

TEST REPORT

**CTK Co., Ltd.**

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Report No.:

CTK-2025-03129-1

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1. Applicant

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, 16677, Korea
- Date of Receipt : 2025-08-18

2. Manufacturer

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, 16677, Korea

3. Use of Report : For FCC Certification**4. Test Sample / Model:** MMU (MF3208d) / MF3208d-25A**5. Date of Test** : 2025-08-18 to 2025-11-19**6. Test Standard(method) used** : FCC 47 CFR Part 24E, 27, ANSI C63.26-2015**7. Testing Environment:** refer to 11 page**8. Test Results** : Compliance**9. Location of Test** : ☒ Permanent Testing Lab ☐ On Site Testing

(Address : 5, Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea)

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This report cannot be reproduced or copied without the written consent of CTK.

Approval	Tested by	Technical Manager
	Won-Jae Jang: (Signature)	Byung-Kwon In: (Signature)

2025-11-25

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MEASUREMENT REPORT

FCC Rule Part 24E

Mode	Tx Frequency (MHz)	Equivalent Isotropic Radiated Power		Max Emission Designator	Modulation
		Max. EIRP (dBm/MHz)	Max. EIRP (W/MHz)		
LTE_B25_1C_5M	1 930 MHz to 1 995 MHz	64.89	3083.19	4M54G7D	QPSK
		64.93	3111.72	4M56W7D	QAM
LTE_B25_1C_10M		65.02	3176.87	9M11G7D	QPSK
		65.01	3169.57	9M11W7D	QAM
LTE_B25_1C_15M		64.81	3026.91	13M6G7D	QPSK
		64.95	3126.08	13M7W7D	QAM
LTE_B25_1C_20M		64.70	2951.21	18M1G7D	QPSK
		64.74	2978.52	18M2W7D	QAM
NR_n25_1C_5M		64.65	2917.43	4M55G7D	QPSK
		64.96	3133.29	4M55W7D	QAM
NR_n25_1C_10M		64.71	2958.01	9M39G7D	QPSK
		64.82	3033.89	9M41W7D	QAM
NR_n25_1C_15M		64.63	2904.02	14M3G7D	QPSK
		64.56	2857.59	14M3W7D	QAM
NR_n25_1C_20M		64.83	3040.89	19M1G7D	QPSK
		64.88	3076.10	19M2W7D	QAM
NR_n25_1C_25M		64.71	2958.01	24M0G7D	QPSK
		64.73	2971.67	24M0W7D	QAM
NR_n25_1C_30M		64.71	2958.01	28M8G7D	QPSK
		64.76	2992.26	28M9W7D	QAM
DSS_B/n25_1C_10M		64.88	3076.10	9M37G7D	QPSK
		64.93	3111.72	9M39W7D	QAM
DSS_B/n25_1C_15M		64.66	2924.15	14M2G7D	QPSK
		64.79	3013.01	14M2W7D	QAM
DSS_B/n25_1C_20M		64.57	2864.18	19M1G7D	QPSK
		64.59	2877.40	19M1W7D	QAM
LTE_B25_2C_10M+10M		64.86	3061.96	19M1G7D	QPSK
		64.42	2766.94	19M1W7D	QAM
LTE_B25_3C_5M+10M+15M		64.71	2958.01	29M1G7D	QPSK
		64.70	2951.21	29M2W7D	QAM
NR_n25_2C_10M+10M		64.61	2890.68	19M4G7D	QPSK
		64.57	2864.18	19M4W7D	QAM
NR_n25_3C_5M+10M+15M		64.76	2992.26	29M5G7D	QPSK
		64.71	2958.01	29M5W7D	QAM
MSR_B/n25_3C_LTE 5M+NR 5M+DSS 10M		64.43	2773.32	19M5G7D	QPSK
		64.40	2754.23	19M5W7D	QAM
MSR_B/n25_3C_LTE 10M+NR 10M+DSS 10M		64.55	2851.02	29M3G7D	QPSK
		64.40	2754.23	29M3W7D	QAM

EUT Overview_PCS Band

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MEASUREMENT REPORT

FCC Rule Part 27

Mode	Tx Frequency (MHz)	Equivalent Isotropic Radiated Power		Max Emission Designator	Modulation
		Max. EIRP (dBm/MHz)	Max. EIRP (W/MHz)		
LTE_B66_1C_5M	2 110 MHz to 2 180 MHz	64.56	2857.59	4M54G7D	QPSK
		64.68	2937.65	4M56W7D	QAM
LTE_B66_1C_10M		64.74	2978.52	9M11G7D	QPSK
		64.81	3026.91	9M13W7D	QAM
LTE_B66_1C_15M		64.89	3083.19	13M7G7D	QPSK
		64.94	3118.89	13M7W7D	QAM
LTE_B66_1C_20M		64.80	3019.95	18M2G7D	QPSK
		64.66	2924.15	18M2W7D	QAM
NR_n66_1C_5M		64.75	2985.38	4M53G7D	QPSK
		64.84	3047.89	4M54W7D	QAM
NR_n66_1C_10M		64.48	2805.43	9M38G7D	QPSK
		64.65	2917.43	9M42W7D	QAM
NR_n66_1C_15M		64.45	2786.12	14M3G7D	QPSK
		64.45	2786.12	14M3W7D	QAM
NR_n66_1C_20M		64.35	2722.70	19M2G7D	QPSK
		64.38	2741.57	19M2W7D	QAM
NR_n66_1C_25M		64.36	2728.98	24M0G7D	QPSK
		64.39	2747.89	24M0W7D	QAM
NR_n66_1C_30M		64.35	2722.70	28M9G7D	QPSK
		64.42	2766.94	28M9W7D	QAM
DSS_B/n66_1C_10M		64.42	2766.94	9M32G7D	QPSK
		64.45	2786.12	9M36W7D	QAM
DSS_B/n66_1C_15M		64.38	2741.57	14M2G7D	QPSK
		64.41	2760.58	14M2W7D	QAM
DSS_B/n66_1C_20M		64.52	2831.39	19M0G7D	QPSK
		64.54	2844.46	19M1W7D	QAM
LTE_B66_2C_10M+10M		64.32	2703.96	19M1G7D	QPSK
		64.22	2642.41	19M1W7D	QAM
LTE_B66_4C_5M+15M+20M+20M		62.22	1667.25	58M8G7D	QPSK
		62.05	1603.25	58M9W7D	QAM
NR_n66_2C_10M+10M		64.83	3040.89	19M4G7D	QPSK
		64.89	3083.19	19M5W7D	QAM
NR_n66_4C_5M+15M+20M+20M		62.27	1686.55	59M4G7D	QPSK
		62.21	1663.41	59M4W7D	QAM
MSR_B/n66_3C_LTE 5M+NR 5M+DSS 10M		64.55	2851.02	19M5G7D	QPSK
		64.53	2837.92	19M5W7D	QAM
MSR_B/n66_4C_LTE 10M+NR 10M+NR 20M+DSS 20M		62.02	1592.21	59M1G7D	QPSK
		61.96	1570.36	59M2W7D	QAM

EUT Overview_AWS Band

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1.0 REVISION RECORD

Issue Number	Issued Date	Revision History
CTK-2025-03129	11/19/2025	Initial issue
CTK-2025-03129-1	11/25/2025	Revision due to updated User Beam antenna gain

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2.0 INTRODUCTION

2.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

2.2 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	CN : 8737A CAB ID : KR0025
KOREA	NRRA	KR0025

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3.0 PRODUCT INFORMATION

3.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung MMU (MF3208d) FCC ID: A3LMF3208D-25A**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 24E & 27.

3.2 Device Capabilities

This device supports the following conditional features and filter information:

FCC ID:	A3LMF3208D-25A		
FCC Classification	PCS Licensed Transmitter		
EUT Type:	MMU (MF3208d)		
Model Name:	MF3208d-25A		
Test Device Serial No:	SMF3208114		
Device Capabilities:	LTE, 5G NR, DSS		
Operating Band/Frequency Range:	Band	Tx (Downlink)	Rx (Uplink)
	B/n25	1 930 MHz to 1 995 MHz	1 850 MHz to 1 915 MHz
	B/n66:	2 110 MHz to 2 180 MHz	1 710 MHz to 1 780 MHz
Supported Modulation:	QPSK, 16QAM, 64QAM, 256QAM		
B/n25_Supported Number of Carriers and Channel Bandwidth:	LTE supports 5/10/15/20 MHz bandwidth modes with up to 3CC max aggregated BW of 30 MHz NR supports 5/10/15/20/25/30 MHz bandwidth modes with up to 3CC max aggregated BW of 30 MHz DSS supports 10/15/20 MHz bandwidth LTE, NR and DSS supports Multi-Standard Radio (MSR)		
B/n66_Supported Number of Carriers and Channel Bandwidth:	LTE supports 5/10/15/20 MHz bandwidth modes with up to 4CC max aggregated BW of 60 MHz NR supports 5/10/15/20/25/30 MHz bandwidth modes with up to 4CC max aggregated BW of 60 MHz DSS supports bandwidths of 10/15/20 MHz LTE, NR and DSS supports Multi-Standard Radio (MSR)		
Multi-Band_Supported Number of Carriers and Channel Bandwidth:	Multi-Band with B/n25 and B/n66 supports up to 6CC and a maximum bandwidth of 90 MHz		
Supported Configurations:	Single carrier, Multi carrier, Multi-Band		
Maximum Output Power	320W/Unit		
RF Chain:	32T32R		
Antenna Gain:	B/n25: Max 24.2 dBi B/n66: Max 24.8 dBi		
Input Voltage:	DC - 48V		

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3.3 Test Configuration

The setup is as follows:

- The EUT MMU (MF3208d) and a Data Unit (DU) are each powered by -48V DC power supply.
- The DU is connected to a test laptop via an ethernet cable acting as backhaul.
- DU connects to the EUT through a fiber optic cable.
- An RF cable connects the signal analyzer and the EUT Ports for respective measurement.

The EUT was tested per the guidance of ANSI C63.26-2015 and KDB 971168 D01 v03r01. See Section 8.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

Distribution unit (DU) which were used in test, that authorized under the SDoC procedure.

The following information is about configurations of carrier frequency and output power per port declared by the manufacturer.

* Abbreviations:

- 1C: single carrier
- 2C: Contiguous 2 carriers in multi-carrier operation
- 2NC: Non-Contiguous 2 carriers in multi-carrier operation
- 3C: Contiguous 3 carriers in multi-carrier operation
- 3NC: Non-Contiguous 3 carriers in multi-carrier operation
- 4C: Contiguous 4 carriers in multi-carrier operation
- 4NC: Non-Contiguous 4 carriers in multi-carrier operation

PCS Configuration	No. of Carriers	Total Bandwidth (MHz)	Carrier Frequency Configuration (MHz)			Rated Conducted Power(W/Unit)
			Low	Middle	High	
LTE_B25_1C_5M	1	5	1 932.5	1 962.5	1 992.5	80
LTE_B25_1C_10M	1	10	1 935.0	1 962.5	1 990.0	160
LTE_B25_1C_15M	1	15	1 937.5	1 962.5	1 987.5	240
LTE_B25_1C_20M	1	20	1 940.0	1 962.5	1 985.0	320
LTE_B25_2C_10M+10M	2	20	1 940.0	1 962.5	1 985.0	320
LTE_B25_2NC_10M+10M			1 940.0 + 1 985.0			
LTE_B25_3C_5M+10M+15M	3	30	1 945.0	1 962.5	1 980.0	320
LTE_B25_3NC_5M+10M+15M			1 945.0 + 1 980.0			
NR_n25_1C_5M	1	5	1 932.5	1 962.5	1 992.5	80
NR_n25_1C_10M	1	10	1 935.0	1 962.5	1 990.0	160
NR_n25_1C_15M	1	15	1 937.5	1 962.5	1 987.5	240
NR_n25_1C_20M	1	20	1 940.0	1 962.5	1 985.0	320
NR_n25_1C_25M	1	25	1 942.5	1 962.5	1 982.5	320
NR_n25_1C_30M	1	30	1 945.0	1 962.5	1 980.0	320
NR_n25_2C_10M+10M	2	20	1 940.0	1 962.5	1 985.0	320
NR_n25_2NC_10M+10M			1 940.0 + 1 985.0			
NR_n25_3C_5M+10M+15M	3	30	1 945.0	1 962.0	1 980.0	320
NR_n25_3NC_5M+10M+15M			1 932.5 + 1 962.5 + 1 987.5			
DSS_B/n25_1C_10M	1	10	1 935.0	1 962.5	1 990.0	160
DSS_B/n25_1C_15M	1	15	1 937.5	1 962.5	1 987.5	240
DSS_B/n25_1C_20M	1	20	1 940.0	1 962.5	1 985.0	320
MSR_B/n25_3C_LTE 5M+NR 5M+DSS 10M	3	20	1 940.0	1 962.5	1 985.0	320
MSR_B/n25_3NC_LTE 5M+NR 5M+DSS 10M			1 932.5 + 1 962.5 + 1 990			
MSR_B/n25_3C_LTE 10M+NR 10M+DSS 10M	3	30	1 945.0	1 962.0	1 980.0	320
MSR_B/n25_3NC_LTE 10M+NR 10M+DSS 10M			1 935.0 + 1 962.5 + 1 990.0			

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AWS Configuration	No. of Carriers	Total Bandwidth (MHz)	Carrier Frequency Configuration (MHz)			Rated Conducted Power(W/Unit)
			Low	Middle	High	
LTE_B66_1C_5M	1	5	2 112.5	2 145.0	2 177.5	80
LTE_B66_1C_10M	1	10	2 115.0	2 145.0	2 175.0	160
LTE_B66_1C_15M	1	15	2 117.5	2 145.0	2 172.5	240
LTE_B66_1C_20M	1	20	2 120.0	2 145.0	2 170.0	320
LTE_B66_2C_10M+10M	2	20	2 110.0	2 145.0	2 170.0	320
LTE_B66_2NC_10M+10M			2 115.0 + 2 175.0			
LTE_B66_4C_5M+15M+20M+20M	4	60	2140.0	2 145.0	2 150.0	320
LTE_B66_4NC_5M+15M+20M+20M			2 112.5 + 2 125.0 + 2 145.0 + 2 170.0			
NR_n66_1C_5M	1	5	2 112.5	2 145.0	2 177.5	80
NR_n66_1C_10M	1	10	2 115.0	2 145.0	2 175.0	160
NR_n66_1C_15M	1	15	2 117.5	2 145.0	2 172.5	240
NR_n66_1C_20M	1	20	2 120.0	2 145.0	2 170.0	320
NR_n66_1C_25M	1	25	2 122.5	2 145.0	2 167.5	320
NR_n66_1C_30M	1	30	2 125.0	2 145.0	2 165.0	320
NR_n66_2C_10M+10M	2	20	2 110.0	2 145.0	2 170.0	320
NR_n66_2NC_10M+10M			2 115.0 + 2 175.0			
NR_n66_4C_5M+15M+20M+20M	4	60	2140.0	2 145.0	2 150.0	320
NR_n66_4NC_5M+15M+20M+20M			2 112.5 + 2 125.0 + 2 145.0 + 2 170.0			
DSS_B/n66_1C_10M	1	10	2 115.0	2 145.0	2 175.0	160
DSS_B/n66_1C_15M	1	15	2 117.5	2 145.0	2 172.5	240
DSS_B/n66_1C_20M	1	20	2 120.0	2 145.0	2 170.0	320
MSR_B/n66_3C_LTE 5M+NR 5M+DSS 10M	4	30	2 125.0	2 145.0	2 165.0	320
MSR_B/n66_3NC_LTE 5M+NR 5M+DSS 10M			2 115.0 + 2 145.0+ 2 175.0			
MSR_B/n66_4C_LTE 10M+NR 10M+NR 20M+DSS 20M	4	60	2140.0	2 145.0	2 150.0	320
MSR_B/n66_4NC_LTE 10M+NR 10M+NR 20M+DSS 20M			2 115.0 + 2 130.0 + 2 147.5 + 2 170.0			

Multi Band Configuration	No. of Carriers	Total Bandwidth (MHz)	Carrier Frequency Configuration (MHz)	Rated Conducted Power(W/Unit)
			Non-Contiguous	
DSS_B/n25_1C_20M + DSS_B/n66_1C_20M	2	40	1 940.0 + 2 170.0	320
MSR_B/n25_3C_LTE 10M+NR 10M+DSS 10M + MSR_B/n66_3C_LTE 20M+NR 20M+DSS 20M	6	90	1 935.0 + 1 962.5 + 1 990.0 + 2 120.0 + 2 145.0 + 2 170.0	320

3.4 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added, and no modifications were made during testing.



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4.0 DESCRIPTION OF TESTS

4.1 Measurement Procedure

The measurement procedures described in the document titled “American National Standard for Compliance Testing of Transmitter Used in Licensed Radio Service” (ANSI C63.26-2015) and the guidance provided in KDB 971168 D01 v03r01, and KDB 662911 D01 v02r01 and KDB 940660 D01 v03 were used in the measurement of the EUT.

