TABLE 1

Link budget template for Indoor Hotspot-eMBB

Item	Downlink	Uplink
System configuration		
Carrier frequency (GHz)	2	2
BS antenna heights (m)	3	3
UE antenna heights (m)	1.5	1.5
Cell area reliability[(1)] (%) (Please specify how it is calculated.)		
Transmission bit rate for control channel (bit/s)	*1248000*	*1248000*
Transmission bit rate for data channel (bit/s)	*1248000*	*1248000*
Target packet error ratio for the required SNR in item (19a) for control channel	*0.01*	*0.01*
Target packet error ratio for the required SNR in item (19b) for data channel	*0.01*	*0.01*
Spectral efficiency[(2)] (bit/s/Hz)	*1.4*	*1.4*
Pathloss model[(3)] (select from LOS or NLOS)	*NLOS*	*NLOS*
UE speed (km/h)	*0*	*0*
Feeder loss (dB)	*0*	*0*
Transmitter		
(1) Number of transmit antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*1*	*1*
(2) Maximal transmit power per antenna (dBm)	*24*	*24*
(3) Total transmit power = function of (1) and (2) (dBm) (The value shall not exceed the indicated value in § 8.4 of Report ITU-R M.2412-0)	*24*	*24*

TABLE 1 (*continued*)

Item	Downlink	Uplink
(4) Transmitter antenna gain (dBi)	*8*	*0*
(5) Transmitter array gain (depends on transmitter array configurations and technologies such as adaptive beam forming, CDD (cyclic delay diversity), etc.) (dB)	*0*	*0*
(6) Control channel power boosting gain (dB)	*0*	*0*
(7) Data channel power loss due to pilot/control boosting (dB)	*0*	*0*
(8) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (feeder loss must be included for and only for downlink)	*1*	*2*
(9a) Control channel e.i.r.p. = (3) + (4) + (5) + (6) – (8) dBm	*31*	*22*
(9b) Data channel e.i.r.p. = (3) + (4) + (5) – (7) – (8) dBm	*31*	*22*
Receiver		
(10) Number of receive antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*2*	*2*
(11) Receiver antenna gain (dBi)	*0*	*8*
(12) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (feeder loss must be included for and only for uplink)	*2*	*1*
(13) Receiver noise figure (dB)	7	5
(14) Thermal noise density (dBm/Hz)	−174	−174
(15) Receiver interference density (dBm/Hz)	*-166*	*-166*
(16) Total noise plus interference density = 10 log (10^(((13) + (14))/10) + 10^((15)/10)) dBm/Hz	*-163*	*-164*
(17) Occupied channel bandwidth (for meeting the requirements of the traffic type) (Hz)	*1.5×10^6*	*1.5×10^6*
(18) Effective noise power = (16) + 10 log((17)) dBm	*-102*	*-102*
(19a) Required SNR for the control channel (dB)	*1.7*	*1.7*
(19b) Required SNR for the data channel (dB)	*1.7*	*1.7*
(20) Receiver implementation margin (dB)	*4*	*2*
(21a) H-ARQ gain for control channel (dB)	*0*	*0*
(21b) H-ARQ gain for data channel (dB)	*0*	*0*
(22a) Receiver sensitivity for control channel = (18) + (19a) + (20) – (21a) dBm	*-96*	*-99*
(22b) Receiver sensitivity for data channel = (18) + (19b) + (20) – (21b) dBm	*-96*	*-99*
(23a) Hardware link budget for control channel = (9a) + (11) − (22a) dB	*127*	*129*

TABLE 1 (*end*)

Item	Downlink	Uplink
(23b) Hardware link budget for data channel = (9b) + (11) − (22b) dB	*127*	*129*
Calculation of available pathloss		
(24) Lognormal shadow fading std deviation (dB)	*4*	*4*
(25) Shadow fading margin (function of the cell area reliability and (24)) (dB)	*8*	*8*
(26) BS selection/macro-diversity gain (dB)	*0*	*0*
(27) Penetration margin (dB)	*0*	*0*
(28) Other gains (dB) (if any please specify)	*0*	*0*
(29a) Available path loss for control channel = (23a) – (25) + (26) – (27) + (28) – (12) dB	*117*	*120*
(29b) Available path loss for data channel = (23b) – (25) + (26) – (27) + (28) – (12) dB	*117*	*120*
Range/coverage efficiency calculation		
(30a) Maximum range for control channel (based on (29a) and according to the system configuration section of the link budget) (m)	*198*	*229*
(30b) Maximum range for data channel (based on (29b) and according to the system configuration section of the link budget) (m)	*198*	*229*
(31a) Coverage Area for control channel = (π (30a)^2) (m^2/site)	*122761*	*164900*
(31b) Coverage Area for data channel = (π (30b)^2) (m^2/site)	*122761*	*164900*

(1) Cell area reliability is defined as the percentage of the cell area over which coverage can be guaranteed. It is obtained from the cell edge reliability, shadow fading standard deviation and the path loss exponent. The latter two values are used to calculate a fade margin. Macro diversity gain may be considered explicitly and improve the system margin or implicitly by reducing the fade margin.

