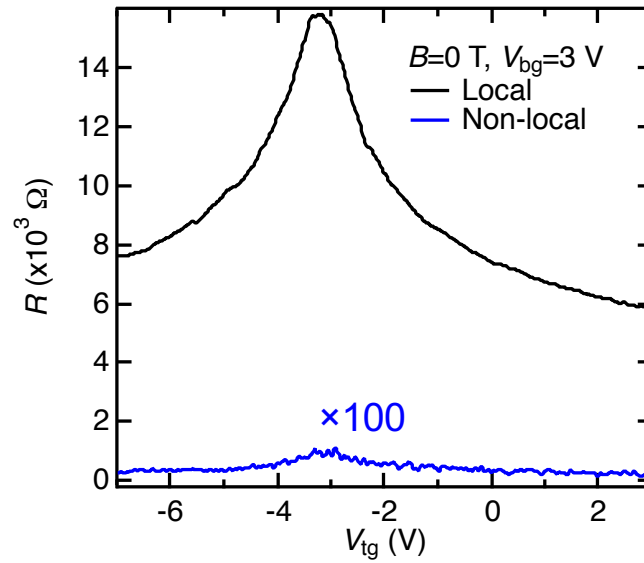
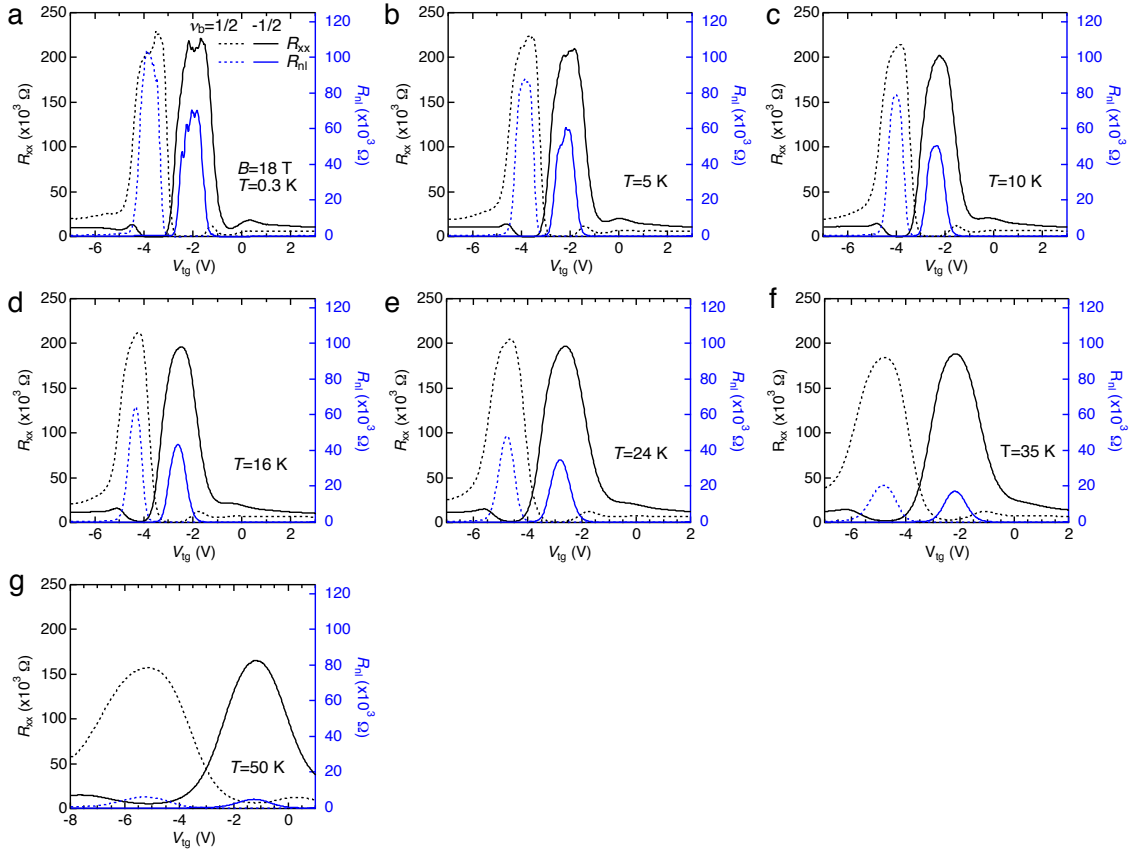


