

Comparison between Cambium Force 400C and UBNT AF-5XHD

BY DREAMS NETWORK & TECHNOLOGY PRIVATE
LIMITED

Content

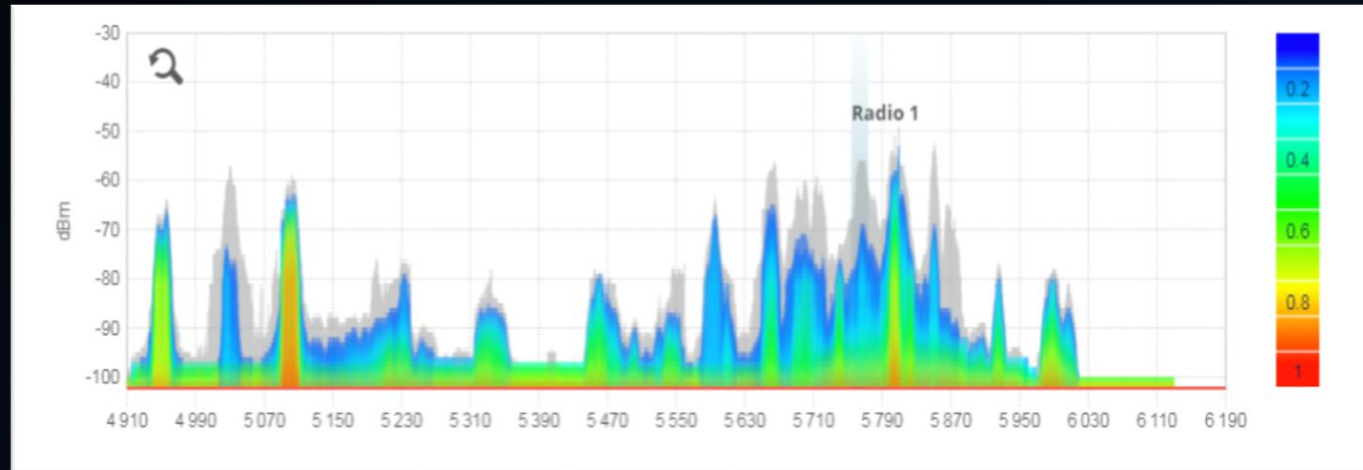
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Activity Details

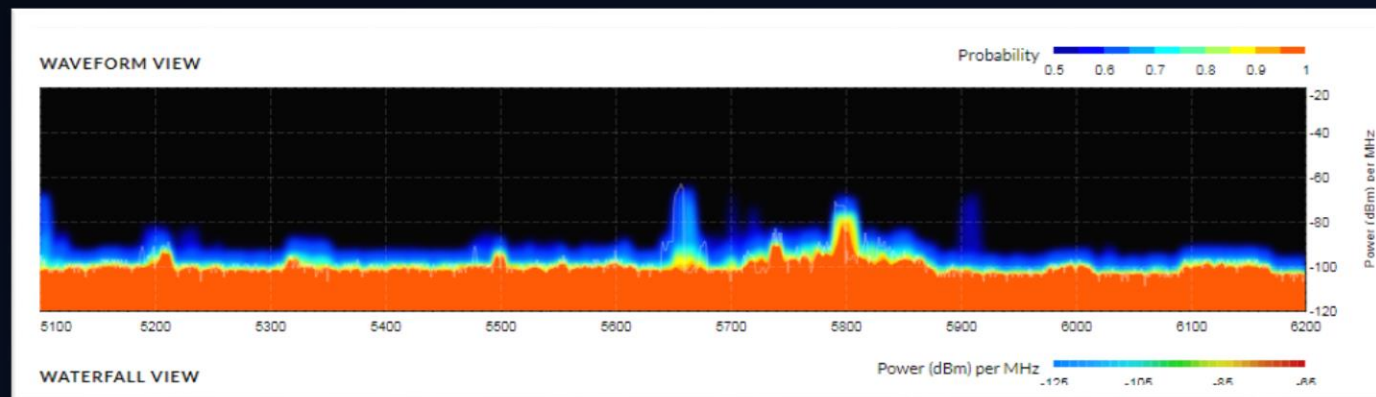
- Test site distance was 5.9KM and location was same for both equipments.
- ePMP Force 400C and AF-5XHD were configured on interference and noise free frequency spot with 20,40 and 80 Mhz channels for optimum performance testing.
- As ISM frequency resources are limited in each country due to which mostly frequency spectrum are polluted with interference and noise therefore both links were tested on interference and noise contaminated frequency spot with 20,40 and 80 Mhz channels to check equipments reliability and link quality.
- Both equipments response comparison tables are mentioned in this report.