(2) The spectral efficiency of the chosen modulation scheme.

(3) The pathloss models are summarized in § 9.1 of Report ITU-R M.2412-0.

5.2.3.3.2 Urban Macro-mMTC environment for DECT-2020 NR

For the purpose of TABLE 4 calculations, the system configuration is according to parameters shown in the table below.

Table 11: System configuration parameters for Urban Macro-mMTC

Parameter	***Value***	***Description***
Modulation	*QPSK*	*OFDM subcarrier modulation*
R	*3/4*	*Rate of binary convolutional code*
W	*1.728*	*Transmission bandwidth (MHz)*
N_{SS}	*1*	*Number of spatial streams*
N_{PL}	*32*	*Payload size (bytes)*
ACR	*6*	*Adjacent channel rejection (dB)*

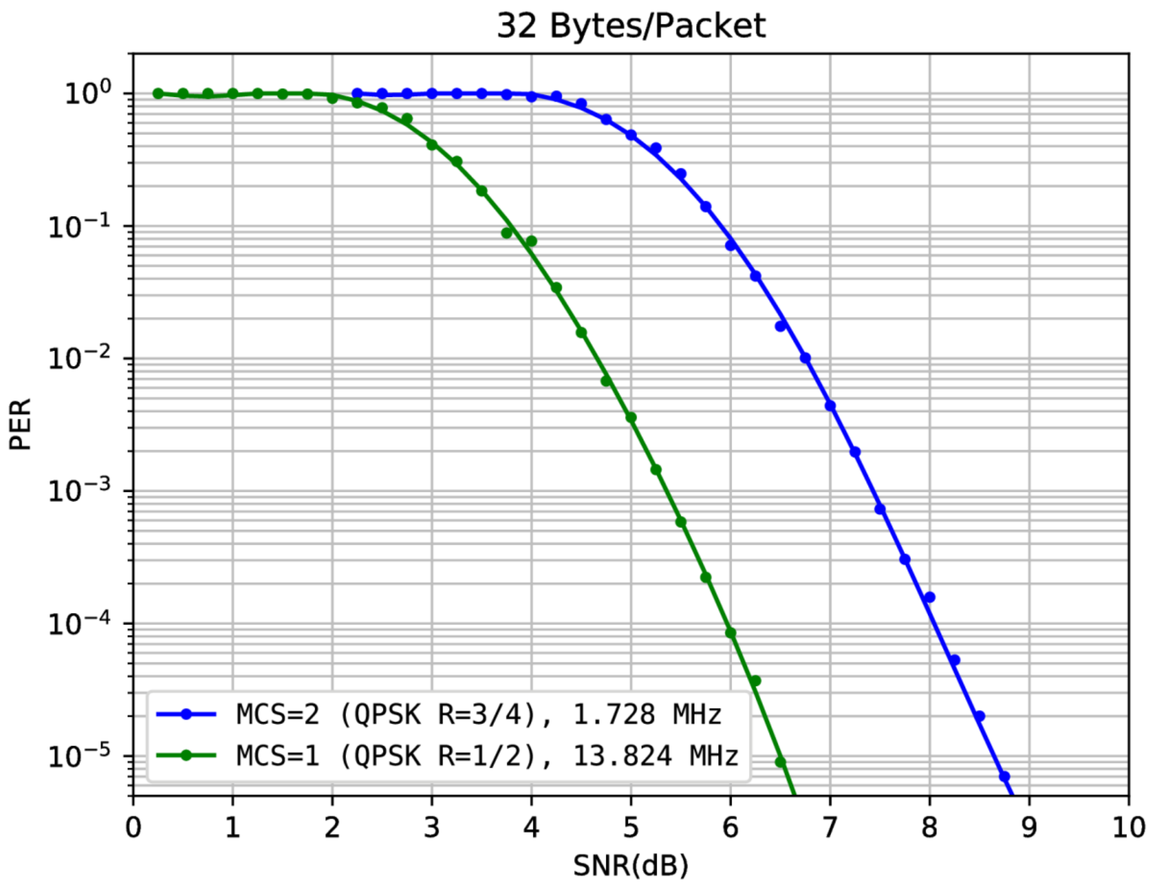

Figure 9: Receiver performance for mMTC 1x1 configurations

TABLE 4

Link budget template for Urban Macro–mMTC (NLOS)

