Spectrum Analyzer 1 Swept SA	Spectrum A Swept SA	Analyzer 2	+					Spectrum Analyzer Swept SA	1 Spectrum Swept SA	Analyzer 2	+				
	Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Adaptive	#Atten: 30 dB Preamp: Off µW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RMS) Avg[Hold: 43/100 Trig: Free Run	1 2 3 4 5 6 A W W W W A N N N N N		KEYSIGHT	Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω Corrections: Off Freq Ref. Int (S) NFE: Adaptive	#Atten: 10 dB Preamp: Off µW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RMS) Avg Hold:>100/100 Trig: Free Run	1 2 3 4 5 6 A W W W W W A N N N N N N	
1 Spectrum Scale/Div 10 dB	•			ef Lvi Offset 33.00 dB ef Level 41.00 dBm				1 Spectrum Scale/Div 10 dB	۲			Ref LvI Offset 33.00 d Ref Level 33.00 dBm	B		
31.0				ľ				22.0				Ĭ			
21.0								13.0							
11.0								3.00							
1.00								-7.00							
-9.00							DL1-13.00 dBm	-17.0							OL1-13.00 dBm
-19.0								-27.0							
-29.0	il casa da la di caià	a <mark>di</mark> da di di di di di	ulitari anni dit				<sup>1</sup> Mahapaté	-37.0							al a sai na balanda kilan da kalan
-49.0	eren hangerpreisen. Herde her er bereiten	alitan and a second	tel a seggi server sign	al desire and a	Post of the second damage	a distante a serie a fasta da	an a	-47.0	A MARTINE AND		giandrikken hikken en				And the second second
Start 9 kHz				Video BW 3.0 MHz*			Stop 3.000 GHz		A CARGE AND		A STATE OF A STATE				
#Res BW 1.0 MHz	<b>7</b> Jun 24	2021 A	coupled: Accy unspec'				~7.06 ms (100000 pts)	Start 3.00 GHz #Res BW 1.0 MHz	Jun 2	4, 2021 👝 🔺 с		#Video BW 3.0 MHz*			Stop 26.00 GHz Sweep ~61.9 ms (100001 pts)
	4:50:4					1									
		F	gure 43	56: 9KI	lz-3GHz			Figure 437: 3GHz-26GHz							

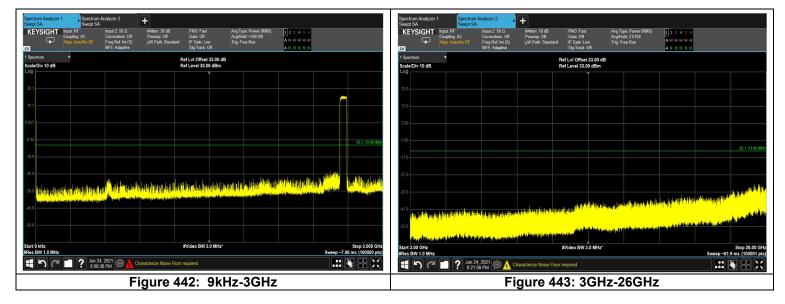
Spurious Emissions at Antenna Terminal QPSK 40MHz B.W.; 2670.0MHz, 60kHz

Spectrum Analyzer 1 Spectrum A Swept SA Swept SA	Analyzer 2 +			Spectrum Analy Swept SA	zer 1 Spectrum Swept SA	n Analyzer 2 +				
KEYSIGHT Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω #Atten: 30 dB Corrections: Off Preamp. Off Freq Ref: Int (S) μW Path: Standard NFE: Adaptive	PNO: Fast Avg Type: Power (RMS) Gate: Off Avg Hold.>100/100 IF Gain: Low Trig: Free Run Sig Track: Off	1 2 3 4 5 6 A w w w w w A N N N N N N	KEYSIGH G		Input Z: 50 Ω #Atten: 11 Corrections: Off Preamp: 0 Freq Ref: Int (S) μW Path: NFE: Adaptive		Avg Type: Power (RMS) Avg Hold: 13/100 Trig: Free Run	1 2 3 4 5 6 A w w w w w A N N N N N	
1 Spectrum v Scale/Div 10 dB		Ref Lvi Offset 33.00 dB Ref Level 30.06 dBm		1 Spectrum Scale/Div 10 d	т В		Ref LvI Offset 33.00 Ref Level 33.00 dBm			
20.1				23.0						
10.1			<u> </u>	13.0						
0.057				3.00						
-9.94				DL1-13.00 dBm						
-19.9				-17.0						DL1-13.00 dBm
-29.9		allista sha kashiki da she du tu tuki da ta shi kili a	, altile, is a state of the	-27.0						1.1
-39.9 -49.9				-37.0 -47.0	ale good a that the state	er <mark>en trensponsjon fræm sam kan af er a</mark> t blekker i	- dilla concerna		un espiratel de de la calenta processaria	
-59.9 Start 9 kHz		#Video BW 3.0 MHz*		Stop 3.000 GHZ		ale of a real failing sole of the loss of	Wales and Will		ran na starini a dan kan na di na di na ana inda	Stop 26.00 GHz
#Res BW 1.0 MHz	, 2021 Characterize Noise Floor	required		06 ms (100000 pts) #Res BW 1.0 M	Hz	24, 2021 Characterize N				9 ms (10001 pts)
	Figure 4	38: 9kHz-3GHz				Figure	9 439: 3G	Hz-26GHz		