Cambium ePMP Force 400C & UBNT AF-5XHD Spectrum Chart (MASTER)

Cambium Force 400C

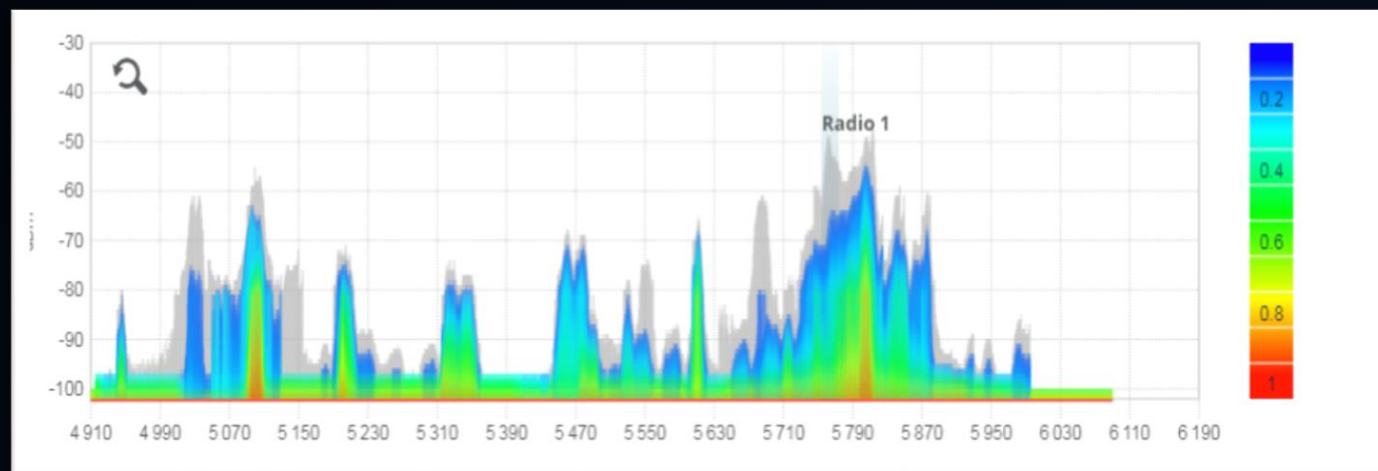


UBNT AF-5XHD

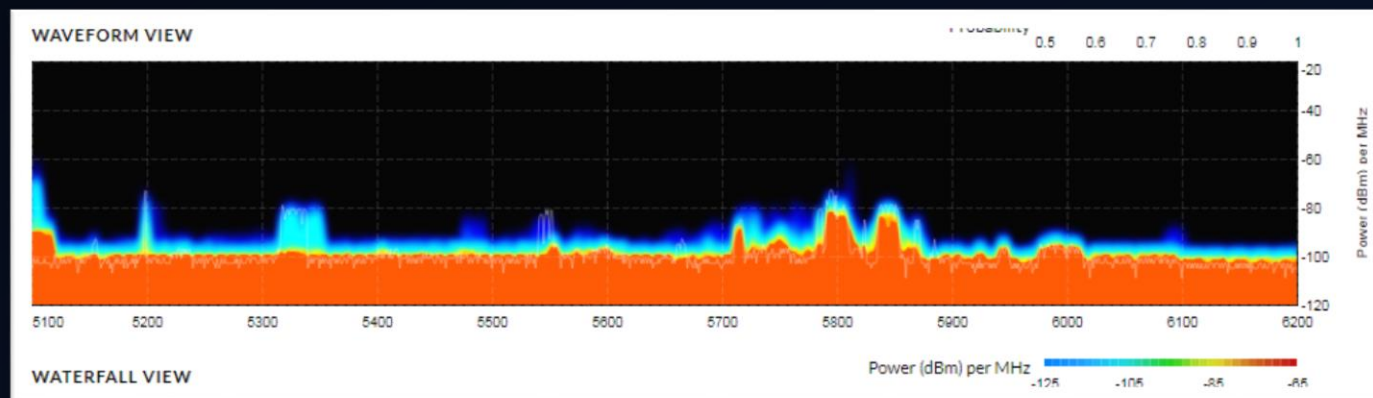


Cambium ePMP Force 400C & UBNT AF-5XHD Spectrum Chart (SLAVE)