Item	Downlink	Uplink
System configuration		
Carrier frequency (GHz)	0.7	0.7
BS antenna heights (m)	25	25
UE antenna heights (m)	1.5	1.5
Cell area reliability(1) (%) (Please specify how it is calculated.)	*100%*	*100%*
Transmission bit rate for control channel (bit/s)	*1872000*	*1872000*
Transmission bit rate for data channel (bit/s)	*1872000*	*1872000*
Target packet error ratio for the required SNR in item (19a) for control channel	10^{-5}	10^{-5}
Target packet error ratio for the required SNR in item (19b) for data channel	10^{-5}	10^{-5}
Spectral efficiency(2) (bit/s/Hz)	*1.4*	*1.4*
Pathloss model(3) (Select from LOS, NLOS or O-to-I)	*NLOS*	*NLOS*
UE speed (km/h)	*0*	*0*
Feeder loss (dB)	*0*	*0*
Transmitter		
(1) Number of transmit antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*1*	*1*
(2) Maximal transmit power per antenna (dBm)	*38*	*23*
(3) Total transmit power = function of (1) and (2) (dBm) (The value shall not exceed the indicated value in § 8.4 of Report ITU-R M.2412-0)	*38*	*23*
(4) Transmitter antenna gain (dBi)	*8*	*0*
(5) Transmitter array gain (depends on transmitter array configurations and technologies such as adaptive beam forming, CDD (Cyclic delay diversity), etc.) (dB)	*0*	*0*
(6) Control channel power boosting gain (dB)	*0*	*0*
(7) Data channel power loss due to pilot/control boosting (dB)	*0*	*0*
(8) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (feeder loss must be included for and only for downlink)	*1*	*2*
(9a) Control channel e.i.r.p. = (3) + (4) + (5) + (6) – (8) dBm	*45*	*21*
(9b) Data channel e.i.r.p. = (3) + (4) + (5) – (7) – (8) dBm	*45*	*21*
Receiver		
(10) Number of receive antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*2*	*2*
(11) Receiver antenna gain (dBi)	*0*	*8*
(12) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (feeder loss must be included for and only for uplink)	*2*	*1*

TABLE 4 (*continued*)

Item	Downlink	Uplink
(13) Receiver noise figure (dB)	7	5
(14) Thermal noise density (dBm/Hz)	−174	−174
(15) Receiver interference density (dBm/Hz)	*-170*	*-170*
(16) Total noise plus interference density = 10 log (10^(((13)+(14))/10) + 10^((15)/10)) dBm/Hz	*-165*	*-166*
(17) Occupied channel bandwidth (for meeting the requirements of the traffic type) (Hz)	*1.5×10^6*	*1.5×10^6*
(18) Effective noise power = (16) + 10 log((17)) dBm	*-103*	*-105*
(19a) Required SNR for the control channel (dB)	*5.4*	*5.4*
(19b) Required SNR for the data channel (dB)	*5.4*	*5.4*
(20) Receiver implementation margin (dB)	*4*	*2*
(21a) H-ARQ gain for control channel (dB)	*0*	*0*
(21b) H-ARQ gain for data channel (dB)	*0*	*0*
(22a) Receiver sensitivity for control channel = (18) + (19a) + (20) – (21a) dBm	*-94*	*-97*
(22b) Receiver sensitivity for data channel = (18) + (19b) + (20) – (21b) dBm	*-94*	*-97*
(23a) Hardware link budget for control channel = (9a) + (11) - (22a) dB	*139*	*126*
(23b) Hardware link budget for data channel = (9b) + (11) - (22b) dB	*139*	*126*
Calculation of available pathloss		
(24) Lognormal shadow fading std deviation (dB)	*6*	*6*
(25) Shadow fading margin (function of the cell area reliability and (24)) (dB)	*22.2*	*22.2*
(26) BS selection/macro-diversity gain (dB)	*0*	*0*
(27) Penetration margin (dB)	*0*	*0*
(28) Other gains (dB) (if any please specify)	*0*	*0*
(29a) Available path loss for control channel = (23a) – (25) + (26) – (27) + (28) – (12) dB	*115*	*103*
(29b) Available path loss for data channel = (23b) – (25) + (26) – (27) + (28) – (12) dB	*115*	*103*
Range/coverage efficiency calculation		
(30a) Maximum range for control channel (based on (29a) and according to the system configuration section of the link budget) (m)	*480*	*234*
(30b) Maximum range for data channel (based on (29b) and according to the system configuration section of the link budget) (m)	*480*	*234*

TABLE 4 (*end*)

Item	Downlink	Uplink
(31a) Coverage Area for control channel = (π (30a)^2) (m^2/site)	*723030*	*172723*
(31b) Coverage Area for data channel = (π (30b)^2) (m^2/site)	*723030*	*172723*

(1) Cell area reliability is defined as the percentage of the cell area over which coverage can be guaranteed. It is obtained from the cell edge reliability, shadow fading standard deviation and the path loss exponent. The latter two values are used to calculate a fade margin. Macro diversity gain may be considered explicitly and improve the system margin or implicitly by reducing the fade margin.

