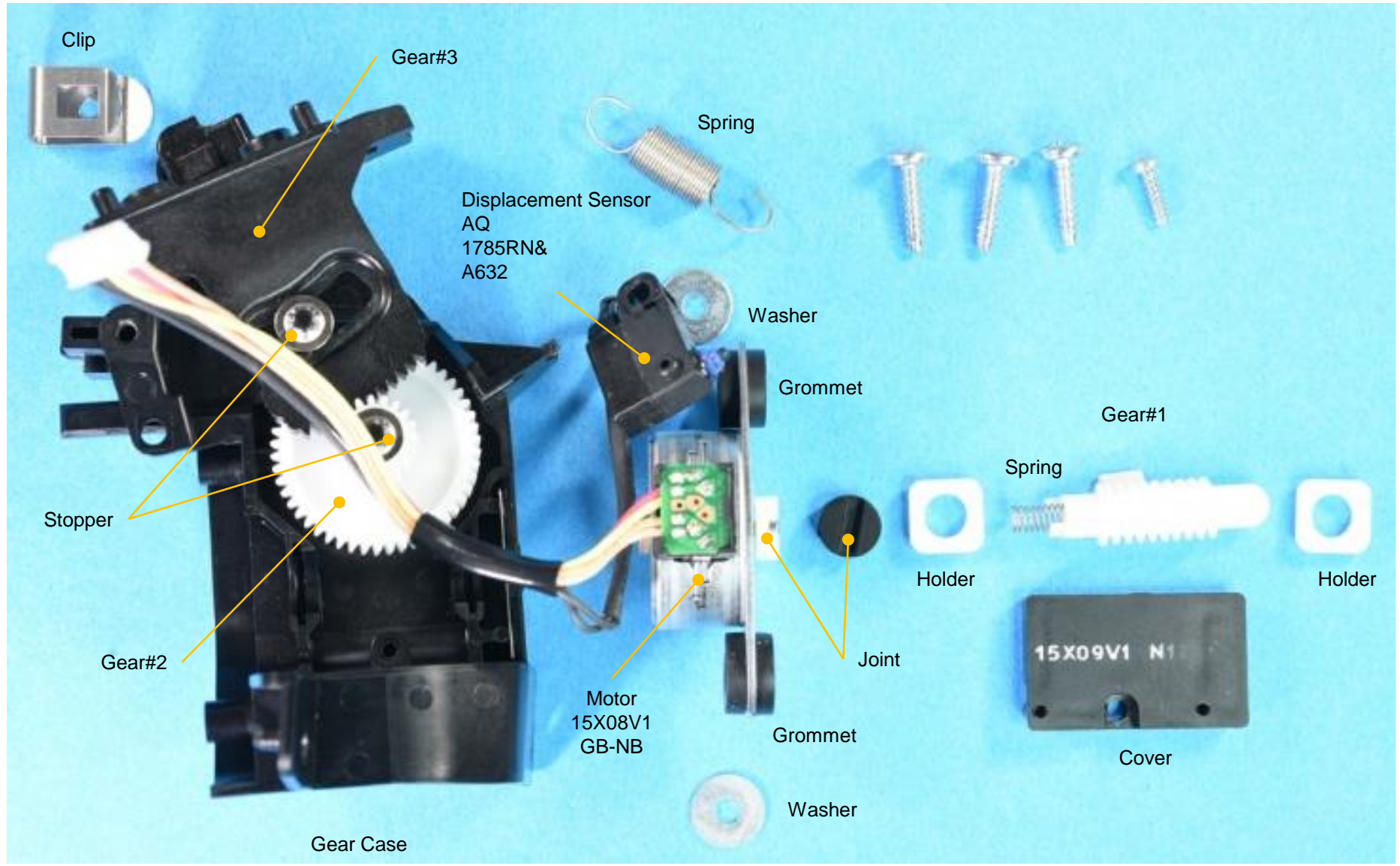
Backlight: ON
Front Light: OFF

Backlight: OFF
Front Light: ON

Backlight: ON
Front Light: ON



MIRROR UNIT (3): MOTOR UNIT



SERVICES

- TEARDOWN: on cellular phone, smartphone, tablet, laptop PC, digital still camera, LCD TV, and other mobile equipments.
- BILL OF MATERIALS: all-component-cost breakdown into more than 100 categories.
- MARKET REPORT: based on requests.
- SEMINAR: based on requests. Free seminars offered to regular subscribers every quarter.
- INTELLECTUAL PROPERTY: old phones available since 1996 up to date. Most of them are functional.

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