

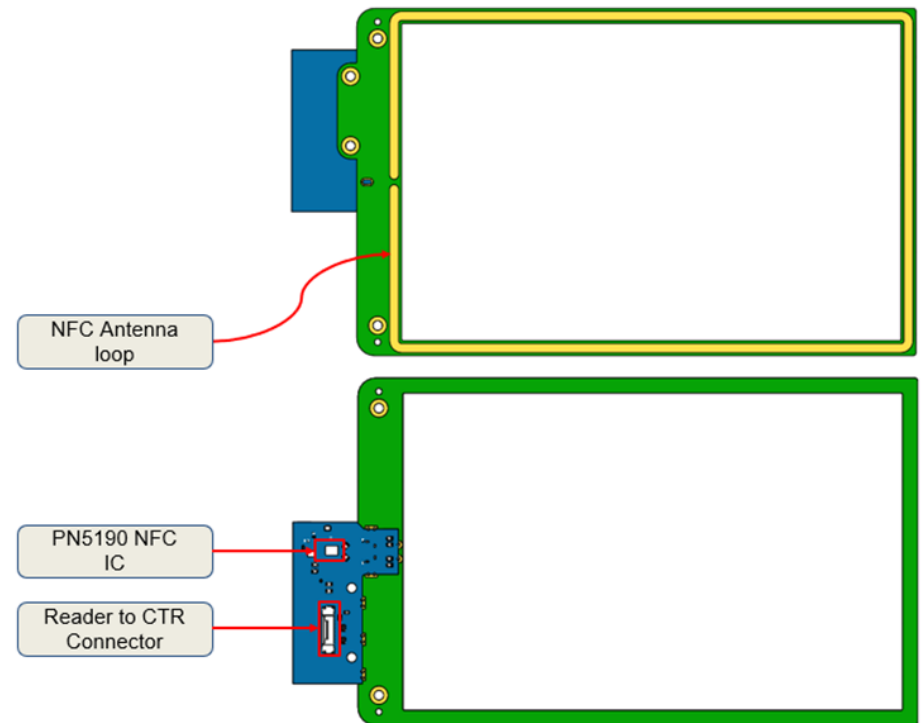


# SR802 HW PCD Antenna

DAR SR802 DES 2104  
Rev.A 20250321

*simplifying technologies for your lifestyle*

# CTR Antenna Design



SR802 provides a **“Tap Anywhere”** function, which antenna is embedded around the LCD display area

*Dimension of Tapping Area: 207 x 115 mm*

*Antenna dimension: 207 x 115 x 1mm*

*Antenna uses 1 loop with 3mm trace width and routed on Top layer.*

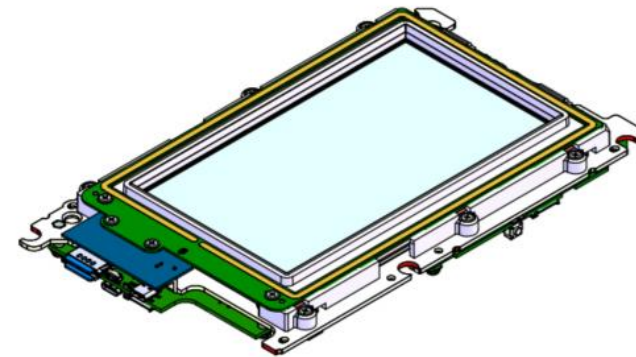
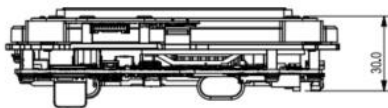
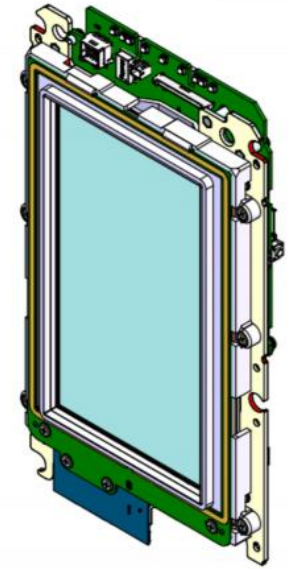
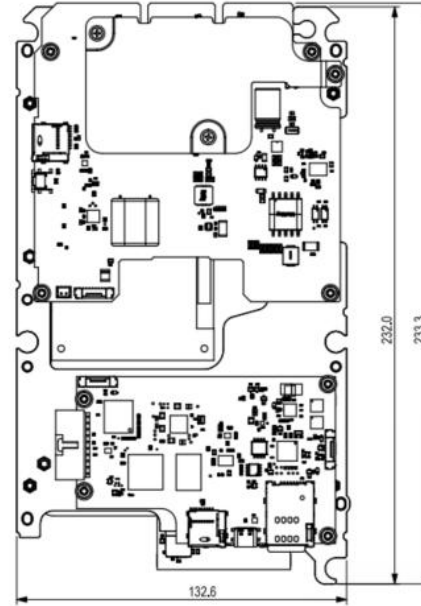
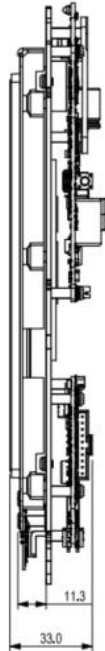
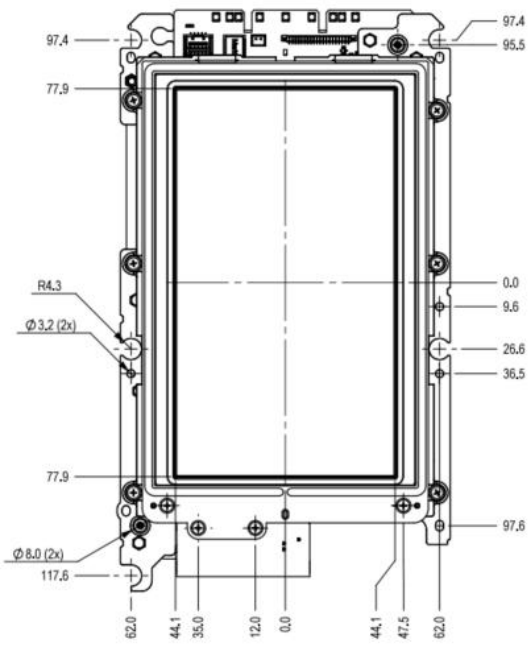
*Resonance Frequency: 13.56Mhz*

