CLAIMS

What is claimed is:

1. A parking meter, comprising:

a weather resistant housing, the housing having a first side and a second side;

a processor disposed inside of the housing

a memory disposed inside of the housing and coupled to the processor;

a network interface disposed in the housing and coupled to the processor;

a graphical user interface disposed in the housing and facing outward from the first side

of the housing;

a first camera disposed in the housing and facing outward from the first side of the housing, the first camera coupled to the processor;

a microphone disposed in the housing;

a speaker disposed in the housing;

a second camera disposed in the housing and facing outward from the housing towards

a first parking space, the second camera coupled to the processor;

a first status light disposed on the housing and coupled to the processor; and

a payment acceptor disposed in the housing,

wherein the processor is configured to:

detect a vehicle's presence in the first parking space;

capture an identification of the vehicle in the first parking space;

transmitting the identification to a remote computer system via the network interface;

time an initial grace period;

receive payment for a parking time period;

determine that a parking violation has occurred due to at least one of the initial

grace period expiring without receiving payment for the parking time period and the parking time period expiring without the vehicle exiting the first parking space;

actuate the status light to provide a visual indication that a violation has

occurred;

transmit notice of the parking violation to the remote computer system via the network interface, the notice including the vehicle's identification and a time of the violation;

accept payment of a fine for the parking violation via the payment acceptor;

transmit notice of payment of the fine to the remote computer system via the network interface; and

transmit a time of the vehicle's exit from the first parking space to the remote computer system via the network interface; and

reset the parking time period to zero upon the vehicle's exit from the first parking space.

2. The parking meter of claim 1, further comprising a third camera disposed in the housing and facing outward from the housing towards a second parking space, the third camera coupled to the processor.

3. The parking meter of claim 1, wherein the processor is further configured to receive updated parking rate parameters from the remote computer system via the network interface.

4. The parking meter of claim 1, wherein the processor is further configured to receive an emergency call request via an input to the meter and initiate a two-way video conference with an emergency services operator.

5. The parking meter of claim 1, wherein the processor is further configured to define a maximum parking time and display the maximum parking time on the graphical user interface.

6. The parking meter of claim 1, wherein the processor is further configured to display via the graphical user interface, after a violation is determined, a notice that the fine can be paid at a discount rate prior to the vehicle exiting the first parking space.

7. The parking meter of claim 1, wherein the processor is further configured to:

define a plurality of parking class rules; and

determine which class rule applies to the vehicle in the first parking space.

8. The parking meter of claim 7, wherein the processor is further configured to determine which class rule applies based upon a class designation associated with the vehicle's identification either as maintained in the memory or as communicated by the remote computer system.

9. The parking meter of claim 7, wherein the processor is further configured to determine which class rule applies based upon a class code input to the meter during the initial grace period.

10. The parking meter of claim 1, wherein the processor is further configured to display a message on the graphical user interface in response to a command received from the remote computer system.

11. The parking meter of claim 1, wherein the processor is further configured to actuate at least one of the first and second cameras and transmit an output of the actuated cameras to the remote computer system over the network interface.

12. The parking meter of claim 1, wherein the processor is further configured to:

calculate a total parking fee in response to a selected amount of time, wherein the total

parking fee comprises a first parking rate for a first portion of the selected amount of time and a second parking rate for a second portion of the selected amount of parking time, the second parking rate being different than the first parking rate;

display the first parking rate and first subtotal for the first portion of the selected amount of time on the graphical user interface;

display the second parking rate and a second subtotal for the second portion of the selected amount of time on the graphical user interface; and

display the total parking fee on the graphical user interface.

13. A method of monitoring and managing parking via a parking meter comprising: a housing; a processor disposed inside of the housing; a memory disposed inside of the housing and coupled to the processor; a graphical user interface coupled to the processor; and a network interface disposed in the housing and coupled to the processor, the method comprising:

sensing a vehicle's presence in a first parking space;

determining by the processor an identification of the vehicle via a camera;

communicating via the network interface the identification of the vehicle to a remote networked computer system;

determining by the processor that a parking violation has occurred due to at least one of an initial grace period expiring without receiving a payment and a parking time period expiring without the vehicle exiting the first parking space prior the parking period expiring;

communicating notice of the parking violation to the remote networked computer system;

displaying on the graphical user interface of the meter that a violation has occurred, the amount of fine due, and a discount fine amount if the fine is paid before the vehicle departs the first parking space;

communicating status of payment of the fine to the remote computer system via the network interface; and

transmitting a time of the vehicle's exit from the first parking space to the remote computer system via the network interface; and

resetting the parking time period to zero upon the vehicle's exit from the first parking space.

