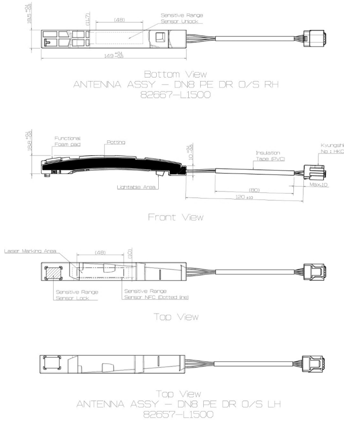
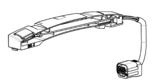
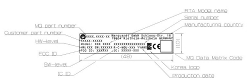




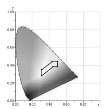
Isometric view



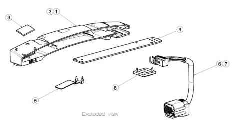
Label Content & Specification (2X)

VERSION TABLE

	H/W	S/W	L-CAN DB.	HSAC	NOTE
	A.00	A.00	00.02.21	OFF	Proto Release
△2	B.00	B.00	00.02.21	OFF	P1 Release
△3	B.00	B.01	00.01.17	OFF	P2 Release



[FIG.1] LED CHROMATICITY CO-ORDINATION



Exploded view

SPECIFICATION

Antenna Type	NFC CAPA ANTENNA O/S DR HDL ASSY
Operation Temperature Range	-30° C to +75° C
Storage Temperature Range	-40° C to +85° C
Operating Voltage Range	9 ~16V
Operatinng Current	TBD
Dark Current	TBD
NFC Operating Frequency	13.65MHz
Pocket Light Current	TBD

Index	Release	Date	Name
	New Release	2022.05.13	ShaikhS
△1	1. All views updated. 2. Cable color changed. 3. Notes updated.	2022.07.04	ShaikhS
△2	P1 Release.	2022.09.20	ShaikhS
△3	P2 Release	2023.02.03	ShaikhS

Note

■ REQUIREMENTS OF CONCERING APPROVAL OF THE HKMC ENGINEERING DESIGN TEAM
1. BEFORE MASS PRODUCT APPROVAL, SAMPLES MUST BE SUBMITTED TO ENGINEERING DESIGN TEAM TO APPROVE.
2. WHEN THE CHANGE OF DRAWING, COMPONENTS OR PRODUCTION METHOD OCCUR, MUST OBTAIN THE APPROVAL OF ENGINNERING DESIGN TEAM, EVEN IF IT IS APPROVED BEFORE.

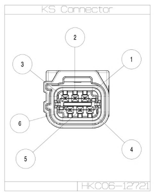
■ THIS PART MUST MEET FOLLOWING SPECIFICATIONS.
1.ES
- ES01000-00 : SYMBOL MARKING STANDARD
- ES10500-00 : OPEN SOURCE SOFTWARE MANAGEMENT SPEC
- ES82657-02 : ANT MODULE ASSY-SMK HDL (TOUCH & NFC)
- △2 ES82657-11 : DOOR HANDLE NFC READER COMPATIBILITY
- ES90000-01 : SOLDERING ACCEPTABILITY REQUIREMENTS OF ELECTRONIC ASSEMBLIES
- ES90000-02 : SPECIFICATION FOR DELAMINATION CRITERIA OF AUTOMOTIVE SEMICONDUCTOR
- ES90000-03 : PCB ENVIRONMENTAL RELIABILITY SPECIFICATION
- ES90000-04 : ENVIRONMENTAL RELIABILITY TEST SPEC OF LEAD FREE-SOLDERING
- ES90000-05 : ACCELERATED STRESS TEST SPECIFICATION FOR AUTOMOTIVE ELECTRIC UNITS
- ES90501-00 : THE STANDARDS OF QUALIFICATION FOR RELIABILITY OF AUTOMOTIVE SEMICONDUCTOR PRODUCTS
- ES90700-00 : HIGH SPEED CAN TEST SPECIFICATION FOR ELECTRONIC CONTROL UNITS
- ES90700-10 : BODY&COMFORT DOMAIN HIGH SPEED CAN TEST SPECIFICATION
- ES91100-00 : WIRING HARNESS DRAWING GUIDE LINE
- ES91101-00 : ELECTRICAL WIRING-COMPLETE
- ES91110-05 : Cable unification SPEC for Automotive
- ES91500-00 : CONNECTOR
- ES91500-02 : THE TERMINAL PLATING MANAGEMENT SPEC
- ES91500-03 : THE RELIABILITY SPECIFICATION FOR PCB CONNECTOR OF AUTOMOTIVE ELECTRONIC DEVICE
- ES95400-10 : ENVIRONMENTAL TEST OF ELECTRONIC DEVICE FOR VEHICLE
- ES95410-10 : Door Handle Module System Specification
- ES95411-00 : SOFTWARE TEST SPECIFICATION
- ES95480-00 : HIGH SPEED CONTROLLER AREA NETWORK (CAN) DESIGN SPECIFICATION
- ES95486-00 : UNIFIED DIAGONOSTIC UDS on CAN
- ES95486-02 : UDS DIAGONOSTIC SPECIFICATION
- ES95489-02 : SECURE FLASH
- ES95489-21 : ECU GERERAL SECURITY REQUIREMENTS
- ES95489-23 : SECURE CODING STANDARD
- ES95489-24 : OPEN-SOURCE SECURITY WEAKNESS VERIFICATION REQUIREMENTS
- ES96200-00 : ELECTROMAGNETIC COMPATIBILITY SPECIFICATION

