



# 5 M\_Band Edge(2292MHz-2296MHz)\_Mid\_BPSK\_1RB

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### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS 1 2 3 4 5 6 Trig. Free Run KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.298000000 GHz AAAAAA ĻΧI Mkr1 2.299 384 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -41.725 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.296000000 GHz Stop Freq 2.300000000 GHz **1** AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.296000 GHz #Res BW 1.0 MHz Stop 2.300000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

## 5 M\_Band Edge(2296MHz-2300MHz)\_Mid\_BPSK\_1RB

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## 5 M\_Band Edge(2300MHz-2305MHz)\_Mid\_BPSK\_1RB

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# 5 M\_Band Edge(2315MHz-2320MHz)\_Mid\_BPSK\_1RB

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# 5 M\_Band Edge(2320MHz-2324MHz)\_Mid\_BPSK\_1RB

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# 5 M\_Band Edge(2324MHz-2328MHz)\_Mid\_BPSK\_1RB

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# 5 M\_Band Edge(2337MHz-2341MHz)\_Mid\_BPSK\_1RB

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# 5 M\_Band Edge(2341MHz-2345MHz)\_Mid\_BPSK\_1RB

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#### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.355000000 GHz AAAAAA ĻΧI Mkr1 2.353 94 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 20.0000000 MHz -64.351 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.345000000 GHz Stop Freq 2.365000000 GHz AUTO TUNE **√**1 CF Step 2.000000 MHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.34500 GHz #Res BW 1.0 MHz Stop 2.36500 GHz #Sweep 1.00 s (1001 pts) #Video BW 3.0 MHz Log Lin

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## 5 M\_Band Edge(2345MHz-2365MHz)\_Mid\_BPSK\_1RB

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# 5 M\_Band Edge(2365MHz-2400MHz)\_Mid\_BPSK\_1RB

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## 5 M\_Band Edge(2280MHz-2288MHz)\_Mid\_BPSK\_FullRB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.290000000 GHz AAAAAA ĻΧI Mkr1 2.291 996 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -55.561 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.288000000 GHz Stop Freq 2.292000000 GHz DL1 -37.00 dB AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.288000 GHz #Res BW 1.0 MHz Stop 2.292000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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## 5 M\_Band Edge(2288MHz-2292MHz)\_Mid\_BPSK\_FullRB

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## 5 M\_Band Edge(2292MHz-2296MHz)\_Mid\_BPSK\_FullRB

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## 5 M\_Band Edge(2296MHz-2300MHz)\_Mid\_BPSK\_FullRB

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#### 5 M\_Band Edge(2300MHz-2305MHz)\_Mid\_BPSK\_FullRB ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.302500000 GHz AAAAAA ĻΧI Mkr1 2.304 995 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 5.00000000 MHz -26.476 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.300000000 GHz Stop Freq 2.305000000 GHz AUTO TUNE 500.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.300000 GHz #Res BW 1.0 MHz Stop 2.305000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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#### 5 M\_Band Edge(2315MHz-2320MHz)\_Mid\_BPSK\_FullRB ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.317500000 GHz AAAAAA ĻΧI Mkr1 2.315 005 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 5.00000000 MHz -27.149 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.315000000 GHz Stop Freq 2.320000000 GHz AUTO TUNE 500.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.315000 GHz #Res BW 1.0 MHz Stop 2.320000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.322000000 GHz AAAAAA ĻΧI Mkr1 2.320 068 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -42.320 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.320000000 GHz Stop Freq 2.324000000 GHz AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.320000 GHz #Res BW 1.0 MHz Stop 2.324000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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## 5 M\_Band Edge(2320MHz-2324MHz)\_Mid\_BPSK\_FullRB

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## 5 M\_Band Edge(2324MHz-2328MHz)\_Mid\_BPSK\_FullRB

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#### 5 M\_Band Edge(2328MHz-2337MHz)\_Mid\_BPSK\_FullRB ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.332500000 GHz AAAAAA ĻΧI Mkr1 2.328 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 9.00000000 MHz -51.529 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.328000000 GHz Stop Freq 2.337000000 GHz DL1 -37.00 dB AUTO TUNE 900.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.328000 GHz #Res BW 1.0 MHz Stop 2.337000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.339000000 GHz AAAAAA ĻΧI Mkr1 2.337 640 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -65.674 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.337000000 GHz Stop Freq 2.341000000 GHz AUTO TUNE **√**1 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.337000 GHz #Res BW 1.0 MHz Stop 2.341000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin ? Jun 03, 2024 4:50:45 PM ...