Spurious Emissions at Antenna Terminal QPSK 60MHz B.W.; 2526.0MHz, 30kHz

Spectrum Analyzer 1 Spectrum Swept SA Swept SA	Analyzer 2			Spectrum Analyzer Swept SA	1 Spectrum Swept SA	Analyzer 2	+				
KEYSIGHT Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω #Atten: 30 dB Corrections: Off Preamp: Off Freq Ref: Int (S) µW Path: Standard NFE: Adaptive	PNO: Fast Avg Type: Power Gate: Off Avg Hold:>100/10 IF Gain: Low Trig: Free Run Sig Track: Off	RMS) 123456 A www.ww A N N N N N	KEYSIGHT	Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Adaptive	#Atten: 10 dB Preamp: Off µW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RMS) Avg Hold: 21/100 Trig: Free Run	1 2 3 4 5 6 A ** ** ** ** A N N N N N	
1 Spectrum  Scale/Div 10 dB Log		Ref Lvi Offset 33.00 dB Ref Level 30.06 dBm		1 Spectrum Scale/Div 10 dB	•			Ref Lvi Offset 33.00 dE Ref Level 33.00 dBm	3		
20.1				23.0							
10.1			<u> </u>	13.0							
0.057				3.00							
-9.94			DL 1 -13 00 dBm	-7.00							
-19.9				-17.0							DL1-13.00 dBm
-29.9				-27.0							
-39.9 <mark>Hall Hat Indones Martilla Hinko</mark> r	. A	hà tha an aich a bha an tha tha air an tha an t	<mark>hina alkala kulosta alka suka suka</mark> ta kuloka suka	-37.0						c. 1 suistiki kilolahki	an and the basis of the
-49.9				-47.0	unin ala di Analy	ter that a line of the	upe a l'incerient discolation	vadri <mark>kukila bi</mark> ka bi		a de la deserver en esta esta esta esta esta esta esta esta	
-59.9				-57.0		kali dud 11. juli i anatik	national states to a state of the	Togram and destroyed	and a start of the start of the start of the	and the second	Alexandra Marine Constantino
Start 9 kHz #Res BW 1.0 MHz		#Video BW 3.0 MHz*	Stop 3.000 GHz Sweep ~7.06 ms (10000 pts)	Start 3.00 GHz #Res BW 1.0 MHz				#Video BW 3.0 MHz*			Stop 26.00 GHz Sweep ~61.9 ms (100001 pts)
Jun 24	4, 2021 AC coupled: Accy unspe	sid < 10MHz		<b>1</b> 26	Jun 24 7:14:3	4, 2021 🗩 🔥 CI 32 PM	haracterize Noise Floor	required			
	Figure 4	40: 9kHz-3G	Hz			F	igure 44	11: 3GH	z-26GHz		

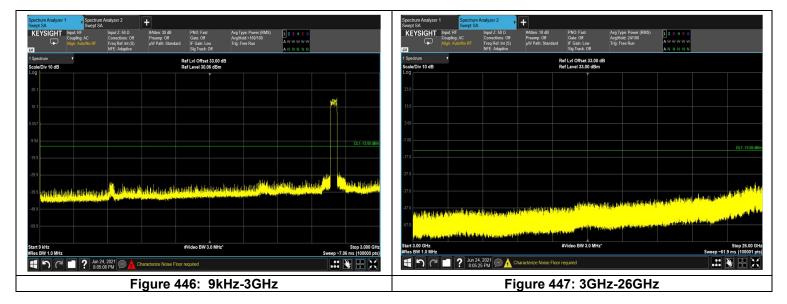
Spurious Emissions at Antenna Terminal QPSK 60MHz B.W.; 2593.0MHz, 30kHz



