

Table 27: Reduced-precision Quantization and with 0.5% BER on CIFAR-10 pre-trained models (w/o quantization aware training)

Base Model	#Bits	CA (Full Precision)	CA (PTQ)	PA	ConvL (1%)				UNetL (1%)			
					CA (NF)	PA (NF)		RP	CA (NF)	PA (NF)		RP
ResNet18	8	92.3	92.3	72.6 $\pm$ 12.5	89.6	85.4 $\pm$ 7.9	12.8		85.9	81.8 $\pm$ 6.2	9.2	
	7		92.3	70.6 $\pm$ 11.4	89.4	86.2 $\pm$ 5.3	15.6		85.5	83.4 $\pm$ 2.4	12.8	
	6		92.1	71.0 $\pm$ 11.2	89.1	85.2 $\pm$ 5.0	14.2		84.9	81.7 $\pm$ 3.6	10.7	
	5		92.0	51.4 $\pm$ 18.0	88.5	73.2 $\pm$ 18.9	21.8		81.6	73.5 $\pm$ 10.5	22.1	
	4		91.7	27.2 $\pm$ 13.7	81.8	39.7 $\pm$ 22.2	12.5		69.6	40.1 $\pm$ 18.9	12.9	
	3		78.6	12.6 $\pm$ 4.6	39.8	11.8 $\pm$ 3.6	-0.8		30.6	11.0 $\pm$ 1.8	-1.6	
	2		10.0	10.0 $\pm$ 0.0	10.0	10.0 $\pm$ 0.0	0.0		10.0	10.0 $\pm$ 0.0	0.0	
VGG19	8	90.2	90.3	70.0 $\pm$ 6.3	89.7	89.0 $\pm$ 0.1	18.9		87.2	85.8 $\pm$ 0.7	15.8	
	7		90.3	68.7 $\pm$ 8.7	89.6	87.8 $\pm$ 1.8	19.1		87.0	85.8 $\pm$ 0.7	17.1	
	6		90.3	65.0 $\pm$ 8.6	89.3	87.8 $\pm$ 1.1	22.9		86.9	85.0 $\pm$ 1.2	20.0	
	5		90.3	51.3 $\pm$ 15.7	88.6	81.0 $\pm$ 9.2	29.7		85.5	79.1 $\pm$ 5.2	27.8	
	4		88.2	22.4 $\pm$ 9.9	83.5	34.7 $\pm$ 19.7	12.3		79.4	45.4 $\pm$ 20.4	23.0	
	3		80.7	10.1 $\pm$ 0.2	40.2	10.1 $\pm$ 0.2	0.0		42.2	10.1 $\pm$ 0.1	0.0	
	2		10.0	10.0 $\pm$ 0.0	10.0	10.0 $\pm$ 0.0	0.0		10.0	10.0 $\pm$ 0.0	0.0	

Note. CA (%): clean accuracy; PTQ: post-training quantization; PA (%): perturbed accuracy; NF: NeuralFuse; and RP: total recovery percentage of PA (NF) vs. PA