(2) The spectral efficiency of the chosen modulation scheme.

(3) The pathloss models are summarized in § 9.1 of Report ITU-R M.2412-0.

TABLE 4

Link budget template for Urban Macro–mMTC (LOS)

Item	Downlink	Uplink
System configuration		
Carrier frequency (GHz)	0.7	0.7
BS antenna heights (m)	25	25
UE antenna heights (m)	1.5	1.5
Cell area reliability[(1)] (%) (Please specify how it is calculated.)	*100%*	*100%*
Transmission bit rate for control channel (bit/s)	*1872000*	*1872000*
Transmission bit rate for data channel (bit/s)	*1872000*	*1872000*
Target packet error ratio for the required SNR in item (19a) for control channel	10^{-5}	10^{-5}
Target packet error ratio for the required SNR in item (19b) for data channel	10^{-5}	10^{-5}
Spectral efficiency[(2)] (bit/s/Hz)	*1.4*	*1.4*
Pathloss model[(3)] (Select from LOS, NLOS or O-to-I)	*LOS*	*LOS*
UE speed (km/h)	*0*	*0*
Feeder loss (dB)	*0*	*0*
Transmitter		
(1) Number of transmit antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*1*	*1*
(2) Maximal transmit power per antenna (dBm)	*38*	*23*
(3) Total transmit power = function of (1) and (2) (dBm) (The value shall not exceed the indicated value in § 8.4 of Report ITU-R M.2412-0)	*38*	*23*
(4) Transmitter antenna gain (dBi)	*8*	*0*
(5) Transmitter array gain (depends on transmitter array configurations and technologies such as adaptive beam forming, CDD (Cyclic delay diversity), etc.) (dB)	*0*	*0*
(6) Control channel power boosting gain (dB)	*0*	*0*
(7) Data channel power loss due to pilot/control boosting (dB)	*0*	*0*
(8) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (feeder loss must be included for and only for downlink)	*1*	*2*
(9a) Control channel e.i.r.p. = (3) + (4) + (5) + (6) – (8) dBm	*45*	*21*
(9b) Data channel e.i.r.p. = (3) + (4) + (5) – (7) – (8) dBm	*45*	*21*
Receiver		
(10) Number of receive antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*2*	*2*
(11) Receiver antenna gain (dBi)	*0*	*8*
(12) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (feeder loss must be included for and only for uplink)	*2*	*1*

TABLE 4 (*continued*)

Item	Downlink	Uplink
(13) Receiver noise figure (dB)	7	5
(14) Thermal noise density (dBm/Hz)	−174	−174
(15) Receiver interference density (dBm/Hz)	*-170*	*-170*
(16) Total noise plus interference density = 10 log (10^(((13)+(14))/10) + 10^((15)/10)) dBm/Hz	*-165*	*-166*
(17) Occupied channel bandwidth (for meeting the requirements of the traffic type) (Hz)	*1.5 x 10^6*	*1.5 x 10^6*
(18) Effective noise power = (16) + 10 log((17)) dBm	*-103*	*-105*
(19a) Required SNR for the control channel (dB)	*5.4*	*5.4*
(19b) Required SNR for the data channel (dB)	*5.4*	*5.4*
(20) Receiver implementation margin (dB)	*4*	*2*
(21a) H-ARQ gain for control channel (dB)	*0*	*0*
(21b) H-ARQ gain for data channel (dB)	*0*	*0*
(22a) Receiver sensitivity for control channel = (18) + (19a) + (20) – (21a) dBm	*-94*	*-97*
(22b) Receiver sensitivity for data channel = (18) + (19b) + (20) – (21b) dBm	*-94*	*-97*
(23a) Hardware link budget for control channel = (9a) + (11) - (22a) dB	*139*	*126*
(23b) Hardware link budget for data channel = (9b) + (11) - (22b) dB	*139*	*126*
Calculation of available pathloss		
(24) Lognormal shadow fading std deviation (dB)	*4*	*4*
(25) Shadow fading margin (function of the cell area reliability and (24)) (dB)	*13.8*	*13.8*
(26) BS selection/macro-diversity gain (dB)	*0*	*0*
(27) Penetration margin (dB)	*0*	*0*
(28) Other gains (dB) (if any please specify)	*0*	*0*
(29a) Available path loss for control channel = (23a) – (25) + (26) – (27) + (28) – (12) dB	*124*	*111*
(29b) Available path loss for data channel = (23b) – (25) + (26) – (27) + (28) – (12) dB	*124*	*111*
Range/coverage efficiency calculation		
(30a) Maximum range for control channel (based on (29a) and according to the system configuration section of the link budget) (m)	*2479*	*1232*
(30b) Maximum range for data channel (based on (29b) and according to the system configuration section of the link budget) (m)	*2479*	*1232*