Spurious Emissions at Antenna Terminal QPSK 60MHz B.W.; 2660.0MHz, 30kHz

Spectrum Analyz Swept SA	ter 1 Spectrum Swept SA	Analyzer 2	+					Spectrum Analyze Swept SA	1 Spectrum Swept S/	Analyzer 2	+					
KEYSIGH		Input Ζ: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Adaptive	WAtten: 30 dB Preamp: Off µW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RMS) Avg Hold:>100/100 Trig: Free Run	1 2 3 4 5 6 A W W W W W A N N N N N N			Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Adaptive	#Atten: 10 dB Preamp: Off µW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RM Avg[Hold:>100/100 Trig: Free Run	) 123456 A ** ** ** ** A N N N N N		
1 Spectrum Scale/Div 10 dB	•			Ref Lvi Offset 33.00 dB Ref Level 30.06 dBm				1 Spectrum Scale/Div 10 dB				Ref Lvi Offset 33.0 Ref Level 33.00 dE				
20.1								23.0								
10.1							~	13.0								
0.057								3.00								
-9.94								-7.00								
-10.0							DL1 -13.00 dBm	17.0								DL1 -13.00 dBm
-10.9								27.0								
-29.9	e Jan Hilfrankaraali aan	a 🔥 dabla i d	lahtsa kiki da sa	ni, li Luchtellen, iheite	and has a darifted			-27.0								
-20-2 Ministration	andra bila serie a salita tan	ur Aronakerskal	Print Party And Party	to phone A borner (from all server	and some the state of the state	y straide of Lipschit Chinid	Contraction of the second s	-37.0							المركوميل والالالج أور	AAAAAAA
-49.9									antestant	in hay family in the state	uburlingu an dhai ai	AND			a final and the	A A A A A A A A A A A A A A A A A A A
-55.9									-		a na kati kata na sikaka kati kati kati kati kati kati kati	Ange and a second a				
Start 9 kHz #Res BW 1.0 Mi				#Video BW 3.0 MHz*			Stop 3.000 GHz Sweep ~7.06 ms (100000 pts)	Start 3.00 GHz #Res BW 1.0 MHz				#Video BW 3.0 M	Hz'		Sweep ~61.	Stop 26.00 GHz 9 ms (100001 pts)
<b>ま</b> り(	Jun 24	4, 2021 💮 🛕 C 43 PM	haracterize Noise Floor	required				100	Jun 2 7:10	14, 2021 🗩 🔥 CI 19 PM	naracterize Noise Floo	ir required				
		F	igure 4	44: 9kł	lz-3GHz	<u> </u>				Fi	gure 44	45: 3G	Hz-26GH	z		

Spurious Emissions at Antenna Terminal QPSK 60MHz B.W.; 2526.0MHz, 60kHz

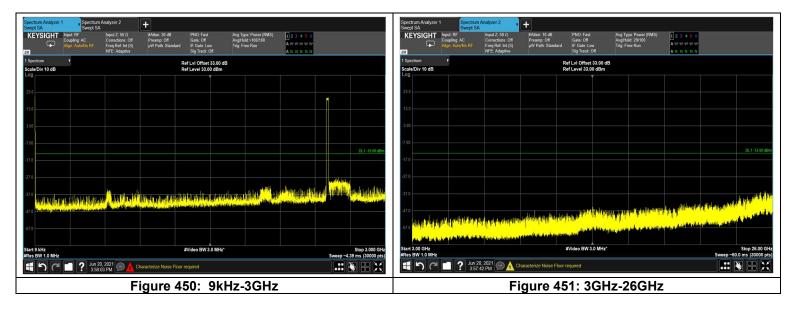


Spurious Emissions at Antenna Terminal QPSK 60MHz B.W.; 2593.0MHz, 60kHz

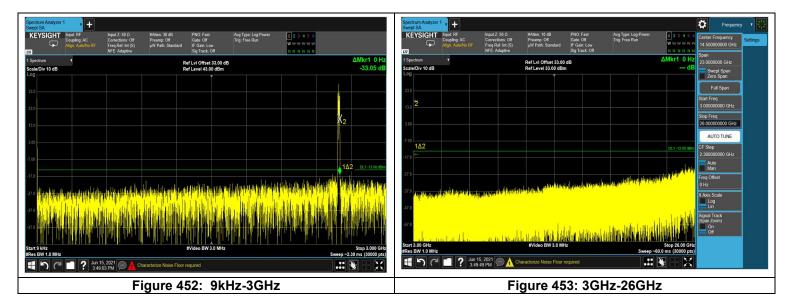
Spectrum Analyzer 1 Spectrum Swept SA Swept SA	n Analyzer 2 +			Spectrum Analyzer Swept SA	1 Spectrum Swept SA	Analyzer 2	+				
KEYSIGHT Coupling: AC Align: Auto:No RF	Input Z: 50 Ω #Atten: 30 dB Corrections: Off Preamp: Off Freq Ref: Int (S) μW Path: Standard NFE: Adaptive	PNO: Fast Avg Type: Power (RMS) Gate: Off Avg Hold: 71/100 I IF Gain: Low Trig: Free Run Sig Track: Off	123456 Awwwww A N N N N N	KEYSIGHT	Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Adaptive	#Atten: 10 dB Preamp: Off µW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RMS) Avg Hold: 88/100 Trig: Free Run	1 2 3 4 5 6 A w w w w w A N N N N N	
1 Spectrum V Scale/Div 10 dB		Ref Lvi Offset 33.00 dB Ref Level 30.06 dBm		1 Spectrum Scale/Div 10 dB	v			Ref Lvi Offset 33.00 di Ref Level 33.00 dBm	3		
20.1		Ĭ		23.0							
			<u> </u>	13.0							
0.057				3.00							
-9.94			DL1-13.00 dBm	-7.00							DL1-13.00 dBm
-19.9				-17.0							
-29.9 Instantistia intervaliated constant	e	a haka dari aktor yang dalam kan dalam dari		-27.0							
-39.9 Telephone and the second		Andread and a state of the product of the state of the st	a set for a part of the set of the	-37.0							where the ball of
-49.9				-47.0	<u>saaddada</u>	dina i doba di co	y manglashi shi			an a	and the second second
Start 9 kHz		#Video BW 3.0 MHz*	Etter 2 000 Olde	Start 3.00 GHz	and the second distance		a destinant distribution of	#Video BW 3.0 MHz*			Stop 26.00 GHz
Start 9 kHz #Res BW 1.0 MHz	24, 2021 A Characterize Noise Floo		Stop 3.000 GHz Sweep -7.06 ms (100000 pts)	#Res BW 1.0 MHz	<b>1 2</b> Jun 2	14, 2021 👝 💧 ch					Stop 26.00 GHz eep ~61.9 ms (100001 pts)
<b>1 1 1 1 8</b> 31		48: 9kHz-3GHz		X       Image: Contracting the second							
	Figure 4	40. JK12-3012				ΓI	yure 44	+9. JGF	12-20002	-	