Occupied Bandwidth:

KDB 971168 D01 v03r01 – Section 4.3

ANSI C63.26-2015 – Section 5.4.4

Modulation Characteristics:

ANSI C63.26 - Section 5.3

Conducted Power Measurement and EIRP and PSD

KDB 971168 D01 v03r01 – Section 5.3

KDB 971168 D01 v03r01 – Section 5.4

KDB 662911 D01 v02r01 – Section E)1) In-Band Power Measurements

ANSI C63.26-2015 – Section 5.2.5

ANSI C63.26-2015 – Section 5.2.4

Peak-to-Average Power Ratio:

KDB 971168 D01 v03r01 – Section 5.7

ANSI C63.26-2015 – Section 5.2.3.4

Channel Edge Emissions at Antenna Terminal

KDB 971168 D01 v03r01 – Section 6

KDB 662911 D01 v02r01 – Section E)3) Out-of-Band and Spurious Emission Measurements

a) Absolute Emission Limits

iii) Measure and add $10 \log(N_{ANT})$ dB

ANSI C63.26-2015 – Section 5.7

Spurious and Harmonic Emissions at Antenna Terminal

KDB 971168 D01 v03r01 – Section 6

KDB 662911 D01 v02r01 – Section E)3) Out-of-Band and Spurious Emission Measurements

a) Absolute Emission Limits

iii) Measure and add $10 \log(N_{ANT})$ dB

ANSI C63.26-2015 – Section 5.7

Radiated unwanted emission

KDB 971168 D01 v03r01 – Section 7

ANSI C63.26-2015 – Section 5.8

Frequency Stability / Temperature Variation

KDB 971168 D01 v03r01 – Section 9

ANSI C63.26-2015 – Section 5.6

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4.2 Measurement Software

Test item	Name	Version
Conducted Measurement	Node B automation	1.0
Radiated Measurement	EP5RE	6.0.1.0
	ES10	10.001

4.3 Environmental Conditions

The temperature is controlled within the range of 15°C to 35°C. The relative humidity is controlled within the range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

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5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Description	Uncertainty
Conducted Power Measurement and EIRP	1.5 dB (C.L. : Approx. 95%, $k = 2$)
Occupied bandwidth	0.1 MHz (C.L. : Approx. 95%, $k = 2$)
Peak-to-average power ratio	1.0 dB (C.L. : Approx. 95%, $k = 2$)
Band Edge Emissions at Antenna Terminal	3.0 dB (C.L. : Approx. 95%, $k = 2$)
Spurious and Harmonic Emissions at Antenna Terminal	3.0 dB (C.L. : Approx. 95%, $k = 2$)
Radiated Emissions ($f \leq 1$ GHz)	4.11 dB (C.L. : Approx. 95%, $k = 2$)
Radiated Emissions ($f > 1$ GHz)	4.64 dB (C.L. : Approx. 95%, $k = 2$)
Frequency Stability	0.1 kHz (C.L. : Approx. 95%, $k = 2$)

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6.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurement antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacture	Model	Description	Cal Date	Cal interval	Cal Due	Serial Number
Rohde & Schwarz	FSV30	Signal Analyzer	2024-11-26	Annual	2025-11-26	100925
Rohde & Schwarz	FSV40	Spectrum Analyzer	2025-01-10	Annual	2026-01-10	101574
Rohde & Schwarz	ESW44	EMI TEST RECEIVER	2025-04-28	Annual	2026-04-28	102039
TESEQ	CBL6111D	Bilog Antenna	2025-08-21	Biennial	2027-08-21	60654
PASTERNAK	PE7AP006-06	Attenuator	2025-07-28	Annual	2026-07-28	L20210504000 023
SONOMA	310N	AMPLIFIER	2025-07-28	Annual	2026-07-28	411011
Agilent	8449B	Preamplifier	2025-03-11	Annual	2026-03-11	3008A00620
ETS-Lindgren	3115	Double Ridged Guide Antenna	2025-03-13	Annual	2026-03-13	00078895
TESTEK	TK-PA1840H	LOW NOISE AMPLIFIER	2025-09-30	Annual	2026-09-30	210124-L
SCHWARZBECK	BBHA9170	HORN ANTENNA	2025-09-30	Annual	2026-09-30	01153
Keysight	N9020B	Signal Analyzer	2025-03-14	Annual	2026-03-14	MY57431080
Keysight	N9020B	Signal Analyzer	2025-03-28	Annual	2026-03-28	MY57142018
Qualwave	QFA1820-18-10-S	Attenuator	2025-08-08	Annual	2026-08-08	22265083 ~ 22265116 (33EA)
Centric RF	C411-20	Attenuator	2025-03-14	Annual	2026-03-14	ey20db002
K&L MICROWAVE	13SH10-1000/U1000-N/N	High Pass Filter	2025-07-10	Annual	2026-07-10	00003
Agilent	6674A	System DC Power Supply	2025-03-13	Annual	2026-03-13	US36372372
ESPEC	EBE-2E20W6P3T-38	Temperature Chamber	2025-04-28	Annual	2026-04-28	3015007507

Table 6-1. Test Equipment

Notes:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
2. All testing was performed before the calibration due date.

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7.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 4M54G7D

Occupied Bandwidth = 4.54 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 4M56W7D

Occupied Bandwidth = 4.56 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

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8.0 TEST RESULTS

8.1 Summary

Company Name: SAMSUNG Electronics Co., Ltd.
FCC ID: A3LMF3208D-25A
FCC Classification: PCS Licensed Transmitter
Mode(s): LTE, NR, DSS

FCC Part Section(s)	Test Description	Limit	Test Condition	Test Result	Reference
§ 2.1046	Conducted Average Output Power	N/A	CONDUCTED	PASS	Annex A
§ 2.1049	Occupied Bandwidth	N/A		PASS	Section 8.2
§ 2.1046, § 24.232, § 27.50(d)	Equivalent Isotropic Radiated Power	< 3280 W/MHz		PASS	Section 8.3
§ 2.1046, § 24.232, § 27.50(d)	Peak-to-average ratio	≤ 13 dB		PASS	Section 8.4
§ 2.1051, § 24.238, § 27.53(h)	Band Edge Emissions at Antenna Terminal	< 43 + log10(P[Watts]) at Band Edge and all out-of-band emissions		PASS	Section 8.5
§ 2.1051, § 24.238, § 27.53(h)	Spurious and Harmonic Emissions at Antenna Terminal			PASS	Section 8.6
§ 2.1055 § 24.235 § 27.54	Frequency Stability	Fundamental emissions stay within authorized frequency block		PASS	Section 8.7
§ 2.1055, § 24.238, § 27.53(h)	Radiated unwanted emission	< 43 + log10(P[Watts]) at Band Edge and all out-of-band emissions	RADIATED	PASS	Section 8.8

Table 8-1. Summary of Test Results

Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots were all taken with a correction table loaded into the analyzer.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.

8.2 Occupied Bandwidth

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 4.3

ANSI C63.26-2015 – Section 5.4.4

Test Setting

The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The spectrum analyzer settings were as follows:

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

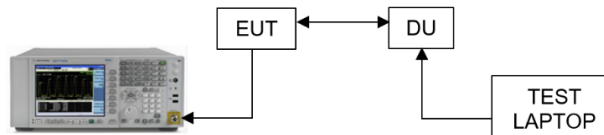


Figure 8-1. Test Instrument & Measurement Setup

Test Notes

None

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	4.53	4.52	4.52	4.54
	1	4.52	4.53	4.54	4.54
	2	4.52	4.55	4.54	4.55
	3	4.53	4.53	4.52	4.53
	4	4.52	4.54	4.53	4.55
	5	4.53	4.53	4.53	4.54
	6	4.52	4.54	4.55	4.55
	7	4.52	4.53	4.54	4.54
	8	4.53	4.54	4.54	4.54
	9	4.52	4.54	4.53	4.52
	10	4.53	4.53	4.54	4.54
	11	4.52	4.54	4.54	4.53
	12	4.53	4.53	4.53	4.53
	13	4.52	4.53	4.56	4.56
	14	4.53	4.54	4.52	4.54
	15	4.53	4.52	4.54	4.53
	16	4.52	4.54	4.53	4.53
	17	4.53	4.53	4.53	4.54
	18	4.53	4.52	4.52	4.54
	19	4.52	4.53	4.53	4.54
	20	4.52	4.53	4.54	4.55
	21	4.53	4.53	4.55	4.54
	22	4.53	4.54	4.53	4.53
	23	4.53	4.54	4.53	4.54
	24	4.52	4.53	4.52	4.53
	25	4.52	4.53	4.53	4.55
	26	4.53	4.55	4.52	4.55
	27	4.52	4.54	4.53	4.53
	28	4.54	4.52	4.52	4.54
	29	4.53	4.53	4.53	4.55
	30	4.53	4.55	4.55	4.55
	31	4.52	4.54	4.52	4.53
Middle	0	4.53	4.52	4.54	4.55
	1	4.52	4.55	4.55	4.54
	2	4.53	4.54	4.54	4.55
	3	4.53	4.53	4.55	4.53
	4	4.53	4.54	4.53	4.53
	5	4.53	4.55	4.53	4.54
	6	4.53	4.55	4.54	4.54
	7	4.52	4.54	4.54	4.53
	8	4.53	4.52	4.53	4.54
	9	4.53	4.53	4.54	4.54
	10	4.53	4.55	4.51	4.55
	11	4.52	4.53	4.52	4.53
	12	4.53	4.54	4.53	4.55
	13	4.52	4.54	4.53	4.54
	14	4.52	4.55	4.53	4.54
	15	4.52	4.54	4.55	4.54
	16	4.53	4.54	4.54	4.54
	17	4.52	4.54	4.52	4.54

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	18	4.54	4.53	4.53	4.53
	19	4.53	4.53	4.53	4.54
	20	4.53	4.54	4.53	4.53
	21	4.53	4.54	4.54	4.54
	22	4.52	4.53	4.52	4.53
	23	4.53	4.53	4.54	4.52
	24	4.53	4.53	4.52	4.54
	25	4.53	4.54	4.54	4.54
	26	4.52	4.54	4.55	4.54
	27	4.53	4.53	4.53	4.54
	28	4.51	4.55	4.55	4.54
	29	4.53	4.54	4.54	4.53
	30	4.53	4.53	4.54	4.54
	31	4.52	4.52	4.53	4.53
High	0	4.53	4.53	4.53	4.53
	1	4.52	4.54	4.53	4.55
	2	4.53	4.54	4.54	4.53
	3	4.53	4.52	4.52	4.53
	4	4.53	4.53	4.53	4.54
	5	4.53	4.54	4.54	4.54
	6	4.53	4.53	4.56	4.54
	7	4.53	4.55	4.54	4.55
	8	4.52	4.53	4.53	4.53
	9	4.52	4.53	4.54	4.53
	10	4.52	4.54	4.53	4.54
	11	4.53	4.53	4.54	4.52
	12	4.52	4.54	4.55	4.54
	13	4.53	4.53	4.53	4.53
	14	4.53	4.53	4.53	4.53
	15	4.52	4.54	4.53	4.54
	16	4.53	4.55	4.53	4.54
	17	4.52	4.54	4.56	4.54
	18	4.53	4.53	4.53	4.55
	19	4.53	4.54	4.53	4.54
	20	4.52	4.53	4.54	4.54
	21	4.52	4.53	4.51	4.54
	22	4.53	4.53	4.53	4.54
	23	4.52	4.53	4.54	4.55
	24	4.53	4.54	4.53	4.53
	25	4.53	4.54	4.54	4.55
	26	4.53	4.53	4.53	4.54
	27	4.52	4.53	4.54	4.54
	28	4.52	4.52	4.54	4.54
	29	4.53	4.54	4.54	4.55
	30	4.52	4.54	4.52	4.53
	31	4.53	4.53	4.52	4.54

Table 8-2. Occupied Bandwidth Summary Data (LTE_B25_1C_5M)

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.05	9.06	9.06	9.06
	1	9.04	9.09	9.05	9.07
	2	9.05	9.04	9.05	9.04
	3	9.04	9.08	9.10	9.06
	4	9.05	9.06	9.07	9.07
	5	9.10	9.04	9.05	9.07
	6	9.06	9.04	9.04	9.08
	7	9.07	9.05	9.06	9.07
	8	9.06	9.08	9.07	9.06
	9	9.07	9.04	9.09	9.06
	10	9.06	9.09	9.07	9.07
	11	9.06	9.08	9.07	9.05
	12	9.05	9.09	9.06	9.06
	13	9.08	9.06	9.06	9.08
	14	9.05	9.07	9.03	9.04
	15	9.04	9.04	9.06	9.08
	16	9.07	9.08	9.08	9.07
	17	9.05	9.05	9.08	9.03
	18	9.04	9.03	9.08	9.07
	19	9.08	9.05	9.03	9.06
	20	9.05	9.04	9.07	9.06
	21	9.06	9.05	9.07	9.05
	22	9.09	9.10	9.10	9.08
	23	9.06	9.10	9.06	9.07
	24	9.06	9.07	9.07	9.08
	25	9.09	9.10	9.07	9.09
	26	9.06	9.05	9.06	9.08
	27	9.07	9.06	9.10	9.05
	28	9.07	9.05	9.08	9.04
	29	9.04	9.07	9.06	9.05
	30	9.08	9.05	9.05	9.07
	31	9.05	9.05	9.06	9.06
Middle	0	9.05	9.08	9.05	9.05
	1	9.05	9.05	9.08	9.06
	2	9.04	9.10	9.08	9.06
	3	9.05	9.07	9.03	9.07
	4	9.07	9.08	9.03	9.09
	5	9.07	9.06	9.04	9.07
	6	9.05	9.03	9.06	9.08
	7	9.07	9.07	9.05	9.07
	8	9.07	9.05	9.08	9.08
	9	9.07	9.08	9.07	9.09
	10	9.04	9.04	9.07	9.06
	11	9.05	9.05	9.07	9.05
	12	9.06	9.06	9.05	9.06
	13	9.08	9.09	9.05	9.07
	14	9.08	9.03	9.08	9.05
	15	9.05	9.03	9.05	9.04
	16	9.02	9.10	9.04	9.06
	17	9.09	9.08	9.07	9.06

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	18	9.07	9.06	9.06	9.08
	19	9.08	9.08	9.07	9.05
	20	9.04	9.07	9.06	9.07
	21	9.07	9.05	9.09	9.04
	22	9.05	9.07	9.05	9.08
	23	9.07	9.07	9.07	9.07
	24	9.10	9.07	9.09	9.07
	25	9.05	9.08	9.06	9.06
	26	9.07	9.06	9.07	9.05
	27	9.07	9.09	9.06	9.07
	28	9.08	9.08	9.07	9.10
	29	9.07	9.09	9.06	9.09
	30	9.07	9.10	9.06	9.07
	31	9.06	9.05	9.07	9.10
High	0	9.06	9.04	9.04	9.06
	1	9.07	9.06	9.07	9.06
	2	9.04	9.03	9.05	9.06
	3	9.05	9.09	9.06	9.06
	4	9.07	9.05	9.05	9.04
	5	9.05	9.05	9.09	9.06
	6	9.08	9.06	9.06	9.07
	7	9.07	9.07	9.11	9.07
	8	9.07	9.06	9.04	9.06
	9	9.06	9.05	9.08	9.04
	10	9.04	9.07	9.06	9.06
	11	9.07	9.04	9.05	9.07
	12	9.08	9.07	9.10	9.06
	13	9.08	9.05	9.07	9.05
	14	9.05	9.07	9.09	9.07
	15	9.08	9.06	9.09	9.05
	16	9.06	9.05	9.07	9.06
	17	9.05	9.03	9.03	9.07
	18	9.07	9.09	9.05	9.06
	19	9.08	9.06	9.04	9.05
	20	9.07	9.03	9.07	9.05
	21	9.08	9.05	9.08	9.08
	22	9.06	9.08	9.06	9.06
	23	9.06	9.08	9.11	9.05
	24	9.07	9.09	9.07	9.06
	25	9.09	9.08	9.05	9.08
	26	9.09	9.06	9.05	9.07
	27	9.05	9.06	9.07	9.07
	28	9.07	9.07	9.05	9.06
	29	9.09	9.10	9.06	9.06
	30	9.11	9.05	9.08	9.07
	31	9.06	9.08	9.06	9.04

Table 8-3. Occupied Bandwidth Summary Data (LTE_B25_1C_10M)

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	13.60	13.61	13.59	13.61
	1	13.62	13.58	13.60	13.68
	2	13.58	13.62	13.57	13.59
	3	13.63	13.56	13.60	13.59
	4	13.59	13.60	13.58	13.57
	5	13.62	13.59	13.56	13.63
	6	13.58	13.59	13.56	13.59
	7	13.60	13.61	13.59	13.55
	8	13.57	13.58	13.60	13.59
	9	13.63	13.61	13.61	13.59
	10	13.59	13.58	13.58	13.61
	11	13.64	13.56	13.59	13.58
	12	13.60	13.63	13.60	13.60
	13	13.61	13.60	13.61	13.60
	14	13.63	13.60	13.61	13.61
	15	13.61	13.61	13.65	13.58
	16	13.59	13.59	13.61	13.57
	17	13.60	13.59	13.61	13.62
	18	13.59	13.58	13.60	13.60
	19	13.57	13.59	13.58	13.60
	20	13.59	13.57	13.62	13.60
	21	13.63	13.59	13.57	13.57
	22	13.60	13.58	13.65	13.63
	23	13.58	13.61	13.60	13.57
	24	13.61	13.61	13.59	13.61
	25	13.58	13.58	13.59	13.63
	26	13.62	13.59	13.63	13.56
	27	13.58	13.59	13.60	13.59
	28	13.58	13.62	13.59	13.65
	29	13.59	13.61	13.61	13.61
	30	13.60	13.59	13.61	13.57
	31	13.61	13.60	13.57	13.54
Middle	0	13.61	13.60	13.59	13.65
	1	13.64	13.61	13.59	13.60
	2	13.63	13.58	13.66	13.61
	3	13.62	13.56	13.62	13.59
	4	13.58	13.62	13.59	13.58
	5	13.60	13.62	13.62	13.64
	6	13.60	13.63	13.61	13.62
	7	13.59	13.61	13.61	13.65
	8	13.63	13.56	13.61	13.60
	9	13.63	13.61	13.64	13.62
	10	13.62	13.61	13.60	13.61
	11	13.60	13.62	13.65	13.61
	12	13.62	13.59	13.62	13.59
	13	13.63	13.62	13.61	13.58
	14	13.60	13.59	13.65	13.62
	15	13.64	13.59	13.60	13.63
	16	13.63	13.62	13.64	13.59
	17	13.63	13.57	13.56	13.64

