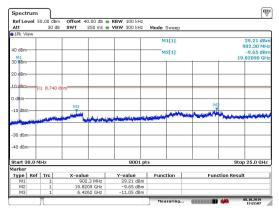
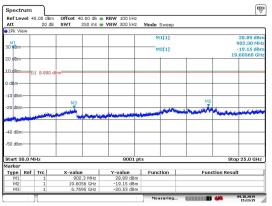
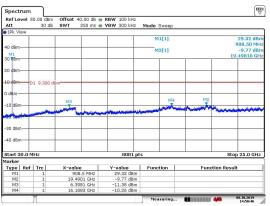
			Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436		Co	onducted	Spurious		
DNB.	Job Numbe	er:	06022		Date:		10 Oct 2019 Conformar			
Custor	mer:		Transcore				Standard			
Mode	Number:		MPRXFH				FCC Part 1			
Descri	iption:		Multiprotoc	ol Reader Extreme- Fro	equency	Hopper			Clause 15.247(d)	
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressure		
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requirement	nts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	Μ	odulation	Peak Output Power (d	Bm)	Read	ding (dBm)	-20dBc (dBm)	Pass/Fall	
0	Low		ерс	28.89			29.21	9.21	Pass	
1	Low	Low epc 28.91 29.32		9.32	Pass					
2	Low	N epc 28.81 28.89		8.89	Pass					
3					9	Pass				



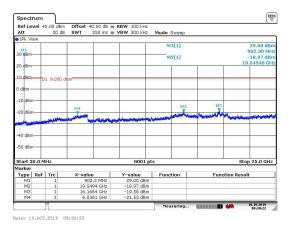
Date: 8.0CT.2019 13:22:07



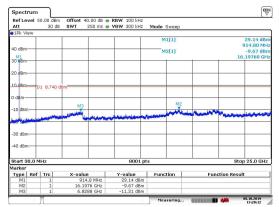
Date: 9.0CT.2019 15:13:15



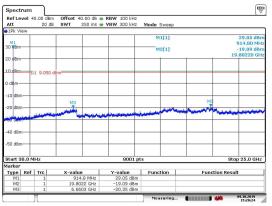




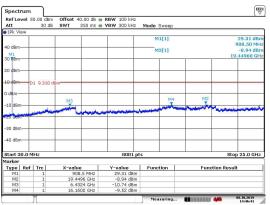
			Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436		Co	onducted	Spurious		
DNB.	Job Numbe	er:	06022		Date:		10 Oct 201		Conformance	
Custor	mer:		Transcore				Standard			
Mode	Number:		MPRXFH					art 15		
Descri	iption:		Multiprotoc	ol Reader Extreme- Fro	equency	Hopper	,	Cla 15.24		
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressu	metric Pressure	
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requirement	nts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	M	odulation	Peak Output Power (d	Bm)	Read	ding (dBm)	-20dBc (dBm)	Pass/Fall	
0	Mid		ерс	28.96			29.14	9.14	Pass	
1	Mid epc 28.92 29.31		9.31	Pass						
2	Mid epc 28.91 29.05		9.05	Pass						
3				28.92			29.15	9.15	Pass	



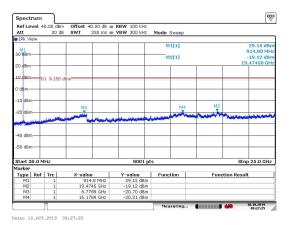
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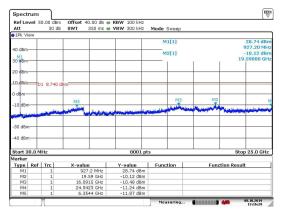
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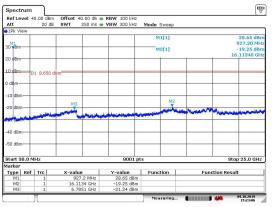
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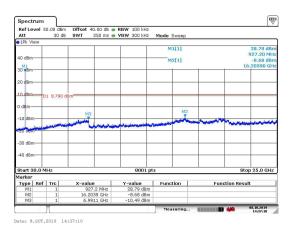
			Coalvi (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436		Co	nducted	Spurious		
DNB.	Job Numb	er:	06022		Date:		10 Oct 201		Conformance	
Custor	mer:		Transcore				Standard			
Mode	l Number:		MPRXFH					FCC P	art 15	
Descri	iption:		Multiprotocol Reader Extreme- Frequency Hopper					0	Clause 15.247(d)	
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressu		
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requiremer	ts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	M	odulation	Peak Output Power (d	Bm)	Read	ling (dBm)	-20dBc (dBm)	Pass/Fall	
0	High		ерс	28.93			28.74	8.74	Pass	
1	High epc 28.94 28.79		8.79	Pass						
2	High epc 28.91 28.65		28.65	8.65	Pass					
3				28.94			28.77	8.77	Pass	

