CERTIFICATE OF SPECIFICATION

DESCRIPTION	NVIDIA BLE RCU
MODEL	FRIDAY P3700
RS MODEL	RD26A00
VERSION	1.0

CERTIFICATION SEAL

REMOTE SOLUTION CO., LTD

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TEL : +86-769-8798-6203

PART DESIGN
CUSTOMERS MODEL : FRIDAY P3700

- Size : 155*31.3*24.6mm
- Battery : AAA* 2 ea

RECORD OF REVISION					
CUSTOMERS MODEL : FRIDAY P3700					
REV. NO	**DATE**	**PAGE**	**PART NAME**	**SPECIFICATION & MAKER**	**CHECK**
Draft	19.03.15	-	-	First Edition	R.H.KIM

======= I N D E X =======

1. Application Range

This technical specification was made by Remote Solution for nVIDIA RCU.

2. Specification

2-1 Appearance

a. There should be no issue for Button Locking
b. There should be no stiff and looseness when opening or closing the battery cover
c. There should be no issue for attachment of label
d. There should be no spread of printing in RCU
e. There should be no warpage in RCU
f. There should be no electricity issue because of deformation of Spring
g. Edge of Spring should be rounded
h. Spring should be horizontal when inserting the battery
i. There should be no sharpness in case
j. The Printing of product should be same as product specification

2-2 Characteristics of framework

2-2-1 Exploded diagram of remote control

a. Component of Remote control should be match up with drawing
b. There should be no issue for soldering after disassemble of remote control
c. Thee should be no contact between component
d. Printing of PCB should be same with drawing
e. There should be no Flux in carbon paste
f. There should be no Pb dirts in PCB

2-2-2 Characteristics of rubber contact

a. Operation : There should be no issue when pressing the keys vertically
b. Operation : Metal Dome will be pressed with power of 130g± 20g
c. Working distance of button: 0.5± 0.1 mm
d. Returning of rubber button: It will be more than 40% of Operation[Measured with middle of Key]
e. Weight : There should be no defects in RCU when pressing the button vertically with power of 3Kg for 3 second
f. Keypad + Metal dome Ass'y Tension SPEC : 230 ± 30gr

2-2-3 Characteristics of battery

a. There should be no issue when inserting or subtracting of battery
b. There should be no issue for current after inserting the battery
c. There should be no electricity issue after inserting or subtracting of battery for 100 times
d. electrode : The gap of electrode from + to - should be less than 0.4mm
e. There should be no electricity flow once battery is inserted by opposite way
f. There should be no deformation after 24 hours once battery is inserted by opposite way
g. Battery should be compatible other maker
[Compatibility of size : AAA(L=44.2~43.4mm, Φ10.5 ~9.5)] , AA (L=50.5~49.0mm , Φ14.5 ~ 13.5)]

2-2-4 Characteristics of battery

① Dimension : Dimension should be meet specification
② The gap should be less than 0.2mm after assemble of RCU
③ Gap : The Gap should be less than 0.2mm after assembly of Battery Cover
④ Product Size : 155mm(L) x 32.31mm(W) x 23.83mm(H)

2-3 Electrical characteristics

2-3-1 leakage current

a. Less than about 20uA with BLE pairing Mode at DC 3.0V
Measure the current, after leaving for 1 minute with switch [OFF] of transmitter remote controller

b. IR Mode : Max 10uA at DC 3.0V

2-3-2 Operating current

1. IR Operating Part
IR operation current should be less than 25mA by applying 3.0V battery.
Test IR Protocol : NEC
If the IR Format is not NEC, the measured current may be different.