**CTK Co., Ltd.**

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	18	13.61	13.65	13.59	13.63
	19	13.64	13.64	13.59	13.61
	20	13.61	13.59	13.61	13.60
	21	13.63	13.59	13.62	13.63
	22	13.60	13.63	13.62	13.64
	23	13.62	13.58	13.62	13.61
	24	13.61	13.59	13.59	13.59
	25	13.61	13.61	13.60	13.58
	26	13.63	13.59	13.62	13.63
	27	13.61	13.58	13.59	13.63
	28	13.61	13.58	13.61	13.59
	29	13.62	13.61	13.63	13.65
	30	13.63	13.59	13.62	13.62
	31	13.62	13.56	13.64	13.59
High	0	13.60	13.61	13.62	13.59
	1	13.60	13.57	13.61	13.62
	2	13.58	13.59	13.60	13.58
	3	13.61	13.58	13.61	13.58
	4	13.58	13.58	13.60	13.62
	5	13.59	13.58	13.64	13.60
	6	13.60	13.61	13.61	13.60
	7	13.64	13.62	13.60	13.59
	8	13.57	13.55	13.61	13.60
	9	13.60	13.62	13.61	13.60
	10	13.59	13.56	13.54	13.63
	11	13.59	13.60	13.63	13.59
	12	13.57	13.58	13.60	13.58
	13	13.60	13.61	13.59	13.60
	14	13.59	13.61	13.59	13.61
	15	13.61	13.62	13.61	13.67
	16	13.61	13.60	13.63	13.61
	17	13.61	13.61	13.63	13.62
	18	13.60	13.60	13.62	13.60
	19	13.63	13.56	13.56	13.60
	20	13.60	13.58	13.60	13.65
	21	13.64	13.62	13.62	13.56
	22	13.58	13.60	13.61	13.54
	23	13.63	13.62	13.59	13.64
	24	13.61	13.61	13.62	13.59
	25	13.59	13.61	13.64	13.61
	26	13.61	13.60	13.62	13.62
	27	13.61	13.60	13.62	13.61
	28	13.57	13.56	13.60	13.57
	29	13.58	13.61	13.61	13.60
	30	13.62	13.60	13.60	13.59
	31	13.61	13.60	13.62	13.62

Table 8-4. Occupied Bandwidth Summary Data (LTE_B25_1C_15M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	18.05	18.08	18.09	18.14
	1	18.10	18.06	18.07	18.05
	2	18.11	18.06	18.08	18.07
	3	18.08	18.13	18.10	18.13
	4	18.04	18.11	18.10	18.08
	5	18.06	18.09	18.05	18.07
	6	18.06	18.10	18.10	18.15
	7	18.08	18.05	18.12	18.08
	8	18.07	18.06	18.05	18.10
	9	18.05	18.07	18.09	18.08
	10	18.08	18.06	18.10	18.11
	11	18.08	18.05	18.10	18.07
	12	18.11	18.05	18.10	18.09
	13	18.06	18.06	18.08	18.09
	14	18.07	18.11	18.10	18.07
	15	18.08	18.09	18.09	18.15
	16	18.09	18.10	18.13	18.16
	17	18.05	18.04	18.10	18.10
	18	18.10	18.11	18.10	18.04
	19	18.09	18.06	18.10	18.14
	20	18.07	18.04	18.11	18.10
	21	18.11	18.08	18.08	18.06
	22	18.08	18.09	18.09	18.14
	23	18.07	18.12	18.13	18.09
	24	18.07	18.05	18.11	18.06
	25	18.12	18.07	18.07	18.08
	26	18.10	18.06	18.09	18.05
	27	18.07	18.11	18.11	18.16
	28	18.11	18.07	18.08	18.06
	29	18.05	18.13	18.09	18.12
	30	18.06	18.09	18.09	18.10
	31	18.08	18.07	18.08	18.08
Middle	0	18.13	18.08	18.09	18.11
	1	18.09	18.10	18.13	18.08
	2	18.09	18.07	18.13	18.15
	3	18.10	18.13	18.05	18.12
	4	18.13	18.10	18.07	18.09
	5	18.08	18.06	18.10	18.11
	6	18.11	18.08	18.06	18.09
	7	18.12	18.06	18.10	18.17
	8	18.12	18.14	18.13	18.06
	9	18.12	18.08	18.09	18.14
	10	18.13	18.07	18.10	18.15
	11	18.14	18.10	18.07	18.16
	12	18.13	18.06	18.09	18.14
	13	18.11	18.13	18.11	18.12
	14	18.09	18.11	18.06	18.09
	15	18.07	18.09	18.11	18.08
	16	18.05	18.16	18.11	18.10
	17	18.13	18.10	18.12	18.12

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	18	18.09	18.09	18.14	18.11
	19	18.08	18.12	18.13	18.14
	20	18.06	18.06	18.09	18.09
	21	18.11	18.12	18.09	18.13
	22	18.12	18.06	18.13	18.07
	23	18.04	18.07	18.13	18.15
	24	18.09	18.11	18.10	18.16
	25	18.07	18.03	18.09	18.11
	26	18.11	18.12	18.05	18.17
	27	18.10	18.06	18.09	18.08
	28	18.10	18.11	18.11	18.14
	29	18.09	18.10	18.08	18.11
	30	18.09	18.10	18.08	18.10
	31	18.10	18.09	18.09	18.09
High	0	18.06	18.12	18.08	18.12
	1	18.12	18.10	18.07	18.12
	2	18.05	18.09	18.09	18.12
	3	18.06	18.05	18.08	18.09
	4	18.05	18.07	18.11	18.12
	5	18.11	18.09	18.05	18.12
	6	18.09	18.10	18.07	18.13
	7	18.11	18.04	18.10	18.16
	8	18.08	18.07	18.12	18.06
	9	18.10	18.02	18.10	18.08
	10	18.04	18.10	18.09	18.11
	11	18.13	18.03	18.11	18.12
	12	18.06	18.10	18.09	18.03
	13	18.06	18.07	18.07	18.08
	14	18.09	18.07	18.03	18.13
	15	18.03	18.06	18.10	18.11
	16	18.07	18.14	18.08	18.12
	17	18.12	18.09	18.09	18.09
	18	18.06	18.08	18.08	18.09
	19	18.05	18.07	18.13	18.13
	20	18.10	18.10	18.09	18.11
	21	18.10	18.08	18.06	18.07
	22	18.10	18.07	18.10	18.12
	23	18.08	18.08	18.10	18.08
	24	18.13	18.08	18.10	18.12
	25	18.10	18.06	18.07	18.12
	26	18.09	18.09	18.05	18.14
	27	18.12	18.06	18.05	18.10
	28	18.07	18.07	18.05	18.12
	29	18.08	18.06	18.12	18.19
	30	18.05	18.06	18.11	18.18
	31	18.12	18.10	18.08	18.12

Table 8-5. Occupied Bandwidth Summary Data (LTE_B25_1C_20M)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,
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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	4.53	4.50	4.53	4.53
	1	4.51	4.52	4.52	4.55
	2	4.51	4.52	4.53	4.55
	3	4.52	4.51	4.52	4.51
	4	4.54	4.50	4.54	4.53
	5	4.54	4.50	4.52	4.51
	6	4.52	4.51	4.52	4.52
	7	4.53	4.52	4.52	4.53
	8	4.55	4.52	4.53	4.52
	9	4.54	4.51	4.53	4.52
	10	4.52	4.51	4.53	4.53
	11	4.53	4.52	4.53	4.53
	12	4.53	4.51	4.53	4.53
	13	4.52	4.51	4.54	4.53
	14	4.52	4.50	4.54	4.52
	15	4.53	4.52	4.53	4.55
	16	4.51	4.51	4.53	4.52
	17	4.54	4.52	4.53	4.54
	18	4.53	4.53	4.52	4.55
	19	4.53	4.52	4.53	4.53
	20	4.54	4.51	4.53	4.52
	21	4.55	4.50	4.53	4.51
	22	4.53	4.52	4.53	4.52
	23	4.51	4.52	4.52	4.55
	24	4.52	4.51	4.52	4.55
	25	4.54	4.51	4.53	4.55
	26	4.52	4.51	4.52	4.53
	27	4.53	4.52	4.53	4.50
	28	4.52	4.51	4.53	4.55
	29	4.52	4.53	4.53	4.53
	30	4.53	4.51	4.52	4.53
	31	4.53	4.52	4.53	4.52
Middle	0	4.53	4.51	4.52	4.52
	1	4.53	4.51	4.51	4.52
	2	4.53	4.52	4.52	4.52
	3	4.52	4.51	4.53	4.53
	4	4.51	4.53	4.54	4.52
	5	4.52	4.51	4.51	4.52
	6	4.51	4.51	4.51	4.53
	7	4.52	4.52	4.52	4.52
	8	4.52	4.52	4.52	4.53
	9	4.52	4.51	4.53	4.52
	10	4.54	4.52	4.51	4.52
	11	4.51	4.52	4.53	4.52
	12	4.53	4.52	4.52	4.52
	13	4.52	4.51	4.54	4.52
	14	4.51	4.51	4.53	4.53
	15	4.52	4.52	4.53	4.52
	16	4.52	4.51	4.53	4.52
	17	4.52	4.51	4.52	4.52

**CTK Co., Ltd.**

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	18	4.51	4.52	4.53	4.52
	19	4.52	4.52	4.52	4.52
	20	4.51	4.51	4.52	4.53
	21	4.52	4.52	4.52	4.53
	22	4.52	4.51	4.52	4.51
	23	4.51	4.52	4.52	4.53
	24	4.52	4.51	4.53	4.53
	25	4.51	4.52	4.52	4.52
	26	4.51	4.52	4.52	4.52
	27	4.52	4.51	4.52	4.52
	28	4.52	4.53	4.53	4.51
	29	4.54	4.51	4.54	4.51
	30	4.51	4.50	4.53	4.51
	31	4.51	4.51	4.53	4.51
High	0	4.51	4.52	4.52	4.51
	1	4.51	4.52	4.53	4.51
	2	4.51	4.52	4.53	4.53
	3	4.53	4.52	4.54	4.51
	4	4.51	4.52	4.52	4.52
	5	4.52	4.52	4.53	4.53
	6	4.51	4.52	4.54	4.51
	7	4.52	4.51	4.52	4.51
	8	4.52	4.51	4.54	4.53
	9	4.53	4.52	4.54	4.54
	10	4.51	4.51	4.52	4.52
	11	4.51	4.51	4.52	4.51
	12	4.51	4.51	4.54	4.52
	13	4.53	4.51	4.52	4.53
	14	4.51	4.52	4.52	4.52
	15	4.53	4.52	4.53	4.53
	16	4.52	4.52	4.53	4.53
	17	4.52	4.50	4.52	4.54
	18	4.52	4.51	4.52	4.51
	19	4.52	4.52	4.53	4.53
	20	4.52	4.51	4.53	4.52
	21	4.52	4.53	4.54	4.52
	22	4.52	4.52	4.52	4.52
	23	4.51	4.52	4.51	4.53
	24	4.51	4.51	4.52	4.52
	25	4.53	4.52	4.55	4.51
	26	4.52	4.52	4.53	4.53
	27	4.52	4.52	4.53	4.53
	28	4.52	4.50	4.52	4.52
	29	4.53	4.51	4.53	4.52
	30	4.52	4.52	4.54	4.53
	31	4.51	4.52	4.51	4.52

Table 8-6. Occupied Bandwidth Summary Data (NR_n25_1C_5M)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,
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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.36	9.35	9.37	9.35
	1	9.36	9.37	9.38	9.36
	2	9.37	9.34	9.38	9.35
	3	9.35	9.36	9.38	9.36
	4	9.34	9.34	9.38	9.38
	5	9.34	9.37	9.37	9.37
	6	9.36	9.34	9.35	9.35
	7	9.35	9.36	9.37	9.35
	8	9.36	9.35	9.38	9.35
	9	9.36	9.35	9.40	9.36
	10	9.37	9.35	9.39	9.35
	11	9.36	9.35	9.38	9.35
	12	9.35	9.34	9.38	9.39
	13	9.37	9.36	9.38	9.36
	14	9.37	9.35	9.39	9.37
	15	9.35	9.37	9.39	9.35
	16	9.35	9.37	9.36	9.37
	17	9.36	9.33	9.39	9.35
	18	9.36	9.36	9.39	9.35
	19	9.34	9.35	9.38	9.35
	20	9.35	9.34	9.38	9.36
	21	9.35	9.34	9.36	9.34
	22	9.36	9.37	9.39	9.36
	23	9.37	9.35	9.39	9.37
	24	9.37	9.35	9.37	9.36
	25	9.35	9.35	9.38	9.37
	26	9.36	9.36	9.36	9.38
	27	9.36	9.35	9.40	9.36
	28	9.35	9.36	9.38	9.37
	29	9.37	9.34	9.37	9.35
	30	9.34	9.36	9.36	9.37
	31	9.36	9.33	9.38	9.40
Middle	0	9.37	9.35	9.39	9.38
	1	9.36	9.38	9.40	9.35
	2	9.37	9.35	9.40	9.37
	3	9.37	9.36	9.38	9.35
	4	9.35	9.36	9.38	9.38
	5	9.38	9.38	9.37	9.35
	6	9.36	9.37	9.41	9.39
	7	9.38	9.36	9.39	9.36
	8	9.37	9.34	9.39	9.37
	9	9.39	9.36	9.37	9.37
	10	9.37	9.35	9.39	9.37
	11	9.36	9.36	9.38	9.38
	12	9.37	9.37	9.38	9.36
	13	9.37	9.35	9.39	9.37
	14	9.35	9.36	9.40	9.35
	15	9.37	9.38	9.40	9.37
	16	9.37	9.36	9.40	9.39
	17	9.38	9.38	9.40	9.37

**CTK Co., Ltd.**

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	18	9.36	9.36	9.35	9.35
	19	9.38	9.35	9.39	9.38
	20	9.38	9.36	9.38	9.36
	21	9.37	9.36	9.37	9.36
	22	9.36	9.35	9.38	9.37
	23	9.36	9.34	9.38	9.39
	24	9.37	9.36	9.38	9.36
	25	9.36	9.39	9.41	9.35
	26	9.35	9.34	9.35	9.38
	27	9.35	9.35	9.38	9.37
	28	9.35	9.36	9.39	9.37
	29	9.36	9.34	9.39	9.39
	30	9.35	9.35	9.38	9.35
	31	9.36	9.36	9.36	9.36
High	0	9.35	9.36	9.37	9.35
	1	9.36	9.37	9.37	9.34
	2	9.35	9.36	9.38	9.37
	3	9.36	9.38	9.39	9.35
	4	9.36	9.34	9.35	9.37
	5	9.35	9.35	9.36	9.37
	6	9.36	9.35	9.38	9.35
	7	9.35	9.34	9.39	9.37
	8	9.35	9.36	9.39	9.36
	9	9.36	9.34	9.40	9.37
	10	9.35	9.35	9.36	9.39
	11	9.36	9.35	9.39	9.38
	12	9.35	9.34	9.39	9.35
	13	9.35	9.34	9.39	9.36
	14	9.35	9.36	9.37	9.35
	15	9.34	9.37	9.37	9.37
	16	9.37	9.36	9.39	9.38
	17	9.36	9.36	9.39	9.38
	18	9.37	9.37	9.36	9.36
	19	9.37	9.34	9.38	9.38
	20	9.36	9.35	9.37	9.36
	21	9.35	9.35	9.41	9.36
	22	9.36	9.34	9.37	9.35
	23	9.37	9.36	9.36	9.38
	24	9.35	9.34	9.36	9.35
	25	9.37	9.38	9.38	9.39
	26	9.36	9.34	9.39	9.38
	27	9.35	9.34	9.38	9.37
	28	9.34	9.33	9.38	9.37
	29	9.37	9.34	9.37	9.36
	30	9.34	9.37	9.37	9.37
	31	9.37	9.35	9.36	9.37

Table 8-7. Occupied Bandwidth Summary Data (NR_n25_1C_10M)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,
17142, Korea
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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	14.23	14.20	14.25	14.22
	1	14.20	14.20	14.23	14.25
	2	14.25	14.22	14.25	14.19
	3	14.24	14.21	14.22	14.19
	4	14.23	14.23	14.19	14.20
	5	14.19	14.21	14.24	14.20
	6	14.19	14.20	14.24	14.19
	7	14.23	14.20	14.26	14.21
	8	14.21	14.19	14.22	14.20
	9	14.26	14.18	14.22	14.22
	10	14.21	14.21	14.21	14.21
	11	14.24	14.19	14.27	14.24
	12	14.24	14.21	14.22	14.19
	13	14.23	14.20	14.23	14.24
	14	14.22	14.19	14.27	14.22
	15	14.22	14.21	14.20	14.19
	16	14.24	14.22	14.22	14.22
	17	14.23	14.21	14.26	14.19
	18	14.22	14.20	14.23	14.18
	19	14.21	14.24	14.26	14.21
	20	14.20	14.19	14.24	14.19
	21	14.21	14.20	14.24	14.22
	22	14.23	14.22	14.23	14.22
	23	14.23	14.21	14.23	14.21
	24	14.23	14.21	14.22	14.21
	25	14.24	14.21	14.27	14.21
	26	14.24	14.23	14.26	14.19
	27	14.22	14.21	14.24	14.17
	28	14.22	14.21	14.23	14.23
	29	14.24	14.21	14.22	14.22
	30	14.23	14.23	14.25	14.21
	31	14.23	14.22	14.22	14.24
Middle	0	14.26	14.22	14.24	14.23
	1	14.27	14.23	14.23	14.25
	2	14.25	14.25	14.22	14.25
	3	14.21	14.23	14.27	14.25
	4	14.22	14.22	14.25	14.24
	5	14.28	14.24	14.23	14.23
	6	14.24	14.23	14.28	14.21
	7	14.25	14.19	14.21	14.24
	8	14.25	14.24	14.24	14.24
	9	14.26	14.22	14.23	14.24
	10	14.24	14.21	14.25	14.25
	11	14.23	14.24	14.23	14.27
	12	14.26	14.23	14.23	14.26
	13	14.21	14.24	14.23	14.25
	14	14.24	14.22	14.25	14.25
	15	14.23	14.23	14.25	14.27
	16	14.23	14.22	14.24	14.23
	17	14.21	14.25	14.23	14.29