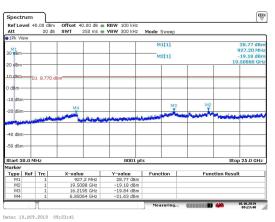


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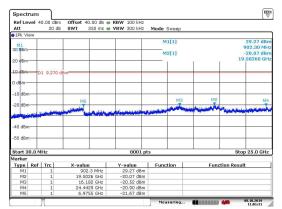


Date: 9.0CT.2019 15:23:07





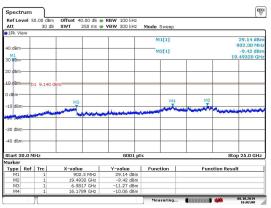
			Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436		Co	onducted	Spurious		
DNB.	Job Numbe	er:	06022		Date:		10 Oct 2019		Conformance	
Custor	mer:		Transcore				Standard			
Mode	Number:		MPRXFH					FCC P	art 15	
Descri	iption:		Multiprotoc	ol Reader Extreme- Fro	equency	Hopper	,	Cla 15.24		
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressu	metric Pressure	
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requirement	nts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	M	odulation	Peak Output Power (d	Bm)	Read	ding (dBm)	-20dBc (dBm)	Pass/Fall	
0	Low		iag	28.87			29.27	9.27	Pass	
1	Low iag 28.74 29.14		9.14	Pass						
2	Low	Low iag 28.74 29.02		29.02	9.02	Pass				
3						29.07	9.07	Pass		



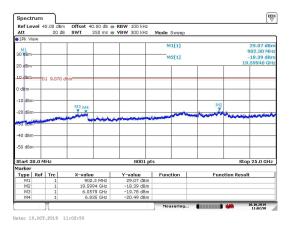
Date: 8.0CT.2019 11:01:31

Att	vel 4	0.00 dBm 20 dB		 RBW 100 kHz VBW 300 kHz 	Mode Sweep		
1Pk Vi	ew	20 00	ONT LOO IND	- TOT DOD MIL	Hous Sweep		
					M1[1]		29.02 dBn
							902.30 MH
					M2[1]		-19.60 dBr
20 dBm	\rightarrow					1 1	16.13520 GH
LO dBm	D.	1 9.020	dBm				_
dem-							
asm-							
10 dBn	-						
			M4		M2	M3	MS
20 dBn			inter inter			and the second se	MIS
1.0		-	ALL ST.	بقاف ويعدد وسرو المساديدين	College Colleg	Contraction of the second second	and the state of the
Conde							
40 dBn							
to ubn	·						
50 dBn	-						
	<u> </u>						
	515 G	Hz		8001 pt	s	S	pan 24.97 GHz
F 12.							
		Tre	X-value	Y-value	Function	Eunction Re	esult
arker	Ref		902.3 MHz	29.02 dBm			
arker	Ref	1					
arker Type M1 M2	Ref	1	16.1352 GHz	-19.60 dBm			
M1 M1 M2 M3	Ref	1	16.1352 GHz 19.5744 GHz	-19.98 dBm			
larker Type M1 M2	Ref	1	16.1352 GHz				

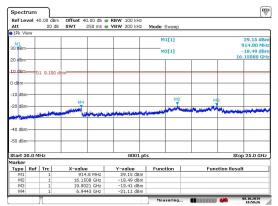
Date: 9.007.2019 14:05:56







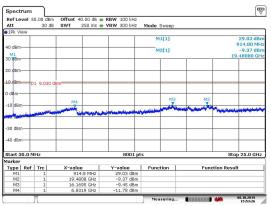
			Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436		Co	onducted	Spurious		
DNB.	Job Numbe	er:	06022		Date:		10 Oct 2019		Conformance	
Custor	mer:		Transcore				Standard			
Model	Number:		MPRXFH					FCC P	art 15	
Descri	iption:		Multiprotoc	ol Reader Extreme- Fro	equency	Hopper		Cla 15.24		
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressure		
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requiremen	nts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	M	odulation	Peak Output Power (d	Bm)	Read	ding (dBm)	-20dBc (dBm)	Pass/Fall	
0	Mid		iag	28.78			29.15	9.15	Pass	
1	Mid	Mid iag 28.90 29.03		9.03	Pass					
2	Mid		iag	28.86	28.86		29.19	9.19	Pass	
3					29.25	9.25	Pass			