Cambium Force 400C



UBNT AF-5XHD



Cambium ePMP Force 400C Signals Strength with Link capacity (20Mhz Channel Width – NON ISM)

Dashboard

Operating Frequency	5 400 MHz	Ethernet MAC Address	BC:E6:7C:20:18:F6
Operating Channel Bandwidth	20 MHz	Auxiliary Port MAC Address	BC:E6:7C:20:18:F8
Transmitter Output Power	27 dBm	IP Address	172.18.0.21
Antenna Gain	30 dBi	Date and Time	07 Aug 2021, 14:12:40 GMT
Country	Other	System Uptime	42 minutes, 44 seconds
Subscriber Module Mode	ePTP Slave	System Description	--
Network Mode	Bridge	Registered AP SSID	Test1
Downlink RSSI	-48 dBm	Registered AP MAC Address	BC:E6:7C:20:19:7E
Downlink SNR	51 dB	Device Coordinates	--
Uplink MCS	DS 11 - 1024-QAM 5/6	Link Quality (Uplink)	100 %
Downlink MCS	DS 11 - 1024-QAM 5/6	Link Capacity (Uplink)	100 %
		Ethernet Status	1 000 Mbps / Full

Wireless Link Capacity

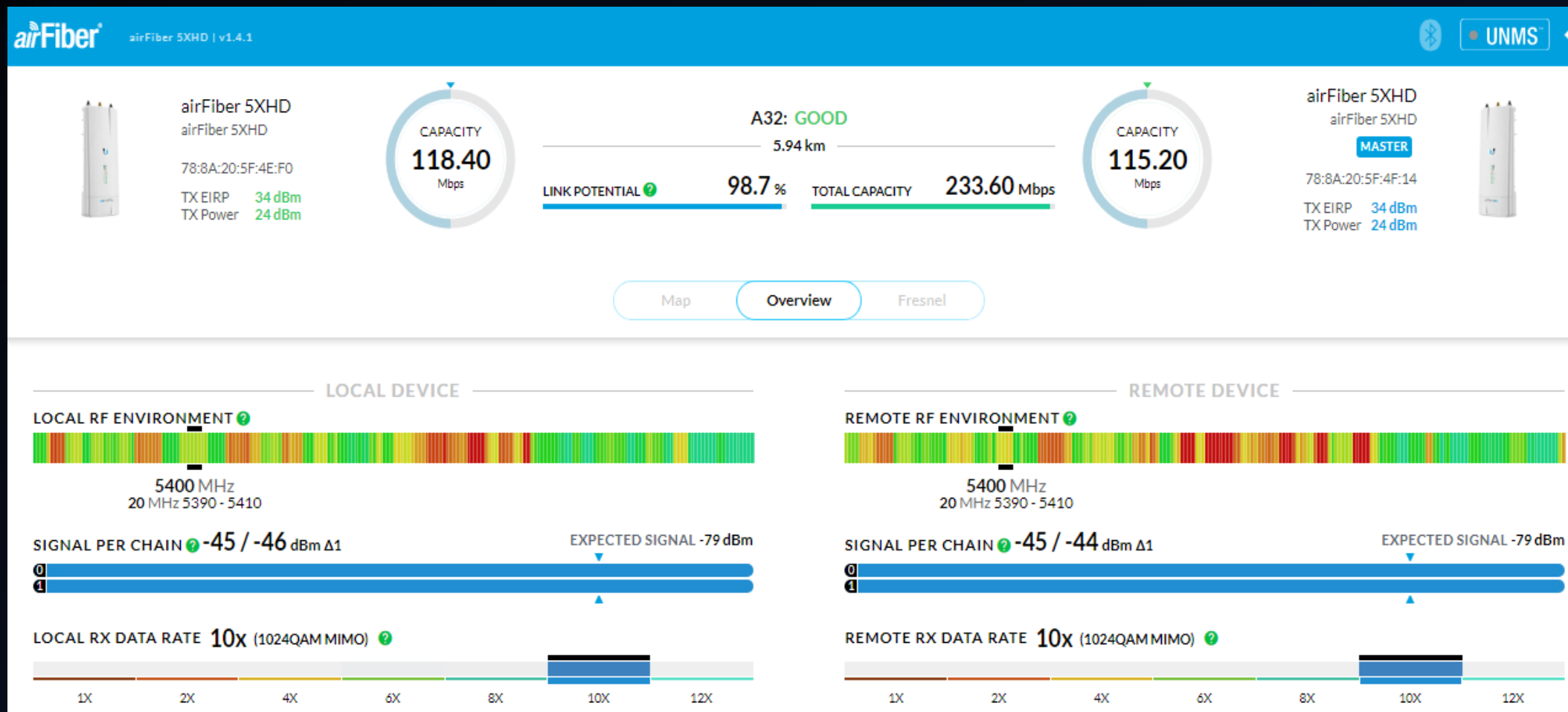
Duration ☐ 4 seconds ☐ 10 seconds ☒ 20 seconds

