

Test report

**5G Network Trial at 3.5GHz band
in Fo Tan office of BOCHK**

Temporary Permit No. T00701

China Mobile Hong Kong Co. Ltd. (CMHK)

May-2020

Version 1.0

1. Introduction

5G development will support more Smart Finance innovative applications and improve office efficiency in future. In cooperation with Bank of China Hong Kong (BOCHK), CMHK has set up a trial 5G indoor site at their Fo Tan office for their trial.

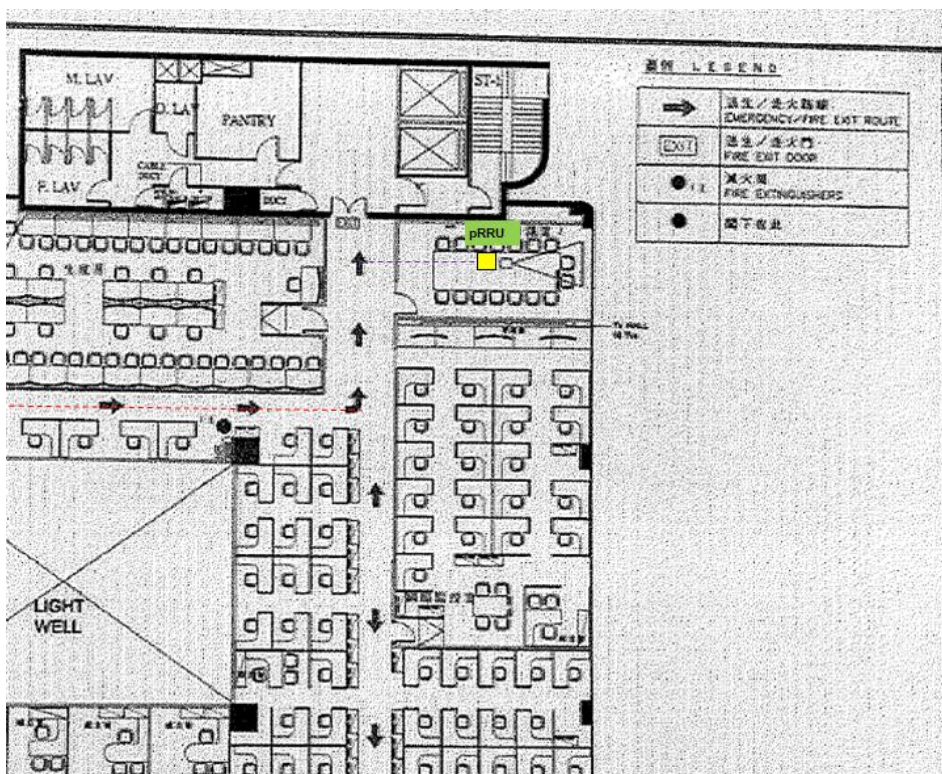
This test report will describe the setup and trial result of 5G 3.5GHz small cells (Huawei Lampsites) in Fo Tan office of BOCHK. The trial period approved in temp permit T00701 is from 6-Nov-2019 to 31-Mar-2020.

2. Trial Location

- Location: Fo Tan office of BOCHK
- Testing Area : Rm701, Fo Tan BOC, 22-24 Kwei Tei Street
- 5G site location: Indoor

The trial is based on 5G NSA network configuration. One 5G 3.5GHz lampsite pRRU is installed in a meeting room, and anchored to existing 4G network.

Rm701, Fo Tan BOCHK area:



3. Trial Setup

3.1 Test Equipment

| Item | Device | Count |
|------|------------------|-------|
| 1 | 5G pRRU5935 | 1 |
| 2 | 5G Huawei Mobile | 1 |

Huawei 5G pRRU5935 specification:

| Frequency Band (MHz) | RX Frequency Band (MHz) | TX Frequency Band (MHz) | IBW (MHz) |
|----------------------|-------------------------|-------------------------|-----------|
| 3500 | 3400 - 3600 | 3400 - 3600 | 100 |

| Mode | Capacity | Tx/Rx Channel |
|------|-----------|---------------|
| NR | 1 carrier | 4T4R |

| Frequency Band (MHz) | Maximum Output Power (mW) |
|----------------------|---------------------------|
| 3500 | 4x250 mW |

| Frequency Band (MHz) | Gain (dBi) | Polarization Mode | Directionality |
|----------------------|------------|-------------------|-----------------|
| 3500 | 4 | Linear | Omnidirectional |

3.2 5G Test Equipment Setting

The spectrum approved for trial in permit T00701 is 3.40GHz to 3.46GHz, which is the spectrum acquired by CMHK through the OFCA C-band auction.