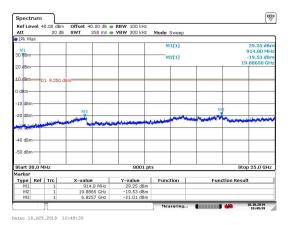
Date: 8.0CT.2019 10:59:26

	vel 4	0.00 dBr	n Offset 40	3.00 dB 👄	RBW 100 kHz			
Att		20 di	B SWT	250 ms 🖷	VBW 300 kHz	Mode Sweep		
1Pk Vi	ew							
						M1[1]		29.19 dBr
M1 30 88m								914.80 MH
						M2[1]		-19.04 dBr
20 dBm	\rightarrow							19.44640 GH
LO dBm		1 9.190	dBm		_		_	
) d8m-								
10 dBn								
10 081	· —					M3	M2	M
20 dBn	-		M5			In S	×	PVI-
		and a stand	- Antonio -	New Street	C. C	and the state of t	the second in the	المستحر والمناد وعرفه والم
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-40 dBn	-	n in the second second	and and a second se	Marialeo	1			******
40 dBn	-			majale				
40 dBn 50 dBn	1 1	142		a the spiriture		5		Spap 24 97 CHz
-40 dBn -50 dBn CF 12.	1 1	Hz		ethericher 	8001 pt	s		Span 24.97 GHz
-40 dBn -50 dBn CF 12. 1arker	515 G		X-yalur		8001 pt		Euro	
-40 dBn -50 dBn CF 12. 1arker	515 G	Hz 1	X-value 914			s Function	Func	Span 24.97 GHz
-40 dBn -50 dBn CF 12. Tarker Type	515 G	Trc	914		8001 pt Y-value		Func	
-40 dBn -50 dBn CF 12. Tarker Type M1 M2 M3	515 G	Trc 1 1	914 19.44 16.02	8 .8 MHz 64 GHz 91 GHz	8001 pt Y-value 29.19 dBm -19.04 dBm -20.72 dBm		Func	
-40 dBn -50 dBn CF 12. Tarker Type M1 M2	515 G	Trc 1	914 19.44 16.02 24.54	8 MHz 64 GHz	8001 pt Y-value 29.19 dBm -19.04 dBm		Func	

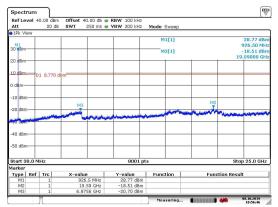
Date: 9.007.2019 14:04:33



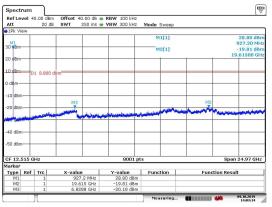
Date: 8.007.2019 15:53:26



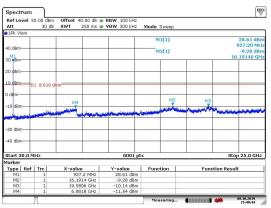
			Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436		Co	onducted	Spurious		
DNB.	Job Numbe	er:	06022		Date:		10 Oct 201		Conformance	
Custor	mer:		Transcore				Standard			
Mode	l Number:		MPRXFH					FCC P	art 15	
Descri	iption:		Multiprotoc	ol Reader Extreme- Fro	equency	Hopper		Cla 15.24		
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressure		
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requiremer	nts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	M	odulation	Peak Output Power (d	Bm)	Read	ding (dBm)	-20dBc (dBm)	Pass/Fall	
0	High		iag	28.79			28.77	8.77	Pass	
1	High iag 28.94 28.61		8.61	Pass						
2	High	High iag 28.68			28.80		8.8	Pass		
3				28.79			28.80	8.8	Pass	



