

Signal provided to each access of the antenna.

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## 1 Filtering chain.

The chain under consideration correspond to the schematic shown in Figure 1.

The signals  $b_1$  and  $b_2$  take the expressions:

$$b_1 = -j \frac{a_1}{\sqrt{2}} \left[ \frac{S_{21}^{F1} (1 - S_{22}^{F2} S_{22}^A) - j S_{21}^{F2} S_{12}^A S_{22}^{F1}}{(1 - S_{22}^{F2} S_{22}^A) (1 - S_{22}^{F1} S_{11}^A) - S_{21}^A S_{12}^A S_{22}^{F1} S_{22}^{F2}} \right] \quad (1)$$

$$b_2 = -\frac{a_1}{\sqrt{2}} \left[ \frac{S_{21}^{F2} (1 - S_{22}^{F1} S_{11}^A) + j S_{21}^{F1} S_{21}^A S_{22}^{F2}}{(1 - S_{22}^{F2} S_{22}^A) (1 - S_{22}^{F1} S_{11}^A) - S_{21}^A S_{12}^A S_{22}^{F1} S_{22}^{F2}} \right] \quad (2)$$

It can be seen than now the polarization of each access are not orthogonal.

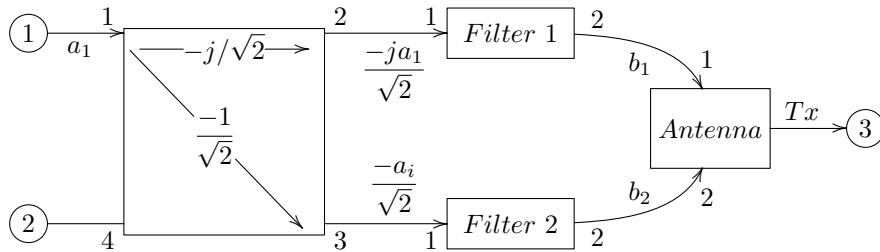


Figure 1: Complete chain chain.