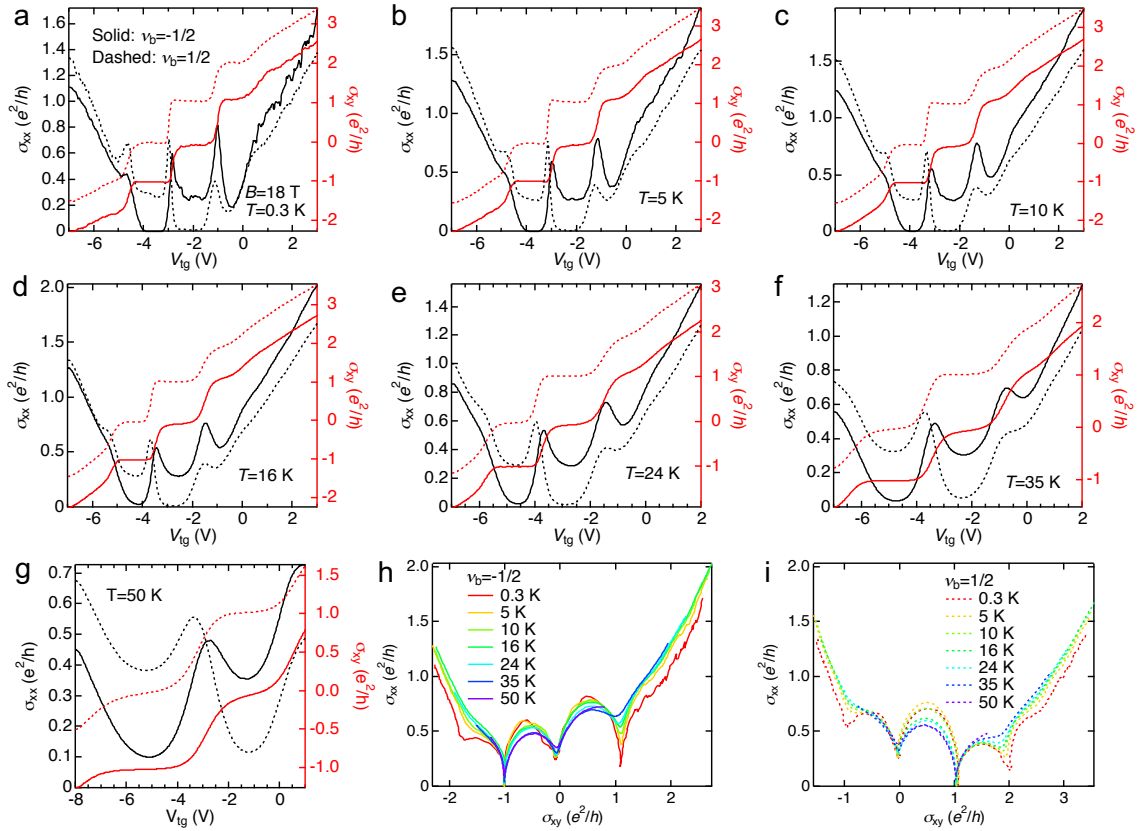
Supplementary Information



Supplementary Figure 1 | Measured local and nonlocal resistance without magnetic field. Local resistance R_{xx} (a) and non-local resistance R_{nl} (b) as functions of V_{tg} at $V_{bg}=3$ V and $B=0$ T, $T=0.3$ K. The non-local resistance R_{nl} shown here is multiplied by a factor of hundred. The data shown in this supplementary file are all from the same Sample A as that in the main text.



Supplementary Figure 2 | Temperature dependence of the local and nonlocal resistance. (a)-(g) Local resistance R_{xx} and nonlocal resistance R_{nl} versus V_{tg} at fixed bottom surface filling factor $\nu_b=1/2$ (dashed) and $-1/2$ (solid) measured at $B=18$ T at different temperatures. At total filling factor $\nu=0$ states, the nonlocal resistance R_{nl} decreases more rapidly with increasing temperature while the local resistance R_{xx} maintains large value up to 50 K.



Supplementary Figure 3 | Temperature dependence of the longitudinal and Hall resistivity. (a)-(g) Longitudinal conductivity σ_{xx} and Hall conductivity σ_{xy} versus V_{tg} at fixed bottom surface filling factor $\nu_b=1/2$ (dashed) and $-1/2$ (solid) measured at $B=18$ T at different temperatures. (h) and (i) show σ_{xx} versus σ_{xy} at $\nu_b=-1/2$ and $1/2$ respectively at different temperatures.