## 5 M\_Band Edge(2337MHz-2341MHz)\_Mid\_BPSK\_FullRB

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## 5 M\_Band Edge(2341MHz-2345MHz)\_Mid\_BPSK\_FullRB

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## 5 M\_Band Edge(2345MHz-2365MHz)\_Mid\_BPSK\_FullRB

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## 5 M\_Band Edge(2365MHz-2400MHz)\_Mid\_BPSK\_FullRB

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## 5 M\_Band Edge(2280MHz-2288MHz)\_High\_BPSK\_1RB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.290000000 GHz AAAAAA ĻΧI Mkr1 2.292 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -58.857 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.288000000 GHz Stop Freq 2.292000000 GHz DL1 -37.00 dB AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.288000 GHz #Res BW 1.0 MHz Stop 2.292000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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## 5 M\_Band Edge(2288MHz-2292MHz)\_High\_BPSK\_1RB

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## 5 M\_Band Edge(2292MHz-2296MHz)\_High\_BPSK\_1RB

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## 5 M\_Band Edge(2296MHz-2300MHz)\_High\_BPSK\_1RB

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## 5 M\_Band Edge(2300MHz-2305MHz)\_High\_BPSK\_1RB

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### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.315500000 GHz AAAAAA ĻΧI Mkr1 2.315 000 GHz 1 Spectrum 1.00000000 MHz Ref LvI Offset 27.27 dB Ref Level 0.00 dBm -32.410 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.315000000 GHz Stop Freq 2.316000000 GHz AUTO TUNE 100.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.3150000 GHz #Res BW 51 kHz Stop 2.3160000 GHz #Sweep 1.00 s (1001 pts) #Video BW 200 kHz Log Lin

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## 5 M\_Band Edge(2315MHz-2316MHz)\_High\_BPSK\_1RB

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5 M\_Band Edge(2316MHz-2320MHz)\_High\_BPSK\_1RB

Note: We used a narrower RBW in order to increase accuracy.

Calculation = Reading Value +  $10 \times \log(1 \text{ MHz}/100 \text{ kHz})$  dB = -43.099 dBm +  $10 \times dB$  = -33.099 dBm

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## 5 M\_Band Edge(2324MHz-2328MHz)\_High\_BPSK\_1RB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.332500000 GHz AAAAAA ĻΧI Mkr1 2.328 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 9.00000000 MHz -48.764 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.328000000 GHz Stop Freq 2.337000000 GHz DL1 -37.00 dB AUTO TUNE 900.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.328000 GHz #Res BW 1.0 MHz Stop 2.337000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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## 5 M\_Band Edge(2328MHz-2337MHz)\_High\_BPSK\_1RB

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#### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.339000000 GHz AAAAAA ĻΧI Mkr1 2.339 532 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -65.622 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.337000000 GHz Stop Freq 2.341000000 GHz AUTO TUNE **♦**1 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.337000 GHz #Res BW 1.0 MHz Stop 2.341000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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# 5 M\_Band Edge(2337MHz-2341MHz)\_High\_BPSK\_1RB

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### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.343000000 GHz AAAAAA ĻΧI Mkr1 2.341 776 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -65.555 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.341000000 GHz Stop Freq 2.345000000 GHz AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.341000 GHz #Res BW 1.0 MHz Stop 2.345000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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## 5 M\_Band Edge(2341MHz-2345MHz)\_High\_BPSK\_1RB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.355000000 GHz AAAAAA ĻΧI Mkr1 2.356 26 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 20.0000000 MHz -64.422 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.345000000 GHz Stop Freq 2.365000000 GHz AUTO TUNE **V**1 CF Step 2.000000 MHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.34500 GHz #Res BW 1.0 MHz Stop 2.36500 GHz #Sweep 1.00 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 5 M\_Band Edge(2345MHz-2365MHz)\_High\_BPSK\_1RB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.382500000 GHz AAAAAA ĻΧI Mkr1 2.371 860 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 35.0000000 MHz -65.666 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.365000000 GHz Stop Freq 2.400000000 GHz DL1-40.00 dB AUTO TUNE CF Step 3.500000 MHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.36500 GHz #Res BW 1.0 MHz Stop 2.40000 GHz #Sweep 1.00 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 5 M\_Band Edge(2365MHz-2400MHz)\_High\_BPSK\_1RB