Spurious Emissions at Antenna Terminal QPSK 60MHz B.W.; 2660.0MHz, 60kHz

## <u>4G</u>



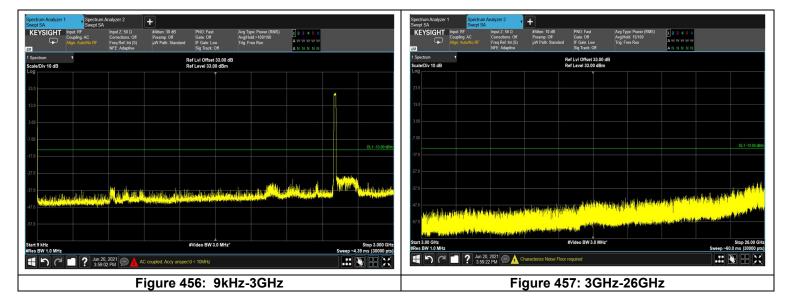
Spurious Emissions at Antenna Terminal 16QAM 20MHz B.W.; 2506.0MHz



Spurious Emissions at Antenna Terminal 16QAM 20MHz B.W.; 2593.0MHz

Spectrum Analyzer 1 Swept SA Swept SA	Analyzer 2				Spectrum Analyzer 2			
KEYSIGHT Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω #Atten: 30 dB Corrections: Off Preamp: Off Freq Ref: Int (S) uW Path: Standard NFE: Adaptive	PNO: Fast Avg Type: Pow Gate: Off Avg Hold.>100/ IF Gain: Low Trig: Free Run Sig Track: Off	r (RMS) 1 2 3 4 5 6 100 A W W W W A H H N N H	KEYSIGHT Input: RF Coupling: At Align: Autor		AMten: 10 dB PNO: Fast Preamp: Off Gate: Off W Path: Standard IF Gain: Low Sig Track: Off	Avg Type: Power (RMS) Avg Hold>100/100 Trig: Free Run	1 2 3 4 5 6 A W W W W A N N N N N
1 Spectrum v Scale/Div 10 dB		ef Lvi Offset 33.00 dB ef Level 33.00 dBm		1 Spectrum v Scale/Div 10 dB		Ref LvI Offset 33.0 Ref Level 33.00 dB		
23.0		Ĭ		23.0				
13.0				13.0				
3.00				3.00				
-7.00			DL1-13.00 dBm	-7.00				DL1-13.00 dBm
-17.0				-17.0				
-27.0 -37.0	a <mark>M</mark> ara kilanda Ketakan matemaki		eler galakinin galan galan di Alimia	-27.0				
-47.0			aller Bergere attel him om andere hanne der der der der der der der der der de	-47.0		sense 1 de la		A LAND AND AND A LAND AND A LAND
-57.0				-57.0 <mark>dir tid da da</mark>	kka kaba a ja ku asi ku di	erisikastei tisai AMM		
Start 9 kHz #Res BW 1.0 MHz		#Video BW 3.0 MHz*	Stop 3.000 GHz Sweep ~4.39 ms (30000 pts)	Start 3.00 GHz #Res BW 1.0 MHz		#Video BW 3.0 M		Stop 26.00 GHz Sweep ~60.0 ms (30000 pts)
1 C I ? Jun 20	0, 2021 Characterize Noise Floor r 46 PM	required		1 7 7 1 ?	Jun 20, 2021 🗩 🔥 Charac 4:09:31 PM	terize Noise Floor required		
	Figure 4	54: 9kHz-3G	Hz	Figure 455: 3GHz-26GHz				