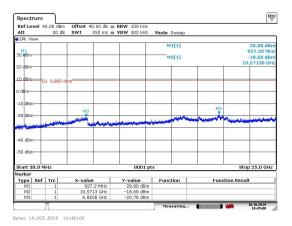
Date: 8.0CT.2019 10:56:46



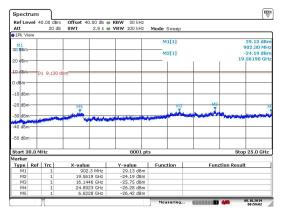
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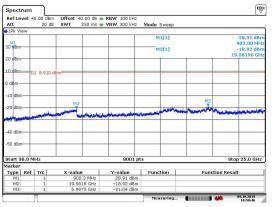




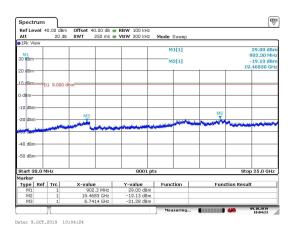
			Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436		Co	onducted	Spurious		
DNB.	Job Numbe	er:	06022		Date:		10 Oct 201		Conformance	
Custor	mer:		Transcore				Standard			
Mode	l Number:		MPRXFH				FCC Part 15			
Descri	iption:		Multiprotoc	ol Reader Extreme- Fro	equency	Hopper		Clause 15.247(d)		
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressure		
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requiremen	nts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	Μ	odulation	Peak Output Power (d	Bm)	Read	ding (dBm)	-20dBc (dBm)	Pass/Fall	
0	Low		Sego	28.99			29.13	9.13	Pass	
1	Low Sego 28.98 29.00		9	Pass						
2	Low	.ow Sego 28.90		28.91		8.91	Pass			
3					29.00	9	Pass			

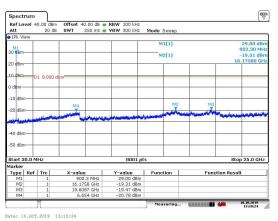


Date: 8.0CT.2019 08:59:01



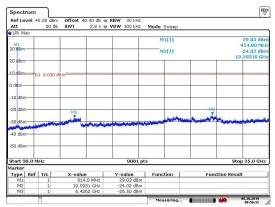
Date: 9.0CT.2019 10:50:46



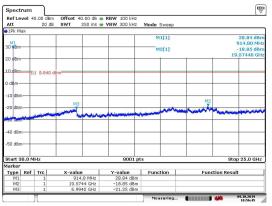


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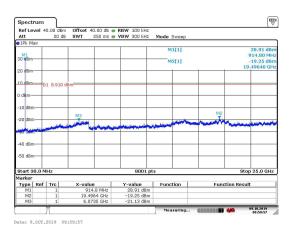
			Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436	Conducted Spurious					
DNB.	Job Numbe	er:	06022		Date:			onformance		
Custor	mer:		Transcore				Standard			
Mode	l Number:		MPRXFH					FCC P	art 15	
Descri	iption:		Multiprotoc	ol Reader Extreme- Fro	equency	Hopper	,	0	Clause 15.247(d)	
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressure		
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requirement	nts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	Μ	odulation	Peak Output Power (d	Bm)	Read	ding (dBm)	-20dBc (dBm)	Pass/Fall	
0	Mid		Sego	28.92			29.03	9.03	Pass	
1	Mid Sego 29.02 28.91		8.91	Pass						
2	Mid Sego 28.80		28.80		28.84		8.84	Pass		
3				28.99			29.18	9.18	Pass	

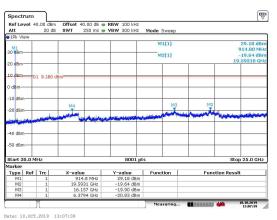


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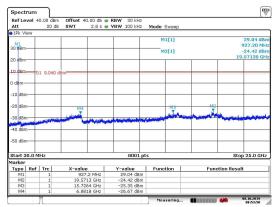
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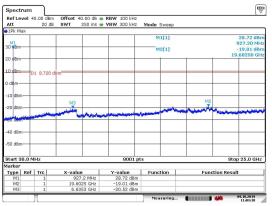