Downlink 214.985 Mbps

Uplink 215.168 Mbps

UBNT Air Fiber 5XHD Signals Strength With Link Capacity (20Mhz Channel Width – NON ISM)

Dashboard / Wireless Link Capacity



Cambium ePMP Force 400C Signals Strength with Link capacity (40Mhz Channel Width – NON ISM)

Dashboard

Operating Frequency	5 400 MHz	Ethernet MAC Address	BC:E6:7C:20:18:F6
Operating Channel Bandwidth	40 MHz	Auxiliary Port MAC Address	BC:E6:7C:20:18:F8
Transmitter Output Power	27 dBm	IP Address	172.18.0.21
Antenna Gain	30 dBi	Date and Time	07 Aug 2021, 14:17:52 GMT
Country	Other	System Uptime	47 minutes, 56 seconds
Subscriber Module Mode	ePTP Slave	System Description	--
Network Mode	Bridge	Registered AP SSID	Test1
Downlink RSSI	-49 dBm	Registered AP MAC Address	BC:E6:7C:20:19:7E
Downlink SNR	48 dB	Device Coordinates	--
Uplink MCS	DS 11 - 1024-QAM 5/6	Link Quality (Uplink)	100 %
Downlink MCS	DS 11 - 1024-QAM 5/6	Link Capacity (Uplink)	100 %
		Ethernet Status	1 000 Mbps / Full

