# Apple Inc. v. DSS Technology Management Inc.

Cases: IPR2015-00369 and IPR2015-00373

U.S. Patent No. 6,128,290

## Petitioner's Demonstratives

APL 1016 IPR2015-00369

# 290 Patent - Independent Claim 1

data network system for effecting coordinated operaa plurality of electronic devices, said system com-

rver microcomputer unit;

urality of peripheral units which are battery powered nd portable, which provide either input information om the user or output information to the user, and hich are adapted to operate within short range of said rver unit;

server microcomputer incorporating an RF transmitr for sending commands and synchronizing informaon to said peripheral units;

peripheral units each including an RF receiver for tecting said commands and synchronizing informaon and including also an RF transmitter for sending put information from the user to said server micromputer;

server microcomputer including a receiver for receivg input information transmitted from said peripheral nits;

server and peripheral transmitters being energized in w duty cycle RF bursts at intervals determined by a de sequence which is timed in relation to said synronizing information.

"...said server and peripheral transmitters being energized in low duty cycle RF bursts at intervals determined by a code sequence which is timed in relation to said synchronizing information."

## 290 Patent - Independent Claim 9

data network system for effecting coordinated operaa plurality of electronic devices, said system com-

ver microcomputer unit, said server unit including an cillator for establishing a time base;

rality of peripheral units which provide either input formation from the user or output information to the er, and which are adapted to operate within about 20 eters of said server unit:

server microcomputer incorporating an RF transmitcontrolled by said oscillator for sending commands d synchronizing information to said peripheral units, id synchronizing information being carried by time aced beacons characteristic of the particular server it;

peripheral units each including an RF receiver for tecting said commands and synchronizing informan and including also a local oscillator, each of said ripheral units being operative in a first mode to ceive said beacons independently of synchronization the respective local oscillator when that peripheral it is in close proximity to said server unit and to termine from the server unit its characteristics, each said peripheral units being operative in a second ode to synchronize the respective local oscillator with the server unit oscillator, each of said peripheral units also including an RF transmitter operative in a third mode for sending input information from the user to said server microcomputer,

said server microcomputer including a receiver for receiving input information transmitted from said peripheral units:

said server and peripheral transmitters being energized in low duty cycle RF bursts at intervals with said receivers being controlled by the respective oscillators.

"...said server and peripheral transmitters being energized in low duty cycle RF bursts at intervals with said receivers being controlled by the respective oscillators."

.001, '290 Patent, 13:26-14:11

## 290 Patent (APL 1001) - Overview

## SUMMARY OF THE PRESENT INVENTION

The data network of the present invention utilizes the fact that the server microcomputer unit and the several peripheral units which are to be linked are all in close physical proximity, e.g., within twenty meters, to establish, with very high accuracy, a common time base or synchronization. The short distances involved means that accuracy of synchronization is not appreciably affected by transit time delays. Using the common time base, code sequences are generated which control the operation of the several transmitters in a low duty cycle pulsed mode of operation. The low duty cycle pulsed operation both substantially reduces power consumption and facilitates the rejection of interfering signals.

.001, '290 Patent, 1:48-61 3

# Natarajan (APL 1003) - Overview

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[FT]
 |...|..|<----->| |<----->|..|<----->|..|
      | Base to | | Mobile to | Contention | |
      | Mobiles | | Base | | from Mobiles | |
->| FH| |<----TA----->| |<---TC----->| |
```



the scheme described here, a scheduled multiacprotocol is used in which time is divided into fixedh frames, and frames are divided into slots as n in FIG. 4. It is to be appreciated that different e divisions and header lengths and content may be ed in the practice of the invention, and the scheme orth here is merely exemplary.

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