14. The method of claim 13, wherein the step of sensing a vehicle's presence in a first parking space is performed by a camera disposed adjacent the first parking space.

15. The method of claim 13, wherein the step of sensing a vehicle's presence in a first parking space is performed by a sensor disposed beneath the first parking space.

16. The method of claim 13, further comprising receiving updated parking rate parameters by the processor from the remote computer system via the network interface.

17. The method of claim 13, further comprising initiating a two-way video conference with an emergency services operator in response to an emergency call request input to the meter.

18. The method of claim 13, further comprising defining a plurality of parking class rules and determining which class rule applies to the vehicle in the first parking space.

19. The parking meter of claim 7, wherein the determine which class rule applies is based upon a class designation associated with the vehicle's identification either as maintained in the memory or as communicated by the remote computer system.

20. The method of claim 13, further comprising displaying a community message on the graphical user interface in response to a command received from the remote computer system.

21. The method of claim 13, further comprising displaying at least one of a coupon and an advertisement on the graphical user interface in response to the sensing of the vehicle's presence in the first parking space.

22. The method of claim 18, wherein the coupon and/or advertisement is selected based upon a determination of vehicle type for the vehicle in the first parking space.

23. The method of claim 13, further comprising remotely actuating a camera disposed in the meter to transmit an output of the camera to the remote computer system over the network interface.

24. A method of managing parking via a parking meter comprising: a housing; a processor disposed inside of the housing; a memory disposed inside of the housing and coupled to the processor, and a graphical user interface coupled to the processor, the method comprising:

receiving a selection of a parking time quantity by a user by the user providing an input

to the meter;

calculating a total parking fee in response to a selected amount of parking time, wherein

the total parking fee comprises a first parking rate for a first portion of the selected amount of time and a second parking rate for a second portion of the selected amount of parking time, the second parking rate being different than the first parking rate;

displaying the first parking rate and a first subtotal fee portion for the first portion of the

selected amount of time on the graphical user interface;

displaying the second parking rate and a second subtotal fee portion for the second amount of time on the graphical user interface; and

display the total parking fee on the graphical user interface.

25. The method of claim 21, wherein the first parking rate and the second parking rate are variable depending on a class rule corresponding to input provided by the user.

CLAIMS

1. A parking meter, comprising:

a weather resistant housing, the housing having a first side and a second side;

a processor disposed inside of the housing;

a memory disposed inside of the housing and coupled to the processor;

a network interface disposed in the housing and coupled to the processor;

a graphical user interface disposed in the housing and facing outward from the first side of the housing;

a first camera disposed in the housing and facing outward from the first side of the housing, the first camera coupled to the processor;

a microphone disposed in the housing;

a speaker disposed in the housing;

a second camera disposed in the housing and facing outward from the housing towards a first parking space, the second camera coupled to the processor;

a first status light disposed on the housing and coupled to the processor; and

a payment acceptor disposed in the housing,

wherein the processor is configured to:

detect a vehicle's presence in the first parking space;

capture an identification of the vehicle in the first parking space;

transmitting the identification to a remote computer system via the network interface;

time an initial grace period;

receive payment for a parking time period;

determine that a parking violation has occurred due to at least one of the initial grace period expiring without receiving payment for the parking time period and the parking time period expiring without the vehicle exiting the first parking space;

actuate the status light to provide a visual indication that a violation has occurred;

transmit notice of the parking violation to the remote computer system via

the network interface, the notice including the vehicle's identification and a time of the violation;

accept payment of a fine for the parking violation via the payment acceptor;

transmit notice of payment of the fine to the remote computer system via the network interface; and

transmit a time of the vehicle's exit from the first parking space to the remote computer system via the network interface; and

reset the parking time period to zero upon the vehicle's exit from the first parking space.

2. The parking meter of claim 1, further comprising a third camera disposed in the housing and facing outward from the housing towards a second parking space, the third camera coupled to the processor.