2. BLUETOOTH LE Part(BLE 5.0)
a. RF key transmit
-> Less than about 10mA at D.C 3.0V
-> Tx Power : +7dBm
b. Voice data transmit
-> Less than about 10mA at D.C 3.0V
-> SNR : >60dB
-> AOP : >110dB

3. Backlight Part
a. Consumption Current : Avr 30mA
b. Backlight Color : Warm White

4. Find me
a. Consumption Current : Avr 40mA (at 2KHz Sound)

2-3-3 Operating voltage
DC 2.2V ~ 3.4V (Alkaline Battery “AAA” * 2ea)

2-3-4 Oscillation
- Main oscillation clock frequency : 24MHz,+/- 10PPM at D.C 3.0V

2-3-5 IR LED Specification

Parameter	Symbol	Test Conditions	Min	TYP	Max	Unit
Radiant Intensity	Ie	I_F=70mA	27.2	74.63	-	mW/sr
Forward Voltage	V_F	I_F=70mA	-	1.6	1.8	V
Reverse Current	I_R	V_R=5V	-	-	100	μA
Peak Wavelength	λp	I_F=70mA	-	940	-	nm
Spectral Line Half- Width	Δλ	I_F=70mA	-	50	-	nm
Viewing Angle	$2\theta_{1/2}$	I_F=70mA	-	15	-	deg

-. This item can be replaced with an equivalent item by the appropriate 4M Process of nVIDIA and RS.

2-3-6. Backlight LED Specification

- White Color(Warm White)

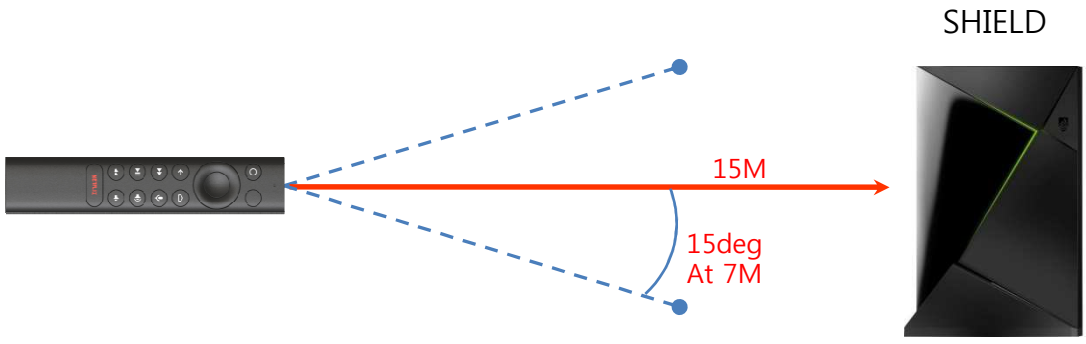
Parameter	Symbol	Test Conditions	Min	TYP	Max	Unit
Forward Voltage	V_F	I_F=5mA	2.5	-	3.4	V
Luminous Intensity	Iv	I_F=5mA	150	250	-	mcd
Reverse Current	I_R	V_R=5V	-	-	10	μA
CIE Coordinates	X	I_F=5mA	0.2260	-	0.2855	-
	Y		0.1942	-	0.2974	-
Viewing Angle	$2\theta_{1/2}$	I_F=10mA	-	140	-	deg

-. This item can be replaced with an equivalent item by the appropriate 4M Process of nVIDIA and RS.

2-3-7 Operating distance and pointing angle

- RF MODE
  -> STRAIGHT : More than 50 m
  -> POINTING ANGLE (180°) : More than 45m

- IR MODE
  -> STRAIGHT : More than 15 m(+50ft)
  -> POINTING ANGLE : Up, Down, Right, Left(30°) : Max 7m



2-3-8 BATTERY LIFE (Ref. Battery : LR03 (Alkaline))
- With Backlight : >5 Months
- Without Backlight : >12 Months

2-3-9 Certificate requirement
- BlueTooth SIG Certificate
- FCC / IC
- CE
- UL
- EAC
- RCM

2-3-10 Launch countries
- USA/Canada
- Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, United Kingdom, Hong Kong
- Japan
- Australia, New Zealand
- South Korea
- Taiwan
- Russia
- Singapore

3. RELIABILITY TEST

3-1 Remote Controller Assembly

3-1-1 Fundamental Performance
- Operation Current / Stand-by Current / Operating Voltage / Performance / Exterior

※ Judgement : Should meet Specification
Should be no issue no operation

3-1-2 Humidity Storage (With battery)
- Temperature : 50± 3℃ / RH 90% ± 5%
- Time : 168 hours(If pass, extend to 336h)

※ Judgement : Should be no issue for operation
Should match current spec after test
Should be no damage or de-form on cosmetic feature

