CLAIMS

1. An ophthalmic lens system capable of wireless communication through utilization of an external device, the ophthalmic lens system comprising:

a first ophthalmic lens on a first eye configured to wirelessly communicate with the external device, wherein the first ophthalmic lens comprises:

a first lens transmitter,

a first lens receiver,

a first lens processor in electrical communication with the first lens transmitter and the first lens receiver,

and a first soft lens portion configured for placement on the first eye and encapsulation of at least a portion of one or more the first lens transmitter, the first lens receiver, and the first lens processor, and wherein the external device comprises a device power source, a device transmitter, a device receiver, and a device processor in electrical communication with the device power source, the device transmitter, and the device receiver; and

a second ophthalmic lens on a second eye configured to wirelessly communicate with one or both the first ophthalmic lens and the external device, wherein the second ophthalmic lens comprises:

a second lens transmitter,

a second lens receiver,

a second lens processor in electrical communication with the second lens transmitter and the second lens receiver,

and a second soft lens portion configured for placement on the second eye and encapsulation of at least a portion of one or more the second lens transmitter, the second lens receiver, and the second lens processor, and wherein the device processor is configured for more computational power than one or both the first lens processor and the second lens processor and wherein the external device receiver is configured for higher sensitivity than the first and second lens receivers wherein the device receiver comprises a low-noise amplifier.

2. The system of Claim 1, wherein one or both the first ophthalmic

lens and the second ophthalmic lens further comprises a lens power source configured to energize the ophthalmic lens system, wherein the lens power source comprises less energization capabilities than the external device power source.

3. The system of Claim 1, wherein the external device is capable of energizing the ophthalmic lens system.

4. The system of Claim 1, further comprising a first functionality, wherein the first functionality comprises a primary purpose of the ophthalmic lens system.

5. The system of Claim 1, wherein one or both the first lens receiver and the first lens transmitter are capable of communicating with one or both the second lens receiver and the second lens transmitter.

6. The system of Claim 1, wherein one or both the first lens processor and the second lens processor comprises a logic block.

7. The system of Claim 1, wherein the first ophthalmic lens further comprises a first position detection mechanism configured to track one or both a gaze position of the first eye or a lid position of a first eyelid.

8. The system of Claim 1, wherein the wireless communication comprises an exchange of first data between the first ophthalmic lens and the external device and an exchange of second data between the external device and the second ophthalmic lens.

9. The system of Claim 1, wherein the wireless communication comprises a wireless protocol configured to require less energy and computational power from the ophthalmic lens system than the external device.

10. The system of Claim 4, wherein one or both the ophthalmic lens system and the external device is configured for programming or operating the functionality of the ophthalmic lens system.

11. The system of Claim 7, wherein the second ophthalmic lens further comprises a second position detection mechanism configured to track one or both a gaze position of the second eye or a lid position of a second eyelid.

12. The system of Claim 8, wherein the exchange of second data comprises a transmission of data from the external device to the second ophthalmic lens, wherein the transmission is responsive to the exchange of first data.

13. The system of Claim 9, wherein the external device comprises a wireless communication mechanism configured for the wireless protocol.

14. The system of Claim 10, wherein the first functionality comprises an operation of the first ophthalmic lens.

15. The system of Claim 10, wherein the first functionality comprises an operation of the first ophthalmic lens and the second ophthalmic lens in conjunction.

16. The system of Claim 11, further comprising a signal conditioning mechanism configured to allow interfacing between the first position detection mechanism and one or both the first lens processor and the device processor and between the second position detection mechanism and one or both the second lens processor and the device processor.

17. The system of Claim 11, wherein the ophthalmic lens system is configured for tracking convergence between the first eye and the second eye, wherein the convergence is based on one or both the gaze position and the lid position of the first eye and the second eye.

18. The system of Claim 11, wherein one or more of the external device, the first ophthalmic lens, and the second ophthalmic lens are configured to discern between voluntary movements and involuntary movements of one or more of the gaze position of the first eye, the gaze position of the second eye, the lid position of the first eye, and

the lid position of the second eye.

19. The system of Claim 13, wherein the wireless communication mechanism comprises a dongle, wherein the dongle is configured to attach to the external device.

