

Probability of Error, \hat{P}_e			
$Q = 10, N = 10, A = 0.35, \Gamma' = 0.5 \times 10^{-3}$			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.999-001	4.999-001	5.000-001
-70	4.996-001	4.998-001	5.000-001
-65	4.988-001	4.994-001	4.998-001
-60	4.962-001	4.982-001	4.995-001
-55	4.881-001	4.942-001	4.985-001
-50	4.635-001	4.819-001	4.953-001
-45	3.943-001	4.453-001	4.852-001
-40	2.407-001	3.482-001	4.549-001
-35	6.086-002	1.673-001	3.719-001
-30	4.055-003	2.570-002	2.024-001
-25	5.286-004	1.838-003	3.945-002
-20	2.393-004	7.032-004	2.359-003
-15	1.625-004	3.662-004	4.306-004
-10	1.147-004	1.913-004	2.164-004
-5	6.559-005	1.189-004	1.537-004
0	1.111-005	3.578-005	1.061-004
5	3.007-007	4.145-006	5.258-005
10	2.090-011	2.485-008	7.274-006
$Q = 10, N = 100$			
-75	4.988-001	4.994-001	4.999-001
-70	4.964-001	4.982-001	4.995-001
-65	4.886-001	4.943-001	4.986-001
-60	4.647-001	4.823-001	4.954-001
-55	3.968-001	4.463-001	4.857-001
-50	2.411-001	3.492-001	4.563-001
-45	5.078-002	1.614-001	3.745-001
-40	4.395-004	1.467-002	2.011-001
-35	7.809-010	1.145-005	2.892-002
-30	3.376-021	1.182-013	8.280-005
-25	3.653-030	1.527-025	1.199-011
-20	4.571-034	4.757-032	1.637-023
-15	4.050-036	4.932-035	3.717-031
-10	3.051-037	1.196-036	1.444-034
-5	3.808-039	1.365-037	2.151-036
0	7.331-047	4.910-042	2.091-037
5	1.710-062	2.170-051	9.680-041
10	2.233-102	1.720-073	5.716-049

Table 4.1. Calculated performance bound (4.44) for class A interference, $A = 0.35, \Gamma' = 0.5 \times 10^{-3}$.

Probability of Error, \hat{P}_e			
Q = 10, N = 1000			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.886-001	4.944-001	4.986-001
-70	4.649-001	4.824-001	4.955-001
-65	3.972-001	4.464-001	4.858-001
-60	2.414-001	3.494-001	4.565-001
-55	5.013-002	1.611-001	3.750-001
-50	3.536-004	1.397-002	2.013-001
-45	6.610-011	6.394-006	2.823-002
-40	2.013-031	2.682-016	5.818-005
-35	1.240-088	2.894-047	2.449-013
-30	7.701-202	7.366-127	1.239-038
-25	1.246-291	1.901-245	1.102-106
-20	0.000+000	0.000+000	8.666-225
-15	0.000+000	0.000+000	1.240-301
-10	0.000+000	0.000+000	0.000+000
-5	0.000+000	0.000+000	0.000+000
0	0.000+000	0.000+000	0.000+000
5	0.000+000	0.000+000	0.000+000
10	0.000+000	0.000+000	0.000+000
Q = 1000, N = 10			
-75	4.999-001	4.999-001	5.000-001
-70	4.996-001	4.998-001	5.000-001
-65	4.988-001	4.994-001	4.999-001
-60	4.964-001	4.981-001	4.995-001
-55	4.886-001	4.941-001	4.986-001
-50	4.648-001	4.815-001	4.954-001
-45	3.978-001	4.445-001	4.858-001
-40	2.474-001	3.462-001	4.565-001
-35	6.595-002	1.644-001	3.760-001
-30	4.882-003	2.430-002	2.094-001
-25	6.312-004	1.430-003	4.349-002
-20	2.589-004	3.388-004	2.889-003
-15	1.520-004	2.095-004	5.041-004
-10	1.017-004	1.775-004	2.290-004
-5	6.464-005	1.393-004	1.405-004
0	1.176-005	4.406-005	9.535-005
5	3.632-007	3.828-006	4.532-005
10	3.645-011	1.955-008	7.795-006

Table 4.1. (continued)