**CTK Co., Ltd.**

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	18	14.23	14.24	14.24	14.24
	19	14.22	14.22	14.23	14.21
	20	14.27	14.22	14.25	14.26
	21	14.26	14.24	14.24	14.26
	22	14.23	14.21	14.26	14.23
	23	14.27	14.23	14.26	14.25
	24	14.27	14.23	14.25	14.26
	25	14.22	14.23	14.23	14.25
	26	14.22	14.25	14.28	14.23
	27	14.22	14.23	14.25	14.27
	28	14.25	14.21	14.23	14.24
	29	14.26	14.20	14.24	14.22
	30	14.20	14.21	14.21	14.24
	31	14.28	14.22	14.22	14.25
High	0	14.22	14.20	14.24	14.23
	1	14.23	14.20	14.24	14.22
	2	14.22	14.21	14.25	14.21
	3	14.21	14.22	14.22	14.21
	4	14.25	14.20	14.26	14.22
	5	14.25	14.19	14.26	14.19
	6	14.26	14.22	14.24	14.22
	7	14.25	14.21	14.25	14.21
	8	14.23	14.23	14.24	14.24
	9	14.23	14.21	14.24	14.23
	10	14.22	14.20	14.23	14.23
	11	14.22	14.18	14.25	14.23
	12	14.23	14.20	14.24	14.19
	13	14.25	14.21	14.24	14.20
	14	14.22	14.17	14.21	14.23
	15	14.24	14.21	14.24	14.22
	16	14.25	14.21	14.23	14.20
	17	14.25	14.24	14.26	14.21
	18	14.25	14.24	14.24	14.19
	19	14.25	14.22	14.26	14.20
	20	14.24	14.22	14.24	14.22
	21	14.20	14.22	14.24	14.23
	22	14.27	14.19	14.22	14.22
	23	14.24	14.22	14.22	14.19
	24	14.24	14.20	14.23	14.23
	25	14.25	14.21	14.23	14.20
	26	14.23	14.20	14.23	14.19
	27	14.24	14.21	14.25	14.22
	28	14.22	14.20	14.23	14.22
	29	14.24	14.21	14.23	14.21
	30	14.24	14.20	14.23	14.21
	31	14.27	14.20	14.25	14.18

Table 8-8. Occupied Bandwidth Summary Data (NR_n25_1C_15M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	19.06	19.08	19.09	19.10
	1	19.07	19.07	19.14	19.10
	2	19.05	19.08	19.09	19.12
	3	19.05	19.10	19.08	19.08
	4	19.07	19.08	19.07	19.08
	5	19.08	19.07	19.10	19.08
	6	19.03	19.06	19.08	19.08
	7	19.08	19.10	19.11	19.13
	8	19.06	19.10	19.09	19.10
	9	19.08	19.06	19.05	19.11
	10	19.05	19.09	19.08	19.08
	11	19.05	19.07	19.12	19.12
	12	19.07	19.05	19.08	19.11
	13	19.09	19.09	19.09	19.10
	14	19.06	19.06	19.09	19.07
	15	19.06	19.07	19.11	19.05
	16	19.11	19.09	19.09	19.06
	17	19.11	19.04	19.10	19.09
	18	19.12	19.08	19.06	19.09
	19	19.08	19.05	19.05	19.09
	20	19.07	19.05	19.11	19.09
	21	19.10	19.07	19.11	19.08
	22	19.11	19.07	19.09	19.10
	23	19.05	19.06	19.10	19.10
	24	19.08	19.10	19.11	19.06
	25	19.06	19.03	19.09	19.07
	26	19.08	19.10	19.12	19.11
	27	19.09	19.07	19.07	19.07
	28	19.08	19.08	19.12	19.10
	29	19.07	19.07	19.07	19.10
	30	19.06	19.06	19.06	19.12
	31	19.06	19.07	19.08	19.11
Middle	0	19.08	19.10	19.11	19.12
	1	19.09	19.12	19.10	19.07
	2	19.09	19.10	19.06	19.06
	3	19.09	19.07	19.11	19.11
	4	19.12	19.12	19.09	19.07
	5	19.10	19.10	19.11	19.08
	6	19.09	19.05	19.10	19.07
	7	19.09	19.08	19.11	19.11
	8	19.12	19.07	19.08	19.09
	9	19.07	19.11	19.10	19.10
	10	19.07	19.12	19.09	19.04
	11	19.06	19.10	19.10	19.07
	12	19.12	19.09	19.11	19.09
	13	19.06	19.12	19.14	19.08
	14	19.08	19.06	19.11	19.08
	15	19.08	19.13	19.08	19.08
	16	19.07	19.06	19.09	19.12
	17	19.09	19.12	19.11	19.06

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	18	19.11	19.10	19.11	19.10
	19	19.13	19.08	19.08	19.10
	20	19.07	19.10	19.12	19.09
	21	19.06	19.08	19.09	19.04
	22	19.09	19.07	19.13	19.08
	23	19.12	19.12	19.11	19.16
	24	19.12	19.10	19.12	19.07
	25	19.10	19.07	19.12	19.07
	26	19.07	19.09	19.10	19.10
	27	19.11	19.11	19.14	19.07
	28	19.13	19.07	19.11	19.03
	29	19.06	19.06	19.09	19.08
	30	19.10	19.08	19.11	19.07
	31	19.11	19.08	19.11	19.10
High	0	19.08	19.05	19.11	19.07
	1	19.03	19.06	19.09	19.09
	2	19.07	19.05	19.07	19.04
	3	19.08	19.09	19.10	19.10
	4	19.05	19.03	19.11	19.07
	5	19.05	19.07	19.09	19.08
	6	19.07	19.04	19.08	19.09
	7	19.12	19.11	19.10	19.08
	8	19.09	19.12	19.09	19.04
	9	19.07	19.10	19.10	19.07
	10	19.07	19.10	19.08	19.12
	11	19.09	19.04	19.10	19.10
	12	19.08	19.07	19.08	19.10
	13	19.08	19.06	19.09	19.07
	14	19.12	19.04	19.12	19.07
	15	19.07	19.07	19.08	19.10
	16	19.07	19.05	19.09	19.09
	17	19.06	19.07	19.09	19.06
	18	19.07	19.05	19.06	19.08
	19	19.09	19.06	19.11	19.10
	20	19.05	19.08	19.11	19.07
	21	19.08	19.10	19.12	19.08
	22	19.10	19.06	19.10	19.09
	23	19.04	19.06	19.12	19.10
	24	19.09	19.12	19.07	19.11
	25	19.08	19.10	19.08	19.08
	26	19.02	19.05	19.09	19.08
	27	19.08	19.10	19.09	19.12
	28	19.05	19.09	19.11	19.07
	29	19.10	19.07	19.11	19.09
	30	19.06	19.09	19.08	19.07
	31	19.09	19.04	19.11	19.09

Table 8-9. Occupied Bandwidth Summary Data (NR_n25_1C_20M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	23.93	23.89	23.95	23.91
	1	23.94	23.87	23.94	23.91
	2	23.91	23.90	23.89	23.91
	3	23.90	23.94	23.96	23.91
	4	23.95	23.98	23.93	23.86
	5	23.94	23.92	23.88	23.91
	6	23.88	23.89	23.91	23.92
	7	23.89	23.91	23.94	23.91
	8	23.86	23.90	23.91	23.93
	9	23.96	23.90	23.93	23.93
	10	23.88	23.89	23.91	23.89
	11	23.88	23.94	23.90	23.85
	12	23.89	23.96	23.91	23.90
	13	23.90	23.87	23.90	23.89
	14	23.89	23.95	23.93	23.91
	15	23.89	23.89	23.88	23.92
	16	23.89	23.94	23.92	23.91
	17	23.95	23.97	23.91	23.92
	18	24.00	23.89	23.93	23.92
	19	23.88	23.93	23.94	23.90
	20	23.91	23.91	23.90	23.93
	21	23.89	23.95	23.92	23.92
	22	23.94	23.96	23.94	23.90
	23	23.90	23.91	23.92	23.98
	24	23.91	23.94	23.88	23.92
	25	23.88	23.96	23.86	23.95
	26	23.94	23.91	23.89	23.86
	27	23.91	23.93	23.95	23.96
	28	23.96	23.94	23.90	23.93
	29	23.83	23.89	23.92	23.88
	30	23.88	23.89	23.93	23.93
	31	23.92	23.95	23.92	23.92
Middle	0	23.93	23.94	23.99	23.90
	1	23.95	23.96	23.93	23.91
	2	23.94	23.90	23.92	23.94
	3	23.94	23.93	23.96	23.87
	4	23.96	23.94	23.91	23.93
	5	23.94	23.94	23.94	23.89
	6	23.96	23.99	23.91	23.96
	7	23.88	23.94	23.92	23.91
	8	23.97	23.93	23.98	23.95
	9	23.90	23.95	23.97	23.90
	10	23.95	23.89	24.00	23.92
	11	23.91	23.96	23.94	23.96
	12	23.89	23.95	23.92	23.91
	13	23.95	23.90	23.96	23.92
	14	23.95	23.93	23.91	23.95
	15	23.97	23.96	23.92	23.88
	16	23.91	23.97	23.96	23.90
	17	23.92	23.97	23.91	23.92

**CTK Co., Ltd.**

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	18	23.93	24.04	23.94	23.95
	19	23.94	23.99	23.96	23.90
	20	23.92	23.98	23.97	23.92
	21	23.96	23.93	23.91	23.91
	22	23.93	23.95	23.95	23.92
	23	23.96	23.97	23.92	23.94
	24	23.96	23.94	23.94	23.91
	25	23.91	23.95	23.91	23.92
	26	23.96	23.94	23.96	23.94
	27	23.88	23.94	23.96	23.90
	28	23.91	23.97	23.95	23.96
	29	23.92	23.96	23.93	23.94
	30	23.93	24.00	23.97	23.97
	31	23.90	23.92	23.98	23.93
High	0	23.87	23.95	23.93	23.93
	1	23.93	23.90	23.90	23.92
	2	23.97	23.93	23.92	23.94
	3	23.93	23.92	23.91	23.93
	4	23.94	23.93	23.94	23.93
	5	23.96	23.96	23.88	23.92
	6	23.98	23.96	23.93	23.94
	7	23.90	23.91	23.95	23.96
	8	23.89	23.89	23.94	23.94
	9	23.94	23.92	23.95	23.89
	10	23.94	23.87	23.92	23.92
	11	23.89	23.92	23.91	23.95
	12	23.94	23.91	23.92	23.99
	13	23.92	23.90	23.90	23.88
	14	23.90	23.93	23.93	23.95
	15	23.95	23.98	23.94	23.88
	16	23.89	23.89	23.96	23.91
	17	23.95	23.88	23.93	23.90
	18	23.89	23.89	23.92	23.91
	19	23.94	23.86	23.92	23.91
	20	23.93	23.89	23.89	23.93
	21	23.91	23.86	23.92	23.94
	22	23.94	23.94	23.98	23.91
	23	23.93	23.90	23.92	23.93
	24	23.92	23.93	23.92	23.94
	25	23.94	23.88	23.92	23.91
	26	23.94	23.95	23.92	23.91
	27	23.92	23.92	23.93	23.90
	28	23.98	23.96	23.89	23.92
	29	23.89	23.93	23.91	23.90
	30	23.93	23.89	23.94	23.92
	31	23.96	23.88	23.94	23.87

Table 8-10. Occupied Bandwidth Summary Data (NR_n25_1C_25M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	28.76	28.77	28.73	28.76
	1	28.70	28.79	28.80	28.80
	2	28.75	28.72	28.74	28.83
	3	28.81	28.74	28.82	28.81
	4	28.74	28.84	28.82	28.79
	5	28.72	28.75	28.80	28.76
	6	28.75	28.73	28.77	28.77
	7	28.78	28.77	28.82	28.81
	8	28.81	28.71	28.77	28.77
	9	28.81	28.76	28.73	28.81
	10	28.80	28.73	28.76	28.82
	11	28.83	28.76	28.75	28.78
	12	28.71	28.71	28.73	28.78
	13	28.80	28.74	28.77	28.72
	14	28.77	28.79	28.76	28.74
	15	28.77	28.72	28.82	28.77
	16	28.74	28.74	28.81	28.74
	17	28.74	28.75	28.81	28.80
	18	28.75	28.70	28.83	28.77
	19	28.74	28.74	28.79	28.79
	20	28.73	28.74	28.76	28.72
	21	28.82	28.78	28.79	28.79
	22	28.82	28.73	28.74	28.78
	23	28.82	28.75	28.79	28.82
	24	28.72	28.73	28.76	28.75
	25	28.78	28.77	28.74	28.77
	26	28.75	28.74	28.78	28.78
	27	28.75	28.76	28.83	28.78
	28	28.72	28.79	28.78	28.76
	29	28.75	28.77	28.72	28.79
	30	28.73	28.75	28.79	28.74
	31	28.72	28.72	28.81	28.84
Middle	0	28.76	28.82	28.87	28.77
	1	28.81	28.75	28.79	28.79
	2	28.73	28.75	28.82	28.80
	3	28.76	28.80	28.76	28.80
	4	28.75	28.78	28.78	28.81
	5	28.80	28.79	28.85	28.83
	6	28.76	28.76	28.81	28.83
	7	28.78	28.82	28.80	28.82
	8	28.75	28.79	28.79	28.79
	9	28.78	28.82	28.85	28.76
	10	28.79	28.76	28.78	28.77
	11	28.79	28.81	28.78	28.84
	12	28.82	28.77	28.81	28.82
	13	28.81	28.79	28.87	28.83
	14	28.79	28.80	28.76	28.79
	15	28.81	28.75	28.83	28.80
	16	28.79	28.74	28.80	28.82
	17	28.81	28.81	28.87	28.78

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	18	28.81	28.79	28.81	28.83
	19	28.81	28.81	28.80	28.81
	20	28.75	28.86	28.83	28.89
	21	28.79	28.77	28.77	28.80
	22	28.78	28.74	28.84	28.86
	23	28.78	28.73	28.76	28.82
	24	28.77	28.78	28.82	28.87
	25	28.80	28.77	28.81	28.75
	26	28.82	28.77	28.83	28.84
	27	28.76	28.80	28.81	28.81
	28	28.80	28.79	28.76	28.79
	29	28.81	28.80	28.84	28.83
	30	28.77	28.84	28.81	28.83
	31	28.79	28.82	28.82	28.85
High	0	28.80	28.75	28.71	28.76
	1	28.76	28.78	28.70	28.75
	2	28.81	28.76	28.77	28.80
	3	28.84	28.80	28.75	28.80
	4	28.77	28.78	28.75	28.76
	5	28.75	28.75	28.76	28.81
	6	28.76	28.79	28.76	28.78
	7	28.72	28.81	28.77	28.75
	8	28.80	28.80	28.73	28.76
	9	28.77	28.79	28.79	28.84
	10	28.80	28.73	28.80	28.75
	11	28.74	28.79	28.79	28.80
	12	28.78	28.79	28.79	28.76
	13	28.74	28.78	28.75	28.79
	14	28.76	28.80	28.74	28.77
	15	28.79	28.77	28.76	28.73
	16	28.80	28.74	28.77	28.74
	17	28.76	28.79	28.79	28.80
	18	28.78	28.78	28.73	28.77
	19	28.77	28.71	28.77	28.79
	20	28.77	28.75	28.75	28.81
	21	28.78	28.72	28.75	28.78
	22	28.75	28.83	28.78	28.78
	23	28.76	28.85	28.73	28.70
	24	28.77	28.78	28.74	28.72
	25	28.74	28.76	28.77	28.74
	26	28.75	28.88	28.81	28.80
	27	28.80	28.70	28.79	28.82
	28	28.75	28.74	28.76	28.76
	29	28.77	28.76	28.77	28.76
	30	28.78	28.83	28.76	28.72
	31	28.76	28.78	28.79	28.73

Table 8-11. Occupied Bandwidth Summary Data (NR_n25_1C_30M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.33	9.31	9.31	9.32
	1	9.31	9.32	9.32	9.30
	2	9.30	9.32	9.35	9.31
	3	9.31	9.36	9.30	9.30
	4	9.31	9.33	9.32	9.28
	5	9.30	9.36	9.32	9.33
	6	9.32	9.38	9.30	9.29
	7	9.30	9.33	9.32	9.34
	8	9.31	9.34	9.30	9.31
	9	9.33	9.34	9.29	9.33
	10	9.32	9.33	9.33	9.33
	11	9.35	9.31	9.32	9.29
	12	9.35	9.31	9.32	9.29
	13	9.29	9.37	9.31	9.34
	14	9.31	9.32	9.31	9.31
	15	9.32	9.32	9.31	9.33
	16	9.32	9.27	9.30	9.30
	17	9.31	9.35	9.28	9.33
	18	9.33	9.33	9.36	9.36
	19	9.31	9.32	9.30	9.30
	20	9.31	9.36	9.32	9.32
	21	9.33	9.31	9.30	9.28
	22	9.31	9.35	9.29	9.34
	23	9.31	9.28	9.30	9.29
	24	9.35	9.32	9.28	9.32
	25	9.32	9.34	9.30	9.31
	26	9.32	9.32	9.31	9.28
	27	9.31	9.33	9.33	9.32
	28	9.31	9.33	9.28	9.33
	29	9.31	9.32	9.29	9.31
	30	9.29	9.35	9.33	9.30
	31	9.32	9.28	9.32	9.30
Middle	0	9.34	9.33	9.30	9.35
	1	9.32	9.35	9.33	9.31
	2	9.32	9.33	9.32	9.31
	3	9.31	9.27	9.37	9.29
	4	9.32	9.32	9.30	9.34
	5	9.31	9.32	9.34	9.34
	6	9.33	9.31	9.34	9.30
	7	9.32	9.30	9.35	9.32
	8	9.32	9.28	9.30	9.33
	9	9.33	9.34	9.32	9.30
	10	9.33	9.34	9.33	9.33
	11	9.33	9.30	9.29	9.32
	12	9.32	9.34	9.33	9.32
	13	9.32	9.33	9.32	9.33
	14	9.31	9.29	9.30	9.31
	15	9.31	9.33	9.34	9.34
	16	9.35	9.31	9.31	9.31
	17	9.32	9.31	9.33	9.33