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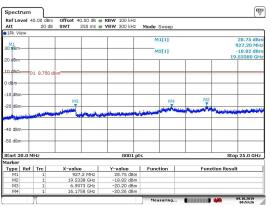
			Coalvi (43:	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436		Co	onducted	Spurious		
DNB.	Job Numb	er:	06022		Date:		10 Oct 2019	mance		
Custor	mer:		Transcore				Standard			
Mode	Number:		MPRXFH					FCC P	art 15	
Descri	iption:		Multiprotoc	Multiprotocol Reader Extreme- Frequency Hopper					Clause 15.247(d)	
	Ambient '	Tempera	ature	Relative Hur	nidity		Bar	ometric Pressure		
	24	4 °C		32 %				101.30 kPa		
EUT p	performed	within t	he requiremer	nts of the applicable sta	indard	[X] Ye	s []No	J Payne		
Port	Channel	M	odulation	Peak Output Power (d	Bm)	Read	ding (dBm)	-20dBc (dBm)	Pass/Fall	
0	High		Sego	28.90			29.04	9.04	Pass	
1	High	gh Sego 28.80 28.75		8.75	Pass					
2	High	High Sego 28.83 28.72		8.72	Pass					
3				29.01			28.79	8.79	Pass	



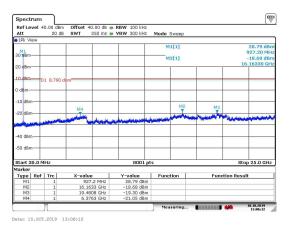
Date: 8.0CT.2019 08:53:50



Date: 9.0CT.2019 11:03:19







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	Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 435) 336-4436	Rest	ricted Band	s Spurious		
DNB Job Number:	06022		Date:	31 Jan 2020	Conformance		
Customer:	Transcore			Standard			
Model Number:	MPRXFH	MPRXFH					
Description:	Multiprotoc	ol Reader Extreme- F	requency Hopp	er	Clause		
	Test Proced	ure			15.247(d)		
Ambient Temper	Ambient Temperature Relative Humidity Baro						
24 °C 32 %				10	01.30 kPa		
EUT performed within the requirements of the applicable standard [X] Yes [] No J Payne							

Test Procedure: ANSI C63.10-2013

11.12.2 Antenna-port conducted measurements

11.12.2.1 General

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for determining compliance in the restricted frequency bands requirements. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case emissions is required.

11.12.2.2 General procedure for conducted measurements in restricted bands

The general procedure for conducted measurements in restricted bands is as follows:

a) Measure the conducted output power (in dBm) using the detector specified by the appropriate regulatory agency (see 11.12.2.3 through 11.12.2.5 for guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP (see 11.12.2.6 for guidance on determining the applicable antenna gain).

c) Add the appropriate maximum ground reflection factor to the EIRP (6 dB for frequencies \leq 30 MHz; 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive; and 0 dB for frequencies > 1000 MHz).

d) For MIMO devices, measure the power of each chain and sum the EIRP of all chains in linear terms (i.e., watts and mW).

	Coalv (43	Chalk Creek Road ille, UT 84017 5) 336-4433 (435) 336-4436	Restr	icted Band	s Spurious	
DNB Job Number:	06022		Date:	31 Jan 2020	Conformance	
Customer:	Transcore				Standard	
Model Number:	MPRXFH				FCC Part 15	
Description:	Multiprotocol Reader Extreme- Frequency Hopper				Clause	
	Test Procedure				15.247(d)	
Ambient Temperature		Relative Humidity		Barometric Pressure		
24 °C		32 %		10	101.30 kPa	
EUT performed within the requirements of the applicable standard [X] Yes [] No J Payne						

Test Procedure: ANSI C63.10-2013 - Continued

e) Convert the resultant EIRP to an equivalent electric field strength using the following relationship:

 $E = \text{EIRP} - 20 \log d + 104.8$ where *E* is the electric field strength in dBµV/m EIRP is the equivalent isotropically radiated power in dBm *d* is the specified measurement distance in m

f) Compare the resultant electric field strength level with the applicable regulatory limit.

g) Perform the radiated spurious emission test.

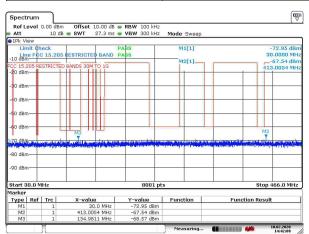
Note: With respect to steps e) and f) a limit line (EIRP) based upon the dBuV/m limit was calculated and put on the plots to satisfy the requirement of step f) above. Formula is: $(E + 20 \log d) - 104.8 = (EIRP limit)$. The appropriate correction factor from step c) was included in the final calculation.

