

# 4G Measurement Survey Results for Q1 2018

## 4G Mobile Service Coverage in Q1 2018

### In-Building Service Coverage

The indicator measures in-building service coverage for the 4G cellular mobile network. In-building service coverage measures the percentage of data points collected in a building from a 4G cellular mobile network that achieves a minimum signal strength of at least -109dBm. Service coverage is measured at randomly selected buildings and at publicly accessible areas within the tested buildings as a proxy for the coverage in the entire building to avoid disturbing residents. In order to better reflect end users' experience, IMDA uses mobile phones to collect the signal strength data points.

M1	Singtel Mobile	StarHub Mobile
<b>IMDA's Performance Survey Period - Q1 2018</b>		
No. of Buildings with 4G Service Coverage of >85% at a Signal Strength of -109dBm or better/ No. of Buildings Tested		
59/60	59/60	56/60

Note: The same sixty buildings were tested across the three mobile operators. The performance of each of the mobile operator varies for each of the building tested. End users' individual experience may differ due to different models of handset used, handset settings, number of users in the vicinity, etc.

### Tunnel Service Coverage

This indicator measures the service coverage for the 4G cellular mobile network within road and MRT tunnels. Tunnel service coverage measures the percentage of data points collected in a tunnel from a 4G cellular mobile network that achieves a minimum signal strength of at least -109dBm. The tunnel areas surveyed by IMDA include all road and MRT tunnels in Singapore. In order to better reflect end users' experience, IMDA uses mobile phones to collect the signal strength data points.

IMDA's Performance Survey Period - Q1 2018	M1	Singtel Mobile	StarHub Mobile
<b>Road Tunnels</b>			
Central Expressway	100%	99.89%	100%
Fort Canning	100%	98.39%	100%
Kallang-Paya Lebar Expressway	100%	99.97%	100%
Marina Coastal Expressway	100%	99.83%	99.76%
Woodsville	100%	100%	100%

<b>MRT Tunnels</b>			
Changi Airport Line	95.31%	96.68%	91.78%
Circle Line	99.96%	99.98%	99.89%
Downtown Line	99.89%	99.95%	99.73%
East-West Line	99.91%	99.72%	99.96%
North East Line	99.14%	99.78%	97.22%
North-South Line	99.84%	99.75%	99.91%

**Note 1:** For road and/or MRT tunnels without a published result, it means that the respective mobile operator has not completed its 4G service deployment at the particular road and/or MRT tunnel.

**Note 2:** End users' individual experience may differ due to different models of handset used, handset settings, number of users in the vicinity, etc. The tunnel service coverage results are based on IMDA's coverage performance surveys.