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	18	9.34	9.34	9.28	9.33
	19	9.32	9.29	9.39	9.32
	20	9.31	9.33	9.34	9.32
	21	9.31	9.30	9.30	9.30
	22	9.34	9.35	9.37	9.31
	23	9.31	9.31	9.31	9.34
	24	9.32	9.34	9.35	9.35
	25	9.32	9.32	9.38	9.29
	26	9.29	9.34	9.30	9.33
	27	9.34	9.30	9.28	9.32
	28	9.34	9.33	9.29	9.33
	29	9.37	9.30	9.32	9.32
	30	9.31	9.29	9.32	9.32
	31	9.31	9.35	9.37	9.33
High	0	9.31	9.31	9.30	9.32
	1	9.33	9.30	9.29	9.32
	2	9.34	9.32	9.31	9.33
	3	9.30	9.29	9.31	9.32
	4	9.33	9.33	9.33	9.30
	5	9.32	9.32	9.32	9.29
	6	9.34	9.33	9.31	9.28
	7	9.30	9.33	9.37	9.31
	8	9.34	9.32	9.35	9.29
	9	9.29	9.32	9.31	9.34
	10	9.30	9.29	9.28	9.32
	11	9.34	9.34	9.30	9.30
	12	9.29	9.36	9.30	9.31
	13	9.30	9.29	9.33	9.32
	14	9.29	9.34	9.34	9.30
	15	9.33	9.31	9.30	9.32
	16	9.33	9.27	9.35	9.30
	17	9.31	9.33	9.32	9.31
	18	9.33	9.33	9.30	9.33
	19	9.35	9.33	9.39	9.31
	20	9.32	9.33	9.35	9.30
	21	9.32	9.33	9.35	9.32
	22	9.28	9.29	9.29	9.30
	23	9.32	9.32	9.35	9.29
	24	9.33	9.31	9.34	9.33
	25	9.27	9.32	9.27	9.31
	26	9.29	9.31	9.30	9.28
	27	9.32	9.28	9.34	9.29
	28	9.34	9.32	9.31	9.30
	29	9.35	9.32	9.32	9.31
	30	9.33	9.32	9.30	9.31
	31	9.32	9.32	9.31	9.33

Table 8-12. Occupied Bandwidth Summary Data (DSS_B/n25_1C_10M)

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	14.14	14.15	14.15	14.07
	1	14.15	14.16	14.11	14.08
	2	14.16	14.16	14.08	14.08
	3	14.14	14.15	14.12	14.12
	4	14.12	14.20	14.12	14.08
	5	14.11	14.17	14.12	14.09
	6	14.17	14.19	14.15	14.14
	7	14.12	14.20	14.11	14.11
	8	14.14	14.18	14.14	14.07
	9	14.18	14.17	14.18	14.04
	10	14.15	14.14	14.13	14.10
	11	14.16	14.19	14.14	14.11
	12	14.17	14.19	14.12	14.12
	13	14.09	14.11	14.10	14.09
	14	14.19	14.22	14.18	14.11
	15	14.21	14.16	14.11	14.04
	16	14.12	14.17	14.17	14.10
	17	14.18	14.14	14.17	14.10
	18	14.14	14.18	14.13	14.10
	19	14.17	14.19	14.12	14.07
	20	14.14	14.13	14.12	14.10
	21	14.20	14.17	14.17	14.12
	22	14.14	14.16	14.13	14.14
	23	14.12	14.19	14.20	14.08
	24	14.15	14.23	14.15	14.10
	25	14.16	14.15	14.14	14.10
	26	14.19	14.16	14.10	14.15
	27	14.14	14.15	14.19	14.14
	28	14.16	14.19	14.11	14.09
	29	14.11	14.17	14.11	14.11
	30	14.20	14.11	14.17	14.10
	31	14.15	14.16	14.13	14.07
Middle	0	14.17	14.21	14.18	14.12
	1	14.18	14.14	14.11	14.13
	2	14.18	14.15	14.16	14.10
	3	14.16	14.15	14.17	14.13
	4	14.21	14.19	14.13	14.09
	5	14.20	14.23	14.11	14.08
	6	14.15	14.19	14.13	14.10
	7	14.21	14.17	14.16	14.09
	8	14.13	14.14	14.14	14.07
	9	14.17	14.17	14.12	14.10
	10	14.23	14.22	14.17	14.12
	11	14.19	14.22	14.13	14.10
	12	14.15	14.18	14.11	14.09
	13	14.14	14.23	14.13	14.13
	14	14.18	14.11	14.15	14.10
	15	14.18	14.20	14.11	14.16
	16	14.13	14.17	14.10	14.11
	17	14.17	14.18	14.15	14.10

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	18	14.17	14.22	14.19	14.14
	19	14.12	14.23	14.11	14.05
	20	14.15	14.17	14.15	14.12
	21	14.16	14.21	14.20	14.10
	22	14.17	14.20	14.15	14.11
	23	14.21	14.19	14.12	14.09
	24	14.15	14.14	14.15	14.11
	25	14.11	14.22	14.17	14.06
	26	14.12	14.18	14.14	14.10
	27	14.14	14.19	14.09	14.09
	28	14.16	14.20	14.15	14.10
	29	14.16	14.16	14.15	14.10
	30	14.17	14.18	14.14	14.10
	31	14.16	14.19	14.11	14.10
High	0	14.12	14.17	14.14	14.09
	1	14.16	14.21	14.13	14.10
	2	14.16	14.09	14.08	14.12
	3	14.19	14.14	14.16	14.08
	4	14.18	14.17	14.12	14.15
	5	14.14	14.19	14.13	14.11
	6	14.11	14.23	14.15	14.10
	7	14.17	14.24	14.15	14.07
	8	14.18	14.19	14.11	14.12
	9	14.13	14.15	14.14	14.09
	10	14.14	14.21	14.15	14.10
	11	14.16	14.21	14.16	14.09
	12	14.20	14.19	14.11	14.10
	13	14.18	14.22	14.17	14.05
	14	14.12	14.16	14.10	14.11
	15	14.19	14.17	14.14	14.09
	16	14.12	14.22	14.15	14.10
	17	14.09	14.16	14.10	14.09
	18	14.14	14.17	14.17	14.15
	19	14.14	14.18	14.08	14.13
	20	14.14	14.14	14.13	14.02
	21	14.19	14.19	14.19	14.10
	22	14.16	14.18	14.09	14.13
	23	14.15	14.18	14.12	14.11
	24	14.16	14.18	14.12	14.11
	25	14.18	14.17	14.12	14.08
	26	14.16	14.12	14.15	14.07
	27	14.17	14.22	14.18	14.15
	28	14.14	14.20	14.17	14.11
	29	14.13	14.21	14.12	14.11
	30	14.11	14.14	14.19	14.11
	31	14.21	14.23	14.16	14.04

Table 8-13. Occupied Bandwidth Summary Data (DSS_B/n25_1C_15M)

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	19.01	18.95	18.91	18.97
	1	18.97	18.96	19.01	18.97
	2	19.03	18.96	18.92	18.97
	3	18.94	18.96	18.90	18.97
	4	18.97	18.96	18.99	18.99
	5	19.01	19.03	18.98	18.99
	6	18.97	18.99	18.99	18.98
	7	18.95	18.97	19.00	18.95
	8	19.00	19.01	18.97	18.96
	9	18.97	18.97	18.91	18.93
	10	19.04	18.94	18.93	18.95
	11	18.97	19.01	18.94	19.02
	12	19.03	18.98	18.92	18.93
	13	19.02	18.97	19.01	18.92
	14	19.08	18.98	18.97	19.04
	15	18.97	18.96	19.02	18.96
	16	19.05	18.97	18.94	18.97
	17	19.03	18.98	19.01	18.93
	18	18.99	18.97	19.03	18.96
	19	19.03	18.96	18.98	19.02
	20	18.99	18.96	18.95	19.01
	21	19.00	18.99	18.96	18.92
	22	18.99	18.93	18.93	18.95
	23	19.02	18.96	18.98	19.01
	24	19.03	18.99	18.98	19.01
	25	18.99	18.98	18.97	18.93
	26	19.00	18.91	18.98	18.98
	27	19.00	18.98	18.92	18.98
	28	18.98	18.97	18.99	18.95
	29	19.03	18.99	18.97	18.93
	30	19.00	18.98	18.96	19.05
	31	18.99	18.98	18.90	18.97
Middle	0	19.01	19.01	18.98	19.00
	1	18.95	19.01	19.00	18.98
	2	19.06	18.98	18.96	18.96
	3	19.02	19.01	18.92	18.98
	4	19.01	19.03	18.97	18.98
	5	18.99	19.03	18.93	18.99
	6	18.95	19.03	18.94	19.02
	7	19.00	19.01	18.93	18.91
	8	19.06	19.02	18.93	18.99
	9	19.03	19.03	19.03	18.98
	10	19.07	18.98	18.96	18.98
	11	19.01	18.99	18.94	18.99
	12	19.00	19.03	18.91	18.93
	13	18.98	18.97	19.07	18.95
	14	19.02	18.99	18.92	18.95
	15	19.01	18.98	18.97	19.04
	16	18.98	19.02	18.98	18.94
	17	19.00	18.97	18.97	18.99

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	18	18.96	19.04	18.94	18.97
	19	18.99	19.00	18.95	18.99
	20	19.02	19.01	19.00	18.98
	21	19.03	19.00	18.98	19.00
	22	19.04	18.97	18.92	18.96
	23	18.98	18.94	18.97	19.04
	24	19.07	18.99	19.02	18.94
	25	19.02	19.01	19.02	18.97
	26	19.00	18.99	18.89	18.97
	27	19.02	18.94	18.98	18.95
	28	19.07	19.03	18.97	18.96
	29	19.02	19.01	19.00	19.01
	30	19.05	19.02	18.95	19.01
	31	19.01	19.03	18.96	19.08
High	0	18.99	18.97	18.92	18.96
	1	18.91	18.91	18.96	18.95
	2	18.95	18.98	18.91	18.94
	3	18.97	18.95	18.94	18.96
	4	18.97	18.94	19.01	18.98
	5	18.96	18.99	18.99	19.03
	6	19.00	18.94	18.92	18.97
	7	19.00	19.01	18.97	18.95
	8	18.97	18.91	18.96	18.96
	9	18.98	19.00	18.94	19.05
	10	18.97	18.99	18.98	18.92
	11	19.04	18.95	19.00	18.94
	12	19.05	18.95	18.97	18.99
	13	19.00	18.94	18.98	18.97
	14	19.01	18.99	18.97	18.94
	15	18.91	18.98	18.97	18.94
	16	18.97	18.98	18.96	19.00
	17	18.96	18.99	18.96	18.95
	18	18.97	18.98	18.93	18.96
	19	18.98	18.92	18.96	19.00
	20	19.04	18.96	18.96	18.90
	21	18.96	18.99	19.03	18.98
	22	19.06	18.95	18.98	18.99
	23	18.95	18.92	18.93	18.92
	24	19.00	18.96	18.96	18.97
	25	18.99	18.93	18.97	18.98
	26	18.97	18.97	18.94	18.95
	27	18.99	19.02	19.00	18.95
	28	18.99	18.91	18.97	18.97
	29	19.01	18.94	18.97	19.00
	30	19.05	18.95	18.96	18.98
	31	19.03	18.94	18.94	18.93

Table 8-14. Occupied Bandwidth Summary Data (DSS_B/n25_1C_20M)

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Channel	Port	OBW (MHz)		Port	OBW (MHz)	
		LTE_B25_2C_10M+10M			LTE_B25_3C_5M+10M+15M	
		QPSK	16QAM		QPSK	16QAM
Low	8	19.09	19.05	6	29.04	29.07
	13	19.05	19.06	7	29.01	29.07
	16	19.10	19.04	10	29.07	29.08
	19	19.06	19.06	13	29.00	29.09
Middle	8	19.09	19.10	6	29.04	29.10
	13	19.09	19.07	7	29.05	29.09
	16	19.09	19.08	10	29.04	29.12
	19	19.08	19.07	13	29.06	29.17
High	8	19.07	19.04	6	29.00	29.04
	13	19.07	19.10	7	28.98	29.11
	16	19.10	19.05	10	29.02	29.05
	19	19.04	19.06	13	29.06	29.02
Channel	Port	OBW (MHz)		Port	OBW (MHz)	
		NR_n25_2C_10M+10M			NR_n25_3C_5M+10M+15M	
		QPSK	16QAM		QPSK	16QAM
Low	0	19.39	19.36	10	29.42	29.38
	10	19.38	19.40	13	29.40	29.40
	13	19.40	19.40	19	29.41	29.39
	19	19.37	19.35	20	29.41	29.39
Middle	0	19.38	19.41	10	29.45	29.41
	10	19.40	19.38	13	29.38	29.35
	13	19.37	19.39	19	29.37	29.46
	19	19.37	19.40	20	29.38	29.35
High	0	19.40	19.38	10	29.35	29.37
	10	19.38	19.39	13	29.33	29.37
	13	19.35	19.36	19	29.41	29.42
	19	19.41	19.40	20	29.39	29.36

Table 8-15. Occupied Bandwidth Summary Data (B/n25_Multi carrier_Configurations)

Channel	Port	OBW (MHz)		Port	OBW (MHz)	
		MSR_B/n25_3C_LTE 5M+NR 5M+DSS 10M			MSR_B/n25_3C_LTE 10M+NR 10M+DSS 10M	
		QPSK	16QAM		QPSK	16QAM
Low	4	19.43	19.49	4	29.17	29.26
	5	19.42	19.47	5	29.12	29.27
	9	19.37	19.46	9	29.15	29.21
	26	19.46	19.45	30	29.16	29.20
Middle	4	19.41	19.48	4	29.12	29.21
	5	19.40	19.52	5	29.18	29.30
	9	19.46	19.50	9	29.16	29.24
	26	19.41	19.50	30	29.25	29.20
High	4	19.43	19.41	4	29.10	29.17
	5	19.38	19.47	5	29.15	29.10
	9	19.39	19.46	9	29.14	29.14
	26	19.39	19.45	30	29.18	29.15

Table 8-16. Occupied Bandwidth Summary Data (B/n25_MSR_Configurations)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	4.53	4.53	4.54	4.54
	1	4.53	4.53	4.54	4.55
	2	4.52	4.53	4.53	4.53
	3	4.53	4.53	4.53	4.54
	4	4.52	4.54	4.54	4.54
	5	4.53	4.52	4.53	4.54
	6	4.52	4.53	4.53	4.54
	7	4.53	4.53	4.53	4.55
	8	4.53	4.52	4.53	4.54
	9	4.53	4.53	4.55	4.55
	10	4.52	4.53	4.54	4.54
	11	4.53	4.53	4.53	4.54
	12	4.53	4.53	4.53	4.54
	13	4.52	4.52	4.52	4.53
	14	4.53	4.53	4.52	4.54
	15	4.53	4.53	4.54	4.54
	16	4.53	4.53	4.54	4.55
	17	4.53	4.53	4.55	4.53
	18	4.52	4.53	4.54	4.54
	19	4.53	4.54	4.54	4.53
	20	4.52	4.53	4.52	4.53
	21	4.53	4.53	4.53	4.54
	22	4.52	4.53	4.54	4.54
	23	4.53	4.53	4.54	4.54
	24	4.52	4.52	4.53	4.55
	25	4.53	4.53	4.52	4.53
	26	4.52	4.53	4.53	4.55
	27	4.53	4.53	4.53	4.54
	28	4.52	4.53	4.53	4.55
	29	4.53	4.53	4.53	4.54
	30	4.52	4.52	4.54	4.54
	31	4.53	4.54	4.54	4.53
Middle	0	4.53	4.53	4.53	4.54
	1	4.52	4.52	4.54	4.54
	2	4.53	4.54	4.53	4.54
	3	4.53	4.53	4.54	4.55
	4	4.53	4.54	4.54	4.54
	5	4.53	4.53	4.55	4.53
	6	4.54	4.53	4.54	4.55
	7	4.52	4.53	4.53	4.54
	8	4.53	4.52	4.55	4.55
	9	4.54	4.53	4.55	4.53
	10	4.53	4.53	4.53	4.56
	11	4.52	4.53	4.53	4.54
	12	4.54	4.55	4.53	4.53
	13	4.53	4.53	4.53	4.54
	14	4.53	4.55	4.53	4.55
	15	4.53	4.52	4.54	4.54
	16	4.53	4.54	4.53	4.54
	17	4.53	4.54	4.55	4.53

**CTK Co., Ltd.**

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	18	4.53	4.54	4.54	4.55
	19	4.53	4.54	4.53	4.55
	20	4.53	4.54	4.52	4.55
	21	4.53	4.54	4.53	4.53
	22	4.52	4.54	4.54	4.54
	23	4.53	4.53	4.52	4.54
	24	4.52	4.54	4.53	4.54
	25	4.53	4.54	4.53	4.53
	26	4.53	4.54	4.54	4.54
	27	4.53	4.55	4.53	4.54
	28	4.53	4.54	4.52	4.53
	29	4.52	4.53	4.52	4.55
	30	4.54	4.54	4.53	4.53
	31	4.53	4.54	4.54	4.53
High	0	4.53	4.53	4.54	4.52
	1	4.53	4.55	4.55	4.53
	2	4.53	4.54	4.53	4.53
	3	4.53	4.52	4.55	4.54
	4	4.53	4.52	4.53	4.54
	5	4.52	4.54	4.53	4.54
	6	4.53	4.54	4.53	4.54
	7	4.52	4.53	4.52	4.54
	8	4.53	4.52	4.53	4.56
	9	4.53	4.54	4.55	4.53
	10	4.53	4.53	4.56	4.54
	11	4.53	4.53	4.54	4.55
	12	4.53	4.54	4.53	4.53
	13	4.53	4.53	4.52	4.55
	14	4.54	4.54	4.55	4.54
	15	4.52	4.54	4.53	4.53
	16	4.53	4.53	4.55	4.55
	17	4.53	4.54	4.53	4.53
	18	4.52	4.53	4.52	4.54
	19	4.53	4.53	4.53	4.54
	20	4.53	4.53	4.53	4.54
	21	4.53	4.54	4.56	4.54
	22	4.53	4.54	4.52	4.55
	23	4.53	4.53	4.55	4.55
	24	4.53	4.54	4.52	4.54
	25	4.53	4.54	4.53	4.54
	26	4.53	4.55	4.55	4.53
	27	4.52	4.54	4.53	4.55
	28	4.54	4.52	4.52	4.54
	29	4.53	4.53	4.53	4.54
	30	4.53	4.55	4.52	4.55
	31	4.53	4.55	4.55	4.53