Wireless Link Capacity

Downlink

431.493 Mbps

Uplink

432.45 Mbps

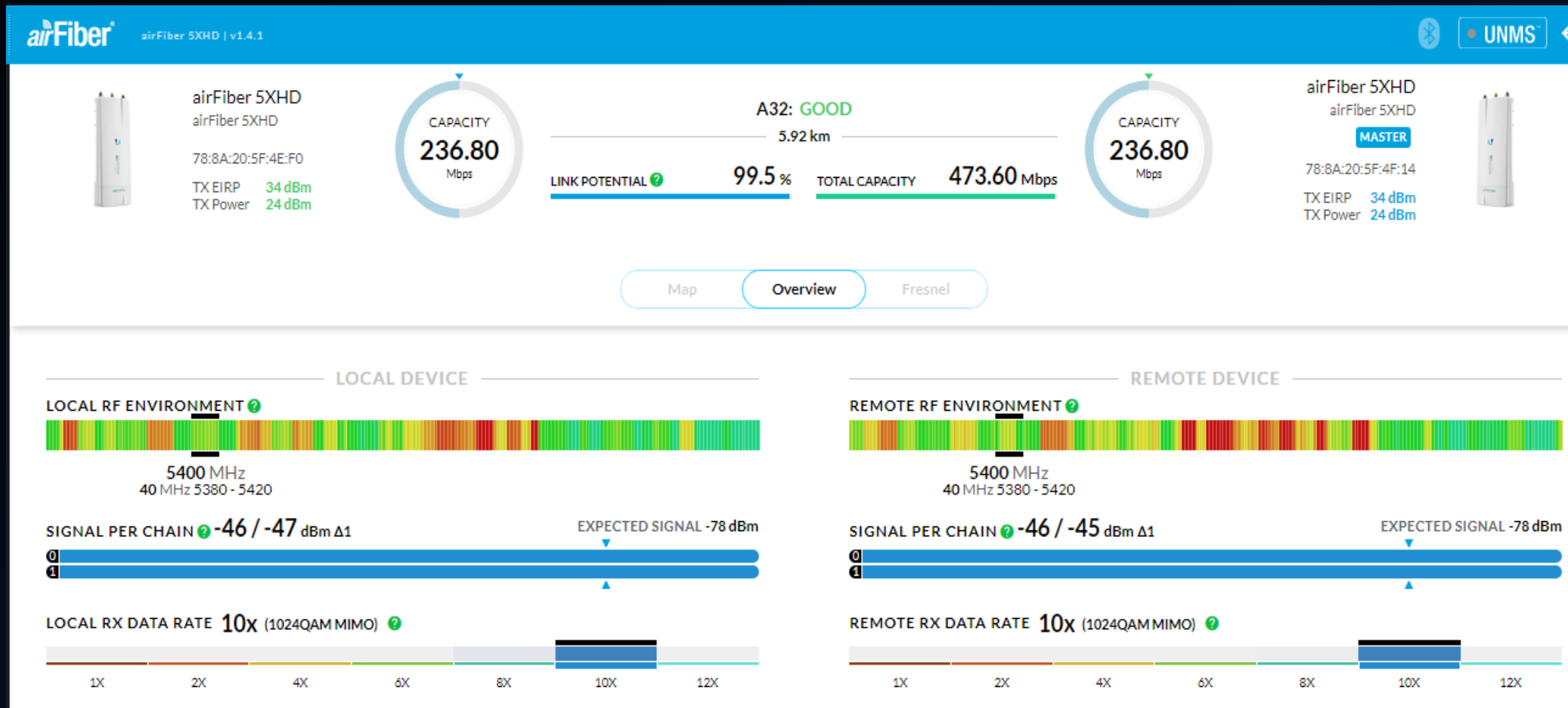
Registered Subscriber Modules

Show Details

Addresses	Device Name	SM Distance (km)	Session Time (hh:mm:ss)	RSSI (dBm) Downlink / Uplink	SNR (dB) Downlink / Uplink	MCS Downlink / Uplink	Downlink Quality	Downlink Capacity	
8.0.21	F400_2018f6	5.845	00:02:03	-48/-48	51/52	DS 11/DS 11	100 %	100 %	

UBNT Air Fiber 5XHD Signals Strength With Link Capacity (40Mhz Channel Width – NON ISM)

Dashboard / Wireless Link Capacity



Cambium ePMP Force 400C Signals Strength with Link capacity (80Mhz Channel Width – NON ISM)

Dashboard

i Operating Frequency	5 400 MHz	i Ethernet MAC Address	BC:E6:7C:20:18:F6
i Operating Channel Bandwidth	80 MHz	Auxiliary Port MAC Address	BC:E6:7C:20:18:F8
i Transmitter Output Power	27 dBm	i IP Address	172.18.0.21
i Antenna Gain	30 dBi	i Date and Time	07 Aug 2021, 14:23:15 GMT
i Country	Other	i System Uptime	53 minutes, 19 seconds
i Subscriber Module Mode	ePTP Slave	System Description	--
i Network Mode	Bridge	i Registered AP SSID	Test1
i Downlink RSSI	-47 dBm	i Registered AP MAC Address	BC:E6:7C:20:19:7E
i Downlink SNR	50 dB	i Device Coordinates	--
i Uplink MCS	DS 11 - 1024-QAM 5/6	i Link Quality (Uplink)	100 %
i Downlink MCS	DS 11 - 1024-QAM 5/6	i Link Capacity (Uplink)	100 %
		i Ethernet Status	1 000 Mbps / Full

