Fig. 1A

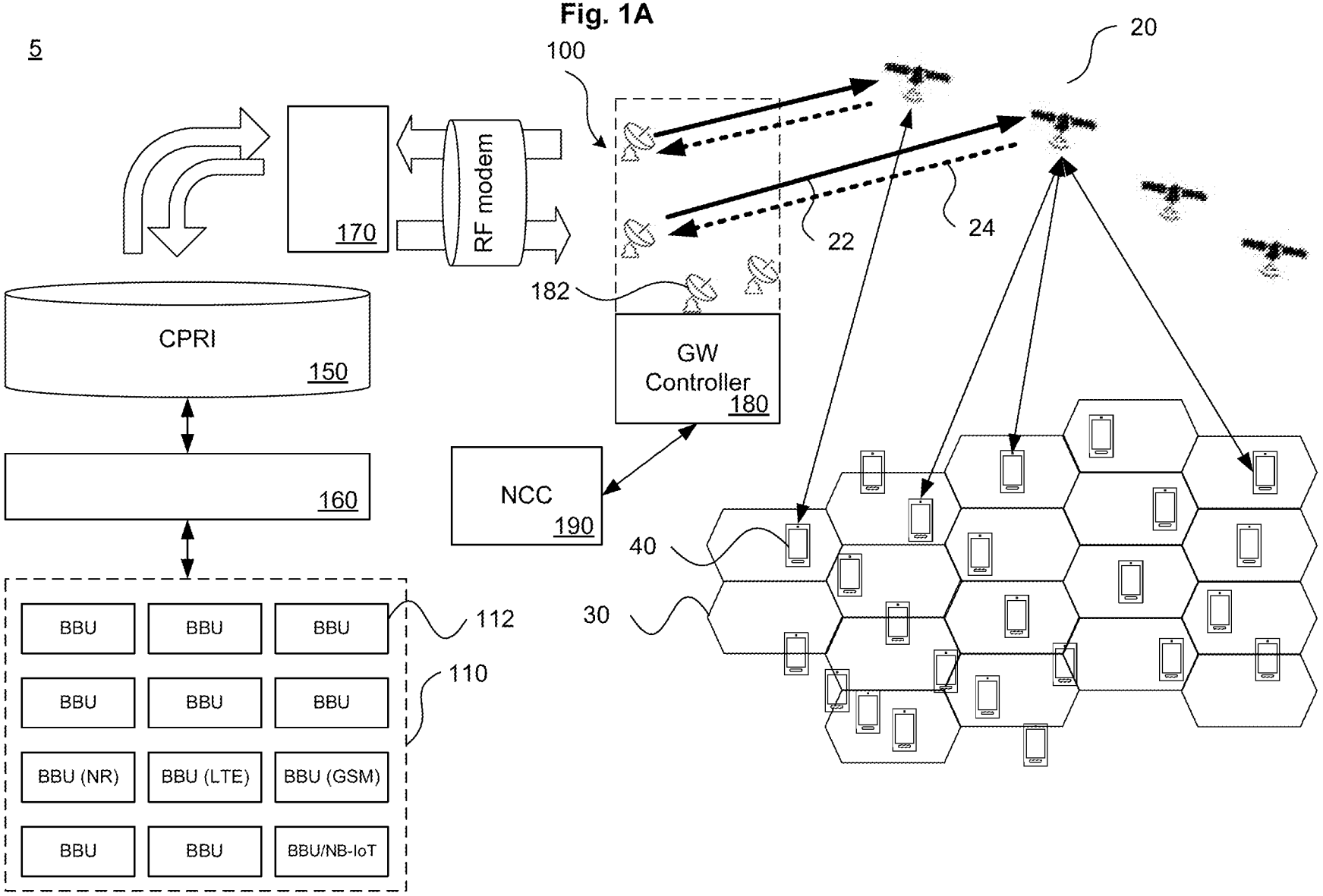

5
100
20
170
RF modem
22
24
182
CPRI
150
GW
Controller
180
160
NCC
190
40
30
112
110
BBU
BBU
BBU
BBU
BBU
BBU
BBU (NR)
BBU (LTE)
BBU (GSM)
BBU
BBU
BBU/NB-IoT