Table 8-17. Occupied Bandwidth Summary Data (LTE_B66_1C_5M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.06	9.06	9.08	9.09
	1	9.07	9.08	9.06	9.07
	2	9.05	9.08	9.05	9.08
	3	9.07	9.09	9.07	9.07
	4	9.09	9.05	9.06	9.08
	5	9.07	9.06	9.07	9.05
	6	9.10	9.05	9.06	9.08
	7	9.05	9.05	9.03	9.07
	8	9.06	9.12	9.07	9.08
	9	9.09	9.07	9.05	9.07
	10	9.08	9.06	9.05	9.06
	11	9.08	9.10	9.10	9.07
	12	9.06	9.06	9.04	9.06
	13	9.05	9.10	9.05	9.07
	14	9.02	9.09	9.06	9.08
	15	9.07	9.04	9.08	9.08
	16	9.07	9.04	9.07	9.08
	17	9.07	9.06	9.06	9.08
	18	9.06	9.05	9.06	9.07
	19	9.10	9.05	9.05	9.08
	20	9.11	9.07	9.08	9.05
	21	9.08	9.03	9.08	9.09
	22	9.07	9.08	9.08	9.06
	23	9.08	9.07	9.06	9.06
	24	9.08	9.09	9.05	9.11
	25	9.08	9.05	9.10	9.06
	26	9.05	9.03	9.06	9.08
	27	9.06	9.08	9.06	9.08
	28	9.08	9.09	9.06	9.08
	29	9.07	9.06	9.05	9.06
	30	9.08	9.07	9.04	9.08
	31	9.05	9.09	9.06	9.08
Middle	0	9.06	9.07	9.07	9.03
	1	9.07	9.09	9.07	9.06
	2	9.06	9.08	9.07	9.07
	3	9.06	9.08	9.06	9.08
	4	9.05	9.05	9.08	9.07
	5	9.05	9.09	9.09	9.05
	6	9.04	9.05	9.10	9.08
	7	9.07	9.06	9.07	9.08
	8	9.06	9.07	9.05	9.08
	9	9.07	9.07	9.07	9.09
	10	9.05	9.04	9.03	9.10
	11	9.05	9.07	9.07	9.09
	12	9.09	9.06	9.07	9.04
	13	9.09	9.09	9.05	9.10
	14	9.04	9.07	9.06	9.06
	15	9.06	9.08	9.07	9.09
	16	9.07	9.08	9.09	9.09
	17	9.06	9.06	9.07	9.09

**CTK Co., Ltd.**

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	18	9.07	9.06	9.07	9.13
	19	9.07	9.08	9.07	9.06
	20	9.08	9.07	9.05	9.07
	21	9.08	9.07	9.09	9.11
	22	9.07	9.06	9.05	9.06
	23	9.08	9.07	9.05	9.11
	24	9.07	9.09	9.06	9.07
	25	9.08	9.09	9.08	9.07
	26	9.07	9.06	9.08	9.08
	27	9.06	9.03	9.08	9.08
	28	9.08	9.04	9.07	9.07
	29	9.08	9.07	9.11	9.05
	30	9.07	9.06	9.10	9.10
	31	9.05	9.06	9.10	9.08
High	0	9.03	9.09	9.06	9.06
	1	9.06	9.06	9.05	9.08
	2	9.06	9.08	9.07	9.05
	3	9.07	9.07	9.08	9.09
	4	9.06	9.08	9.08	9.03
	5	9.05	9.09	9.08	9.06
	6	9.07	9.07	9.06	9.06
	7	9.05	9.07	9.06	9.07
	8	9.08	9.06	9.09	9.05
	9	9.07	9.07	9.05	9.07
	10	9.07	9.06	9.08	9.09
	11	9.08	9.09	9.07	9.06
	12	9.06	9.08	9.05	9.05
	13	9.06	9.09	9.08	9.06
	14	9.06	9.05	9.07	9.07
	15	9.06	9.06	9.07	9.09
	16	9.09	9.08	9.07	9.08
	17	9.07	9.06	9.08	9.03
	18	9.09	9.06	9.04	9.07
	19	9.08	9.05	9.04	9.07
	20	9.06	9.09	9.07	9.07
	21	9.07	9.08	9.08	9.10
	22	9.07	9.05	9.08	9.04
	23	9.08	9.07	9.07	9.07
	24	9.07	9.06	9.05	9.05
	25	9.06	9.05	9.04	9.06
	26	9.07	9.08	9.08	9.07
	27	9.06	9.07	9.02	9.08
	28	9.08	9.06	9.09	9.08
	29	9.08	9.07	9.07	9.07
	30	9.06	9.07	9.07	9.07
	31	9.07	9.10	9.08	9.06

Table 8-18. Occupied Bandwidth Summary Data (LTE_B66_1C_10M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	13.59	13.59	13.58	13.64
	1	13.57	13.63	13.63	13.60
	2	13.60	13.60	13.58	13.61
	3	13.61	13.56	13.58	13.63
	4	13.57	13.57	13.59	13.59
	5	13.60	13.62	13.59	13.60
	6	13.58	13.59	13.58	13.59
	7	13.62	13.58	13.63	13.59
	8	13.64	13.54	13.60	13.64
	9	13.60	13.60	13.60	13.58
	10	13.60	13.60	13.63	13.61
	11	13.64	13.62	13.60	13.60
	12	13.60	13.61	13.58	13.59
	13	13.60	13.59	13.61	13.59
	14	13.64	13.63	13.62	13.60
	15	13.62	13.55	13.61	13.64
	16	13.61	13.58	13.57	13.61
	17	13.62	13.59	13.61	13.59
	18	13.60	13.58	13.58	13.58
	19	13.61	13.56	13.61	13.58
	20	13.62	13.59	13.60	13.61
	21	13.59	13.60	13.63	13.59
	22	13.61	13.59	13.59	13.58
	23	13.63	13.62	13.60	13.60
	24	13.57	13.62	13.58	13.59
	25	13.61	13.60	13.62	13.57
	26	13.59	13.63	13.61	13.55
	27	13.61	13.59	13.58	13.58
	28	13.58	13.59	13.61	13.59
	29	13.59	13.62	13.63	13.60
	30	13.62	13.61	13.61	13.62
	31	13.63	13.60	13.63	13.62
Middle	0	13.60	13.63	13.61	13.62
	1	13.62	13.61	13.61	13.62
	2	13.60	13.64	13.61	13.65
	3	13.62	13.61	13.61	13.62
	4	13.64	13.61	13.58	13.59
	5	13.59	13.61	13.61	13.60
	6	13.61	13.62	13.62	13.58
	7	13.58	13.61	13.58	13.64
	8	13.59	13.57	13.67	13.63
	9	13.61	13.63	13.64	13.60
	10	13.61	13.64	13.58	13.56
	11	13.60	13.60	13.61	13.61
	12	13.64	13.62	13.64	13.60
	13	13.58	13.63	13.59	13.64
	14	13.61	13.62	13.63	13.63
	15	13.61	13.64	13.61	13.62
	16	13.62	13.58	13.62	13.58
	17	13.64	13.61	13.61	13.60

**CTK Co., Ltd.**

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	18	13.63	13.57	13.59	13.60
	19	13.62	13.61	13.59	13.64
	20	13.60	13.61	13.62	13.65
	21	13.60	13.65	13.65	13.63
	22	13.61	13.60	13.60	13.60
	23	13.64	13.61	13.64	13.58
	24	13.58	13.61	13.60	13.64
	25	13.60	13.60	13.62	13.60
	26	13.62	13.57	13.64	13.62
	27	13.61	13.64	13.63	13.59
	28	13.61	13.61	13.60	13.62
	29	13.62	13.61	13.63	13.59
	30	13.64	13.63	13.62	13.60
	31	13.61	13.58	13.64	13.65
High	0	13.61	13.61	13.63	13.61
	1	13.60	13.62	13.60	13.61
	2	13.61	13.60	13.63	13.60
	3	13.62	13.61	13.58	13.58
	4	13.62	13.57	13.62	13.58
	5	13.61	13.61	13.63	13.61
	6	13.64	13.61	13.59	13.62
	7	13.61	13.60	13.64	13.62
	8	13.62	13.64	13.62	13.61
	9	13.63	13.60	13.60	13.57
	10	13.60	13.64	13.65	13.61
	11	13.61	13.63	13.60	13.63
	12	13.62	13.64	13.59	13.58
	13	13.61	13.60	13.60	13.63
	14	13.61	13.64	13.64	13.58
	15	13.60	13.60	13.60	13.60
	16	13.59	13.64	13.62	13.58
	17	13.61	13.64	13.60	13.58
	18	13.61	13.59	13.58	13.61
	19	13.61	13.61	13.64	13.60
	20	13.61	13.62	13.63	13.58
	21	13.61	13.61	13.58	13.61
	22	13.60	13.64	13.62	13.62
	23	13.61	13.62	13.59	13.60
	24	13.63	13.61	13.65	13.58
	25	13.59	13.60	13.65	13.61
	26	13.59	13.60	13.60	13.60
	27	13.63	13.60	13.63	13.60
	28	13.65	13.62	13.64	13.63
	29	13.62	13.62	13.60	13.60
	30	13.60	13.59	13.60	13.58
	31	13.60	13.58	13.62	13.60

Table 8-19. Occupied Bandwidth Summary Data (LTE_B66_1C_15M)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,
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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	18.06	18.10	18.09	18.11
	1	18.10	18.07	18.14	18.12
	2	18.07	18.12	18.09	18.04
	3	18.11	18.05	18.08	18.10
	4	18.08	18.10	18.09	18.13
	5	18.05	18.10	18.11	18.11
	6	18.07	18.10	18.07	18.08
	7	18.08	18.05	18.08	18.08
	8	18.14	18.08	18.07	18.12
	9	18.09	18.07	18.11	18.12
	10	18.14	18.09	18.11	18.07
	11	18.09	18.13	18.11	18.10
	12	18.11	18.07	18.08	18.09
	13	18.10	18.14	18.13	18.13
	14	18.09	18.06	18.09	18.09
	15	18.08	18.05	18.13	18.09
	16	18.08	18.08	18.09	18.11
	17	18.07	18.06	18.12	18.10
	18	18.10	18.11	18.14	18.08
	19	18.07	18.10	18.09	18.10
	20	18.10	18.07	18.12	18.09
	21	18.07	18.07	18.08	18.10
	22	18.06	18.12	18.15	18.13
	23	18.05	18.08	18.10	18.11
	24	18.07	18.05	18.10	18.11
	25	18.05	18.08	18.10	18.10
	26	18.07	18.07	18.12	18.11
	27	18.07	18.09	18.11	18.07
	28	18.06	18.09	18.12	18.11
	29	18.09	18.08	18.06	18.07
	30	18.12	18.10	18.12	18.07
	31	18.14	18.13	18.11	18.07
Middle	0	18.12	18.08	18.06	18.09
	1	18.08	18.13	18.07	18.13
	2	18.10	18.06	18.09	18.14
	3	18.12	18.08	18.15	18.10
	4	18.13	18.13	18.07	18.08
	5	18.14	18.10	18.15	18.13
	6	18.09	18.09	18.08	18.11
	7	18.12	18.11	18.10	18.06
	8	18.14	18.10	18.06	18.09
	9	18.11	18.14	18.08	18.12
	10	18.09	18.10	18.12	18.06
	11	18.08	18.08	18.05	18.15
	12	18.11	18.10	18.10	18.08
	13	18.10	18.09	18.05	18.07
	14	18.10	18.15	18.09	18.09
	15	18.12	18.12	18.09	18.09
	16	18.14	18.06	18.10	18.09
	17	18.05	18.08	18.07	18.09

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	18	18.07	18.08	18.05	18.05
	19	18.10	18.12	18.08	18.07
	20	18.11	18.06	18.07	18.11
	21	18.11	18.12	18.13	18.13
	22	18.11	18.08	18.12	18.08
	23	18.09	18.13	18.10	18.12
	24	18.09	18.10	18.09	18.07
	25	18.06	18.13	18.09	18.12
	26	18.09	18.11	18.11	18.04
	27	18.13	18.14	18.09	18.06
	28	18.12	18.13	18.12	18.09
	29	18.12	18.08	18.07	18.12
	30	18.06	18.12	18.05	18.07
	31	18.11	18.13	18.07	18.11
High	0	18.08	18.05	18.10	18.05
	1	18.12	18.11	18.10	18.12
	2	18.09	18.10	18.13	18.12
	3	18.08	18.07	18.12	18.08
	4	18.09	18.15	18.09	18.13
	5	18.08	18.10	18.11	18.10
	6	18.07	18.12	18.10	18.12
	7	18.09	18.09	18.07	18.11
	8	18.05	18.10	18.05	18.15
	9	18.07	18.10	18.13	18.10
	10	18.09	18.12	18.09	18.13
	11	18.05	18.08	18.14	18.10
	12	18.07	18.07	18.11	18.10
	13	18.08	18.14	18.10	18.15
	14	18.06	18.09	18.13	18.11
	15	18.05	18.11	18.12	18.06
	16	18.11	18.09	18.08	18.18
	17	18.08	18.07	18.09	18.13
	18	18.13	18.10	18.09	18.16
	19	18.07	18.10	18.12	18.11
	20	18.07	18.14	18.11	18.06
	21	18.08	18.09	18.10	18.09
	22	18.09	18.14	18.12	18.12
	23	18.04	18.14	18.08	18.13
	24	18.15	18.14	18.12	18.10
	25	18.05	18.11	18.12	18.12
	26	18.11	18.08	18.08	18.16
	27	18.09	18.06	18.08	18.11
	28	18.07	18.07	18.13	18.10
	29	18.09	18.08	18.09	18.07
	30	18.07	18.10	18.09	18.14
	31	18.08	18.09	18.10	18.16

Table 8-20. Occupied Bandwidth Summary Data (LTE_B66_1C_20M)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,
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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	4.51	4.52	4.52	4.52
	1	4.51	4.51	4.51	4.52
	2	4.53	4.52	4.53	4.53
	3	4.52	4.52	4.52	4.53
	4	4.51	4.52	4.53	4.51
	5	4.52	4.51	4.52	4.52
	6	4.51	4.52	4.52	4.53
	7	4.53	4.53	4.52	4.52
	8	4.51	4.51	4.52	4.52
	9	4.53	4.50	4.51	4.53
	10	4.51	4.52	4.53	4.53
	11	4.52	4.52	4.51	4.53
	12	4.52	4.51	4.51	4.52
	13	4.52	4.51	4.52	4.52
	14	4.53	4.50	4.52	4.52
	15	4.52	4.53	4.51	4.52
	16	4.51	4.53	4.52	4.52
	17	4.52	4.51	4.51	4.52
	18	4.51	4.52	4.52	4.51
	19	4.52	4.51	4.52	4.52
	20	4.52	4.52	4.52	4.52
	21	4.52	4.51	4.52	4.53
	22	4.52	4.52	4.53	4.51
	23	4.52	4.52	4.52	4.53
	24	4.52	4.51	4.51	4.52
	25	4.51	4.51	4.53	4.53
	26	4.52	4.51	4.52	4.52
	27	4.52	4.51	4.52	4.52
	28	4.52	4.52	4.51	4.52
	29	4.52	4.52	4.52	4.52
	30	4.52	4.51	4.52	4.52
	31	4.53	4.52	4.54	4.51
Middle	0	4.52	4.52	4.51	4.52
	1	4.51	4.53	4.52	4.52
	2	4.51	4.51	4.51	4.52
	3	4.52	4.53	4.52	4.51
	4	4.51	4.54	4.51	4.53
	5	4.52	4.51	4.53	4.51
	6	4.53	4.52	4.53	4.52
	7	4.51	4.52	4.52	4.52
	8	4.52	4.51	4.52	4.53
	9	4.51	4.52	4.51	4.52
	10	4.51	4.51	4.51	4.52
	11	4.52	4.52	4.51	4.50
	12	4.53	4.51	4.52	4.52
	13	4.53	4.51	4.51	4.51
	14	4.52	4.51	4.51	4.52
	15	4.52	4.52	4.52	4.53
	16	4.52	4.52	4.51	4.52
	17	4.51	4.52	4.52	4.52