TABLE 4 (*end*)

Item	Downlink	Uplink
(31a) Coverage Area for control channel = (π (30a)^2) (m^2/site)	*19299520*	*4764761*
(31b) Coverage Area for data channel = (π (30b)^2) (m^2/site)	*19299520*	*4764761*

(1) Cell area reliability is defined as the percentage of the cell area over which coverage can be guaranteed. It is obtained from the cell edge reliability, shadow fading standard deviation and the path loss exponent. The latter two values are used to calculate a fade margin. Macro diversity gain may be considered explicitly and improve the system margin or implicitly by reducing the fade margin.

(2) The spectral efficiency of the chosen modulation scheme.

(3) The pathloss models are summarized in § 9.1 of Report ITU-R M.2412-0.

5.2.3.3.3 Urban Macro-URLLC environment for DECT-2020 NR

For the purpose of TABLE 5 calculations, the system configuration is according to parameters shown in the table below.

Table 12: System configuration parameters for Urban Macro-URLLC

Parameter	***Value***	***Description***
Modulation	*QPSK*	*OFDM subcarrier modulation*
R	*3/4*	*Rate of binary convolutional code*
W	*1.728*	*Transmission bandwidth (MHz)*
N_{SS}	*1*	*Number of spatial streams*
N_{PL}	*32*	*Payload size (bytes)*
ACR	*6*	*Adjacent channel rejection (dB)*