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### 5 M\_Band Edge(2280MHz-2288MHz)\_High\_BPSK\_FullRB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.290000000 GHz AAAAAA ĻΧI Mkr1 2.292 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -58.487 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.288000000 GHz Stop Freq 2.292000000 GHz DL1 -37.00 dB AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.288000 GHz #Res BW 1.0 MHz Stop 2.292000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 5 M\_Band Edge(2288MHz-2292MHz)\_High\_BPSK\_FullRB

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### 5 M\_Band Edge(2292MHz-2296MHz)\_High\_BPSK\_FullRB

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#### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.298000000 GHz AAAAAA ĻΧI Mkr1 2.299 960 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -43.900 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.296000000 GHz Stop Freq 2.300000000 GHz AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.296000 GHz #Res BW 1.0 MHz Stop 2.300000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 5 M\_Band Edge(2296MHz-2300MHz)\_High\_BPSK\_FullRB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.302500000 GHz AAAAAA ĻΧI Mkr1 2.305 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 5.00000000 MHz -31.249 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.300000000 GHz Stop Freq 2.305000000 GHz AUTO TUNE 500.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.300000 GHz #Res BW 1.0 MHz Stop 2.305000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 5 M\_Band Edge(2300MHz-2305MHz)\_High\_BPSK\_FullRB

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Start 2.3150000 GHz #Res BW 51 kHz

#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.315500000 GHz AAAAAA ĻΧI Mkr1 2.315 002 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 1.00000000 MHz -26.600 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.315000000 GHz Stop Freq 2.316000000 GHz AUTO TUNE 100.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale

#Video BW 200 kHz

? Jun 03, 2024 4:58:18 PM Stop 2.3160000 GHz #Sweep 1.00 s (1001 pts)

Log Lin

## 5 M\_Band Edge(2315MHz-2316MHz)\_High\_BPSK\_FullRB

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5 M\_Band Edge(2316MHz-2320MHz)\_High\_BPSK\_FullRB

Note: We used a narrower RBW in order to increase accuracy.

Calculation = Reading Value +  $10 \times \log(1 \text{ MHz}/100 \text{ kHz})$  dB = -32.516 dBm +  $10 \times dB$  = -22.516 dBm

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#### Spectrum Analyzer 1 Swept SA + Ö Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off PNO: Best Wide #Awg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Awwwww A A A A A A A #Atten: 10 dB Preamp: Off KEYSIGHT Input: RF Center Frequency 2.322000000 GHz Settings Align: Auto A A A A A A ĻΧI Mkr1 2.320 016 GHz -34.055 dBm 1 Spectrum Ref Lvi Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.320000000 GHz Stop Freq 2.324000000 GHz **AUTO TUNE** CF Step 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Stop 2.324000 GHz #Sweep ~1.01 s (1001 pts) Start 2.320000 GHz #Video BW 3.0 MHz Log Lin #Res BW 1.0 MHz ? Jun 03, 2024 4:58:52 PM # 1

## 5 M\_Band Edge(2320MHz-2324MHz)\_High\_BPSK\_FullRB

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### 5 M\_Band Edge(2324MHz-2328MHz)\_High\_BPSK\_FullRB

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Local

X Axis Scale

Log Lin

Stop 2.337000 GHz #Sweep ~1.01 s (1001 pts)

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Start 2.328000 GHz #Res BW 1.0 MHz

#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.332500000 GHz AAAAAA ĻΧI Mkr1 2.328 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 9.00000000 MHz -48.575 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.328000000 GHz Stop Freq 2.337000000 GHz AUTO TUNE 900.000 kHz Auto Man Freq Offset 0 Hz