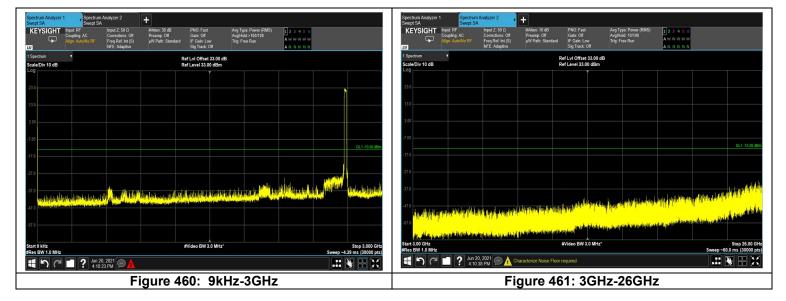
Spurious Emissions at Antenna Terminal 16QAM 20MHz B.W.; 2680.0MHz



Spurious Emissions at Antenna Terminal 64QAM 20MHz B.W.; 2506.0MHz

Spectrum Analyzer 1						Spectrum Analyzer Swept SA							Frequency	· 💥
Coupling: AC Align: Auto/No RF	Input Z: 50 Ω #Atten: 30 dB Corrections: Off Preamp: Off Freq Ref. Int (S) µW Path: Standard NFE: Adaptive	PNO:Fast A Gate:Off Ti IF Gain:Low Sig Track:Off	ig: Free Run	23456 WWWWWW NNNNNN			Input: RF Coupling: AC Align: Auto/No RF	Input Z:50 Ω Corrections: Off Freq Ref. Int (S) NFE: Adaptive	#Atten: 10 dB Preamp: Off µW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Trig: Free Run	1 2 3 4 5 6 W W W W W W N N N N N N	Center Frequency 14.500000000 GHz Span	ttings
1 Spectrum v Scale/Div 10 dB Log		Ref Lvi Offset 33.00 dB Ref Level 43.00 dBm v			ΔMkr1 0 Hz -28.65 dB	1 Spectrum Scale/Div 10 dB	•		Ref Lvi Offset 33.00 Ref Level 33.00 dBn			ΔMkr1 0 Hz dB	23.0000000 GHz Swept Span Zero Span	
33.0						23.0							Full Span Start Freq	
13.0				Xz	21	3.00							3.000000000 GHz Stop Freq 26.000000000 GHz	
3.00						-7.00 1Δ2						DL1 -13.00 dBm	AUTO TUNE CF Step 2.300000000 GHz	
-7.00					Δ2 DL1-13.00 dBm	-17.0					ları, alanın	and the state of the	Auto Man Freq Offset	
-27.0						-37.0 <mark>-1741 - 1747 - 1</mark> 747	and white a con	nin alahanina		ing an de dille den stelen			0 Hz X Axis Scale Log Lin	
-37.0 -47.0						-47.0 -57.0	a ltatan		and a state of the	en leith aich listeicea			Lin Signal Track (Span Zoom) On Off	
Start 9 kHz #Res BW 1.0 MHz I D C D ? Jun 15, 3:47:31	2021 🗩 🛓	#Video BW 3.0 MHz			Stop 3.000 GHz ~2.39 ms (30000 pts)	Start 3.00 GHz #Res BW 1.0 MHz	Jun 1 3:50	5, 2021 🗩 🔥 Cha	#Video BW 3.0 MF aracterize Noise Floor r		Sweep ~60	Stop 26.00 GHz 1.0 ms (30000 pts)		
	Figure 4	58: 9kHz	z-3GHz					Fiç	gure 45	59: 3GH	lz-26GH	Z		

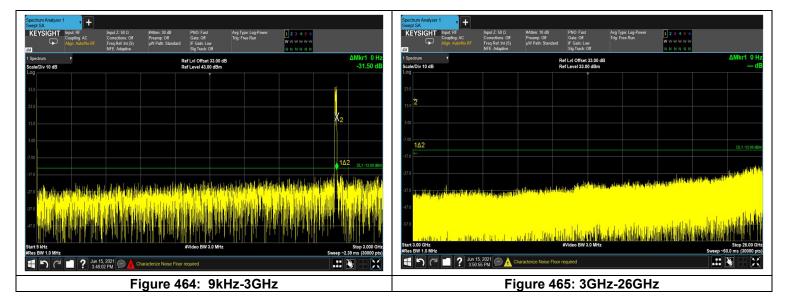
Spurious Emissions at Antenna Terminal 64QAM 20MHz B.W.; 2593.0MHz



