Table 1: T-test results comparing models without (CNR=∞) and with (CNR=3) noise injection during training across different SNR dB levels. Significant p-values ($p < 0.05$) are in bold.

SNR	**Precision**		**Recall**		**F1**	
(dB)	t	p	t	p	t	p
-6	-1.75	8.16e-02	-20.40	**1.26e-61**	-20.30	**3.32e-61**
-3	-1.83	6.80e-02	-17.94	**1.44e-51**	-16.73	**1.18e-46**
0	-5.17	**3.94e-07**	-14.44	**1.98e-37**	-13.37	**2.93e-33**
3	-7.01	**1.22e-11**	-10.77	**1.50e-23**	-10.18	**1.64e-21**
6	-7.99	**1.90e-14**	-7.61	**2.58e-13**	-7.56	**3.54e-13**
9	-7.84	**5.26e-14**	-5.41	**1.15e-07**	-5.71	**2.40e-08**
12	-6.78	**4.99e-11**	-3.64	**3.08e-04**	-3.93	**1.03e-04**
15	-5.39	**1.32e-07**	-2.40	**1.67e-02**	-2.87	**4.34e-03**
18	-4.19	**3.47e-05**	-1.77	7.76e-02	-2.07	**3.95e-02**
21	-3.33	**9.74e-04**	-1.32	1.88e-01	-1.54	1.25e-01
24	-2.86	**4.48e-03**	-0.93	3.51e-01	-1.10	2.71e-01
27	-1.56	1.19e-01	-0.96	3.37e-01	-1.15	2.50e-01
30	-1.63	1.03e-01	-0.97	3.32e-01	-1.00	3.19e-01
33	0.00	1.00e+00	-0.66	5.07e-01	-0.69	4.91e-01
36	0.00	1.00e+00	-0.66	5.10e-01	-0.68	4.95e-01
39	0.94	3.47e-01	-0.56	5.76e-01	-0.53	5.99e-01
42	0.94	3.47e-01	-0.67	5.02e-01	-0.53	5.99e-01
45	0.00	1.00e+00	-0.67	5.02e-01	-0.53	5.99e-01
∞	0.94	3.47e-01	-0.70	4.84e-01	-0.56	5.77e-01

Table 2: T-test results comparing models without (CNR=∞) and with (CNR=1) noise injection during training across different SNR dB levels. Significant p-values ($p < 0.05$) are in bold.

SNR	**Precision**		**Recall**		**F1**	
(dB)	t	p	t	p	t	p
-6	-1.82	6.90e-02	-25.18	**9.69e-81**	-24.83	**2.25e-79**
-3	-1.62	1.06e-01	-20.91	**1.08e-63**	-19.06	**3.78e-56**
0	-4.41	**1.37e-05**	-16.14	**2.87e-44**	-14.58	**5.54e-38**
3	-6.44	**3.99e-10**	-11.90	**1.09e-27**	-11.10	**9.34e-25**
6	-7.73	**1.12e-13**	-8.63	**2.20e-16**	-8.39	**1.24e-15**
9	-7.15	**4.98e-12**	-6.09	**3.01e-09**	-6.18	**1.78e-09**
12	-6.05	**3.76e-09**	-4.22	**3.10e-05**	-4.34	**1.84e-05**
15	-4.54	**7.90e-06**	-2.73	**6.61e-03**	-3.07	**2.33e-03**
18	-3.41	**7.33e-04**	-1.90	5.87e-02	-2.25	**2.53e-02**
21	-2.50	**1.28e-02**	-1.44	1.50e-01	-1.56	1.19e-01
24	-2.01	**4.51e-02**	-1.06	2.89e-01	-1.12	2.63e-01
27	-0.75	4.53e-01	-0.97	3.32e-01	-1.00	3.20e-01
30	-0.78	4.34e-01	-0.98	3.29e-01	-1.01	3.15e-01
33	0.82	4.14e-01	-0.77	4.39e-01	-0.69	4.91e-01
36	0.86	3.93e-01	-0.66	5.08e-01	-0.69	4.91e-01
39	1.70	8.94e-02	-0.56	5.74e-01	-0.53	5.99e-01
42	1.70	8.94e-02	-0.56	5.74e-01	-0.35	7.23e-01
45	1.70	8.94e-02	-0.57	5.72e-01	-0.35	7.23e-01
∞	1.70	8.94e-02	-0.23	8.15e-01	-0.18	8.54e-01

Table 3: T-test results comparing models without (CNR=∞) and with (CNR=1/3) noise injection during training across different SNR dB levels. Significant p-values ($p < 0.05$) are in bold.