Wireless Link Capacity

Downlink

641.447 Mbps

Uplink

696.857 Mbps

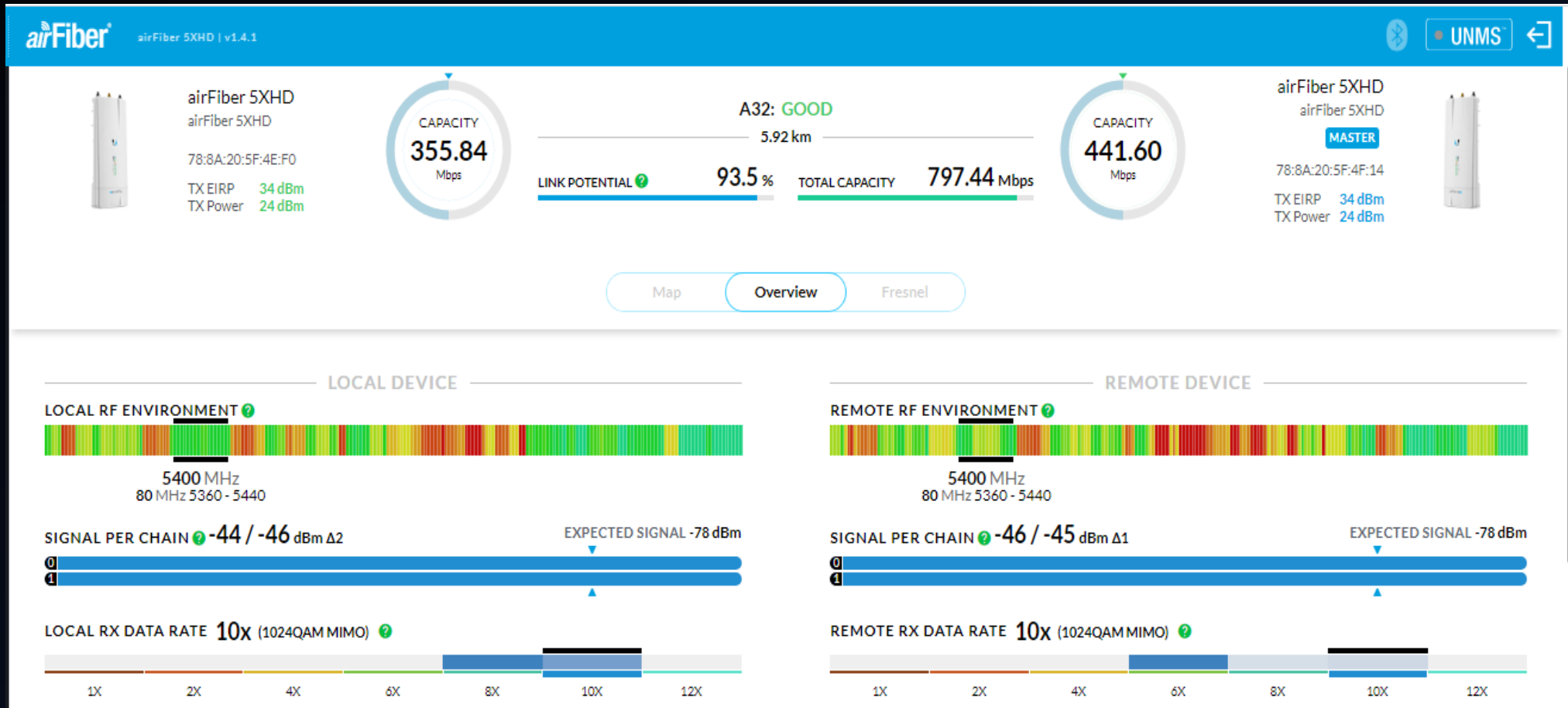
Registered Subscriber Modules

Show Details

Device Name	SM Distance (km)	Session Time (hh:mm:ss)	i RSSI (dBm) Downlink / Uplink	SNR (dB) Downlink / Uplink	MCS Downlink / Uplink	Downlink Quality	Downlink Capacity	Mo
F400_2018f6	5.696	00:02:57	-48/-47	49/51	DS 11/DS 11	100 %	100 %	5 GHz Force 4

UBNT Air Fiber 5XHD Signals Strength With Link Capacity (80Mhz Channel Width – NON ISM)

Dashboard / Wireless Link Capacity



Cambium ePMP Force 400C Signals Strength with Link capacity (20Mhz Channel Width – ISM)