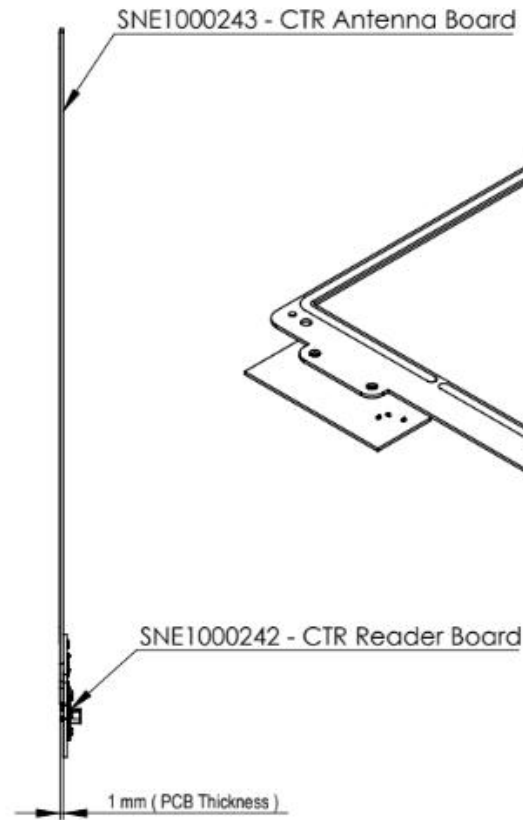
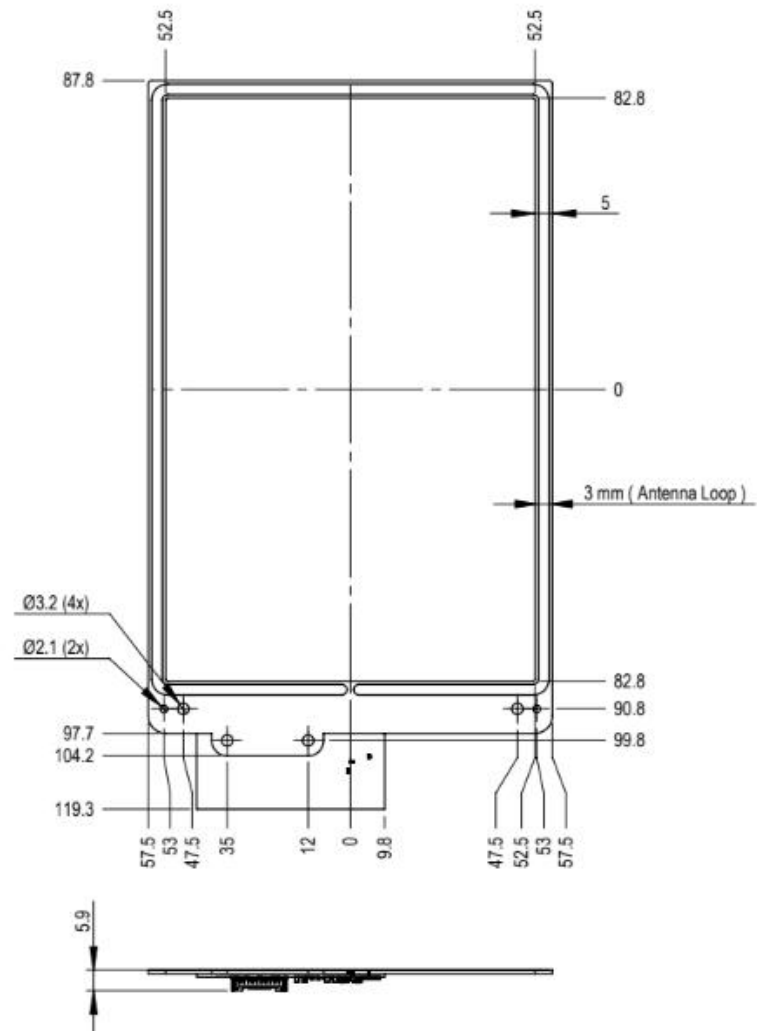
*Max Output: 2W*

