

**Alice**

(4) Alice  $\mathbf{y}_A$

(7) LDPC BF  
Decoder

(8) Alice  $\hat{\mathbf{y}}_B$

(3) Equivalent  
channel

(6) Classical  
channel

**Bob**

(1) QRNG

(2) Bob  $\mathbf{y}_B$

(5) Syndrome side  
information  $\mathbf{s}_B$