#Video BW 3.0 MHz

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### 5 M\_Band Edge(2328MHz-2337MHz)\_High\_BPSK\_FullRB

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#### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.339000000 GHz AAAAAA ĻΧI Mkr1 2.338 936 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -65.628 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.337000000 GHz Stop Freq 2.341000000 GHz AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.337000 GHz #Res BW 1.0 MHz Stop 2.341000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz

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### 5 M\_Band Edge(2337MHz-2341MHz)\_High\_BPSK\_FullRB

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AUTO TUNE

Local

400.000 kHz Auto Man Freq Offset 0 Hz

X Axis Scale

Log Lin

Stop 2.345000 GHz #Sweep ~1.01 s (1001 pts)

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Start 2.341000 GHz #Res BW 1.0 MHz

#### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.343000000 GHz AAAAAA Mkr1 2.342 176 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -65.725 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.341000000 GHz Stop Freq 2.345000000 GHz

#Video BW 3.0 MHz

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### 5 M\_Band Edge(2341MHz-2345MHz)\_High\_BPSK\_FullRB

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#### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.355000000 GHz AAAAAA ĻΧI Mkr1 2.356 54 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 20.0000000 MHz -64.411 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.345000000 GHz Stop Freq 2.365000000 GHz AUTO TUNE CF Step 2.000000 MHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.34500 GHz #Res BW 1.0 MHz Stop 2.36500 GHz #Sweep 1.00 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 5 M\_Band Edge(2345MHz-2365MHz)\_High\_BPSK\_FullRB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.382500000 GHz AAAAAA ĻΧI Mkr1 2.368 745 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 35.0000000 MHz -65.707 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.365000000 GHz Stop Freq 2.400000000 GHz DL1-40.00 dB AUTO TUNE CF Step 3.500000 MHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.36500 GHz #Res BW 1.0 MHz Stop 2.40000 GHz #Sweep 1.00 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 5 M\_Band Edge(2365MHz-2400MHz)\_High\_BPSK\_FullRB

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### 10 M\_Band Edge(2280MHz-2288MHz)\_Mid\_BPSK\_1RB

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Start 2.288000 GHz #Res BW 1.0 MHz

#### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS 1 2 3 4 5 6 Trig. Free Run KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.290000000 GHz AAAAAA ĻΧI Mkr1 2.291 996 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -55.094 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.288000000 GHz Stop Freq 2.292000000 GHz DL1 -37.00 dB AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale

#Video BW 3.0 MHz

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Stop 2.292000 GHz #Sweep ~1.01 s (1001 pts)

III 🐺

Log Lin

### 10 M\_Band Edge(2288MHz-2292MHz)\_Mid\_BPSK\_1RB

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### 10 M\_Band Edge(2292MHz-2296MHz)\_Mid\_BPSK\_1RB

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#### ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS 1 2 3 4 5 6 Trig. Free Run KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.298000000 GHz AAAAAA ĻΧI Mkr1 2.300 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -39.039 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.296000000 GHz Stop Freq 2.300000000 GHz AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.296000 GHz #Res BW 1.0 MHz Stop 2.300000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 10 M\_Band Edge(2296MHz-2300MHz)\_Mid\_BPSK\_1RB

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10 M\_Band Edge(2300MHz-2304MHz)\_Mid\_BPSK\_1RB

Note: We used a narrower RBW in order to increase accuracy.

Calculation = Reading Value +  $10 \times \log(1 \text{ MHz}/100 \text{ kHz})$  dB = -37.810 dBm +  $10 \times dB$  = -27.810 dBm

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10 M\_Band Edge(2304MHz-2305MHz)\_Mid\_BPSK\_1RB

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Log Lin



#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.315500000 GHz AAAAAA ĻΧI Mkr1 2.315 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 1.00000000 MHz -34.452 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.315000000 GHz 30.0 1 Stop Freq 2.316000000 GHz AUTO TUNE 100.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.3150000 GHz #Res BW 100 kHz Stop 2.3160000 GHz #Sweep 1.00 s (1001 pts)

#Video BW 390 kHz

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### 10 M\_Band Edge(2315MHz-2316MHz)\_Mid\_BPSK\_1RB

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10 M\_Band Edge(2316MHz-2320MHz)\_Mid\_BPSK\_1RB

Note: We used a narrower RBW in order to increase accuracy.