Probability of Error, \hat{P}_e			
Q = 1000, N = 100			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.989-001	4.994-001	4.999-001
-70	4.965-001	4.982-001	4.996-001
-65	4.890-001	4.945-001	4.986-001
-60	4.661-001	4.827-001	4.956-001
-55	4.005-001	4.473-001	4.853-001
-50	2.484-001	3.517-001	4.580-001
-45	5.574-002	1.651-001	3.790-001
-40	5.833-004	1.574-002	2.087-001
-35	1.700-009	1.416-005	3.248-002
-30	1.432-020	2.101-013	1.173-004
-25	9.876-030	4.150-025	3.008-011
-20	6.940-034	8.337-032	7.383-023
-15	4.711-036	4.835-035	8.624-031
-10	4.101-037	9.619-037	2.038-034
-5	1.029-038	1.035-037	2.520-036
0	3.912-046	1.000-041	2.976-037
5	3.419-061	1.189-050	2.969-040
10	6.726-100	1.958-072	4.229-048
Q = 1000, N = 1000			
-75	4.891-001	4.945-001	4.986-001
-70	4.664-001	4.829-001	4.957-001
-65	4.012-001	4.479-001	4.864-001
-60	2.492-001	3.530-001	4.583-001
-55	5.542-002	1.663-001	3.797-001
-50	4.851-004	1.546-002	2.095-001
-45	1.775-010	8.790-006	3.200-002
-40	4.050-030	7.232-016	8.633-005
-35	4.793-085	5.738-046	8.371-013
-30	4.125-195	2.089-123	4.992-037
-25	1.746-286	1.062-239	1.930-102
-20	0.000+000	1.215-306	6.755-218
-15	0.000+000	0.000+000	4.506-297
-10	0.000+000	0.000+000	0.000+000
-5	0.000+000	0.000+000	0.000+000
0	0.000+000	0.000+000	0.000+000
5	0.000+000	0.000+000	0.000+000
10	0.000+000	0.000+000	0.000+000

Table 4.1. (continued)

Probability of Error, \hat{P}_e			
Q = 100,000, N = 10			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.999-001	4.999-001	5.000-001
-70	4.996-001	4.998-001	5.000-001
-65	4.988-001	4.995-001	4.998-001
-60	4.962-001	4.983-001	4.995-001
-55	4.880-001	4.946-001	4.985-001
-50	4.632-001	4.830-001	4.952-001
-45	3.933-001	4.484-001	4.851-001
-40	2.392-001	3.558-001	4.544-001
-35	6.023-002	1.781-001	3.708-001
-30	4.183-003	2.957-002	2.009-001
-25	5.589-004	1.830-003	3.910-002
-20	2.249-004	3.668-004	2.478-003
-15	1.055-004	1.886-004	4.464-004
-10	8.557-005	1.368-004	1.938-004
-5	6.422-005	9.393-005	9.690-005
0	1.249-005	4.089-005	8.543-005
5	2.876-007	5.348-006	4.442-005
10	2.060-011	3.427-008	7.242-006
Q = 100,000, N = 100			
-75	4.989-001	4.995-001	4.999-001
-70	4.965-001	4.983-001	4.996-001
-65	4.890-001	4.945-001	4.986-001
-60	4.661-001	4.829-001	4.956-001
-55	4.004-001	4.479-001	4.863-001
-50	2.482-001	3.533-001	4.580-001
-45	5.561-002	1.675-001	3.789-001
-40	5.795-004	1.647-002	2.085-001
-35	1.674-009	1.622-005	3.239-002
-30	1.426-020	2.954-013	1.164-004
-25	1.077-029	6.661-025	2.959-011
-20	7.547-034	1.302-031	7.441-023
-15	4.836-036	8.602-035	9.543-031
-10	2.743-037	1.628-036	2.207-034
-5	5.883-039	1.567-037	2.430-036
0	2.986-046	1.264-041	1.893-037
5	2.762-061	1.250-050	2.319-040
10	5.256-100	2.871-072	3.237-048

Table 4.1. (continued)

Probability of Error, \hat{P}_e			
Q = 100,000, N = 1000			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.891-001	4.945-001	4.986-001
-70	4.663-001	4.829-001	4.957-001
-65	4.011-001	4.479-001	4.864-001
-60	2.492-001	3.531-001	4.583-001
-55	5.536-002	1.665-001	3.796-001
-50	4.836-004	1.551-002	2.094-001
-45	1.758-010	8.881-006	3.196-002
-40	3.931-030	7.465-016	8.599-005
-35	4.431-085	6.300-046	8.269-013
-30	3.705-195	2.623-123	4.812-037
-25	1.958-296	1.411-239	1.762-102
-20	0.000+000	1.436-306	6.191-218
-15	0.000+000	0.000+000	5.268-297
-10	0.000+000	0.000+000	0.000+000
-5	0.000+000	0.000+000	0.000+000
0	0.000+000	0.000+000	0.000+000
5	0.000+000	0.000+000	0.000+000
10	0.000+000	0.000+000	0.000+000

Table 4.1. (continued)