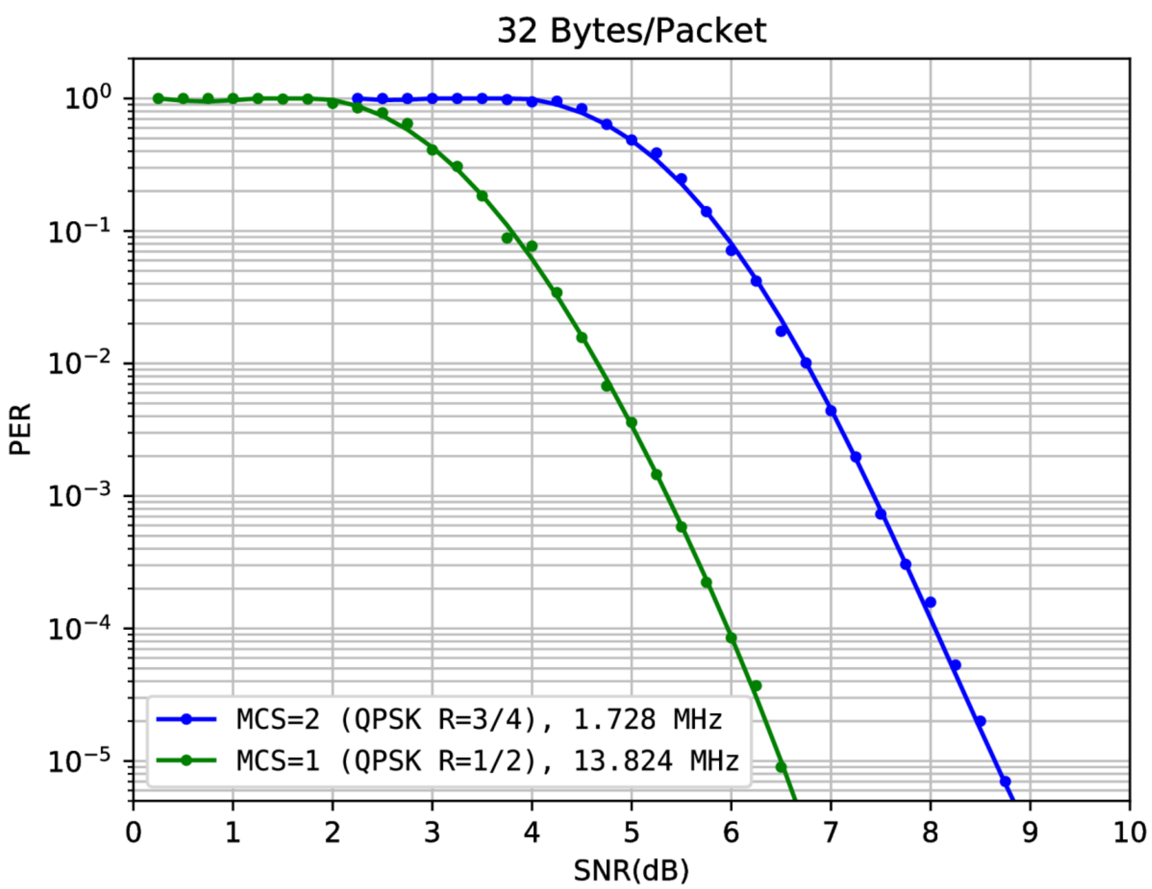

Figure 10: Receiver performance for URLLC 1x1 configurations

TABLE 5

Link budget template for Urban Macro–URLLC (NLOS)

Item	Downlink	Uplink
System configuration		
Carrier frequency (GHz)	0.7	0.7
BS antenna heights (m)	25	25
UE antenna heights (m)	1.5	1.5
Cell area reliability(1) (%) (Please specify how it is calculated.)	*95%*	*95%*
Transmission bit rate for control channel (bit/s)	*1872000*	*1872000*
Transmission bit rate for data channel (bit/s)	*1872000*	*1872000*
Target packet error ratio for the required SNR in item (19a) for control channel	10^{-5}	10^{-5}
Target packet error ratio for the required SNR in item (19b) for data channel	10^{-5}	10^{-5}
Spectral efficiency(2) (bit/s/Hz)	*1.4*	*1.4*
Pathloss model(3) (Select from LOS, NLOS or O-to-I)	*NLOS*	*NLOS*
UE speed (km/h)	*0*	*0*
Feeder loss (dB)	*0*	*0*
Transmitter		
(1) Number of transmit antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*20* *(5x4 array)*	*1*
(2) Maximal transmit power per antenna (dBm)	*36*	*23*
(3) Total transmit power = function of (1) and (2) (dBm) (The value shall not exceed the indicated value in § 8.4 of Report ITU-R M.2412-0)	*49*	*23*
(4) Transmitter antenna gain (dBi)	*8*	*0*
(5) Transmitter array gain (depends on transmitter array configurations and technologies such as adaptive beam forming, CDD (cyclic delay diversity), etc.) (dB)	*13*	*0*

TABLE 5 (*continued*)

Item	Downlink	Uplink
(6) Control channel power boosting gain (dB)	*0*	*0*
(7) Data channel power loss due to pilot/control boosting (dB)	*0*	*0*
(8) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (Feeder loss must be included for and only for downlink)	*1*	*2*
(9a) Control channel e.i.r.p. = (3) + (4) + (5) + (6) - (8) dBm	*69*	*21*
(9b) Data channel e.i.r.p. = (3) + (4) + (5) - (7) - (8) dBm	*69*	*21*
Receiver		
(10) Number of receive antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*4*	*20*
(11) Receiver antenna gain (dBi)	*0*	*8*
(11b) Receiver Diversity gain (dB)	*6*	*13*
(12) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (Feeder loss must be included for and only for uplink)	*2*	*1*
(13) Receiver noise figure (dB)	7	5
(14) Thermal noise density (dBm/Hz)	−174	−174
(15) Receiver interference density (dBm/Hz)	*-170*	*-170*
(16) Total noise plus interference density = 10 log (10^(((13) + (14))/10) + 10^((15)/10)) dBm/Hz	*-165*	*-166*
(17) Occupied channel bandwidth (for meeting the requirements of the traffic type) (Hz)	*1.5×10^6*	*1.5×10^6*
(18) Effective noise power = (16) + 10 log((17)) dBm	*-103*	*-105*
(19a) Required SNR for the control channel (dB)	*8.6*	*8.6*
(19b) Required SNR for the data channel (dB)	*8.6*	*8.6*
(20) Receiver implementation margin (dB)	*2*	*2*
(21a) H-ARQ gain for control channel (dB)	*0*	*0*
(21b) H-ARQ gain for data channel (dB)	*0*	*0*
(22a) Receiver sensitivity for control channel = (18) + (19a) + (20) – (21a) dBm	*-93*	*-97*
(22b) Receiver sensitivity for data channel = (18) + (19b) + (20) – (21b) dBm	*-93*	*-97*
(23a) Hardware link budget for control channel = (9a) + (11) +(11b) - (22a) dB	*168*	*136*
(23b) Hardware link budget for data channel = (9b) + (11) +(11b) - (22b) dB	*168*	*136*
Calculation of available pathlos		
(24) Lognormal shadow fading std deviation (dB)	*6*	*6*
(25) Shadow fading margin (function of the cell area reliability and (24)) (dB)	*22.2*	*22.2*