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,
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	18	4.53	4.53	4.51	4.52
	19	4.53	4.51	4.52	4.54
	20	4.53	4.52	4.51	4.51
	21	4.53	4.51	4.52	4.53
	22	4.51	4.54	4.52	4.51
	23	4.52	4.52	4.51	4.54
	24	4.52	4.50	4.52	4.52
	25	4.52	4.52	4.52	4.52
	26	4.52	4.51	4.52	4.52
	27	4.52	4.52	4.52	4.52
	28	4.52	4.52	4.52	4.53
	29	4.51	4.52	4.51	4.52
	30	4.53	4.52	4.52	4.51
	31	4.51	4.51	4.53	4.52
High	0	4.52	4.52	4.51	4.54
	1	4.52	4.50	4.52	4.53
	2	4.51	4.51	4.52	4.53
	3	4.53	4.50	4.53	4.53
	4	4.53	4.52	4.52	4.52
	5	4.51	4.51	4.53	4.50
	6	4.52	4.52	4.51	4.53
	7	4.52	4.51	4.52	4.52
	8	4.52	4.51	4.52	4.52
	9	4.51	4.51	4.53	4.51
	10	4.51	4.51	4.51	4.52
	11	4.52	4.51	4.52	4.52
	12	4.51	4.51	4.52	4.51
	13	4.53	4.52	4.53	4.52
	14	4.52	4.51	4.51	4.53
	15	4.53	4.51	4.52	4.51
	16	4.52	4.51	4.53	4.52
	17	4.52	4.52	4.52	4.52
	18	4.52	4.51	4.52	4.51
	19	4.51	4.52	4.52	4.50
	20	4.52	4.51	4.52	4.53
	21	4.52	4.50	4.51	4.53
	22	4.53	4.52	4.53	4.52
	23	4.52	4.51	4.52	4.51
	24	4.53	4.51	4.53	4.52
	25	4.51	4.51	4.52	4.52
	26	4.53	4.51	4.52	4.52
	27	4.52	4.51	4.53	4.52
	28	4.51	4.51	4.52	4.52
	29	4.52	4.51	4.52	4.52
	30	4.52	4.51	4.52	4.51
	31	4.52	4.50	4.51	4.52

Table 8-21. Occupied Bandwidth Summary Data (NR_n66_1C_5M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.36	9.34	9.38	9.37
	1	9.37	9.38	9.37	9.38
	2	9.35	9.36	9.38	9.37
	3	9.37	9.35	9.37	9.38
	4	9.34	9.37	9.38	9.38
	5	9.36	9.33	9.38	9.36
	6	9.36	9.35	9.38	9.36
	7	9.35	9.36	9.39	9.37
	8	9.36	9.36	9.39	9.40
	9	9.37	9.36	9.37	9.40
	10	9.35	9.35	9.39	9.37
	11	9.35	9.37	9.36	9.38
	12	9.37	9.35	9.35	9.34
	13	9.36	9.34	9.40	9.37
	14	9.37	9.37	9.37	9.38
	15	9.37	9.37	9.41	9.40
	16	9.37	9.36	9.36	9.38
	17	9.37	9.35	9.39	9.36
	18	9.35	9.35	9.37	9.36
	19	9.36	9.37	9.40	9.36
	20	9.37	9.37	9.37	9.37
	21	9.35	9.37	9.38	9.36
	22	9.36	9.37	9.36	9.37
	23	9.36	9.37	9.39	9.37
	24	9.35	9.35	9.38	9.38
	25	9.36	9.37	9.37	9.36
	26	9.36	9.34	9.37	9.38
	27	9.36	9.36	9.35	9.37
	28	9.35	9.36	9.38	9.35
	29	9.36	9.37	9.37	9.37
	30	9.35	9.36	9.37	9.35
	31	9.36	9.36	9.41	9.36
Middle	0	9.36	9.37	9.37	9.39
	1	9.37	9.36	9.35	9.38
	2	9.37	9.34	9.36	9.38
	3	9.38	9.36	9.38	9.36
	4	9.35	9.36	9.39	9.37
	5	9.37	9.35	9.39	9.38
	6	9.37	9.34	9.37	9.39
	7	9.37	9.36	9.38	9.39
	8	9.37	9.36	9.35	9.38
	9	9.35	9.35	9.38	9.42
	10	9.35	9.36	9.38	9.36
	11	9.35	9.36	9.38	9.39
	12	9.37	9.35	9.37	9.39
	13	9.36	9.34	9.38	9.41
	14	9.37	9.35	9.38	9.40
	15	9.38	9.36	9.37	9.38
	16	9.36	9.35	9.37	9.38
	17	9.38	9.36	9.38	9.36

**CTK Co., Ltd.**

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	18	9.37	9.37	9.40	9.38
	19	9.36	9.35	9.38	9.36
	20	9.36	9.35	9.37	9.38
	21	9.36	9.37	9.37	9.38
	22	9.37	9.35	9.38	9.40
	23	9.37	9.36	9.38	9.36
	24	9.35	9.36	9.36	9.38
	25	9.37	9.36	9.39	9.40
	26	9.36	9.37	9.36	9.38
	27	9.38	9.39	9.40	9.40
	28	9.37	9.38	9.38	9.39
	29	9.35	9.36	9.38	9.40
	30	9.38	9.37	9.39	9.39
	31	9.36	9.38	9.37	9.37
High	0	9.34	9.36	9.37	9.35
	1	9.36	9.36	9.35	9.39
	2	9.34	9.36	9.35	9.35
	3	9.36	9.37	9.35	9.36
	4	9.37	9.36	9.38	9.35
	5	9.36	9.37	9.36	9.36
	6	9.36	9.38	9.37	9.35
	7	9.36	9.35	9.36	9.37
	8	9.38	9.36	9.36	9.39
	9	9.36	9.37	9.36	9.34
	10	9.36	9.36	9.38	9.37
	11	9.36	9.37	9.37	9.37
	12	9.37	9.34	9.36	9.35
	13	9.35	9.37	9.35	9.35
	14	9.36	9.37	9.37	9.38
	15	9.36	9.37	9.37	9.35
	16	9.37	9.37	9.37	9.38
	17	9.36	9.38	9.37	9.35
	18	9.36	9.36	9.36	9.37
	19	9.35	9.37	9.36	9.35
	20	9.35	9.38	9.35	9.37
	21	9.37	9.35	9.38	9.35
	22	9.37	9.36	9.37	9.37
	23	9.36	9.35	9.37	9.37
	24	9.37	9.37	9.37	9.37
	25	9.36	9.37	9.35	9.37
	26	9.37	9.37	9.37	9.36
	27	9.37	9.36	9.37	9.36
	28	9.37	9.36	9.37	9.36
	29	9.35	9.36	9.37	9.36
	30	9.37	9.36	9.37	9.37
	31	9.35	9.36	9.36	9.35

Table 8-22. Occupied Bandwidth Summary Data (NR_n66_1C_10M)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,
17142, Korea
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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	14.23	14.21	14.26	14.24
	1	14.24	14.21	14.26	14.21
	2	14.23	14.21	14.23	14.22
	3	14.23	14.22	14.23	14.21
	4	14.26	14.22	14.25	14.23
	5	14.26	14.23	14.24	14.23
	6	14.25	14.21	14.26	14.21
	7	14.24	14.25	14.25	14.24
	8	14.25	14.24	14.22	14.23
	9	14.24	14.22	14.24	14.24
	10	14.25	14.24	14.24	14.22
	11	14.27	14.22	14.25	14.22
	12	14.23	14.23	14.26	14.22
	13	14.25	14.22	14.24	14.21
	14	14.22	14.19	14.24	14.20
	15	14.23	14.23	14.23	14.23
	16	14.23	14.23	14.25	14.21
	17	14.21	14.23	14.22	14.22
	18	14.22	14.21	14.26	14.22
	19	14.26	14.23	14.22	14.22
	20	14.22	14.24	14.25	14.25
	21	14.24	14.21	14.24	14.18
	22	14.25	14.20	14.25	14.22
	23	14.26	14.22	14.25	14.21
	24	14.25	14.20	14.26	14.22
	25	14.24	14.25	14.27	14.21
	26	14.22	14.19	14.23	14.21
	27	14.25	14.22	14.22	14.22
	28	14.22	14.21	14.23	14.22
	29	14.23	14.23	14.23	14.22
	30	14.25	14.20	14.25	14.23
	31	14.20	14.24	14.25	14.22
Middle	0	14.23	14.22	14.23	14.22
	1	14.26	14.25	14.23	14.20
	2	14.25	14.22	14.22	14.21
	3	14.25	14.23	14.23	14.24
	4	14.23	14.22	14.21	14.22
	5	14.25	14.23	14.21	14.21
	6	14.25	14.24	14.22	14.23
	7	14.23	14.23	14.20	14.23
	8	14.23	14.21	14.22	14.25
	9	14.23	14.25	14.23	14.24
	10	14.25	14.24	14.22	14.22
	11	14.25	14.22	14.21	14.20
	12	14.27	14.24	14.21	14.25
	13	14.24	14.22	14.23	14.21
	14	14.27	14.23	14.25	14.22
	15	14.26	14.26	14.24	14.22
	16	14.24	14.23	14.20	14.23
	17	14.24	14.22	14.20	14.21

**CTK Co., Ltd.**

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	18	14.24	14.25	14.22	14.20
	19	14.24	14.21	14.21	14.23
	20	14.24	14.22	14.20	14.23
	21	14.23	14.21	14.21	14.22
	22	14.26	14.23	14.23	14.24
	23	14.25	14.23	14.23	14.23
	24	14.26	14.22	14.22	14.24
	25	14.27	14.20	14.22	14.22
	26	14.24	14.22	14.21	14.23
	27	14.24	14.21	14.21	14.23
	28	14.22	14.23	14.23	14.22
	29	14.25	14.23	14.23	14.20
	30	14.26	14.23	14.22	14.19
	31	14.24	14.21	14.23	14.23
High	0	14.23	14.22	14.22	14.26
	1	14.25	14.24	14.26	14.23
	2	14.28	14.21	14.25	14.22
	3	14.21	14.25	14.25	14.23
	4	14.26	14.25	14.23	14.21
	5	14.23	14.24	14.25	14.22
	6	14.24	14.24	14.25	14.24
	7	14.24	14.23	14.28	14.21
	8	14.23	14.23	14.25	14.24
	9	14.27	14.25	14.24	14.20
	10	14.23	14.24	14.25	14.22
	11	14.25	14.23	14.24	14.20
	12	14.26	14.22	14.25	14.21
	13	14.24	14.25	14.24	14.26
	14	14.25	14.24	14.28	14.24
	15	14.24	14.23	14.25	14.23
	16	14.22	14.20	14.24	14.22
	17	14.23	14.23	14.23	14.20
	18	14.22	14.22	14.25	14.22
	19	14.22	14.24	14.23	14.21
	20	14.23	14.23	14.25	14.25
	21	14.24	14.24	14.25	14.21
	22	14.27	14.23	14.26	14.21
	23	14.22	14.23	14.24	14.23
	24	14.25	14.24	14.26	14.21
	25	14.22	14.21	14.24	14.23
	26	14.22	14.26	14.22	14.23
	27	14.24	14.23	14.22	14.21
	28	14.23	14.23	14.25	14.23
	29	14.24	14.22	14.22	14.24
	30	14.24	14.23	14.26	14.19
	31	14.26	14.25	14.23	14.22

Table 8-23. Occupied Bandwidth Summary Data (NR_n66_1C_15M)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do,
17142, Korea
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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	19.07	19.08	19.13	19.06
	1	19.05	19.10	19.15	19.09
	2	19.07	19.07	19.08	19.08
	3	19.08	19.13	19.10	19.09
	4	19.10	19.07	19.08	19.10
	5	19.07	19.12	19.09	19.09
	6	19.09	19.10	19.07	19.07
	7	19.07	19.08	19.13	19.07
	8	19.14	19.11	19.08	19.13
	9	19.11	19.07	19.09	19.08
	10	19.06	19.10	19.11	19.11
	11	19.07	19.08	19.06	19.07
	12	19.06	19.06	19.15	19.10
	13	19.07	19.08	19.09	19.08
	14	19.15	19.13	19.07	19.08
	15	19.11	19.09	19.14	19.11
	16	19.06	19.09	19.08	19.08
	17	19.08	19.08	19.06	19.09
	18	19.03	19.07	19.11	19.07
	19	19.08	19.12	19.11	19.04
	20	19.10	19.09	19.08	19.09
	21	19.06	19.06	19.08	19.11
	22	19.08	19.07	19.11	19.08
	23	19.07	19.10	19.10	19.11
	24	19.09	19.05	19.10	19.11
	25	19.10	19.09	19.08	19.09
	26	19.06	19.09	19.06	19.12
	27	19.08	19.10	19.04	19.08
	28	19.07	19.06	19.08	19.09
	29	19.06	19.08	19.08	19.09
	30	19.04	19.09	19.10	19.06
	31	19.10	19.10	19.10	19.06
Middle	0	19.10	19.11	19.12	19.09
	1	19.09	19.10	19.08	19.11
	2	19.10	19.09	19.12	19.14
	3	19.10	19.09	19.10	19.10
	4	19.11	19.08	19.14	19.10
	5	19.14	19.10	19.11	19.08
	6	19.09	19.05	19.13	19.06
	7	19.06	19.08	19.10	19.06
	8	19.04	19.13	19.13	19.10
	9	19.11	19.08	19.10	19.08
	10	19.11	19.09	19.09	19.06
	11	19.10	19.10	19.10	19.10
	12	19.10	19.06	19.09	19.08
	13	19.11	19.07	19.09	19.08
	14	19.08	19.07	19.10	19.10
	15	19.09	19.09	19.09	19.09
	16	19.09	19.10	19.08	19.08
	17	19.08	19.12	19.11	19.09

**CTK Co., Ltd.**

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	18	19.05	19.06	19.13	19.09
	19	19.10	19.07	19.14	19.09
	20	19.08	19.09	19.08	19.08
	21	19.15	19.08	19.09	19.07
	22	19.08	19.07	19.15	19.09
	23	19.08	19.14	19.09	19.10
	24	19.11	19.09	19.12	19.07
	25	19.13	19.09	19.15	19.12
	26	19.14	19.09	19.13	19.06
	27	19.08	19.10	19.10	19.08
	28	19.07	19.09	19.13	19.07
	29	19.09	19.12	19.12	19.08
	30	19.07	19.06	19.09	19.08
	31	19.09	19.08	19.14	19.06
High	0	19.10	19.09	19.11	19.15
	1	19.09	19.13	19.10	19.11
	2	19.09	19.07	19.12	19.13
	3	19.09	19.12	19.08	19.10
	4	19.09	19.08	19.12	19.11
	5	19.06	19.11	19.11	19.10
	6	19.10	19.09	19.10	19.10
	7	19.06	19.08	19.05	19.14
	8	19.08	19.10	19.10	19.08
	9	19.05	19.10	19.11	19.10
	10	19.09	19.08	19.12	19.11
	11	19.09	19.07	19.11	19.10
	12	19.06	19.13	19.11	19.10
	13	19.07	19.10	19.11	19.13
	14	19.06	19.10	19.11	19.10
	15	19.09	19.05	19.10	19.13
	16	19.08	19.09	19.09	19.12
	17	19.05	19.06	19.12	19.08
	18	19.10	19.08	19.10	19.10
	19	19.05	19.05	19.11	19.12
	20	19.06	19.10	19.14	19.08
	21	19.05	19.08	19.14	19.12
	22	19.07	19.05	19.10	19.09
	23	19.09	19.06	19.12	19.09
	24	19.08	19.08	19.13	19.12
	25	19.07	19.09	19.15	19.07
	26	19.12	19.11	19.10	19.10
	27	19.08	19.09	19.11	19.12
	28	19.08	19.09	19.07	19.10
	29	19.11	19.11	19.09	19.12
	30	19.08	19.08	19.11	19.06
	31	19.10	19.11	19.11	19.10

Table 8-24. Occupied Bandwidth Summary Data (NR_n66_1C_20M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	23.95	23.99	23.96	23.93
	1	23.97	23.94	23.93	23.94
	2	23.92	23.99	23.93	23.92
	3	23.94	23.92	23.92	23.94
	4	23.95	23.98	23.95	23.93
	5	24.00	23.97	24.00	23.97
	6	23.89	23.93	23.93	23.91
	7	23.94	23.94	23.93	23.88
	8	23.93	24.00	23.89	23.89
	9	23.93	23.92	23.91	23.92
	10	23.93	23.96	23.98	23.91
	11	23.95	23.90	23.90	23.92
	12	23.91	23.96	23.95	23.89
	13	23.97	23.92	23.98	23.93
	14	23.93	23.96	23.91	23.91
	15	23.91	23.96	23.99	23.92
	16	23.97	23.94	23.98	23.92
	17	23.95	23.90	23.92	23.91
	18	23.90	23.93	23.94	23.91
	19	23.96	23.96	23.94	23.94
	20	23.92	23.92	23.91	23.96
	21	23.94	24.00	23.96	23.90
	22	23.95	23.95	23.91	23.92
	23	23.92	23.91	23.92	23.92
	24	23.94	23.92	23.97	23.90
	25	23.89	23.98	23.95	23.92
	26	23.94	23.92	23.95	23.94
	27	23.91	23.98	23.91	23.92
	28	23.93	23.99	23.91	23.92
	29	23.96	23.98	23.94	23.90
	30	23.92	23.90	23.90	23.93
	31	23.98	23.92	23.95	23.91
Middle	0	23.98	23.96	23.96	23.94
	1	23.97	23.94	23.93	23.94
	2	23.94	23.95	23.98	23.96
	3	24.00	23.94	23.90	23.94
	4	23.94	23.92	23.96	23.94
	5	24.02	23.90	23.96	23.96
	6	23.93	23.99	23.94	23.92
	7	23.96	23.93	23.96	23.91
	8	23.90	23.93	23.91	23.94
	9	23.97	23.88	23.98	23.95
	10	23.96	23.93	23.94	23.93
	11	23.93	23.99	23.94	23.97
	12	23.97	23.92	23.99	23.93
	13	23.93	24.00	23.95	23.90
	14	23.96	23.91	23.95	23.90
	15	24.00	23.91	23.97	23.99
	16	23.95	23.93	23.97	23.93
	17	23.96	23.90	23.97	23.93