Spurious Emissions at Antenna Terminal 64QAM 20MHz B.W.; 2680.0MHz

Spectrum Analyzer 1			Spectrum Analyzer 1 Spectrum Swept SA Swept SA	Analyzer 2 +			
KEYSIGHT Input RF Input Z: 50 0 (#Atten: 30 dB Coupling: AC Align: AutoNo RF Freq Ref. Int (S) VFE: Adaptive VFE: Adaptive	PNO: Fast Avg Type: Power (RMS) Gate: Off AvgHold>100/100 IF Gain: Low Trig: Free Run Sig Track: Off	1 2 3 4 5 6 A w w w w w A N N N N N	KEYSIGHT Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω III/Atten: 10 dB Corrections: Off Preamp: Off Freq Ref: Int (S) μW Path: Standard NFE: Adaptive	PNO: Fast Avg Type: Po Gate: Off Avg Hold >1 IF Gain: Low Trig: Free Ro Sig Track: Off	ower (RMS) 1 2 3 4 5 6 00/100 A W W W W W A N N N N N	
Scale/Div 10 dB	Ref Lvi Offset 33.00 dB Ref Level 33.00 dBm		1 Spectrum v Scale/Div 10 dB		Ref LvI Offset 33.00 dB Ref Level 33.00 dBm		
230			230				
13.0		1	13.0				
300			3.00				
-7.00			-7.00				
-17.0		DL1-13.00 dBm	-17.0			DL1-13.00 dBm	
-27.0		, tritente,	-27.0				
.370 11.1 d. Alexand Icel and mit i Ascultula de Milling i Constant	Will and willows with the	Wilder and Anton and Antonio and An	-37.0			C. A. MARTIN	
47.0			-47.0	n e a	and the second second		
-57.0							
Start 9 kHz #Res BW 1.0 MHz	#Video BW 3.0 MHz*	Stop 3.000 GHz Sweep ~4.39 ms (30000 pts)	Start 3.00 GHz #Res BW 1.0 MHz		#Video BW 3.0 MHz*	Stop 26.00 GHz Sweep ~60.0 ms (30000 pts)	
In 20, 2021 🗩 🛓				0, 2021 💬 🚹 Characterize Noise Floor 15 PM	required		
Figure 4	62: 9kHz-3GHz		Figure 463: 3GHz-26GHz				

Spurious Emissions at Antenna Terminal QPSK 20MHz B.W.; 2506.0MHz



Spurious Emissions at Antenna Terminal QPSK 20MHz B.W.; 2593.0MHz

Spectrum Analyzer 1 Spectrum Swept SA Swept SA	Analyzer 2 +					Spectrum Analyzer Swept SA	1 Spectrun Swept S/	n Analyzer 2	+				
KEYSIGHT Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω #Atten: 30 d Corrections: Off Preamp: Off Freq Ref: Int (S) μW Path: St NFE: Adaptive	Gate: Off	Avg Type: Power (RMS) Avg Hold:>100/100 Trig: Free Run	1 2 3 4 5 6 A w w w w w A N N N N N N		KEYSIGHT	Input: RF Coupling: AC Align: Auto/No RF	Input Z: 50 Ω Corrections: Off Freq Ref. Int (S) NFE: Adaptive	#Atten: 10 dB Preamp: Off µW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Power (RMS) Avg Hold: 19/100 Trig: Free Run	1 2 3 4 5 6 A ** ** ** ** A N N N N N	
1 Spectrum  Scale/Div 10 dB Log		Ref Lvi Offset 33.00 di Ref Level 33.00 dBm	3			1 Spectrum Scale/Div 10 dB			R	ef Lvi Offset 33.00 d ef Level 33.00 dBm	В		
23.0						23.0				Ĭ			
13.0					1	13.0							
3.00						3.00							
-7.00					DL 1-13.00 dBm	-7.00							
-17.0					0.1112.00 0000	-17:0							DL1-13.00 dB
-27.0				Jun a Milli		-27.0							
-37.0 -47.0	a <sup>A</sup> alahan Nata kida			a Milli Lughe dan <sup>Angriere</sup>	all daile filler	-47.0		4	hailin hà liait		da se statut da se statut da se	in, mhatiait	
						-57.0 <b>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</b>	<mark>ANTENNESSA.</mark> Antennessa	<mark>. Andreachan an Andreachan an Andreachan an Andreachan an Andreachan an Andreachan Andreachan Andreachan Andre An Andreachan Andreachan Andreachan Andreachan Andreachan Andreachan Andreachan Andreachan Andreachan Andreachan</mark>	<mark>ne population population.</mark> Manadabilitation	and and all a	19 19 19 19 19 Rectore a characteristic	da, na vadina i a vidi	
Start 9 kHz #Res BW 1.0 MHz		#Video BW 3.0 MHz*			Stop 3.000 GHz 4.39 ms (30000 pts)	Start 3.00 GHz #Res BW 1.0 MHz				#Video BW 3.0 MHz*			Stop 26.00 GF Sweep ~60.0 ms (30000 pt
まっで <b>ニ?</b> Jun 20 4:08:2	23 PM	unspec'd < 10MHz				10	Jun 2 4:08	20, 2021 🗩 🚹 Cł 3:59 PM	naracterize Noise Floor r	required			
	Figure 466: 9kHz-3GHz							Fig	gure 46	7: 3GF	lz-26GHz	2	