SNR	**Precision**		**Recall**		**F1**	
(dB)	t	p	t	p	t	p
-6	-1.96	5.07e-02	-24.71	**6.72e-79**	-24.42	**9.87e-78**
-3	-2.03	**4.27e-02**	-21.12	**1.50e-64**	-19.24	**7.14e-57**
0	-5.33	**1.76e-07**	-16.38	**3.21e-45**	-14.78	**8.25e-39**
3	-7.87	**4.49e-14**	-11.96	**6.82e-28**	-11.17	**5.23e-25**
6	-8.94	**2.31e-17**	-8.47	**6.63e-16**	-8.33	**1.82e-15**
9	-8.28	**2.59e-15**	-5.82	**1.30e-08**	-6.05	**3.74e-09**
12	-6.65	**1.14e-10**	-3.83	**1.52e-04**	-4.05	**6.31e-05**
15	-5.16	**4.23e-07**	-2.23	**2.64e-02**	-2.73	**6.57e-03**
18	-4.08	**5.48e-05**	-1.36	1.74e-01	-1.73	8.39e-02
21	-3.13	**1.90e-03**	-0.80	4.22e-01	-1.06	2.89e-01
24	-2.01	**4.51e-02**	-0.52	6.06e-01	-0.62	5.35e-01
27	-1.50	1.33e-01	-0.21	8.34e-01	-0.32	7.48e-01
30	-0.78	4.34e-01	-0.21	8.32e-01	-0.16	8.71e-01
33	0.82	4.14e-01	0.11	9.14e-01	0.00	1.00e+00
36	0.00	1.00e+00	0.11	9.14e-01	0.00	1.00e+00
39	1.79	7.43e-02	0.33	7.43e-01	0.17	8.66e-01
42	1.70	8.94e-02	0.22	8.27e-01	0.34	7.35e-01
45	1.79	7.43e-02	0.33	7.43e-01	0.34	7.35e-01
∞	1.70	8.94e-02	0.57	5.71e-01	0.53	5.95e-01

Table 4: T-test results comparing models without (CNR=∞) and with (CNR=0) noise injection during training across different SNR dB levels. Significant p-values ($p < 0.05$) are in bold.

SNR	**Precision**		**Recall**		**F1**	
(dB)	t	p	t	p	t	p
-6	-3.47	**5.83e-04**	-20.85	**1.92e-63**	-21.11	**1.70e-64**
-3	-3.59	**3.78e-04**	-17.44	**1.56e-49**	-16.55	**6.27e-46**
0	-10.43	**2.25e-22**	-13.13	**2.56e-32**	-12.51	**5.91e-30**
3	-11.80	**2.64e-27**	-9.34	**1.15e-18**	-9.23	**2.51e-18**
6	-12.23	**6.71e-29**	-6.25	**1.17e-09**	-6.60	**1.50e-10**
9	-12.09	**2.24e-28**	-3.72	**2.35e-04**	-4.43	**1.27e-05**
12	-10.08	**3.70e-21**	-1.69	9.11e-02	-2.45	**1.48e-02**
15	-8.58	**3.08e-16**	-0.26	7.94e-01	-1.16	2.47e-01
18	-7.27	**2.31e-12**	0.64	5.21e-01	-0.14	8.91e-01
21	-5.64	**3.48e-08**	1.13	2.57e-01	0.57	5.69e-01
24	-4.56	**6.97e-06**	1.45	1.47e-01	1.02	3.08e-01
27	-3.37	**8.48e-04**	1.58	1.16e-01	1.20	2.29e-01
30	-2.56	**1.10e-02**	1.59	1.12e-01	1.38	1.70e-01
33	-0.94	3.50e-01	1.74	8.33e-02	1.43	1.52e-01
36	-0.89	3.71e-01	1.73	8.49e-02	1.58	1.15e-01
39	0.00	1.00e+00	1.87	6.24e-02	1.61	1.09e-01
42	0.00	1.00e+00	1.77	7.83e-02	1.78	7.54e-02
45	0.94	3.47e-01	1.88	6.09e-02	1.62	1.06e-01
∞	0.94	3.47e-01	2.04	**4.22e-02**	2.03	**4.31e-02**