3-1-3 Thermal shock (With battery)
- Cycle : 50 cycles
- Test Condition : -20℃ / 0.5 hour
+55℃ / 0.5 hour

※ -20℃ ~ +55℃, 30 min/cycle, ramp rate: 30C/min, dwell time: 15 min, 50 cycles. (w/ battery)
If pass, extend to 100 cycles (margin test for understand design limit)

3-1-4 Low Temperature storage
- Temperature : -30± 3℃
- Time : 48 hours

※ Judgement : Should be no issue for operation
Should match current spec after test
Should be no damage or de-form on cosmetic feature

3-1-5 High temperature storage
- Temperature : 70± 3℃
- Time : 48 hours

※ Judgement : Should be no issue for operation
Should match current spec after test
Should be no damage or de-form on cosmetic feature

3-1-6 Vibration test
- Vibration width : 1.5mm
- Test Period : 10~55Hz(7.5min) → 55Hz(2Hours) → 55~10Hz(7.5min)
- Each direction(X,Y,Z)

※ Judgement : Should have no functional issue
Current should meet spec
Should be no damage or de-form
Should not be tear of PE bag, scratch on product

3-1-7 Drop test(Condition : inclued battery)
- Concrete: 1 Corner, 3 Edge, 5 Surfaces, Height : 100cm, on the Concrete floor to verify the ultrasonic waves assembly.

※ Judgement : Should be No component tear, damage
Should be able to assemble again if case is opened re-assembled unit should be operatable

3-1-8 ESD Test
- 1) ± 4㎸,1㎐,10 Times Contact discharge
2) ± 8㎸,1㎐,10 Times Air contact discharge

※ Judgement : Should be no isse for operation

3-1-9 Button Life Time
- Once Per second for 300,000 cycles
  Peak load: 500g force
  Dwell time at peak load: 0.5 second, 1 cycle/second
※ Judgement : Should be no issue for operation
  Should match current spec after test
  Should be no damage or de-form on cosmetic feature

3-1-10 Button Alcohol test
- After falling 3-4 drops of ethyl alcohol(99.9%) on surface, clean surface 200 times with 500g force
※ Judgement : Print should not be erased after test

3-1-11 Alcohol test
- After falling 3-4 drops of ethyle alcohol(99.9%) on mold surface, clean surface 50 times with 500g force
※ Judgement : Print should not be erased after test

3-1-12 Cross Cut Test
- After the cross cut, take off OPP tape suddenly
※ Judgement : Print should not be wear & tear