Spurious Emissions at Antenna Terminal QPSK 20MHz B.W.; 2680.0MHz

### 8.4 Equipment Used; Spurious Emissions at Antenna Terminals

Instrument	Manufacturer	Model	Serial	Calibration			
Instrument	Manufacturer	Widdei	Number	Last Calibration	Calibration Due		
EXA signal Analyzer	Keysight	UXA N9040B	MY56080119	January 31, 2020	January 31, 2022		
EXG Vector Signal Generator	Agilent Technologies	N5172B	MY53051952	January 17, 2019	January 17, 2022		
40 dB Attenuator	Weinschel Associates	WA 39- 40-33	-	November 1, 2020	November 1, 2021		
RF Coaxial Cable	Huber-Suner	SLLS210B	-	November 1, 2020	November 1, 2021		

Table 30 Test Equipment Used

## 9 Spurious Radiated Emission

#### 9.1 Test Specification

FCC, Part 27, Subpart C, Section 27.53 (g)

### 9.2 Test Procedure

(Temperature (23°C)/ Humidity (47%RH))

The test method was based on ANSI/TIA-603-D: 2010, Section 2.2.12 Unwanted Emissions: Radiated Spurious.

### For measurements between 0.009MHz-30MHz:

The E.U.T was tested inside the shielded room at a distance of 3 meters and the E.U.T was placed on a non-metallic table, 1.5 meters above the ground. The frequency range 0.009MHz-30MHz was scanned. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization. The emissions were measured at a distance of 3 meters.

### For measurements between 30.0MHz-1.0GHz:

A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The frequency range 30.0MHz -1.0GHz was scanned and the list of the highest emissions was verified and updated accordingly.

The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between  $0-360^\circ$ , and the antenna polarization.

The emissions were measured at a distance of 3 meters.

#### For measurements between 1.0GHz-26.0GHz:

The E.U.T was tested inside the shielded room at a distance of 3 meters and the E.U.T was placed on a non-metallic table, 1.5 meters above the ground. The frequency range 1.0GHz -26.0GHz was scanned. The readings were maximized by the turntable azimuth between 0-360°, and the antenna polarization. The emissions were measured at a distance of 3 meters.

The E.U.T. was replaced by a substitution antenna (dipole 30MHz-

1GHz, Horn Antenna above 1GHz) driven by a signal generator.

The height was readjusted for maximum reading. The signal

generator level was adjusted to obtain the same reading on the EMI receiver as in step (a).

The signals observed in step (a) were converted to radiated power using:

 $P_d(dBm) = P_g(dBm) - Cable Loss (dB) + Substitution Antenna Gain (dBd)$  $P_d = Dipole equivalent power (result).$  $P_g = Signal generator output level.$ 

A Peak detector was used for this test.

Testing was performed when the RF port was connected to 50  $\Omega$  termination.

Evaluation was performed for all possible modulations, bandwidths, and sub carriers.

### 9.3 Test Limit

The power of any emission outside of the authorized operating frequency ranges (862 - 894 MHz) must be attenuated below the transmitting power (P) by a factor of at least  $43 + \log (P) dB$ , yielding -13 dBm.

#### 9.4 Test Results

No emissions were detected above the EMI receiver noise level which is at least 20 dB margin below the limit.

Judgement: Passed

				Calib	ration
Instrument	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
EMI Receiver	HP	8542E	3906A00276	March 03, 2020	March 03, 2021
RF Filter Section	НР	85420E	3705A00248	March 03, 2020	March 03, 2021
Spectrum Analyzer	HP	8593EM	3536A00120ADI	March 10, 2020	March 10, 2021
Active Loop Antenna	EMCO	6502	9506-2950	February 5, 2019	February 28, 2021
Antenna Biconical	EMCO	3110B	9912-3337	Apr 24, 2021	Apr 24, 2023
Antenna Log Periodic	ЕМСО	3146	9505-4081	Apr 27, 2021	Apr 27, 2023
Horn Antenna 1G-18G	ETS	3115	29845	May 31, 2018	May 31, 2021
Horn Antenna 18G-26.5G	ARA	SWH-28	1007	December 13, 2017	December 31, 2020
Low Noise Amplifier	Narda	LNA-DBS- 0411N313	013	December 24, 2019	December 31, 2020
Low Noise Amplifier	Sophia Wireless	LNA 28-B	232	December 24, 2019	December 31, 2020
Vector Signal Generator	VIAVI	MTS 5800	WMNK0071690 263	July 1, 2018	July 1, 2021
Semi Anechoic Civil Chamber	ETS	S81	SL 11643	NCR	NCR
Antenna Mast	ETS	2070-2	-	NCR	NCR
Turntable	ETS	2087	-	NCR	NCR
Mast & Table Controller	ETS/EMCO	2090	9608-1456	NCR	NCR

### 9.5 Test Instrumentation Used; Radiated Measurements

 Table 31
 Test Equipment Used

# 10 Out-of-Band Rejection

### 10.1 Test Specification

KDB 935210 D05 v01r01, Section 3.3

### 10.2 Test Procedure

(Temperature (21°C)/ Humidity (35%RH))

The E.U.T. antenna terminal was connected to the spectrum analyzer through an external attenuator and an appropriate coaxial cable (max Loss= 41.1 dB).

