

# Projected Capacitive Air Gap application note

Version 1.1

Jan 2015

For X line only (XcalibuR COF)  
Transparent Glass version (TG)

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## 1) GENERAL INFORMATION

### 1.1 IMPORTANT NOTICE

This application note is an integration of the standard Projected Capacitive integration guide. All the information into the Standard Capacitive integration guide must be taken in consideration before read this Application Note

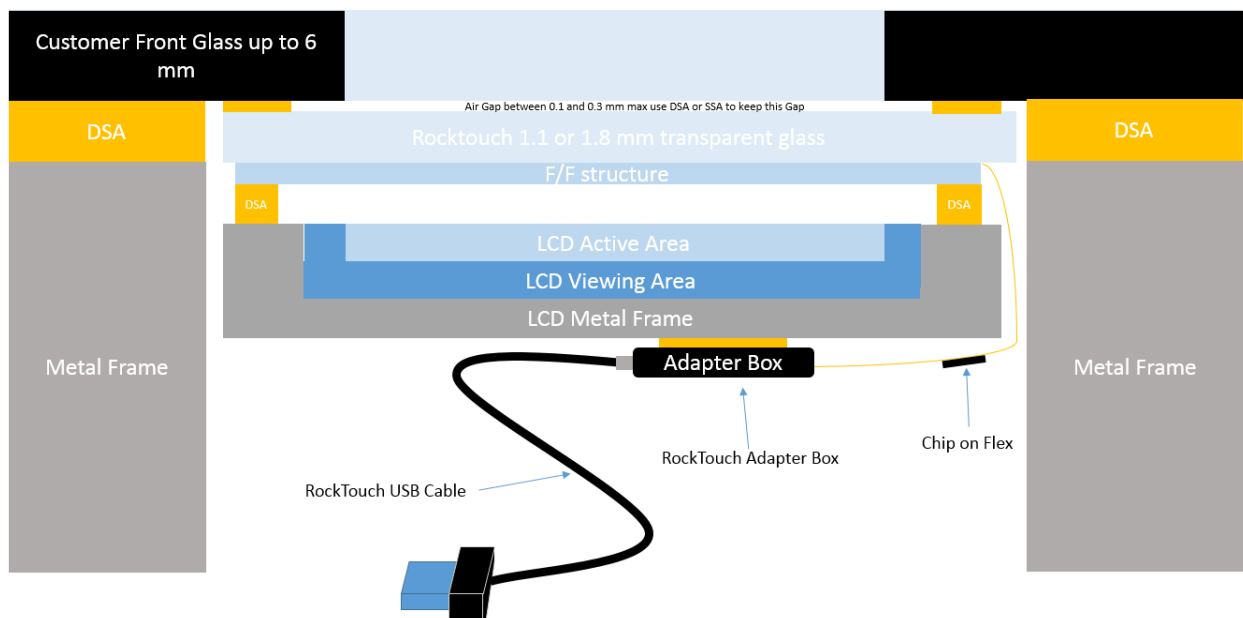
## 2) EXAMPLE OF AIR GAP INTEGRATION

There is very important point to follow to install the Projected Capacitive Touch Panel. Integration must be more strict and careful compare to the Resistive touch panel, otherwise the touch will never work correctly. In Pcap is important to try to keep all the sensing and driving channels with much similar stray capacitance as possible. Due in a lot of application sensing line can overlapping the LCD metal frame or conductive parts (with and without ground), this situation may cause significant signal difference between the center area and the edge area, and degrade the touch performance and interference immunity.

Here the mechanical integration based on AIR GAP Solution.

### 2.1 MOUNTING THE TOUCH DIRECTLY ON THE LCD

Starting from the top side you will have:  
 Customer Cover lens, can be transparent or printed and we suggest maximum thickness must be 6 mm  
 Then there is an Air Gap between 0.1 up to 0.3 mm.  
 Then Rocktouch XcalibuR Touch sensor with his transparent Glass (1.1 or 1.8 mm)  
 Then the TFT LCD.  
 Check the following drawing for better explanation.



The air gap can not be thicker than 0.3 mm otherwise the structure will not work correctly.  
If you can keep 0.1 mm performance will be better than 0.3 mm Air Gap.  
The thickness of the Air Gap must be constant all over the surface, otherwise you can have capacitance issue (Ghost points) or maybe the touch response is not equal all over the surface.  
You need to avoid humidity in between Front Glass and Touch sensor (into the Air Gap Area)  
Distance between LCD and touch is usually suggested as 1 mm, in this case of AIR GAP installation we suggest to keep at least 2 mm, this distance can vary based on different LCD noise emission.

Before mass production customer must provide them final product machine to make sure we will customize the firmware for his final product application.  
If not possible we can connect by VPN to customer machine to set the firmware.  
Customer can also use our standard firmware is no issue is notice.  
Is very important, customer must make sure no ghost point or other interference happen into his machine design before mass production the product, due of the Projected Capacitive technology structure.

### **3) IMPORTANT NOTES RESUME**

Always be sure the integration is correct following our integration guide.  
If you make sure your integration is correct and there is minor noise issue you can ship the machine to us and we will find the final tune on the touch firmware level.  
Supply the correct voltage and current to the COF interface with stable value otherwise ghost point or other interference can happen.  
Always clean the surface of the touch to ensure the correct functionality.  
For multi touch features ensure your operating system and application can support multi touch input.  
For updated driver version please contact us.