Fig. 1B

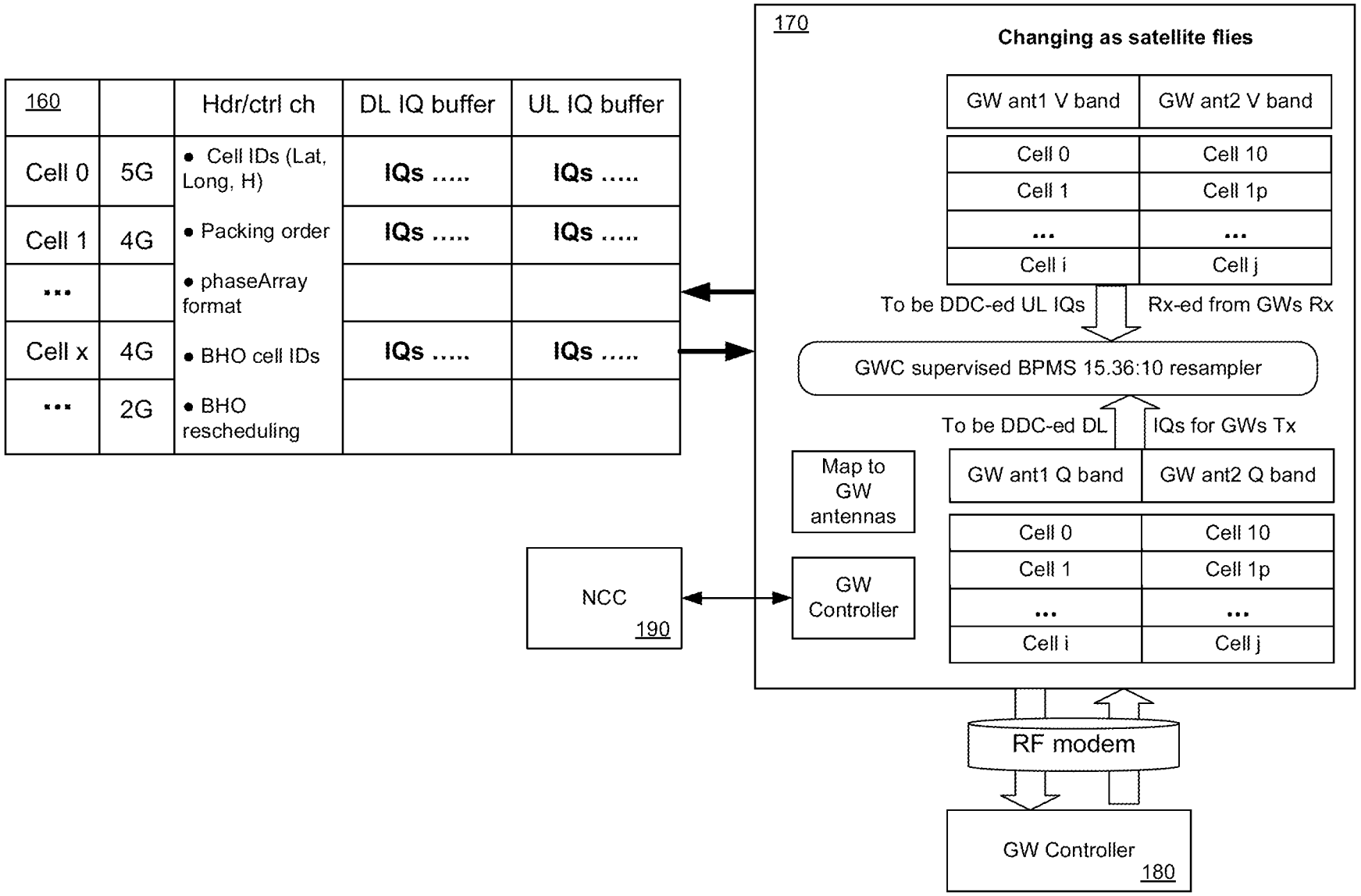

160
Hdr/ctrl ch
DL IQ buffer
UL IQ buffer
Cell 0
5G
• Cell IDs (Lat, Long, H)
IQs .....
IQs .....
Cell 1
4G
• Packing order
IQs .....
IQs .....
...
• phaseArray format
Cell x
4G
• BHO cell IDs
IQs .....
IQs .....
...
2G
• BHO rescheduling
170
Changing as satellite flies
GW ant1 V band
GW ant2 V band
Cell 0
Cell 10
Cell 1
Cell 1p
...
...
Cell i
Cell j
To be DDC-ed UL IQs
Rx-ed from GWs Rx
GWC supervised BPMS 15.36:10 resampler
To be DDC-ed DL
IQs for GWs Tx
Map to GW antennas
GW ant1 Q band
GW ant2 Q band
Cell 0
Cell 10
Cell 1
Cell 1p
...
...
Cell i
Cell j
NCC
190
GW Controller
RF modem
GW Controller
180