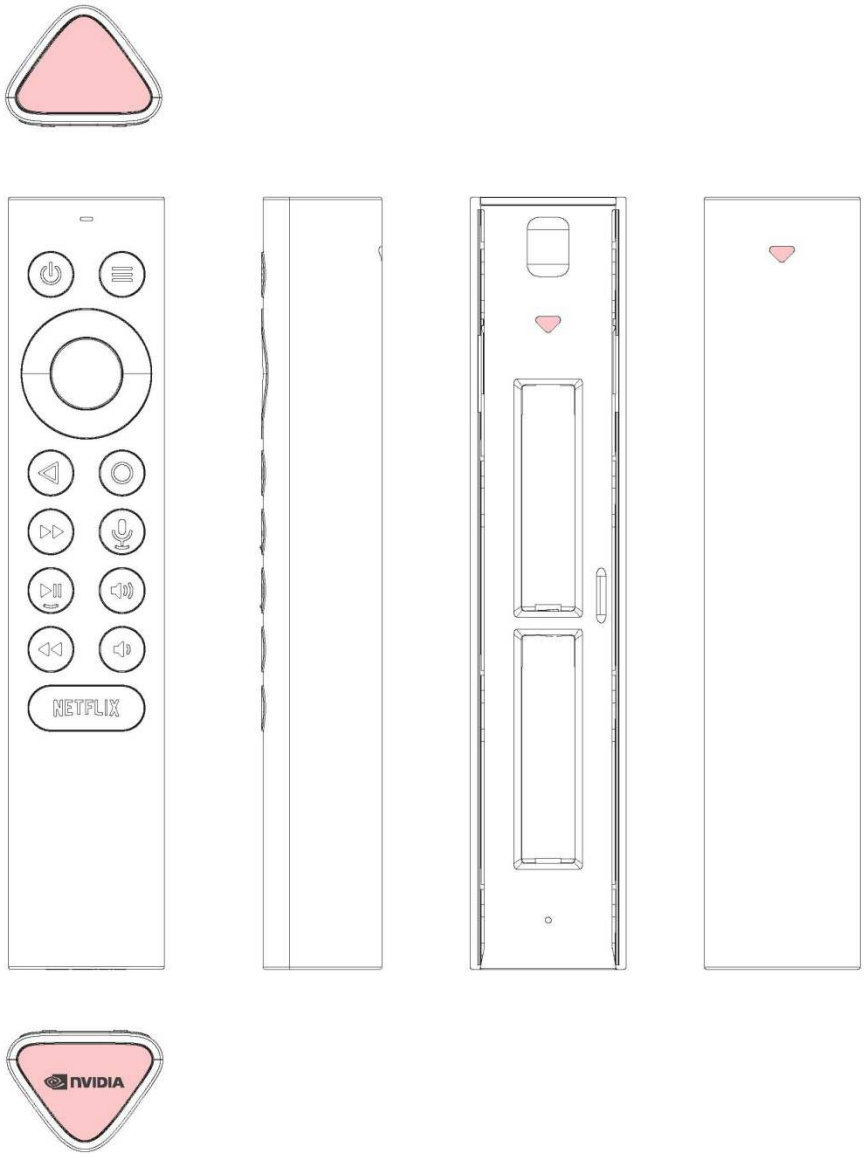
3-1-13 Liquid Spill
- Pour 100mL liquid onto one sample top surface, wipe samples clean with tissue paper. Place samples in 40C 90%RH chamber for 24 hours, then do visual inspection and function check
  Liquid 1 : hot coffee with sugar and cream
  Liquid 2: original Coke
※ Judgement : Should be no isse for operation

3-1-14 Squeeze and Pressure
- Apply load of 25kg for 5 times/surface, all 5 surfaces Visual inspection and function check.
  Then step on the product with bare foot by 80Kg human for 1 time on top surface and 3 times on 3 long edges (1 time per edge)
※ Judgement : Should meet specification

3-1-15 Pencil Hardness - Part-level Housing Test
- • Follow the ASTM D 3363 Standard Test Method for Film Hardness
  • Place the coated part on a level, firm, horizontal surface. Starting with the hardest lead, hold the pencil or lead holder firmly with the lead against the film at a 45° angle (point away from the operator) and push away from the operator. Allow the load weight to apply uniform pressure downward and forward as you move the pencil to either to cut or scratch the film or to crumble the edge of the lead. It is suggested that the length of the stroke be 1/4 in (6.5 mm).
  • Repeat the process down the hardness scale until a pencil is found that will not scratch or gouge the film. The hardest pencil that does not scratch or gouge the film is then considered the pencil hardness of the sample.
  Certified ASTM D 3363 Scratch Hardness tester
  Pencil Type (Brand Name: Mitsubishi) – 6B-5B-4B-3B-2B-B-HB-F-H-2H-3H-4H-5H-6H

7. Design Specification

DESIGN SPECIFICATION Model : RD26A00



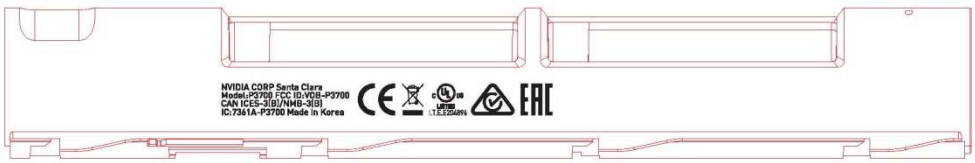
1. MOLD

1.1 MOLD COLOR
1.1.1 COVER TOP, BATTERY DOOR : PC ABS BK Texture
1.1.2 Cover Battery & Cover Bottom : PC ABS BK Texture & High Glossy
1.1.3 IR WINDOW : PC BK High Glossy

NVIDIA : Texture : High Glossy

- Texture (VDI24, 4~6GU)
- High Glossy (95)GU)