Dashboard

400_2018f6		Subscriber Module	EN	1	3					Administrat
Status										
Device Name	F400_2018f6									
Operating Frequency	5 825 MHz									
Operating Channel Bandwidth	20 MHz									
Transmitter Output Power	27 dBm									
Antenna Gain	30 dBi									
Country	Other									
Subscriber Module Mode	ePTP Slave									
Network Mode	Bridge									
Downlink RSSI	-49 dBm									
Downlink SNR	41 dB									
Uplink MCS	DS 9 - 256-QAM 5/6									
Downlink MCS	DS 10 - 1024-QAM 3/4									
Wireless MAC Address	BC:E6:7C:20:18:F7									
Ethernet MAC Address	BC:E6:7C:20:18:F6									
Auxiliary Port MAC Address	BC:E6:7C:20:18:F8									
IP Address	172.18.0.21									
Date and Time	07 Aug 2021, 14:39:25 GMT									
System Uptime	1 hour, 9 minutes									
System Description	--									
Registered AP SSID	Test1									
Registered AP MAC Address	BC:E6:7C:20:19:7E									
Device Coordinates	--									
Link Quality (Uplink)	100 %									
Link Capacity (Uplink)	80 %									
Ethernet Status	1 000 Mbps / Full									

Wireless Link Capacity

Downlink

149.692 Mbps

Uplink

128.493 Mbps

Registered Subscriber Modules

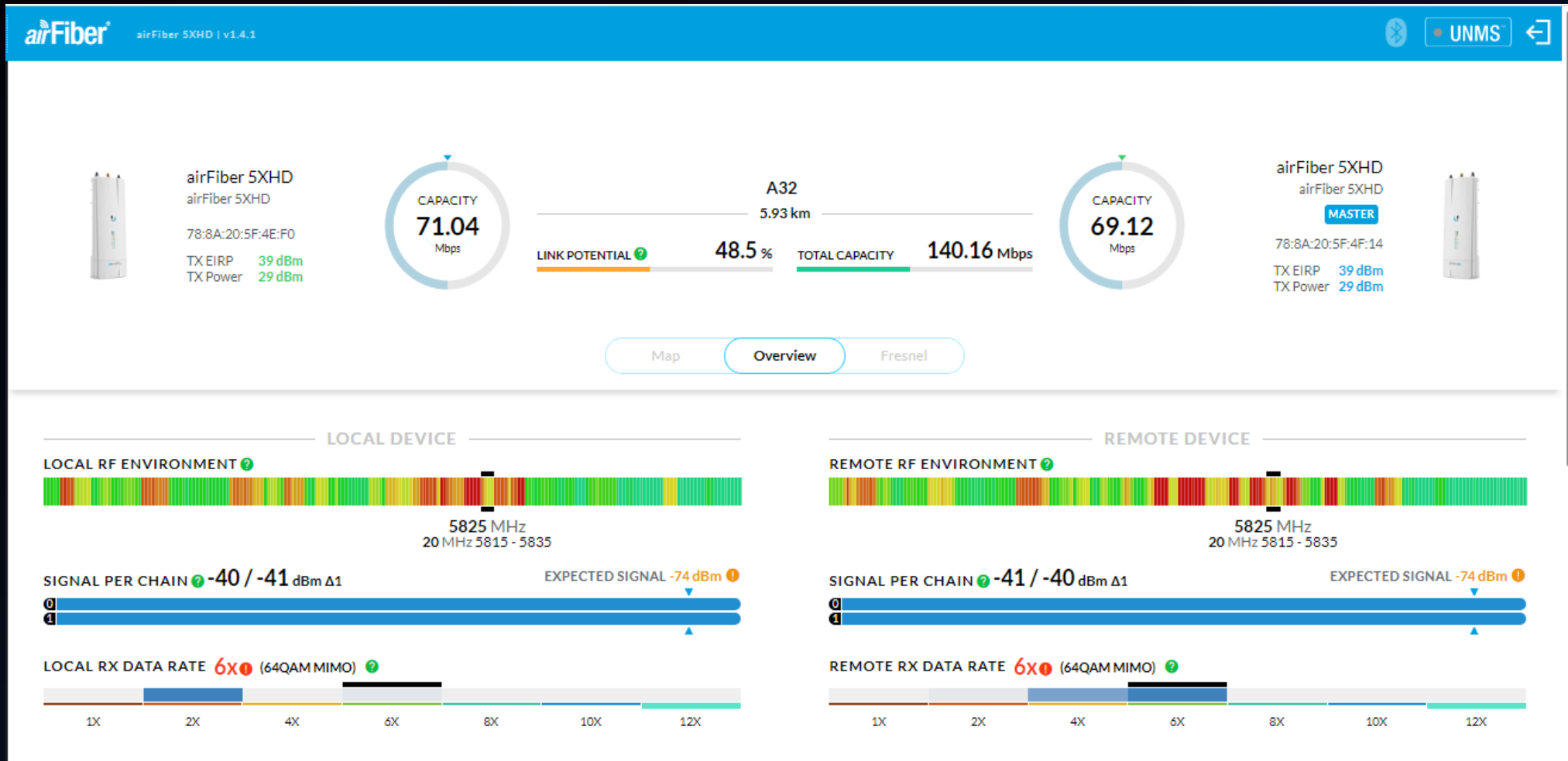
Show Details

Device Name	SM Distance (km)	Session Time (hh:mm:ss)	i RSSI (dBm) Downlink / Uplink	SNR (dB) Downlink / Uplink	MCS Downlink / Uplink	Downlink Quality	Downlink Capacity	Mo
F400_2018f6	5.995	00:06:46	-50/-49	43/44	DS 10/DS 8	100 %	90 %	5 GHz Force 4

UBNT Air Fiber 5XHD Signals Strength With Link Capacity (20Mhz Channel Width – ISM)



Dashboard / Wireless Link Capacity



Cambium ePMP Force 400C Signals Strength with Link capacity (40Mhz Channel Width – ISM)

Dashboard

F400_2018f6 Subscriber Module		EN	1	2					Administrator
Status									
Device Name	F400_2018f6								
Operating Frequency	5750 MHz								
Operating Channel Bandwidth	40 MHz								
Transmitter Output Power	27 dBm								
Antenna Gain	30 dBi								
Country	Other								
Subscriber Module Mode	ePTP Slave								
Network Mode	Bridge								
Downlink RSSI	-50 dBm								
Downlink SNR	45 dB								
