Appendix A

Coupled differential equations of the time dependent coefficients corresponds to different field modes are

$$\dot{A}_1 + i\omega_c A_1 = 0$$

$$\dot{A}_2 + i\omega_c A_2 + ig A_1 B_1^{*2} = 0$$

$$\dot{A}_3 + i\omega_c A_3 + ig A_1 B_1^2 = 0$$

$$\dot{A}_4 + i\omega_c A_4 + 2ig A_1 = 0$$

$$\dot{A}_5 + i\omega_c A_5 + ig A_1 = 0$$

$$\dot{B}_1 + i\omega_m B_1 = 0$$

$$\dot{B}_2 + i\omega_m B_2 + 2ig B_1 = 0$$

$$\dot{B}_3 + i\omega_m B_3 + 2ig B_1^* = 0$$