

## SEARCH HISTORY

<b>Application Number</b>	PCT/US 17/68707
<b>Search Conducted By</b>	MK
<b>Search Approved By</b>	Rll

<b>IPC/CPC Classifications Searched</b>	IPC(8) - H04M 1/00; H04W 72/00 (2018.01) CPC - H04W 16/14; H04W 88/06; H04W 72/04
<b>Date Conducted</b>	16 March 2018 (16.03.2018)

<b>Documentation Searched</b>	IPC(8) - H04M 1/00; H04W 72/00 (2018.01) CPC - H04W 16/14; H04W 88/06; H04W 72/04; G06Q 20/20; G06Q 20/32; G06Q 20/382; G06Q 20/425 USPC - 455/552.1; 370/329; 370/338; 455/41.1; 455/426.1; 455/450
<b>Search Terms Used</b>	Bluetooth low energy, Basic Rate, Enhanced Data Rate, ACK, acknowledge, packet, channel, quality, mode, aggregate, modulation rate
<b>Date Conducted</b>	16 March 2018 (16.03.2018)

<b>Electronic Database Searched</b>	PatBase
<b>Files Searched</b>	Full-text: AU BE BR CA CH CN DE DK EP ES FI FR GB IN JP KR SE TH TW US WO Bibliographic: (Europe) AT BA BE BG CH CS CY CZ DD DK EE ES FI GE GR HR HU IE IS IT LT LU LV MC MD MT NL NO PL PT RO RS SE SI SK SM TR UA YU (Asia) EA GC HK ID IL IN KZ MN MY PH RU SG SU TH TJ TW UZ VN (North America) CA CR CU DO GT HN MX NI PA SV TT (South America) AR BR CL CO EC PE UY (Australasia) AU NZ (Africa) AP DZ EG KE MA MW OA ZA ZM ZW
<b>Date Conducted</b>	16 March 2018 (16.03.2018)

**Search Logic:**

Search 1: PN=(US20170272851 OR US8780961 OR WO2016039598) (Results 3)  
Search 2: Bluetooth AND master% AND slave% AND protocol% AND transceiver% AND transmi\* AND receiv\* (Results 4387)  
Search 3: 2 AND (Basic Rate) AND (Enhanced Data Rate) (Results 124)  
Search 4: 2 AND (Bluetooth Low Energy) (Results 460)  
Search 5: 4 AND acknowledg\* AND packet\* (Results 162)

Search 6: 3 AND 5 (Results 55)  
 Search 7: 2 AND ((mixed mode) OR (mixed modes)) (Results 29)  
 Search 8: 7 AND 6 (Results 0)  
 Search 9: 6 AND (mode OR modes) (Results 50)  
 Search 10: 9 AND channel% AND quality (Results 10)  
 Search 11: PN=EP2780531 (Results 1)  
 Search 11: 7 AND (time% W6 (enabl\* OR turn\* OR activat\* OR power\*)) (Results 17)  
 Search 12: 9 AND (time% W6 (enabl\* OR turn\* OR activat\* OR power\*)) (Results 14)  
 Search 13: PN=US20150327001 (Results 1)  
 Search 14: 9 AND aggregat\* (Results 15)  
 Search 15: 2 AND ((acknowledg\* OR ACK%) W6 aggregat\*) (Results 6)  
 Search 16: 4 AND (modulat\* W3 rate%) (Results 11)  
 Search 17: 2 AND (modulation rate%) (Results 37)  
 Search 18: 4 AND 17 (Results 2)  
 Search 19: 17 AND ((modulation rate%) W6 (high\* OR great\* OR low\* OR less\* OR exceed\*)) (Results 5)  
 Search 20: 17 AND 4 (Results 2)  
 Search 21: PN=US20170134227 (Results 1)  
 Search 22: 9 AND request\* (Results 49)  
 Search 23: 22 AND (threshold\* W8 quality) (Results 2)  
 Search 24: IC=(H04M1/00 OR H04W72/00) (Results 89277)  
 Search 25: CPC=(H04W16/14 OR H04W88/06 OR H04W72/04) (Results 23512)  
 Search 26: CPC=(G06Q20/20 OR G06Q20/32 OR G06Q20/382 OR G06Q20/425) (Results 13280)  
 Search 27: UC=(455/552.1 OR 370/329 OR 370/338 OR 455/41.1 OR 455/426.1 OR 455/450) (Results 46795)  
 Search 28: 24 OR 25 OR 26 OR 27 (Results 153819)  
 Search 29: 28 AND (Basic Rate) AND (Enhanced Data Rate) AND (Bluetooth Low Energy) (Results 29)  
 Search 30: 28 AND Bluetooth AND master% AND slave% (Results 1889)  
 Search 31: 30 AND (mode OR modes) (Results 1557)  
 Search 32: 31 AND transmi\* AND receiv\* (Results 1526)  
 Search 33: 32 AND BLE (Results 100)  
 Search 34: 33 AND acknowledg\* AND packet\* (Results 34)