2. MS
- MS184-01 : Pb-FREE SOLDER PASTE
- MS184-02 : Pb-FREE SOLDER WIRE
- MS201-01 : MARKING OF MATERIALS FOR AUTOMOTIVE PARTS
- MS201-02 : PROHIBITION OF THE USE OF HARMFUL SUBSTANCES
- MS941-01 TYPE B : Copper Clad Laminate Printed Circuit Board
- MS941-03 : THERMOPLASTIC POLYMERIC MATERIALS-ELECTRICAL AND ELECTRONIC COMPONENTS CONNECTORS
- MS911-03 : COPPER AND COPPER ALLOY-CONDUCTOR WIRE FOR AUTOM
- MS260-13 : SPONGE RUBBER

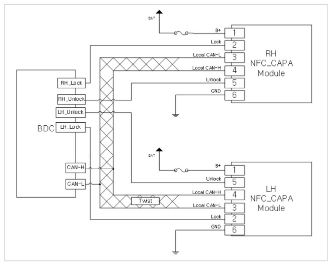
■ THIS PART SHOULD CONFORM TO FOLLOWING REGULATIONS;
- POCKET LIGHTING : DOMESTIC ARTICLE 38-3, FMVSS 108, ECE R-48, 76/756/EEC, GB 4785
  ※ WHITE (BE CONFORMED TO FIG.1)
  BLUE BOUNDARY : $x \geq 0.310$, YELLOW BOUNDARY : $x \leq 0.500$
  GREEN BOUNDARY : $y \leq 0.150+0.640x$, $y \leq 0.440$
  VIOLET BOUNDARY : $y \geq 0.050+0.750x$, RED BOUNDARY : $y \geq 0.382$
- EMC : 72/245/EEC, 2009/19/EC, ECE R-10, UNECE R-10
- CYBER SECURITY : UNECE R-155
- SOFTWARE UPDATE : ECE R-156
- THE PART SHOULD CONFORM TO THE LATEST VERSION OF REGULATIONS

■ REQUIREMENTS
1. THIS PART MUST NOT HAVE THE COARSE SURFACE, SHRINGKAGE, GAP AND BURRS ETC..
2. THE DIMENSIONS OF THE PART MUST BE MEARSURED AFTER 24 HOURS FROM COMPLETTION OF THE MANUFACTURING PROCESS.
3. THIS PART SHOULD NOT BE INFRINGE PATENTS
4. UNSPECIFIED SHARP EDGE SHOULD BE MIN R0.5.
5. ELECTRICAL COMPONENTS IN THE HDL : MUST MEET WATER-PROOF AND DUST PROOF(LEVEL IP67)
6. EXPOSED AREA OF WIRE SHALL BE FREE FROM SHORT DUE TO BENDING & SHARP EDGE.
7. CONNECTOR SPEC. MUST BE REQUIRED BY CONNECTOR MAKER'S APPROVAL AND THE DOCUMENT MUST BE SUBMITTED.
8. ALL ELECTRONIC COMPONENTS DEVELOPED FOR AUTOMOTOVE MUST BE APPLIED.
9. CONNECTOR MAKER'S APPROVAL IS REQUIRED TO USED CONNECTORS.
10. MUST MEET THE BELOW REQUIREMENTS FOR WIRING
    1) THERE ARE NO DEFECT SUCH AS SCRATCH CUTAND GASH OF INSULATOR (WIRE INSULATOR, TAPE ETC) ONWIRING HARNESS
    2) APPLY HEAT SHRINK ADHESIVE TUBE (135℃) AT JOINT IN NONE WATERPROOF AREA (EX, ENG ROOM).
    3) APPLY CAP OR VINYL PACK IN CONNECTOR THATAPPLY GOLD AND SILVER PLATE TERMINAL.
11. Signal Redundancy Control Type: Type B
△1 12. APPLY DIGITAL KEY 2.0