In the CTR module, the Reader board is a small board that has been soldered on the Antenna board.

Reader board is using PN5190 IC for Fare Media communication, it has a 10pos connector to connect to CTR Main board including SPI interface with MCU MAX32552 and 3.3V power supply. A NXP NFC IC PN5190 was chosen for Contactless Smart Card (CSC) Interface for its feature:

- High power (2W), feature-filled transmitter: DPC 2.0 (dynamic power control without processing load on host MCU)
- Single 3.3 V supply with max TX transmitter power possible
- Connection of 1 differential or 2 single-ended antennas
- Robust receiver: Automatic configuration, advanced insensitivity against TFT display noise for higher RF performance
- Full NFC Frontend with active load modulation in Card Mode for large operating distance
- All relevant RF protocols implemented
- NXP proprietary high data rates up to 212 Kbit for NTAG5 communication
- Ultra-low-power card detect for low average current consumption
- Flexible configuration of EMD handling (EMVCo 3.1, ISO, FeliCa) for future-proof system integration
- Automatic antenna tuning (AAT) with variable capacitors
- RF Debugging without external probing of test signals possible but not required – ideal debugging solution for PCI compliant POS terminals
- Advanced RF debugging with AUX0, AUX1, AUX2 outputs
- Certifications: EMVCo 3.1, NFC Forum

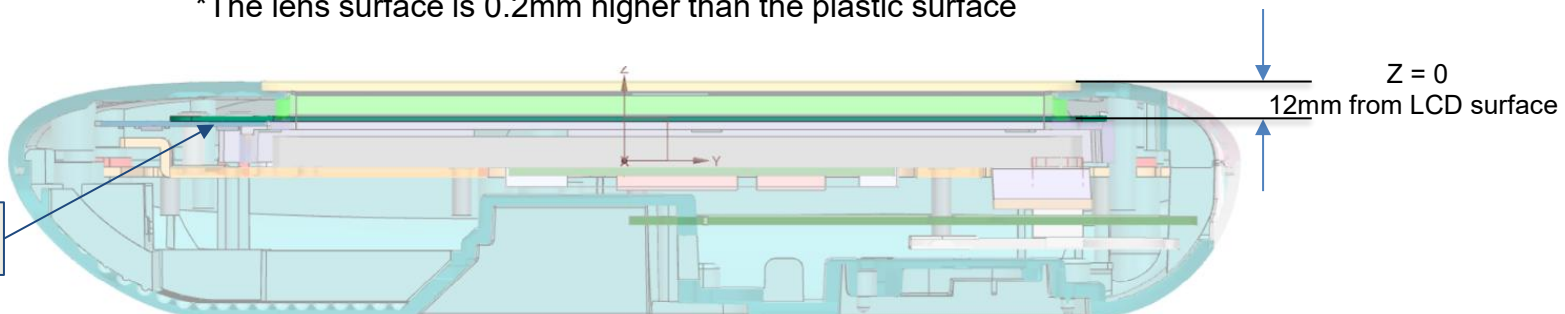




Final Design



\*The lens surface is 0.2mm higher than the plastic surface



The distance between the antenna loop and the top surface of the **PC+PMMA** screen's protection sheet on the Card Validator is **7.2mm**



**Thank You**  
for your kind audience