Fig. 2

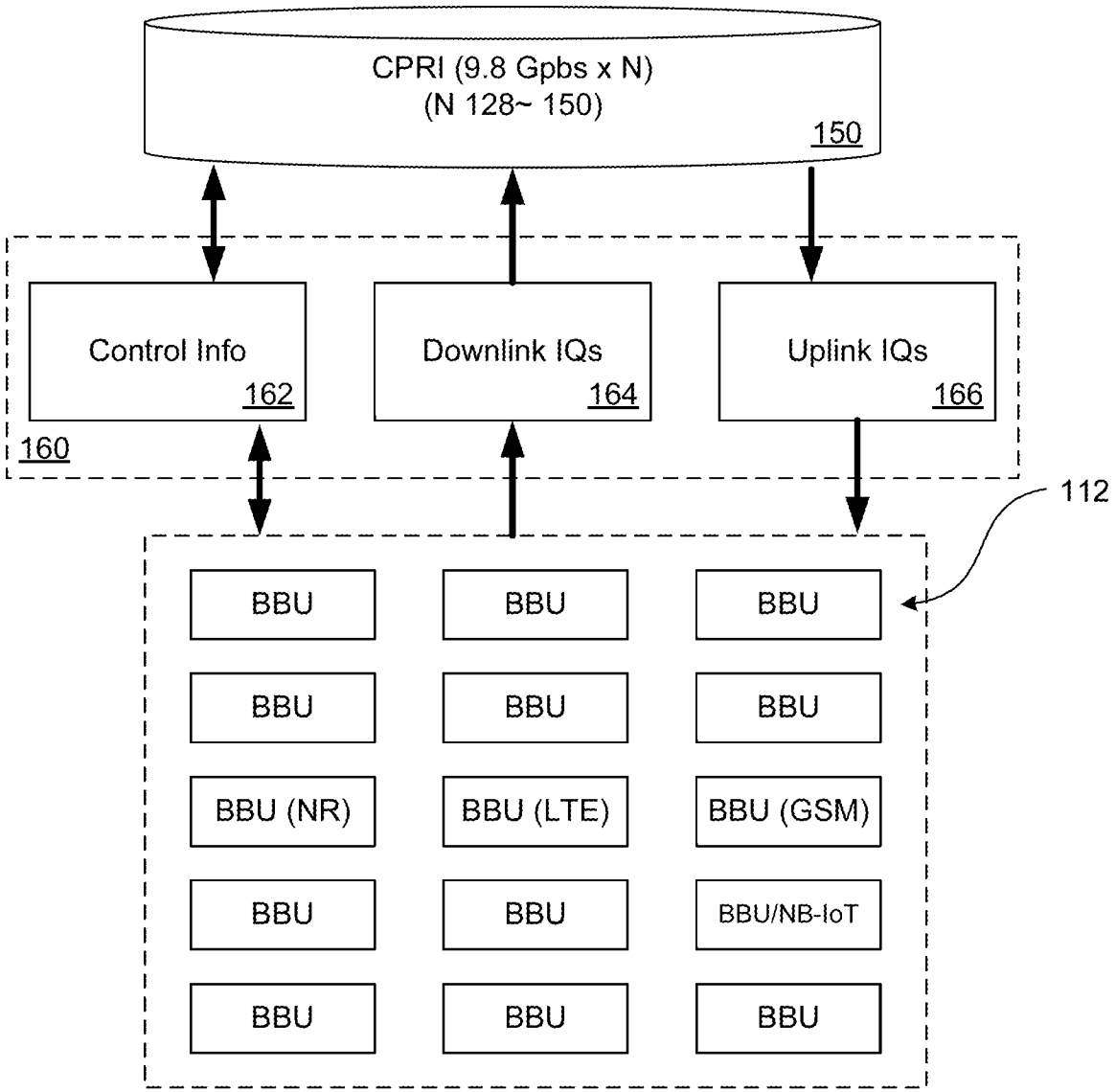

CPRI (9.8 Gpbs x N)
(N 128~ 150)
150
Control Info
162
Downlink IQs
164
Uplink IQs
166
160
112
BBU
BBU
BBU
BBU
BBU
BBU
BBU (NR)
BBU (LTE)
BBU (GSM)
BBU
BBU
BBU/NB-IoT
BBU
BBU
BBU