Missing dimensions according to 3D-model.
Allowed deviations of 3D data file according to general tolerances in title block.
Dimensions shown in () are for reference only.



PIN Configuration						
Pin No.	Wire SQ	Wire color	Material	Plating	Pin Name	Signal Description
1	0.35mm²	Red	FLRYW	@	V Batt.	Power Supply
2	0.35mm²	Yellow	FLRYW	@	Lock	Lock Signal
3	0.35mm²	Green	FLRYW	@	L_CAN (L)	CAN Low Signal
4	0.35mm²	Blue	FLRYW	@	L_CAN (H)	CAN High Signal
△1 5	0.35mm²	Pink	FLRYW	@	Unlock	Unlock Signal
6	0.35mm²	Black	FLRYW	@	GND	Electrical Ground



S.No.	Part No.	Part Name	Weight	Remark
2	82667-L1500	Door Handle Sensor Module RH (CAPA+NFC)	59.9g	RH
1	82657-L1500	Door Handle Sensor Module LH (CAPA+NFC)	59.9g	LH

Pos.	Part No.	Title	Material	Finish	Weight	Tooling Status	Qty.	Qty.	Colour	Remark
9	-	Potting	PU TYPE B (MS215-01)	-	19g	-	1	1	-	-
8	-	Gasket	NBR TYPE (MS263-02)	-	0.5g	IK PE2 C/O	1	1	-	-
7	-	Cable Set Assy RH	STD	-	5g	IK PE2 C/O	-	1	-	-
6	-	Cable Set Assy LH	STD	-	5g	IK PE2 C/O	1	-	-	-
5	-	Sensor Plate	Spring Steel	-	4g	IK PE2 C/O	1	1	-	-
4	-	PCB Assy	FR4 (Type A)	-	10g	IK PE2 C/O	1	1	-	-
3	-	Foam Pad (Seal)	PU TYPE (MS201-02)	-	0.1g	KA4 C/O	1	1	-	-
2	-	Housing RH	PC-001 TYPE B (MS215-01)	-	21.3g	New	-	1	Haze 60%	-
1	-	Housing LH	PC-001 TYPE B (MS215-01)	-	21.3g	New	1	-	Haze 60%	-

BOM

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For production part approval process (PPAP) of Marquardt, the specifications made in this drawing frame and the double-sided agreed evidences are valid.

Sl. No.	Type	Hardware	Software	Customer No.	Art.No.-PI
2	HYUNDAI_DHS_DN8 PE_RH	HXX	XX.XX.XX	82667-L1500	3104.4322-XX
1	HYUNDAI_DHS_DN8 PE_LH	HXX	XX.XX.XX	82657-L1500	3104.4321-XX

Index	MEC No.	Date (YYYY-MM-DD)	Edited by
a	145222	2023-02-03	ShaikhS
	144044	2022-08-17	ShaikhS

All dimensions are in millimetres. General tolerances. Sheet 01. Format DIN A0+. Scale 1:1. System CATIA V5. Replacement of. Ident. K. Document number 31044321. Index a.

Hyundai DN8 PE NFC

MARQUARDT

Attachment 1：

Product: NFC Door Handle

Model: HH4

FCC ID: IYZHH4

IC: 2701A-HH4

Warning sentence for FCC:

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

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. Privacy of communications may not be ensured when using this device.

Warning sentence for ISED:

This device complies with Industry Canada licence-exempt RSS standard(s): Operation is subject to the following Two conditions:(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.