Antenna 1+1, Go for 5G

Commercial deployment of 5G networks has begun in 2018 and will be the most important topic for global operators in the next few years. However, 5G network deployment will face many new challenges due to the 5G network characteristics.

The introduction of new spectrums requires deployment of more antennas. 5G NR has two spectrum ranges. FR1 corresponds to 450–6000MHz and FR2 corresponds to 24250–52600MHz. 5G has much wider spectrum ranges than 4G. New antennas must be deployed for 5G base stations to support new frequency bands.

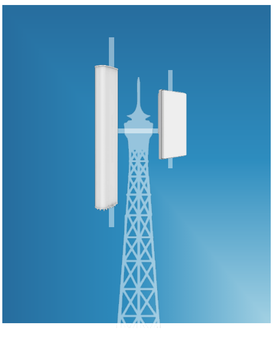
5G networks require large capacity. High-order MIMO will be widely used. 4T4R and 8T8R will be widely deployed to serve the basic coverage of 5G. C-band Massive MIMO and mmWave Massive MIMO will also be deployed on a large scale to meet high capacity requirements.

5G networks require simpler sites. As mobile networks develop from 2G to 4G, sites become more and more complicated. A large number of sites have no extra space for new 5G antennas. In addition, 5G uses higher frequency spectrum and requires higher network density, which greatly increases the network construction cost of operators. Therefore, how to simplify sites to save the costs of 5G network construction and operation has become an urgent issue to be solved for operators.

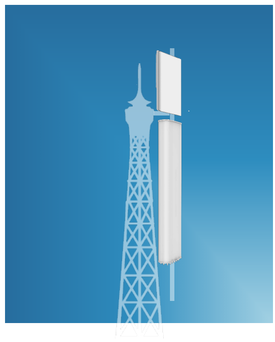
Image from the internet

As a leading global ICT infrastructure provider, Huawei is committed to addressing the challenges of network deployment and development. To meet the challenges of 5G network deployment, Huawei first proposed the antenna 1+1 modernization strategy in 2017. The key idea is to use one passive antenna to incorporate 2G, 3G, and 4G frequency bands and use one antenna to deploy 5G, such as C-band Massive MIMO. This solution simplifies site configuration and reduces 5G deployment costs, which helps to achieve fast 5G deployment.

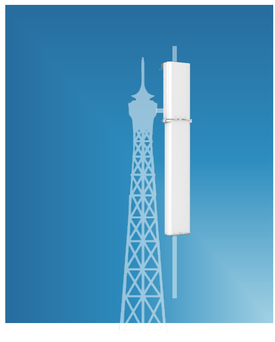
Huawei showcased three forms of antenna 1+1 in the 5G era for the first time in 2018 Global Antenna Technology & Industry Forum.



1+1 Side by Side
Two poles are used to deploy passive antennas and 5G Massive MIMO, which are applicable to scenarios where site space is sufficient.



1+1 Stacked
Passive antennas and 5G Massive MIMO are deployed on a single pole in stacking mode.



1+1 Mechanical Integrated
Passive antennas and Massive MIMO are presented as one antenna, which simplifies site license acquisition and reduces boxes on tower.

The three forms are acceptable to different site conditions for better ”1+1”, which accelerate 5G deployment.