The signal and spectrum analyzer frequency range was set to  $\pm 250\%$  of the passband, Dwell time set to approximately 10msec.

RBW was set between 1% to 5% of the E.U.T passband and VBW set to  $\geq$ 3\*RBW.

#### 10.3 Test Limit

N/A

### 10.4 Test Results

JUDGEMENT:

Passed

Spectrum Ar Channel Pov	wer	0	pectrum Ar ccupied B\	N	Powe	um Analyzer 3 Stat CCDF		Swept	um Analyze SA		Spectrum Ar Swept SA	nalyzer 5	+	
KEYSI		Input: RF Coupling: AC Align: Auto/N		Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) NFE: Adaptive	P	Atten: 20 dB reamp: Off W Path: Standard	Gat IF (	O: Fast e: Off Gain: Lov Track: C		Avg Type: L Avg Hold:> Trig: Free F	100/100	1 2 3 4 5 6 M W W W W W P N N N N N		
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#### Figure 468. Out-of-Band Rejection Plot

## 10.5 Test Equipment Used; Out-of-Band Rejection

Instrument	Manufacturer	Model	Serial Number	Calibration	
				Last Calibration	Next Calibration
EXA signal Analyzer	Keysight	UXA N9040B	MY56080119	January 31, 2020	January 31, 2022
EXG Vector Signal Generator	Agilent Technologies	N5172B	MY53051952	January 17, 2019	January 17, 2022
40 dB Attenuator	Weinschel Associates	WA 39- 40-33	-	November 1, 2020	November 1, 2021
RF Coaxial Cable	Huber-Suner	SLLS210B	-	November 1, 2020	November 1, 2021

Table 32 Test Equipment Used

# **11 APPENDIX A - CORRECTION FACTORS**

## 11.1 For ITL #1911 OATS RF Cable

Frequency (MHz)	Cable Loss (dB)	Frequency (MHz)	Cable Loss (dB)
1.0	0.5	450.00	5.83
10.00	1.0	500.00	6.33
20.00	1.34	550.00	6.67
30.00	1.5	600.00	6.83
50.00	1.83	650.00	7.17
100.00	2.67	700.00	7.66
150.00	3.17	750.00	7.83
200.00	3.83	800.00	8.16
250.00	4.17	850.00	8.5
300.00	4.5	900.00	8.83
350.00	5.17	950.00	8.84
400.00	5.5	1000.00	9.0

## 11.2 For ITL #1840 Anechoic Chamber RF Cable

Frequency (MHz)	Cable Loss (dB)	Frequency (MHz)	Cable Loss (dB)
1000.0	-1.4	10000.0	-6.0
1500.0	-1.7	10500.0	-6.2
2000.0	-2.0	11000.0	-6.2
2500.0	-2.3	11500.0	-6.0
3000.0	-2.6	12000.0	-6.0
3500.0	-2.8	12500.0	-6.1
4000.0	-3.1	13000.0	-6.3
4500.0	-3.3	13500.0	-6.5
5000.0	-3.6	14000.0	-6.7
5500.0	-3.7	14500.0	-7.0
6000.0	-4.0	15000.0	-7.3
6500.0	-4.4	15500.0	-7.5
7000.0	-4.7	16000.0	-7.6
7500.0	-4.8	16500.0	-8.0
8000.0	-5.0	17000.0	-8.0
8500.0	-5.1	17500.0	-8.1
9000.0	-5.6	18000.0	-8.2
9500.0	-5.8		

## 11.3 For ITL # 1075 Active Loop Antenna

Frequency (MHz)	MAF (dBs/m)	AF (dB/m)
0.01	-33.1	18.4
0.02	-37.2	14.3
0.03	-38.2	13.3
0.05	-39.8	11.7
0.1	-40.1	11.4
0.2	-40.3	11.2
0.3	-40.3	11.2
0.5	-40.3	11.2
0.7	-40.3	11.2
1	-40.1	11.4
2	-40.0	11.5
3	-40.0	11.5
4	-40.1	11.4
5	-40.2	11.3
6	-40.4	11.1
7	-40.4	11.1
8	-40.4	11.1
9	-40.5	11.0
10	-40.5	11.0
20	-41.5	10.0
30	-43.5	8.0

### 11.4 For ITL #1356 Biconical Antenna

Frequency (MHz)	AF (dB/m)
30	13.00
35	10.89
40	10.59
45	10.63
50	10.12
60	9.26
70	7.74
80	6.63
90	8.23
100	11.12
120	13.16
140	13.07
160	14.80
180	16.95
200	17.17

## 11.5 For ITL # 1349 Log Periodic Antenna

Frequency (MHz)	AF (dB/m)
200	11.58
250	12.04
300	14.76
400	15.55
500	17.85
600	18.66
700	20.87
800	21.15
900	22.32
1000	24.22