TABLE 5 (*end*)

Item	Downlink	Uplink
(26) BS selection/macro-diversity gain (dB)	*0*	*0*
(27) Penetration margin (dB)	*0*	*0*
(28) Other gains (dB) (if any please specify)	*0*	*0*
(29a) Available path loss for control channel = (23a) – (25) + (26) – (27) + (28) – (12) dB	*144*	*113*
(29b) Available path loss for data channel = (23b) – (25) + (26) – (27) + (28) – (12) dB	*144*	*113*
Range/coverage efficiency calculation		
(30a) Maximum range for control channel (based on (29a) and according to the system configuration section of the link budget) (m)	*2565*	*418*
(30b) Maximum range for data channel (based on (29b) and according to the system configuration section of the link budget) (m)	*2565*	*418*
(31a) Coverage Area for control channel = (π (30a)^2) (m^2/site)	*20673966*	*548797*
(31b) Coverage Area for data channel = (π (30b)^2) (m^2/site)	*20673966*	*548797*

(1) Cell area reliability is defined as the percentage of the cell area over which coverage can be guaranteed. It is obtained from the cell edge reliability, shadow fading standard deviation and the path loss exponent. The latter two values are used to calculate a fade margin. Macro diversity gain may be considered explicitly and improve the system margin or implicitly by reducing the fade margin.

(2) The spectral efficiency of the chosen modulation scheme.

(3) The pathloss models are summarized in § 9.1 of Report ITU-R M.2412-0.

TABLE 5

Link budget template for Urban Macro–URLLC (LOS)

Item	Downlink	Uplink
System configuration		
Carrier frequency (GHz)	0.7	0.7
BS antenna heights (m)	25	25
UE antenna heights (m)	1.5	1.5
Cell area reliability(1) (%) (Please specify how it is calculated.)	*95%*	*95%*
Transmission bit rate for control channel (bit/s)	*1872000*	*1872000*
Transmission bit rate for data channel (bit/s)	*1872000*	*1872000*
Target packet error ratio for the required SNR in item (19a) for control channel	10^{-5}	10^{-5}
Target packet error ratio for the required SNR in item (19b) for data channel	10^{-5}	10^{-5}
Spectral efficiency(2) (bit/s/Hz)	*1.4*	*1.4*
Pathloss model(3) (Select from LOS, NLOS or O-to-I)	*LOS*	*LOS*
UE speed (km/h)	*0*	*0*
Feeder loss (dB)	*0*	*0*
Transmitter		
(1) Number of transmit antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*20*	*1*
(2) Maximal transmit power per antenna (dBm)	*36*	*23*
(3) Total transmit power = function of (1) and (2) (dBm) (The value shall not exceed the indicated value in § 8.4 of Report ITU-R M.2412-0)	*49*	*23*
(4) Transmitter antenna gain (dBi)	*8*	*0*
(5) Transmitter array gain (depends on transmitter array configurations and technologies such as adaptive beam forming, CDD (cyclic delay diversity), etc.) (dB)	*13*	*0*

TABLE 5 (*continued*)

Item	Downlink	Uplink
(6) Control channel power boosting gain (dB)	*0*	*0*
(7) Data channel power loss due to pilot/control boosting (dB)	*0*	*0*
(8) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (Feeder loss must be included for and only for downlink)	*1*	*2*
(9a) Control channel e.i.r.p. = (3) + (4) + (5) + (6) - (8) dBm	*69*	*21*
(9b) Data channel e.i.r.p. = (3) + (4) + (5) - (7) - (8) dBm	*69*	*21*
Receiver		
(10) Number of receive antennas (The number shall be within the indicated range in § 8.4 of Report ITU-R M.2412-0)	*4*	*20*
(11) Receiver antenna gain (dBi)	*0*	*8*
(11b) Receiver diversity gain (dB)	*6*	*13*
(12) Cable, connector, combiner, body losses, etc. (enumerate sources) (dB) (Feeder loss must be included for and only for uplink)	*2*	*1*
(13) Receiver noise figure (dB)	7	5
(14) Thermal noise density (dBm/Hz)	−174	−174
(15) Receiver interference density (dBm/Hz)	*-170*	*-170*
(16) Total noise plus interference density = 10 log (10^(((13) + (14))/10) + 10^((15)/10)) dBm/Hz	*-165*	*-166*
(17) Occupied channel bandwidth (for meeting the requirements of the traffic type) (Hz)	*1.5×10^6*	*1.5×10^6*
(18) Effective noise power = (16) + 10 log((17)) dBm	*-103*	*-105*
(19a) Required SNR for the control channel (dB)	*8.6*	*8.6*
(19b) Required SNR for the data channel (dB)	*8.6*	*8.6*
(20) Receiver implementation margin (dB)	*2*	*2*
(21a) H-ARQ gain for control channel (dB)	*0*	*0*
(21b) H-ARQ gain for data channel (dB)	*0*	*0*
(22a) Receiver sensitivity for control channel = (18) + (19a) + (20) – (21a) dBm	*-93*	*-94*
(22b) Receiver sensitivity for data channel = (18) + (19b) + (20) – (21b) dBm	*-93*	*-94*
(23a) Hardware link budget for control channel = (9a) + (11) +(11b) - (22a) dB	*168*	*136*
(23b) Hardware link budget for data channel = (9b) + (11) +(11b) - (22b) dB	*168*	*136*
Calculation of available pathloss		
(24) Lognormal shadow fading std deviation (dB)	*4*	*4*
(25) Shadow fading margin (function of the cell area reliability and (24)) (dB)	*13.8*	*13.8*