<b>Electronic Database Searched</b>	Google
<b>Files Searched</b>	Scholar (Articles excluding patents)
<b>Date Conducted</b>	16 March 2018 (16.03.2018)
<b>Search Logic:</b>	
Bluetooth BLE master slave - About 3,800 results (0.05 sec)	
Bluetooth BLE transceiver master slave mixed mode communication - About 852 results (0.17 sec)	
Bluetooth BLE transceiver master slave mixed mode communication acknowledgement ACK - About 361 results (0.06 sec)	

Bluetooth BLE transceiver master slave mixed mode communication BR/EDR protocol - 11 results (0.05 sec)

<b>Electronic Database Searched</b>	Google
<b>Files Searched</b>	Patents (US Patents/Published Applications, EPO publications, International, China, Germany, Canada)
<b>Date Conducted</b>	16 March 2018 (16.03.2018)
<b>Search Logic:</b>	
Bluetooth BLE master slave - About 1,640 results (0.33 seconds)	
Bluetooth BLE transceiver master slave mixed mode communication - About 1,030 results (0.38 seconds)	
Bluetooth BLE transceiver master slave mixed mode communication acknowledgement ACK - About 512 results (0.38 seconds)	
Bluetooth BLE transceiver master slave mixed mode communication BR/EDR protocol - About 20 results (0.40 seconds)	

<b>Electronic Database Searched</b>	PatBase (RII: Supplemental Search)
<b>Files Searched</b>	Full-text: AU BE BR CA CH CN DE DK EP ES FI FR GB IN JP KR SE TH TW US WO Bibliographic: (Europe) AT BA BE BG CH CS CY CZ DD DK EE ES FI GE GR HR HU IE IS IT LT LU LV MC MD MT NL NO PL PT RO RS SE SI SK SM TR UA YU (Asia) EA GC HK ID IL IN KZ MN MY PH RU SG SU TH TJ TW UZ VN (North America) CA CR CU DO GT HN MX NI PA SV TT (South America) AR BR CL CO EC PE UY (Australasia) AU NZ (Africa) AP DZ EG KE MA MW OA ZA ZM ZW
<b>Date Conducted</b>	16 March 2018 (16.03.2018)
<b>Search Logic:</b>	

Search 1: IC=(H04M1/00 OR H04W72/00) (Results 89277)

Search 2: CPC=(H04W16/14 OR H04W88/06 OR H04W72/04 or G06Q20/20 OR G06Q20/32 OR G06Q20/382 OR G06Q20/425) (Results 36678)

Search 3: UC=(455/552.1 OR 370/329 OR 370/338 OR 455/41.1 OR 455/426.1 OR 455/450) (Results 46795)

- Search 4: (1 or 2 or 3) (Results 153819)
- Search 5: 4 and (bluetooth\* or blue-tooth\*) (Results 24408)
- Search 6: 5 and rate% (Results 11967)
- Search 7: 6 and ((bluetooth\* or blue-tooth\*) w3 rate%) (Results 216)
- Search 8: 7 and (basic\* w3 rate%) (Results 39)
- Search 9: 8 and (basic w3 rate\*) (Results 38)
- Search 10: 8 and (enhanc\* w3 rate\*) (Results 33)
- Search 11: (bluetooth\* or blue-tooth\*) (Results 311648)
- Search 12: 11 and rate% (Results 115801)
- Search 13: 12 and ((bluetooth\* or blue-tooth\*) w3 rate%) (Results 988)
- Search 14: 13 and (basic\* w3 rate%) (Results 263)
- Search 15: 14 and (enhanc\* w3 rate\*) (Results 239)
- Search 16: 15 and acknowledgement (Results 52)