Calculation = Reading Value +  $10 \times \log(1 \text{ MHz}/100 \text{ kHz})$  dB = -41.116 dBm +  $10 \times \log(1 \text{ MHz}/100 \text{ kHz})$ 

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10 M\_Band Edge(2320MHz-2324MHz)\_Mid\_BPSK\_1RB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.326000000 GHz AAAAAA ĻΧI Mkr1 2.324 024 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -47.204 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.324000000 GHz Stop Freq 2.328000000 GHz AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.324000 GHz #Res BW 1.0 MHz Stop 2.328000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 10 M\_Band Edge(2324MHz-2328MHz)\_Mid\_BPSK\_1RB

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# 10 M\_Band Edge(2328MHz-2337MHz)\_Mid\_BPSK\_1RB



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## 10 M\_Band Edge(2337MHz-2341MHz)\_Mid\_BPSK\_1RB



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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.343000000 GHz AAAAAA ĻΧI Mkr1 2.343 072 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -65.733 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.341000000 GHz Stop Freq 2.345000000 GHz AUTO TUNE **1** 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.341000 GHz #Res BW 1.0 MHz Stop 2.345000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 10 M\_Band Edge(2341MHz-2345MHz)\_Mid\_BPSK\_1RB

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.355000000 GHz AAAAAA ĻΧI Mkr1 2.353 96 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 20.0000000 MHz -64.544 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.345000000 GHz Stop Freq 2.365000000 GHz AUTO TUNE **1** CF Step 2.000000 MHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.34500 GHz #Res BW 1.0 MHz Stop 2.36500 GHz #Sweep 1.00 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 10 M\_Band Edge(2345MHz-2365MHz)\_Mid\_BPSK\_1RB

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#### 10 M\_Band Edge(2365MHz-2400MHz)\_Mid\_BPSK\_1RB ø Frequency Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS 1 2 3 4 5 6 Trig. Free Run KEYSIGHT Input RF #Atten: 10 dB Preamp: Off Center Frequency Settings Align: Auto 2.382500000 GHz AAAAAA ĻΧI Mkr1 2.368 885 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 35.0000000 MHz -65.818 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.365000000 GHz Stop Freq 2.400000000 GHz DL1-40.00 dB AUTO TUNE CF Step 3.500000 MHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.36500 GHz #Res BW 1.0 MHz Stop 2.40000 GHz #Sweep 1.00 s (1001 pts) #Video BW 3.0 MHz Log Lin

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#### ø Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.284000000 GHz AAAAAA ĻΧI Mkr1 2.287 976 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 8.00000000 MHz -65.286 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.280000000 GHz Stop Freq 2.288000000 GHz DL1-40.00 dB AUTO TUNE 800.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.280000 GHz #Res BW 1.0 MHz Stop 2.288000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 10 M\_Band Edge(2280MHz-2288MHz)\_Mid\_BPSK\_FullRB

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#### Ö Frequency #Avg Type: Power (RMS 1 2 3 4 5 6 Trig: Free Run Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Adaptive #Atten: 10 dB Preamp: Off PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off KEYSIGHT Input RF Center Frequency Settings Align: Auto 2.290000000 GHz AAAAAA ĻΧI Mkr1 2.292 000 GHz 1 Spectrum Ref LvI Offset 27.27 dB Ref Level 0.00 dBm 4.00000000 MHz -46.564 dBm Scale/Div 10 dB Swept Span Zero Span Full Span Start Freq 2.288000000 GHz Stop Freq 2.292000000 GHz AUTO TUNE 400.000 kHz Auto Man Freq Offset 0 Hz Local X Axis Scale Start 2.288000 GHz #Res BW 1.0 MHz Stop 2.292000 GHz #Sweep ~1.01 s (1001 pts) #Video BW 3.0 MHz Log Lin

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### 10 M\_Band Edge(2288MHz-2292MHz)\_Mid\_BPSK\_FullRB

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