TABLE 5 (*end*)

Item	Downlink	Uplink
(26) BS selection/macro-diversity gain (dB)	*0*	*0*
(27) Penetration margin (dB)	*0*	*0*
(28) Other gains (dB) (if any please specify)	*0*	*0*
(29a) Available path loss for control channel = (23a) – (25) + (26) – (27) + (28) – (12) dB	*152*	*121*
(29b) Available path loss for data channel = (23b) – (25) + (26) – (27) + (28) – (12) dB	*152*	*121*
Range/coverage efficiency calculation		
(30a) Maximum range for control channel (based on (29a) and according to the system configuration section of the link budget) (m)	*12752*	*2166*
(30b) Maximum range for data channel (based on (29b) and according to the system configuration section of the link budget) (m)	*12752*	*2166*
(31a) Coverage Area for control channel = (π (30a)^2) (m^2/site)	*510880857*	*14741990*
(31b) Coverage Area for data channel = (π (30b)^2) (m^2/site)	*510880857*	*14741990*

(1) Cell area reliability is defined as the percentage of the cell area over which coverage can be guaranteed. It is obtained from the cell edge reliability, shadow fading standard deviation and the path loss exponent. The latter two values are used to calculate a fade margin. Macro diversity gain may be considered explicitly and improve the system margin or implicitly by reducing the fade margin.

(2) The spectral efficiency of the chosen modulation scheme.

(3) The pathloss models are summarized in § 9.1 of Report ITU-R M.2412-0.

5.2.4.1 Compliance template for services[1]

	Service capability requirements	Evaluator's comments
5.2.4.1.1	**Support for wide range of services** Is the proposal able to support a range of services across different usage scenarios (eMBB, URLLC, and mMTC)?: ☑**YES** / ☐NO Specify which usage scenarios (eMBB, URLLC, and mMTC) the candidate RIT or candidate SRIT can support.[(1)]	*The SRIT proposal can support eMBB, URLLC and mMTC usage scenarios.*

[(1)] Refer to the process requirements in IMT-2020/2.

5.2.4.2 Compliance template for spectrum[3]

	Spectrum capability requirements
5.2.4.2.1	**Frequency bands identified for IMT** Is the proposal able to utilize at least one frequency band identified for IMT in the ITU Radio Regulations?: ☑ **YES** / ☐ ~~NO~~ Specify in which band(s) the candidate RIT or candidate SRIT can be deployed. ***For DECT-2020 NR component RIT:*** *The candidate RIT is designed to operate over:* *1) The frequency bands currently allocated to DECT service (1880 MHz – 1900 MHz)* *2) The frequency bands currently allocated to IMT-2000 FT service (1900 MHz – 1980 MHz and 2010 MHz – 2025 MHz)* *3) Any other frequency band that may be allocated in the future to the service, including bands above 24.25 GHz* *In particular license exempt frequencies at the 5 GHz band have been considered as possible.* ***For 3GPP-NR component RIT:*** *Same as in the „3GPP 5G CANDIDATE FOR INCLUSION IN IMT-2020: SUBMISSION 2 FOR IMT-2020 (RIT)" package.*
5.2.4.2.2	**Higher Frequency range/band(s)** Is the proposal able to utilize the higher frequency range/band(s) above 24.25 GHz?: ☑**YES** / ☐ NO Specify in which band(s) the candidate RIT or candidate SRIT can be deployed. NOTE 1 – In the case of the candidate SRIT, at least one of the component RITs need to fulfil this requirement. ***For DECT-2020 NR component RIT:*** *Any other frequency band that may be allocated in the future to the service, including bands above 24.25 GHz.* ***For 3GPP-NR component RIT:***

[1] If a proponent determines that a specific question does not apply, the proponent should indicate that this is the case and provide a rationale for why it does not apply.