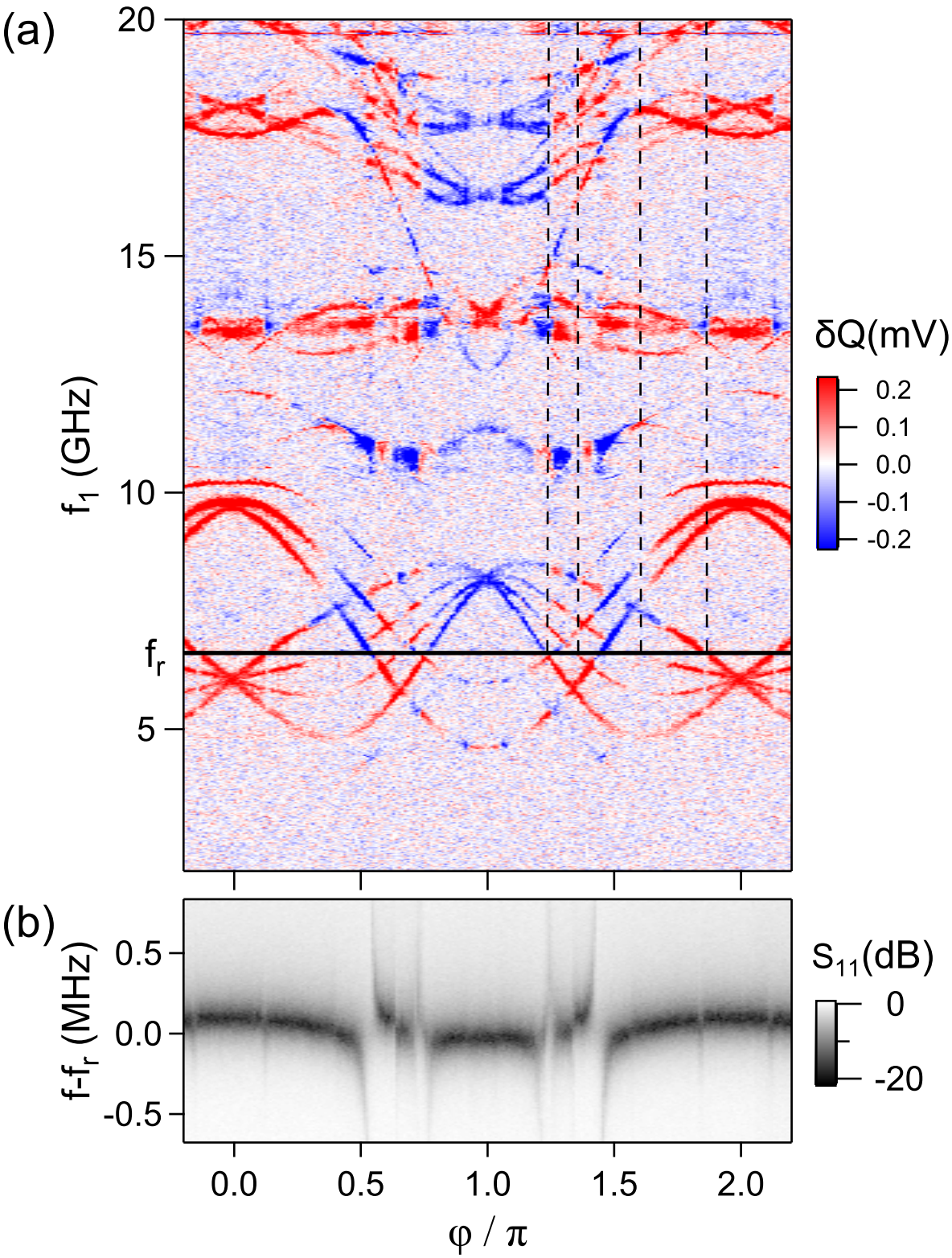
(a)
20
15
10
5
f_r
f_1 (GHz)
δQ(mV)
0.2
0.1
0.0
-0.1
-0.2
(b)
0.5
0.0
-0.5
$f-f_r$ (MHz)
S_{11}(dB)
0
-20
0.0
0.5
1.0
1.5
2.0
φ / π