**CTK Co., Ltd.**

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	18	23.98	23.94	23.92	23.94
	19	23.97	23.96	23.96	23.93
	20	23.92	23.94	23.93	23.91
	21	23.93	23.92	23.92	23.96
	22	23.89	23.97	23.97	23.93
	23	23.96	23.92	23.96	23.92
	24	23.96	23.94	23.96	23.93
	25	23.96	23.98	23.97	23.93
	26	23.91	23.93	23.95	23.89
	27	23.94	23.95	23.93	23.94
	28	23.93	23.95	23.98	23.95
	29	23.92	23.92	23.94	23.97
	30	23.92	23.90	23.90	23.98
	31	23.90	23.90	23.97	23.91
High	0	23.96	23.93	23.94	23.90
	1	23.98	23.99	23.98	23.94
	2	23.91	23.91	24.01	23.97
	3	23.97	23.95	23.97	23.97
	4	23.93	23.97	23.90	23.95
	5	23.95	23.94	23.91	23.93
	6	23.94	23.94	23.97	23.92
	7	23.90	23.90	23.94	23.92
	8	23.90	23.93	23.92	23.95
	9	23.93	23.97	23.97	23.97
	10	23.93	23.93	23.97	23.92
	11	23.98	23.95	23.94	23.91
	12	23.99	23.97	23.96	23.94
	13	23.98	23.97	23.99	23.90
	14	23.94	23.97	23.99	23.93
	15	23.91	23.92	23.91	23.92
	16	23.96	23.94	23.96	23.88
	17	23.93	23.92	23.93	23.93
	18	23.89	23.93	23.94	23.90
	19	23.93	23.93	23.97	23.90
	20	23.95	23.95	23.94	23.99
	21	23.95	23.97	23.95	24.00
	22	23.97	23.93	23.93	23.91
	23	23.95	23.99	23.93	23.94
	24	23.99	23.93	23.91	23.93
	25	23.97	23.95	23.91	23.93
	26	23.95	23.94	23.91	23.98
	27	23.94	23.95	23.92	23.93
	28	23.98	23.96	23.96	23.97
	29	23.95	23.97	23.95	23.92
	30	23.97	23.96	23.95	23.96
	31	23.94	23.88	23.93	23.85

Table 8-25. Occupied Bandwidth Summary Data (NR_n66_1C_25M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	28.75	28.80	28.88	28.78
	1	28.75	28.73	28.78	28.78
	2	28.80	28.80	28.81	28.77
	3	28.77	28.82	28.85	28.73
	4	28.88	28.78	28.83	28.79
	5	28.79	28.84	28.85	28.77
	6	28.85	28.80	28.78	28.85
	7	28.79	28.80	28.79	28.73
	8	28.86	28.82	28.79	28.82
	9	28.83	28.75	28.75	28.75
	10	28.87	28.82	28.80	28.77
	11	28.83	28.81	28.79	28.76
	12	28.83	28.79	28.75	28.75
	13	28.76	28.79	28.82	28.75
	14	28.79	28.81	28.82	28.73
	15	28.87	28.84	28.79	28.83
	16	28.89	28.75	28.78	28.75
	17	28.78	28.75	28.77	28.73
	18	28.85	28.77	28.81	28.75
	19	28.83	28.78	28.78	28.80
	20	28.86	28.77	28.81	28.80
	21	28.84	28.82	28.82	28.76
	22	28.77	28.78	28.76	28.80
	23	28.82	28.82	28.77	28.78
	24	28.79	28.79	28.75	28.79
	25	28.77	28.78	28.79	28.80
	26	28.85	28.77	28.86	28.80
	27	28.77	28.82	28.77	28.76
	28	28.80	28.77	28.81	28.79
	29	28.92	28.79	28.78	28.72
	30	28.86	28.81	28.83	28.82
	31	28.75	28.84	28.80	28.76
Middle	0	28.83	28.82	28.86	28.76
	1	28.80	28.83	28.79	28.82
	2	28.84	28.81	28.83	28.80
	3	28.83	28.86	28.85	28.83
	4	28.79	28.77	28.76	28.75
	5	28.79	28.81	28.83	28.82
	6	28.81	28.76	28.83	28.77
	7	28.80	28.80	28.83	28.75
	8	28.77	28.73	28.86	28.82
	9	28.88	28.81	28.78	28.75
	10	28.78	28.76	28.81	28.83
	11	28.80	28.80	28.87	28.83
	12	28.82	28.79	28.85	28.75
	13	28.79	28.84	28.86	28.79
	14	28.85	28.82	28.81	28.72
	15	28.85	28.85	28.86	28.79
	16	28.77	28.80	28.83	28.81
	17	28.78	28.83	28.83	28.79

**CTK Co., Ltd.**

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	18	28.86	28.85	28.77	28.80
	19	28.84	28.81	28.78	28.74
	20	28.80	28.83	28.79	28.77
	21	28.82	28.78	28.78	28.79
	22	28.87	28.79	28.78	28.79
	23	28.77	28.78	28.86	28.74
	24	28.84	28.78	28.84	28.79
	25	28.80	28.77	28.82	28.81
	26	28.89	28.79	28.80	28.76
	27	28.82	28.84	28.80	28.78
	28	28.76	28.78	28.84	28.78
	29	28.81	28.76	28.86	28.76
	30	28.79	28.84	28.83	28.79
	31	28.78	28.77	28.75	28.80
High	0	28.83	28.81	28.76	28.82
	1	28.88	28.81	28.87	28.75
	2	28.84	28.81	28.88	28.78
	3	28.88	28.82	28.76	28.76
	4	28.82	28.80	28.83	28.78
	5	28.81	28.80	28.82	28.76
	6	28.85	28.80	28.83	28.80
	7	28.85	28.81	28.80	28.81
	8	28.79	28.78	28.80	28.80
	9	28.85	28.83	28.78	28.76
	10	28.80	28.81	28.79	28.77
	11	28.88	28.80	28.82	28.80
	12	28.80	28.77	28.83	28.80
	13	28.78	28.79	28.81	28.76
	14	28.90	28.83	28.82	28.77
	15	28.83	28.79	28.83	28.78
	16	28.77	28.80	28.77	28.79
	17	28.83	28.78	28.77	28.77
	18	28.87	28.80	28.78	28.77
	19	28.90	28.77	28.81	28.77
	20	28.90	28.78	28.86	28.77
	21	28.89	28.83	28.83	28.75
	22	28.81	28.79	28.80	28.82
	23	28.87	28.79	28.80	28.76
	24	28.88	28.77	28.82	28.77
	25	28.83	28.79	28.81	28.75
	26	28.86	28.74	28.81	28.77
	27	28.84	28.82	28.79	28.81
	28	28.84	28.81	28.84	28.77
	29	28.86	28.80	28.83	28.74
	30	28.88	28.82	28.78	28.83
	31	28.87	28.81	28.83	28.78

Table 8-26. Occupied Bandwidth Summary Data (NR_n66_1C_30M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	9.29	9.29	9.32	9.27
	1	9.29	9.26	9.28	9.24
	2	9.29	9.27	9.33	9.25
	3	9.27	9.27	9.29	9.29
	4	9.28	9.25	9.25	9.27
	5	9.26	9.27	9.30	9.28
	6	9.26	9.30	9.28	9.27
	7	9.27	9.29	9.27	9.26
	8	9.26	9.27	9.27	9.29
	9	9.31	9.29	9.31	9.26
	10	9.25	9.30	9.26	9.26
	11	9.26	9.28	9.29	9.25
	12	9.29	9.26	9.27	9.24
	13	9.25	9.30	9.24	9.29
	14	9.27	9.28	9.28	9.31
	15	9.23	9.28	9.27	9.28
	16	9.26	9.22	9.26	9.29
	17	9.29	9.28	9.31	9.32
	18	9.29	9.25	9.28	9.28
	19	9.28	9.25	9.24	9.26
	20	9.26	9.26	9.27	9.28
	21	9.23	9.24	9.23	9.25
	22	9.25	9.28	9.28	9.26
	23	9.31	9.29	9.26	9.27
	24	9.26	9.25	9.29	9.26
	25	9.30	9.27	9.26	9.27
	26	9.32	9.28	9.28	9.26
	27	9.29	9.27	9.26	9.29
	28	9.28	9.30	9.30	9.29
	29	9.25	9.30	9.26	9.27
	30	9.29	9.28	9.26	9.28
	31	9.30	9.30	9.24	9.23
Middle	0	9.29	9.30	9.27	9.30
	1	9.28	9.28	9.27	9.28
	2	9.28	9.25	9.30	9.30
	3	9.29	9.25	9.27	9.31
	4	9.30	9.27	9.29	9.33
	5	9.28	9.30	9.27	9.29
	6	9.27	9.30	9.27	9.25
	7	9.28	9.26	9.30	9.23
	8	9.28	9.31	9.29	9.27
	9	9.27	9.28	9.26	9.28
	10	9.27	9.30	9.23	9.29
	11	9.29	9.27	9.30	9.29
	12	9.30	9.30	9.25	9.29
	13	9.27	9.28	9.26	9.31
	14	9.28	9.32	9.29	9.27
	15	9.28	9.27	9.32	9.28
	16	9.31	9.27	9.29	9.25
	17	9.29	9.26	9.24	9.28

**CTK Co., Ltd.**

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	18	9.25	9.27	9.31	9.23
	19	9.26	9.27	9.28	9.27
	20	9.27	9.27	9.31	9.28
	21	9.30	9.28	9.30	9.26
	22	9.26	9.29	9.26	9.29
	23	9.24	9.23	9.32	9.25
	24	9.32	9.24	9.29	9.31
	25	9.25	9.31	9.33	9.29
	26	9.26	9.27	9.27	9.30
	27	9.27	9.29	9.36	9.28
	28	9.29	9.32	9.30	9.31
	29	9.30	9.27	9.31	9.29
	30	9.25	9.26	9.25	9.30
	31	9.24	9.30	9.28	9.26
High	0	9.29	9.28	9.25	9.24
	1	9.30	9.28	9.27	9.25
	2	9.26	9.28	9.30	9.26
	3	9.27	9.25	9.26	9.33
	4	9.30	9.28	9.28	9.31
	5	9.27	9.27	9.27	9.28
	6	9.30	9.30	9.27	9.25
	7	9.30	9.26	9.27	9.26
	8	9.30	9.27	9.29	9.30
	9	9.30	9.26	9.25	9.23
	10	9.28	9.28	9.30	9.32
	11	9.28	9.30	9.30	9.31
	12	9.31	9.28	9.27	9.29
	13	9.29	9.26	9.28	9.27
	14	9.25	9.28	9.30	9.28
	15	9.30	9.31	9.28	9.30
	16	9.30	9.26	9.30	9.22
	17	9.25	9.28	9.27	9.31
	18	9.23	9.26	9.28	9.25
	19	9.30	9.26	9.30	9.32
	20	9.28	9.28	9.26	9.26
	21	9.30	9.27	9.25	9.28
	22	9.29	9.29	9.30	9.30
	23	9.26	9.27	9.29	9.28
	24	9.28	9.29	9.29	9.23
	25	9.27	9.22	9.29	9.30
	26	9.30	9.28	9.28	9.33
	27	9.27	9.30	9.26	9.24
	28	9.26	9.22	9.31	9.30
	29	9.29	9.30	9.28	9.29
	30	9.31	9.28	9.30	9.28
	31	9.28	9.28	9.29	9.28

Table 8-27. Occupied Bandwidth Summary Data (DSS_B/n66_1C_10M)

**CTK Co., Ltd.**

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	14.06	14.12	14.10	14.08
	1	14.17	14.13	14.14	14.10
	2	14.07	14.14	14.19	14.03
	3	14.13	14.13	14.06	14.06
	4	14.10	14.10	14.09	14.03
	5	14.19	14.15	14.18	14.12
	6	14.13	14.13	14.07	14.12
	7	14.14	14.09	14.06	14.12
	8	14.08	14.12	14.10	14.08
	9	14.17	14.14	14.09	14.07
	10	14.13	14.12	14.15	14.10
	11	14.11	14.11	14.19	14.08
	12	14.12	14.10	14.11	14.08
	13	14.07	14.07	14.13	14.05
	14	14.11	14.13	14.11	14.04
	15	14.17	14.07	14.11	14.08
	16	14.12	14.14	14.16	14.07
	17	14.07	14.12	14.18	14.11
	18	14.09	14.11	14.10	14.08
	19	14.12	14.16	14.14	14.08
	20	14.07	14.14	14.07	14.07
	21	14.11	14.15	14.08	14.10
	22	14.14	14.13	14.14	14.06
	23	14.10	14.15	14.14	14.11
	24	14.20	14.14	14.17	14.05
	25	14.11	14.11	14.08	14.07
	26	14.08	14.17	14.03	14.02
	27	14.14	14.09	14.10	14.06
	28	14.13	14.11	14.08	14.11
	29	14.11	14.14	14.09	14.04
	30	14.14	14.08	14.13	14.12
	31	14.08	14.15	14.06	14.03
Middle	0	14.14	14.15	14.09	14.14
	1	14.08	14.10	14.12	14.10
	2	14.14	14.19	14.13	14.09
	3	14.17	14.11	14.06	14.11
	4	14.17	14.10	14.08	14.02
	5	14.21	14.10	14.11	14.12
	6	14.13	14.13	14.14	14.05
	7	14.14	14.14	14.14	14.08
	8	14.12	14.12	14.17	14.06
	9	14.17	14.15	14.13	14.13
	10	14.08	14.15	14.14	14.06
	11	14.13	14.09	14.11	14.08
	12	14.12	14.12	14.13	14.10
	13	14.10	14.15	14.20	14.10
	14	14.11	14.15	14.13	14.15
	15	14.12	14.12	14.11	14.10
	16	14.11	14.14	14.13	14.04
	17	14.10	14.13	14.10	14.09

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	18	14.14	14.14	14.11	14.07
	19	14.06	14.10	14.20	14.08
	20	14.13	14.15	14.07	14.08
	21	14.12	14.14	14.14	14.10
	22	14.18	14.11	14.13	14.08
	23	14.15	14.09	14.15	14.05
	24	14.10	14.17	14.14	14.09
	25	14.13	14.16	14.09	14.08
	26	14.11	14.19	14.10	14.12
	27	14.17	14.11	14.15	14.12
	28	14.10	14.17	14.13	14.11
	29	14.21	14.16	14.08	14.10
	30	14.19	14.15	14.08	14.02
	31	14.08	14.13	14.07	14.04
High	0	14.16	14.12	14.09	14.05
	1	14.14	14.13	14.09	14.07
	2	14.10	14.15	14.13	14.09
	3	14.12	14.15	14.08	14.08
	4	14.20	14.10	14.08	14.09
	5	14.17	14.19	14.16	14.12
	6	14.14	14.11	14.15	14.02
	7	14.15	14.09	14.12	14.12
	8	14.16	14.15	14.14	14.10
	9	14.12	14.12	14.06	14.06
	10	14.12	14.18	14.06	14.05
	11	14.14	14.13	14.17	14.14
	12	14.03	14.15	14.15	14.12
	13	14.14	14.14	14.13	14.07
	14	14.10	14.17	14.13	14.10
	15	14.09	14.10	14.09	14.03
	16	14.08	14.13	14.05	14.08
	17	14.13	14.16	14.14	14.11
	18	14.12	14.15	14.12	14.06
	19	14.11	14.11	14.13	14.16
	20	14.11	14.15	14.12	14.05
	21	14.12	14.06	14.11	14.06
	22	14.10	14.11	14.16	14.06
	23	14.20	14.10	14.07	14.08
	24	14.09	14.11	14.14	14.09
	25	14.15	14.12	14.14	14.06
	26	14.13	14.14	14.12	14.08
	27	14.14	14.10	14.12	14.13
	28	14.10	14.09	14.12	14.10
	29	14.13	14.11	14.12	14.10
	30	14.14	14.10	14.15	14.12
	31	14.07	14.14	14.19	14.11

Table 8-28. Occupied Bandwidth Summary Data (DSS_B/n66_1C_15M)

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Channel	Port	OBW (MHz)			
		QPSK	16QAM	64QAM	256QAM
Low	0	18.95	18.92	18.89	18.91
	1	18.98	19.00	18.86	18.91
	2	18.94	18.95	18.94	18.93
	3	18.94	18.96	18.96	18.94
	4	18.91	18.95	18.90	18.90
	5	18.92	18.94	18.88	18.93
	6	18.93	19.00	18.95	18.90
	7	19.01	18.90	18.95	18.88
	8	18.89	18.92	18.84	18.92
	9	18.99	18.98	18.91	18.96
	10	18.87	18.88	18.89	18.92
	11	18.96	18.88	18.95	18.94
	12	18.94	18.92	18.92	18.94
	13	18.82	18.94	18.93	18.91
	14	18.91	18.91	18.93	18.86
	15	18.94	18.95	18.87	18.91
	16	18.99	18.95	18.89	18.94
	17	18.90	18.93	18.84	18.93
	18	18.94	18.88	19.00	18.93
	19	18.97	18.88	18.91	18.92
	20	18.99	18.84	18.90	18.91
	21	18.92	18.94	18.92	18.92
	22	18.87	18.96	18.99	18.89
	23	18.87	18.89	18.92	18.92
	24	18.94	18.94	19.01	18.90
	25	18.89	19.01	19.00	18.91
	26	18.92	18.98	18.89	18.84
	27	18.97	18.94	18.93	18.91
	28	18.93	18.85	18.95	18.96
	29	18.92	19.04	18.92	18.93
	30	18.95	18.85	18.90	18.92
	31	18.95	18.89	18.92	18.89
Middle	0	18.99	18.89	18.94	18.90
	1	18.99	18.96	18.96	18.90
	2	18.90	18.95	18.89	18.91
	3	18.97	19.00	18.94	18.94
	4	19.00	18.94	18.91	18.88
	5	18.98	18.93	18.98	18.96
	6	18.96	18.87	18.98	18.94
	7	18.89	18.91	18.99	18.90
	8	18.95	18.93	18.89	18.94
	9	18.98	18.97	18.92	18.93
	10	18.89	18.95	18.99	18.89
	11	18.87	18.99	18.93	18.89
	12	18.94	18.93	18.97	18.94
	13	18.97	18.91	19.05	18.93
	14	18.90	18.93	18.94	18.90
	15	18.92	19.01	18.92	18.93
	16	18.91	18.89	18.94	18.96
	17	18.99	18.92	18.92	18.87