3. The parking meter of claim 1, wherein the processor is further configured to receive updated parking rate parameters from the remote computer system via the network interface.

4. The parking meter of claim 1, wherein the processor is further configured to receive an emergency call request via an input to the meter and initiate a two-way video conference with an emergency services operator.

5. The parking meter of claim 1, wherein the processor is further configured to define a maximum parking time and display the maximum parking time on the graphical user interface.

6. The parking meter of claim 1, wherein the processor is further configured to display via the graphical user interface, after a violation is determined, a notice that the fine can be paid at a discount rate prior to the vehicle exiting the first parking space.

7. The parking meter of claim 1, wherein the processor is further configured to:

define a plurality of parking class rules; and

determine which class rule applies to the vehicle in the first parking space.

8. The parking meter of claim 7, wherein the processor is further configured to determine which class rule applies based upon a class designation associated with the vehicle's identification either as maintained in the memory or as communicated by the remote computer system.

9. The parking meter of claim 7, wherein the processor is further configured to determine which class rule applies based upon a class code input to the meter during the initial grace period.

10. The parking meter of claim 1, wherein the processor is further configured to display a message on the graphical user interface in response to a command received from the remote computer system.

11. The parking meter of claim 1, wherein the processor is further configured to actuate at least one of the first and second cameras and transmit an output of the actuated cameras to the remote computer system over the network interface.

12. The parking meter of claim 1, wherein the processor is further configured to:

calculate a total parking fee in response to a selected amount of time, wherein the total parking fee comprises a first parking rate for a first portion of the selected amount of time and a second parking rate for a second portion of the selected amount of parking time, the second parking rate being different than the first parking rate;

display the first parking rate and first subtotal for the first portion of the selected amount of time on the graphical user interface;

display the second parking rate and a second subtotal for the second portion of the selected amount of time on the graphical user interface; and

display the total parking fee on the graphical user interface.

13. A method of monitoring and managing parking via a parking meter comprising: a housing; a processor disposed inside of the housing; a memory disposed inside of the housing and coupled to the processor; a graphical user interface coupled to the processor; and a network interface disposed in the housing and coupled to the processor, the method comprising:

sensing a vehicle's presence in a first parking space;

determining by the processor an identification of the vehicle via a camera;

communicating via the network interface the identification of the vehicle to a remote networked computer system;

determining by the processor that a parking violation has occurred due to at least one of an initial grace period expiring without receiving a payment and a parking time period expiring without the vehicle exiting the first parking space prior the parking period expiring;

communicating notice of the parking violation to the remote networked computer system;

displaying on the graphical user interface of the meter that a violation has occurred, the amount of fine due, and a discount fine amount if the fine is paid before the vehicle departs the first parking space;

communicating status of payment of the fine to the remote computer system via the network interface; and

transmitting a time of the vehicle's exit from the first parking space to the remote computer system via the network interface; and

resetting the parking time period to zero upon the vehicle's exit from the first parking space.

14. The method of claim 13, wherein the step of sensing a vehicle's presence in a first parking space is performed by a camera disposed adjacent the first parking space.

15. The method of claim 13, wherein the step of sensing a vehicle's presence in a first parking space is performed by a sensor disposed beneath the first parking space.

16. The method of claim 13, further comprising receiving updated parking rate parameters by the processor from the remote computer system via the network interface.

17. The method of claim 13, further comprising initiating a two-way video conference with an emergency services operator in response to an emergency call request input to the meter.

18. The method of claim 13, further comprising defining a plurality of parking class rules and determining which class rule applies to the vehicle in the first parking space.

19. The method of claim 18, wherein the determination of which class rule applies is based upon a class designation associated with the vehicle's identification either as maintained in the memory or as communicated by the remote computer system.

20. The method of claim 13, further comprising displaying a community message on the graphical user interface in response to a command received from the remote computer system.

21. The method of claim 13, further comprising displaying at least one of a coupon and an advertisement on the graphical user interface in response to the sensing of the vehicle's presence in the first parking space.

22. The method of claim 21, wherein the coupon and/or advertisement is selected based upon a determination of vehicle type for the vehicle in the first parking space.

23. The method of claim 13, further comprising remotely actuating a camera disposed in the meter to transmit an output of the camera to the remote computer system over the network interface.