```
step:  90, cost: 1.13E-02, attack: 0.994, loss: 1.043703, ce: 0.116332, reg: 81.968773, reg_best: 80.656906
step:  91, cost: 1.13E-02, attack: 0.992, loss: 1.096583, ce: 0.149861, reg: 83.675507, reg_best: 80.656906
step:  92, cost: 1.13E-02, attack: 0.993, loss: 1.100199, ce: 0.128566, reg: 85.881065, reg_best: 80.656906
up cost from 1.13E-02 to 2.26E-02
step:  93, cost: 2.26E-02, attack: 0.993, loss: 2.058425, ce: 0.121741, reg: 85.590134, reg_best: 80.656906
step:  94, cost: 2.26E-02, attack: 0.991, loss: 2.005823, ce: 0.151067, reg: 81.969406, reg_best: 80.656906
step:  95, cost: 2.26E-02, attack: 0.990, loss: 2.022429, ce: 0.185617, reg: 81.176361, reg_best: 80.656906
step:  96, cost: 2.26E-02, attack: 0.989, loss: 1.998324, ce: 0.186649, reg: 80.065453, reg_best: 80.656906
step:  97, cost: 2.26E-02, attack: 0.990, loss: 2.017800, ce: 0.179738, reg: 81.231659, reg_best: 80.656906
step:  98, cost: 2.26E-02, attack: 0.986, loss: 2.017342, ce: 0.216784, reg: 79.574173, reg_best: 80.656906
step:  99, cost: 2.26E-02, attack: 0.986, loss: 2.091044, ce: 0.217858, reg: 82.783913, reg_best: 80.656906
down cost from 2.26E-02 to 8.00E-03
step: 100, cost: 8.00E-03, attack: 0.993, loss: 0.810802, ce: 0.111971, reg: 87.353851, reg_best: 80.656906
step: 101, cost: 8.00E-03, attack: 0.995, loss: 0.769504, ce: 0.070346, reg: 87.394737, reg_best: 80.656906
step: 102, cost: 8.00E-03, attack: 0.996, loss: 0.769554, ce: 0.077329, reg: 86.528168, reg_best: 80.656906
step: 103, cost: 8.00E-03, attack: 0.999, loss: 0.722585, ce: 0.016866, reg: 88.214828, reg_best: 80.656906
step: 104, cost: 8.00E-03, attack: 0.997, loss: 0.759815, ce: 0.068939, reg: 86.336937, reg_best: 80.656906
up cost from 8.00E-03 to 1.60E-02
step: 105, cost: 1.60E-02, attack: 0.996, loss: 1.420259, ce: 0.067955, reg: 84.519012, reg_best: 80.656906
step: 106, cost: 1.60E-02, attack: 0.993, loss: 1.434861, ce: 0.103410, reg: 83.215675, reg_best: 80.656906
step: 107, cost: 1.60E-02, attack: 0.991, loss: 1.473489, ce: 0.153210, reg: 82.517464, reg_best: 80.656906
early stop
pattern, shape: (32, 32, 3), min: -0.000015, max: 255.000000
mask, shape: (32, 32), min: -0.000000, max: 1.000000
mask norm of label 42: 77.948586
visualization cost 16.163079 seconds
```