Below is the 5G cell configuration:

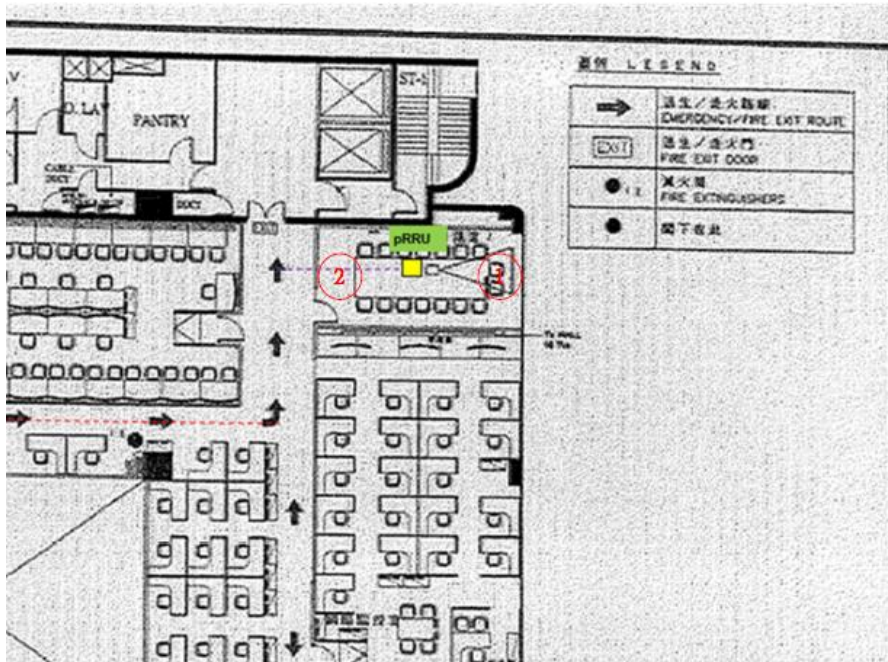
| Site | Pcell PCI | Type |
|------|-----------|------|
| 6477 | 0 | NR |

| Cell Configuration | |
|---------------------------|--------|
| Frequency Band | n78 |
| Downlink NARFCN | 628666 |
| Downlink Bandwidth | 60MHz |
| Subcarrier Spacing(KHz) | 30 |
| Slot Assignment | 7:3 |
| Max Transmit Power (EIRP) | 34 dBm |
| EN-DC | Off |

4. Measurement Result

2 test positions (highlighted in red) at Rm701, Fo Tan BOCHK were measured for coverage and throughput.

Rm701, Fo Tan BOCHK test positions:





Test mobile (Huawei Mate20x) was used to test the throughput by OFCA speed test APP.

Rm701, Fo Tan BOCHK:

| Test position | RSRP (dBm) | SINR (dB) | Download (Mbps) | Upload (Mbps) | Network Latency (ms) |
|---------------|------------|-----------|-----------------|---------------|----------------------|
| 1 | -70 | 26 | 538 | 106 | 9 |
| 2 | -73 | 20 | 521 | 103 | 9 |

Overall test summary:

| Location | Avg RSRP (dBm) | Avg SINR (dB) | Avg Download (Mbps) | Avg Upload (Mbps) | Avg Latency (ms) |
|-------------------|----------------|---------------|---------------------|-------------------|------------------|
| Rm701, Fo Tan BOC | -71.5 | 23 | 529 | 104.5 | 9 |

5. Conclusion

The 5G indoor site (lampsites) at 3.5GHz band is successfully deployed and tested in the Fo Tan office of BOCHK. The measurement results verify that the coverage and data throughput of 5G NR are satisfactory with 60MHz bandwidth in the indoor environment.