20. The system of Claim 16, wherein the signal conditioning mechanism comprises an amplifier.

21. The system of Claim 16, wherein the signal conditioning mechanism comprises an analog-to-digital converter.

CLAIMS

1. An ophthalmic lens system capable of wireless communication through utilization of an external device, the ophthalmic lens system comprising:

an external device comprising a processor, a transmitter, a high sensitivity receiver, a power source and a transmission adaptor;

a first contact lens wearable on a on a first eye for wirelessly communicating with the external device, wherein the first contact lens comprises:

a first lens transmitter,

a first lens receiver,

a first lens processor in electrical communication with the first lens transmitter and the first lens receiver,

and a first soft lens portion configured for placement on the first eye and encapsulation of at least a portion of one or more the first lens transmitter, the first lens receiver, and the first lens processor; and

a second contact lens wearable directly on a second eye wirelessly communicating with one or both the first contact lens and the external device, wherein the second contact lens comprises:

a second lens transmitter,

a second lens receiver,

a second lens processor in electrical communication with the second lens transmitter and the second lens receiver,

and a second soft lens portion for placement on the second eye and encapsulation of at least a portion of one or more the second lens transmitter, the second lens receiver, and the second lens processor, and wherein the device processor is configured for more computational power than one or both the first lens processor and the second lens processor,

wherein the first contact lens, the second contact lens and the external device communicate with each other such that the first and the second contact lenses perform one or more coordinated functions, the transmission adaptor including a wireless protocol configured

for asymmetric communication and data exchange between the first and second contact lenses and the external device.

2. The system of Claim 1, wherein one or both the first contact lens and the second contact lens further comprises a lens power source configured to energize the ophthalmic lens system, wherein the lens power source comprises less energization capabilities than the external device power source.

3. The system of claim 1, wherein the external device receiver is configured for higher sensitivity than the first and second lens receivers.

4. The system of Claim 1, wherein the external device is capable of energizing the ophthalmic lens system.

5. The system of Claim 1, further comprising a first functionality, wherein the first functionality comprises a primary purpose of the ophthalmic lens system.

6. The system of Claim 1, wherein one or both the first lens receiver and the first lens transmitter are capable of communicating with one or both the second lens receiver and the second lens transmitter.

7. The system of Claim 1, wherein one or both the first lens processor and the second lens processor comprises a logic block.

8. The system of Claim 1, wherein the first contact lens further comprises a first position detection mechanism configured to track one or both a gaze position of the first eye or a lid position of a first eyelid.

9. The system of Claim 1, wherein the wireless communication comprises an exchange of first data between the first contact lens and the external device and an exchange of second data between the external device and the second contact lens.

10. The system of Claim 1, wherein the wireless communication comprises a wireless protocol configured to require less energy and computational power from the ophthalmic lens system than the external device.

11. The system of claim 1, wherein the device receiver comprises a low-noise amplifier.

12. The system of Claim 5, wherein one or both the ophthalmic lens system and the external device is configured for programming or operating the functionality of the ophthalmic lens system.

13. The system of Claim 8, wherein the second contact lens further comprises a second position detection mechanism configured to track one or both a gaze position of the second eye or a lid position of a second eyelid.

14. The system of Claim 9, wherein the exchange of second data comprises a transmission of data from the external device to the second contact lens, wherein the transmission is responsive to the exchange of first data.

15. The system of Claim 10, wherein the external device comprises a wireless communication mechanism configured for the wireless protocol.

16. The system of Claim 12, wherein the first functionality comprises an operation of the first contact lens.

17. The system of Claim 11, wherein the first functionality comprises an operation of the first contact lens and the second contact lens in conjunction.

18. The system of Claim 13, further comprising a signal conditioning mechanism configured to allow interfacing between the first position detection mechanism and one or both the first lens processor and the device processor and between the second position detection mechanism and one or both the second lens processor and the device processor.

19. The system of Claim 13, wherein the ophthalmic lens system is configured for tracking convergence between the first eye and the second eye, wherein the convergence is based on one or both the gaze position and the lid position of the first eye and the second eye.

20. The system of Claim 13, wherein one or more of the external device, the first ophthalmic lens, and the second ophthalmic lens are configured to discern between voluntary movements and involuntary movements of one or more of the gaze position of the first eye, the gaze position of the second eye, the lid position of the first eye, and the lid position of the second eye.

21. The system of Claim 15, wherein the wireless communication mechanism comprises a dongle, wherein the dongle is configured to attach to the external device.

22. The system of Claim 18, wherein the signal conditioning mechanism comprises an amplifier.

23. The system of Claim 18, wherein the signal conditioning mechanism comprises an analog-to-digital converter.