DESIGN SPECIFICATION Model : RD26A00



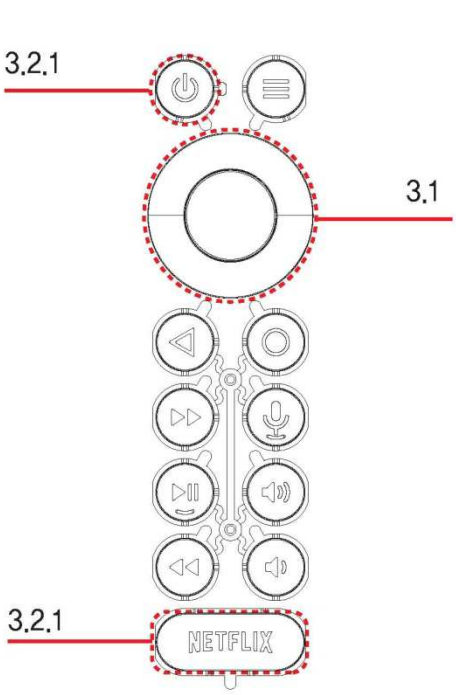
NVIDIA CORP Santa Clara
Model:P3700 FCC ID:VOB-P3700
CAN ICES-3(B)/NMB-3(B)
IC:7361A-P3700 Made in Korea

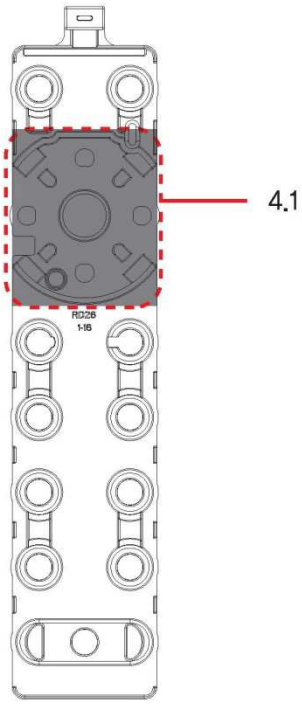
2. Laser Etching

2.1 Color

2.1.1 Coolgray 9C~10C

DESIGN SPECIFICATION Model : RD26A00





3. KEYCAP	4. RUBBER
3.1 Navi, OK Key : PC ABS BK Texture 3.2 Double Shot Key 3.2.1 First : PC translucence Red Texture Second : PC ABS Black Texture 3.2.2 Others, First : PC translucence Milky Texture Second : PC ABS Black Texture – Texture (VDI24, 4~6GU)	4.1 Silicon Black 4.2 Others Silicon translucence Milky