Probability of Error, \hat{P}_e			
$Q = 10, N = 10, A = 0.1, \Gamma' = 10^{-4}$			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.999-001	5.000-001	5.000-001
-70	4.997-001	4.998-001	5.000-001
-65	4.991-001	4.995-001	4.999-001
-60	4.971-001	4.986-001	4.996-001
-55	4.912-001	4.957-001	4.988-001
-50	4.736-001	4.868-001	4.964-001
-45	4.233-001	4.606-001	4.891-001
-40	3.006-001	3.887-001	4.674-001
-35	1.074-001	2.320-001	4.066-001
-30	5.836-003	5.026-002	2.659-001
-25	1.535-005	8.819-004	7.475-002
-20	2.797-007	3.035-006	2.277-003
-15	5.881-008	5.795-007	4.938-006
-10	2.801-008	1.420-007	1.887-007
-5	1.311-008	3.721-008	4.799-008
0	4.716-009	1.294-008	2.506-008
5	9.975-010	3.083-009	1.067-008
10	1.454-011	3.275-010	3.870-009
$Q = 10, N = 100$			
-75	4.990-001	4.995-001	4.999-001
-70	4.971-001	4.985-001	4.996-001
-65	4.911-001	4.955-001	4.988-001
-60	4.731-001	4.863-001	4.964-001
-55	4.218-001	4.592-001	4.889-001
-50	2.966-001	3.850-001	4.667-001
-45	1.007-001	2.241-001	4.047-001
-40	3.724-003	4.274-002	2.612-001
-35	1.843-007	2.768-004	6.829-002
-30	1.217-019	8.918-011	1.145-003
-25	1.585-044	5.629-028	5.641-009
-20	2.595-062	1.881-053	1.410-023
-15	5.226-070	5.265-066	2.462-049
-10	4.114-074	6.144-072	3.033-064
-5	2.447-076	3.584-075	5.247-071
0	5.656-080	1.849-077	1.152-074
5	2.211-087	1.749-082	7.965-077
10	2.533-105	1.945-092	5.216-081

Table 4.2. Calculated performance bound (4.44) for class A interference, $A = 0.1, \Gamma' = 10^{-4}$.

Probability of Error, \hat{P}_e			
Q = 10, N = 1000			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.906-001	4.953-001	4.988-001
-70	4.717-001	4.856-001	4.962-001
-65	4.180-001	4.571-001	4.883-001
-60	2.883-001	3.794-001	4.650-001
-55	9.209-002	2.142-001	4.001-001
-50	2.771-003	3.698-002	2.522-001
-45	5.983-008	1.685-004	6.105-002
-40	3.424-022	1.137-011	7.847-004
-35	5.119-065	1.769-033	1.257-009
-30	3.429-186	3.616-098	2.743-027
-25	0.000+000	1.383-269	4.450-080
-20	0.000+000	0.000+000	2.312-225
-15	0.000+000	0.000+000	0.000+000
-10	0.000+000	0.000+000	0.000+000
-5	0.000+000	0.000+000	0.000+000
0	0.000+000	0.000+000	0.000+000
5	0.000+000	0.000+000	0.000+000
10	0.000+000	0.000+000	0.000+000
Q = 1000, N = 10			
-75	4.999-001	5.000-001	5.000-001
-70	4.997-001	4.998-001	5.000-001
-65	4.991-001	4.995-001	4.999-001
-60	4.972-001	4.986-001	4.996-001
-55	4.916-001	4.956-001	4.989-001
-50	4.746-001	4.866-001	4.966-001
-45	4.260-001	4.599-001	4.895-001
-40	3.063-001	3.871-001	4.686-001
-35	1.137-001	2.290-001	4.097-001
-30	6.906-003	4.833-002	2.723-001
-25	2.312-005	7.872-004	8.026-002
-20	3.994-007	1.808-006	2.796-003
-15	6.928-008	1.176-007	7.721-006
-10	2.385-008	4.562-008	2.585-007
-5	1.005-008	3.407-008	5.391-008
0	4.771-009	1.837-008	2.042-008
5	1.084-009	3.641-009	8.505-009
10	1.864-011	3.133-010	3.975-009

Table 4.2. (continued)

