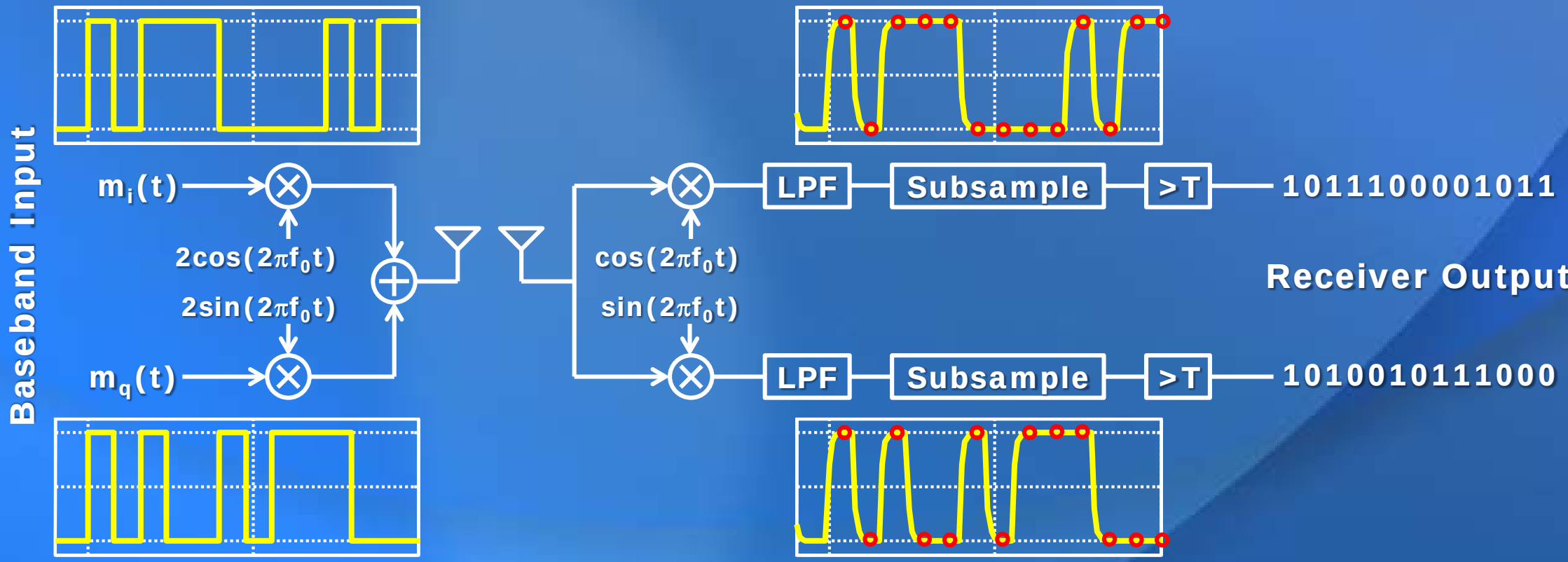
Quadrature Phase Shift Keying

Digital I/Q Modulation

Use I/Q transmission to transmit two bit sequences.



Quadrature Phase Shift Keying

- We call this quadrature phase shift keying (QPSK)
- The phase of the carrier shifts between four values, depending upon the input bits.

I	Q	$x_i(t)+x_q(t)$	
0	0	$-\cos(2\pi f_0 t)-\sin(2\pi f_0 t)$	$\sqrt{2}\cdot\cos(2\pi f_0 t - (-3\pi/4))$
0	1	$-\cos(2\pi f_0 t)+\sin(2\pi f_0 t)$	$\sqrt{2}\cdot\cos(2\pi f_0 t - 3\pi/4)$
1	0	$+\cos(2\pi f_0 t)-\sin(2\pi f_0 t)$	$\sqrt{2}\cdot\cos(2\pi f_0 t - (-\pi/4))$
1	1	$\cos(2\pi f_0 t)+\sin(2\pi f_0 t)$	$\sqrt{2}\cdot\cos(2\pi f_0 t - \pi/4)$