Fig. 3

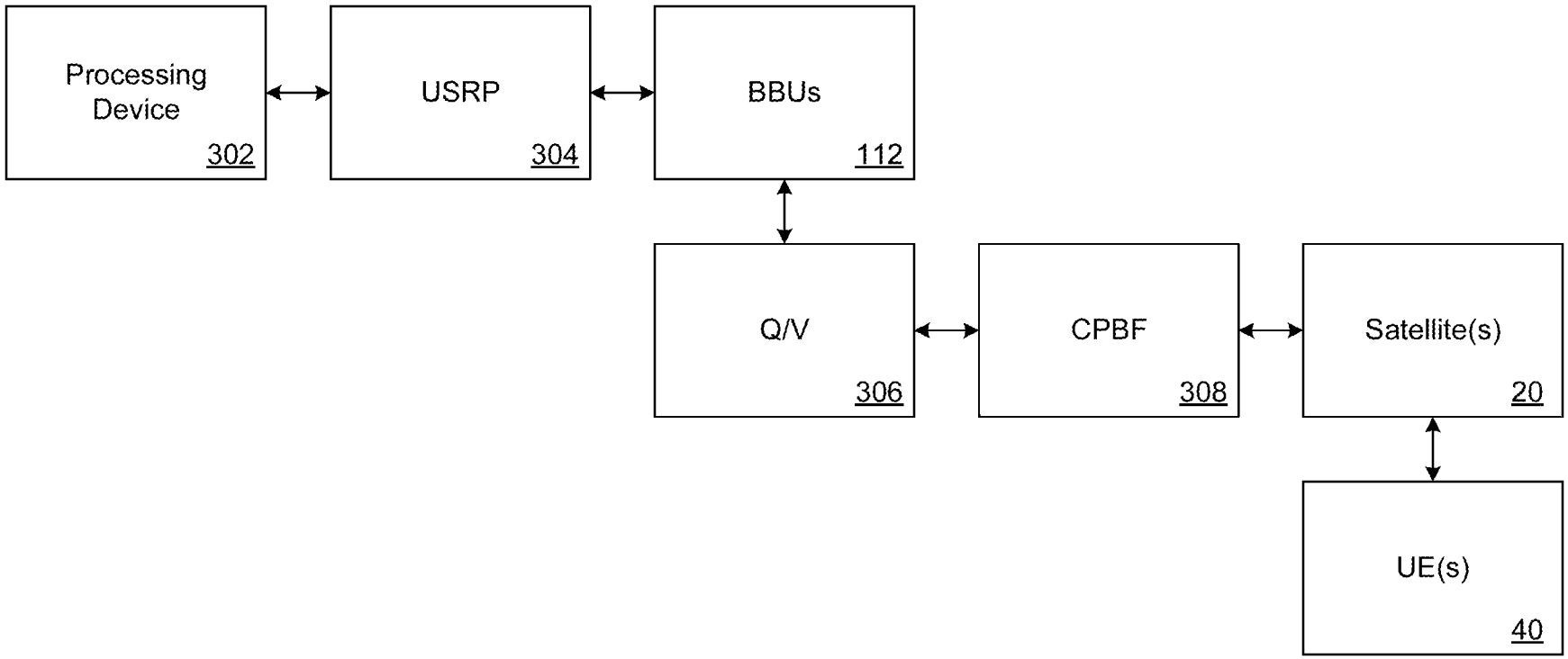
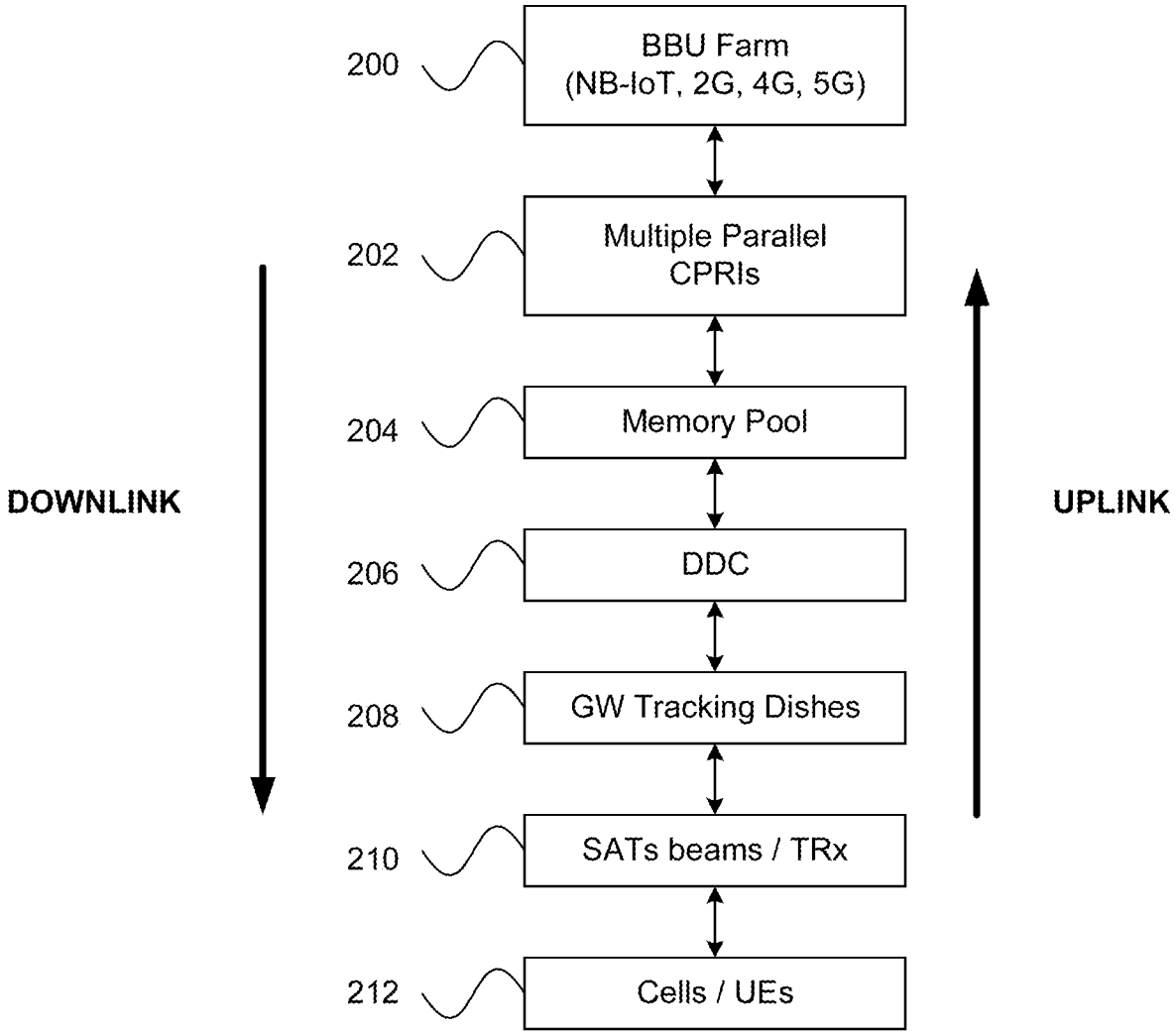

Processing Device
302
USRP
304
BBUs
112
Q/V
306
CPBF
308
Satellite(s)
20
UE(s)
40

Fig. 4


200
BBU Farm
(NB-IoT, 2G, 4G, 5G)
202
Multiple Parallel
CPRIs
204
Memory Pool
206
DDC
208
GW Tracking Dishes
210
SATs beams / TRx
212
Cells / UEs
DOWNLINK
UPLINK