Probability of Error, \hat{P}_e			
Q = 1000, N = 100			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.991-001	4.995-001	4.999-001
-70	4.972-001	4.986-001	4.996-001
-65	4.914-001	4.956-001	4.989-001
-60	4.741-001	4.866-001	4.965-001
-55	4.247-001	4.600-001	4.894-001
-50	3.029-001	3.870-001	4.680-001
-45	1.074-001	2.277-001	4.082-001
-40	4.535-003	4.487-002	2.682-001
-35	3.327-007	3.210-004	7.399-002
-30	6.360-019	1.389-010	1.461-003
-25	3.748-043	1.921-027	1.168-008
-20	1.821-061	1.659-052	1.013-022
-15	1.200-069	1.551-065	5.896-048
-10	5.453-074	5.679-072	1.555-063
-5	4.440-076	2.262-075	1.026-070
0	3.506-079	1.010-077	1.599-074
5	3.600-086	7.503-082	1.703-076
10	1.311-103	2.146-091	4.004-080
Q = 1000, N = 1000			
-75	4.910-001	4.954-001	4.938-001
-70	4.728-001	4.860-001	4.963-001
-65	4.212-001	4.582-001	4.888-001
-60	2.952-001	3.824-001	4.665-001
-55	9.904-002	2.193-001	4.040-001
-50	3.464-003	3.978-002	2.597-001
-45	1.186-007	2.108-004	6.683-002
-40	2.764-021	2.259-011	1.036-003
-35	2.694-062	1.430-032	2.942-009
-30	1.446-178	1.849-095	3.652-026
-25	0.000+000	3.424-262	9.994-077
-20	0.000+000	0.000+000	2.900-216
-15	0.000+000	0.000+000	0.000+000
-10	0.000+000	0.000+000	0.000+000
-5	0.000+000	0.000+000	0.000+000
0	0.000+000	0.000+000	0.000+000
5	0.000+000	0.000+000	0.000+000
10	0.000+000	0.000+000	0.000+000

Table 4.2. (continued)

Probability of Error, \hat{P}_e			
Q = 100,000, N = 10			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.999-001	5.000-001	5.000-001
-70	4.997-001	4.999-001	5.000-001
-65	4.991-001	4.996-001	4.999-001
-60	4.971-001	4.987-001	4.996-001
-55	4.912-001	4.959-001	4.988-001
-50	4.734-001	4.875-001	4.964-001
-45	4.227-001	4.627-001	4.890-001
-40	2.992-001	3.944-001	4.671-001
-35	1.059-001	2.424-001	4.058-001
-30	5.685-003	5.713-002	2.644-001
-25	1.654-005	1.205-003	7.357-002
-20	3.110-007	3.029-006	2.221-003
-15	5.298-008	1.351-007	5.585-006
-10	1.055-008	3.659-008	2.001-007
-5	7.446-009	1.949-008	3.847-008
0	4.608-009	7.902-009	8.884-009
5	9.775-010	3.366-009	7.135-009
10	1.442-011	4.023-010	3.848-009
Q = 100,000, N = 100			
-75	4.991-001	4.995-001	4.999-001
-70	4.972-001	4.986-001	4.996-001
-65	4.914-001	4.957-001	4.989-001
-60	4.741-001	4.868-001	4.955-001
-55	4.246-001	4.605-001	4.894-001
-50	3.027-001	3.883-001	4.680-001
-45	1.072-001	2.301-001	4.081-001
-40	4.514-003	4.631-002	2.680-001
-35	3.282-007	3.535-004	7.385-002
-30	6.151-019	1.846-010	1.453-003
-25	3.700-043	4.019-027	1.148-008
-20	2.236-061	4.451-052	9.759-023
-15	1.402-069	3.942-065	5.978-048
-10	5.909-074	1.864-071	1.963-063
-5	1.774-076	6.813-075	1.207-070
0	1.469-079	2.439-077	1.472-074
5	2.183-086	1.245-081	6.243-077
10	8.759-104	1.771-091	1.834-080

Table 4.2. (continued)

Probability of Error, \hat{P}_e			
Q = 100,000, N = 1000			
SNR, dB	Antipodal	Orthogonal	ON-OFF
-75	4.910-001	4.954-001	4.988-001
-70	4.728-001	4.860-001	4.963-001
-65	4.212-001	4.582-001	4.888-001
-60	2.951-001	3.825-001	4.665-001
-55	9.897-002	2.195-001	4.039-001
-50	3.456-003	3.987-002	2.596-001
-45	1.178-007	2.124-004	6.677-002
-40	2.707-021	2.309-011	1.033-003
-35	2.533-062	1.529-032	2.917-009
-30	1.223-178	2.249-095	3.560-026
-25	0.000+000	5.621-262	9.265-077
-20	0.000+000	0.000+000	2.381-216
-15	0.000+000	0.000+000	0.000+000
-10	0.000+000	0.000+000	0.000+000
-5	0.000+000	0.000+000	0.000+000
0	0.000+000	0.000+000	0.000+000
5	0.000+000	0.000+000	0.000+000
10	0.000+000	0.000+000	0.000+000

Table 4.2. (continued)