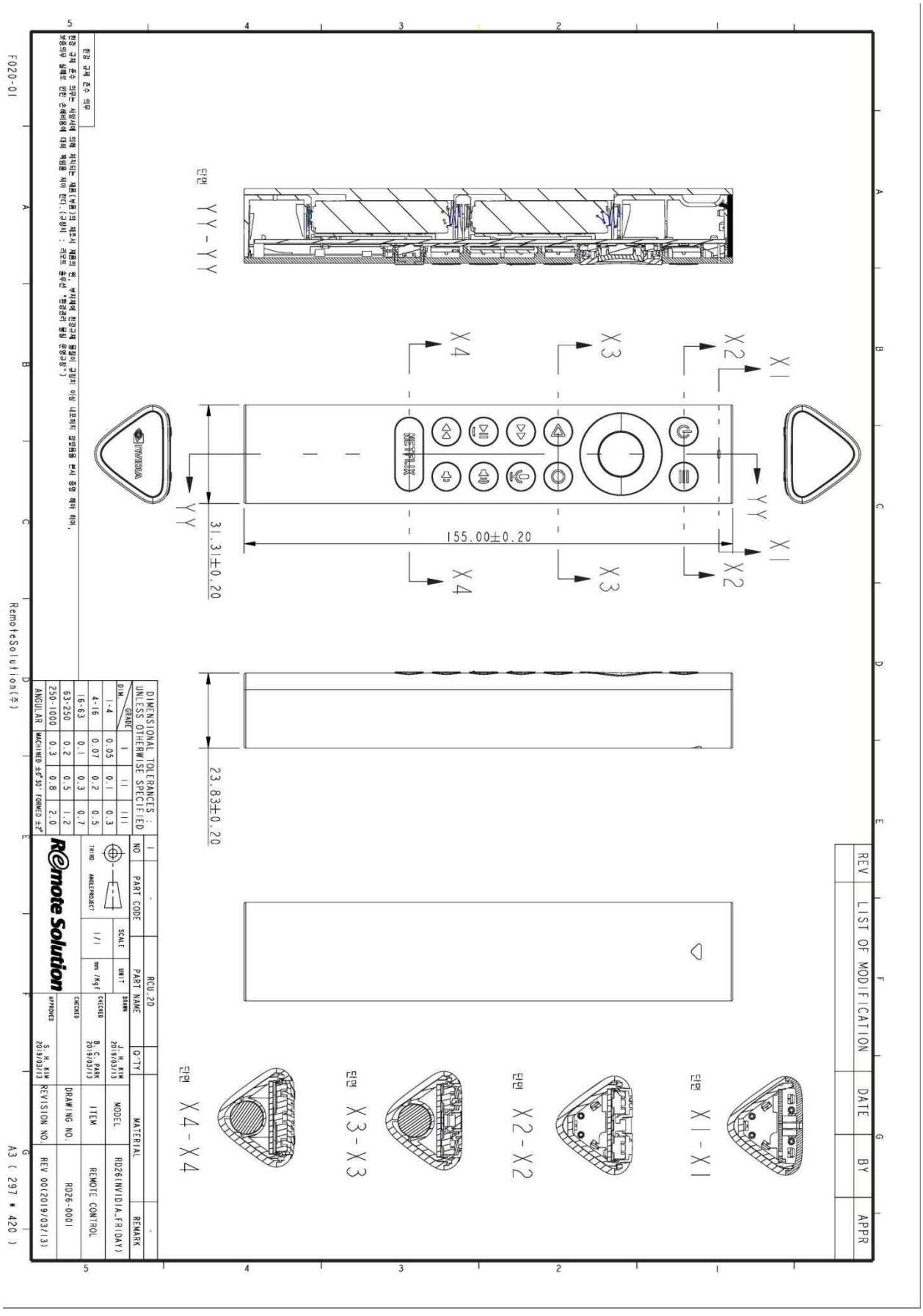
DESIGN SPECIFICATION Model : RD26A00

5. Protect Film

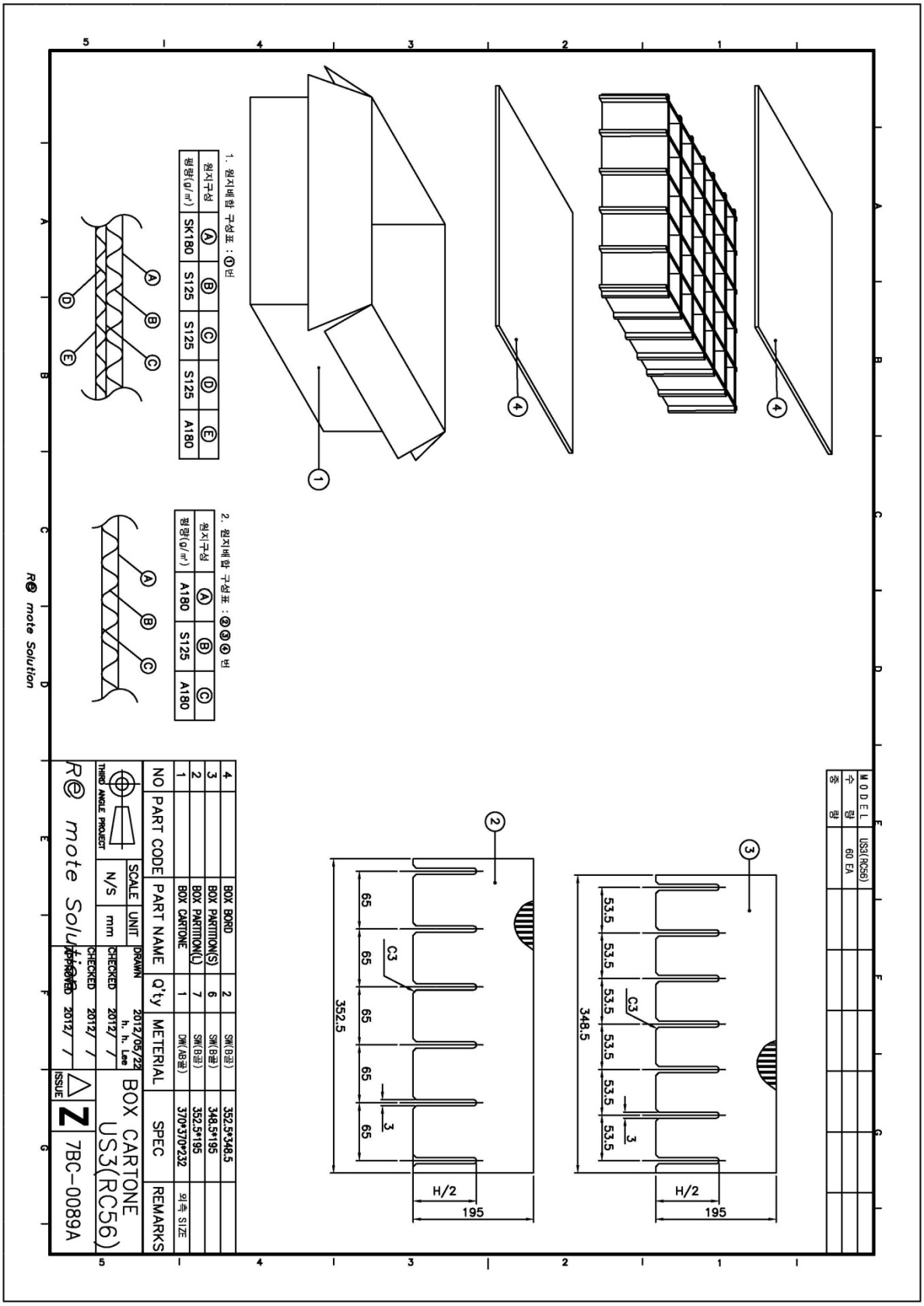
6. Passed Label

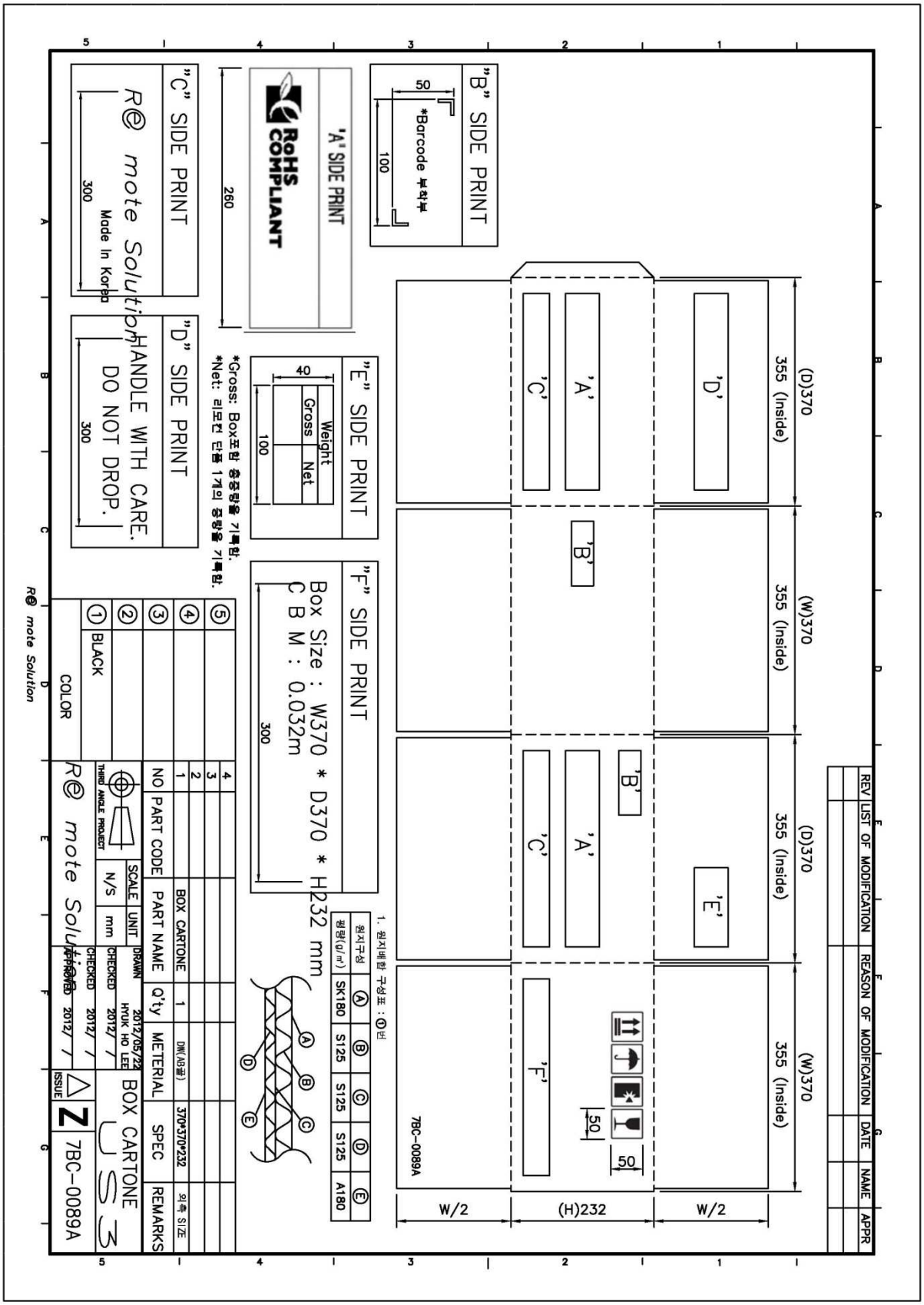
5. Protect Film	6. Passed Label
5.1 PC Clear 0.06T, 26.5*19mm	6.1 Material : ART PAPER 6.2 Size : 30mm X 15mm 6.3 Silk Color : Text-BLACK, P/T 2728C Background-WHITE