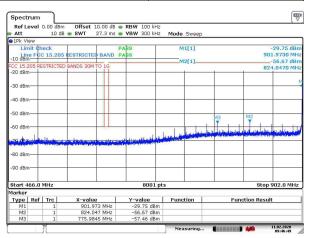
Limit Calculation:

Formula: E – 104.8 + 20log(3) – antenna gain – ground reflection factor

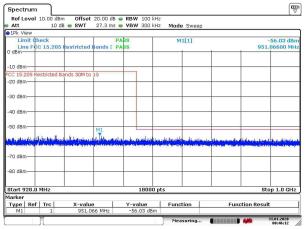
30 MHz - 88 MHz 88 MHz - 216 MHz	40 - 104.8 + 20log(d) - 6 - 4.7 43 - 104.8 + 20log(d) - 6 - 4.7	= -65.96 dBm = -62.46 dBm
216 MHz - 960 MHz 960 MHz - 1000 MHz	46 - 104.8 + 20log(d) - 6 - 4.7	= -59.96 dBm
> 1000 MHz	54 - 104.8 + 20log(d) - 6 - 4.7 54 - 104.8 + 20log(d) - 6 - 0	= -51.96 dBm = -47.26 dBm

	Coalv (43	Chalk Creek Road rille, UT 84017 5) 336-4433 (435) 336-4436		ricted I	Band	Spurious	
DNB Job Number:	06022		Date:	31 Jan 2	2020	Conformance	
Customer:	Transcore	Transcore				Standard	
Model Number:	MPRXFH	MPRXFH				FCC Part 15	
Description:	Multiprotocol Reader Extreme- Frequency Hopper				Clause 15.247(d)		
Ambient Temperature		Relative Humidity			Barometric Pressure		
23 °C		30	30 %		10	101.80 kPa	
EUT performed within the requirements of the applicable standard [X] Yes [] No CL					L Payne		
Port		Channel		Modulation		Pass/Fall	
0		Low				Pass	

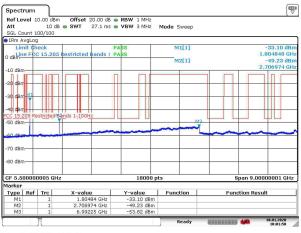




Date: 10.FEB.2020 14:42:09



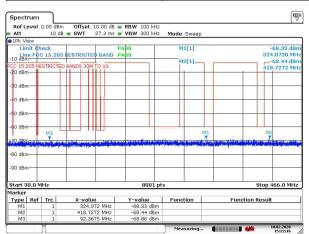
Date: 11.FEB.2020 09:46:49

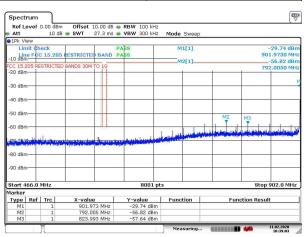


Date: 31.JAN.2020 08:46:12

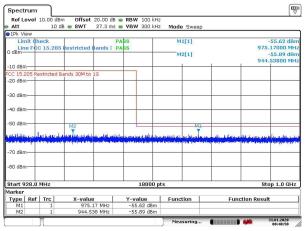
Date: 30.JAN.2020 10:01:59

	Coalv (43	Chalk Creek Road rille, UT 84017 5) 336-4433 (435) 336-4436		ricted I	Band	Spurious	
DNB Job Number:	06022		Date:	31 Jan 2	2020	Conformance	
Customer:	Transcore	Transcore				Standard	
Model Number:	MPRXFH	MPRXFH				FCC Part 15	
Description:	Multiprotocol Reader Extreme- Frequency Hopper				Clause 15.247(d)		
Ambient Temperature		Relative Humidity		Barometric Pressure		etric Pressure	
23 °C		30)%		10	101.80 kPa	
EUT performed within the requirements of the applicable standard [X] Yes [] No CL					Payne		
Port		Channel		Modulation		Pass/Fall	
1		Low				Pass	

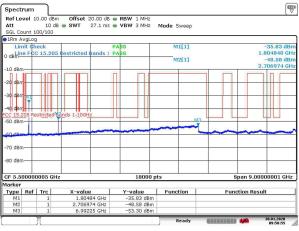




Date: 10.FEB.2020 15:22:16



Date: 11.FEB.2020 10:39:03



Date: 31.JAN.2020 08:48:50

Date: 30.JAN.2020 09:58:56