$$\nabla F(A,B) = \left(\frac{1}{N} \sum_{n=1}^{N} \frac{\partial \ln(G)}{\partial G} \frac{\partial (1+\exp(F))}{\partial F} \frac{\partial \left(-y_n\left(Az_n+B\right)\right)}{\partial A}, \ \frac{1}{N} \sum_{n=1}^{N} \frac{\partial \ln(G)}{\partial G} \frac{\partial (1+\exp(F))}{\partial F} \frac{\partial \left(-y_n\left(Az_n+B\right)\right)}{\partial B} \right)$$