9. Assembly Diagram



10. Packing Information
10-1. Dimension : 370 x 370 x 232 (outsize)
10-2. Quantity : 60ea




"B" SIDE PRINT
*Barcode 부착부
50
100
'A' SIDE PRINT
RoHS COMPLIANT
260
"C" SIDE PRINT
Made In Korea
300
"D" SIDE PRINT
HANDLE WITH CARE.
DO NOT DROP.
300
"E" SIDE PRINT
Weight
Gross
Net
40
100
*Gross: Box포함 총중량을 기록함.
*Net: 리모컨 단품 1개의 중량을 기록함.
"F" SIDE PRINT
Box Size : W370 * D370 * H232 mm
C B M : 0.032m
300
(D)370
355 (Inside)
(W)370
355 (Inside)
(D)370
355 (Inside)
(W)370
355 (Inside)
'A'
'B'
'C'
'D'
'E'
'F'
50
50
7BC-0089A
W/2
(H)232
W/2
1. 원지배합 구성표 : ①번
원지구성
평량(g/㎡)
SK180
S125
S125
S125
A180
REV
LIST OF MODIFICATION
REASON OF MODIFICATION
DATE
NAME
APPR
NO
PART CODE
PART NAME
Q'ty
METERIAL
SPEC
REMARKS
BOX CARTONE
1
DW(AB골)
370*370*232
외측 SIZE
SCALE
N/S
UNIT
mm
DRAWN
2012/05/22
HYUK HO LEE
CHECKED
2012/ /
APPROVED
2012/ /
THIRD ANGLE PROJECT
BOX CARTON
ISSUE
Z
7BC-0089A
COLOR
① BLACK
Remote Solution

CHECK				APPROVAL
회로 개발	기구 팀	소프트팀	디자인팀	연구소장
김락환	김정호	김진규	박병준	김재원
책임연구원	연구원	책임연구원	선임연구원	이사
2019.03.15	2019.03.15	2019.03.15	2019.03.15	2019.03.15

DATE : 2019. 03. 15

FCC warning

§ 15.21 Information to user.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.105 Information to the user.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

15. RF exposure statement

* RF warning for Portable device:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

16. label statement

§ 15.19 Labelling requirements. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.