Uplink MCS	DS 8 - 256-QAM 3/4								
Downlink MCS	DS 9 - 256-QAM 5/6								
Wireless MAC Address	BC:E6:7C:20:18:F7								
Ethernet MAC Address	BC:E6:7C:20:18:F6								
Auxiliary Port MAC Address	BC:E6:7C:20:18:F8								
IP Address	172.18.0.21								
Date and Time	07 Aug 2021, 14:58:56 GMT								
System Uptime	1 hour, 29 minutes								
System Description	--								
Registered AP SSID	Test1								
Registered AP MAC Address	BC:E6:7C:20:19:7E								
Device Coordinates	--								
Link Quality (Uplink)	100 %								
Link Capacity (Uplink)	72 %								
Ethernet Status	1 000 Mbps / Full								

Wireless Link Capacity

Downlink

215.648 Mbps

Uplink

228.832 Mbps

Registered Subscriber Modules

Show Details

Session Time (hh:mm:ss)	RSSI (dBm) Downlink / Uplink	SNR (dB) Downlink / Uplink	MCS Downlink / Uplink	Downlink Quality	Downlink Capacity	Model Name	Version
00:01:43	-50/-50	45/40	DS 7/DS 9	100 %	60 %	5 GHz Force 400 CSM Radio (ROW)	5.1.2

UBNT Air Fiber 5XHD Signals Strength With Link Capacity (40Mhz Channel Width – ISM)



Dashboard / Wireless Link Capacity



Cambium ePMP Force 400C Signals Strength with Link capacity (80Mhz Channel Width – ISM)

Dashboard

F400_2018f6 Subscriber Module		EN	1	2				Administrator
Status								
Device Name	F400_2018f6							
Operating Frequency	5750 MHz							
Operating Channel Bandwidth	80 MHz							
Transmitter Output Power	27 dBm							
Antenna Gain	30 dBi							
Country	Other							
Subscriber Module Mode	ePTP Slave							
Network Mode	Bridge							
Downlink RSSI	-51 dBm							
Downlink SNR	44 dB							
Uplink MCS	DS 8 - 256-QAM 3/4							
Downlink MCS	DS 10 - 1024-QAM 3/4							
Wireless MAC Address	BC:E6:7C:20:18:F7							
Ethernet MAC Address	BC:E6:7C:20:18:F6							
Auxiliary Port MAC Address	BC:E6:7C:20:18:F8							
IP Address	172.18.0.21							
Date and Time	07 Aug 2021, 15:09:25 GMT							
System Uptime	1 hour, 39 minutes							
System Description	--							
Registered AP SSID	Test1							
Registered AP MAC Address	BC:E6:7C:20:19:7E							
Device Coordinates	--							
Link Quality (Uplink)	100 %							
Link Capacity (Uplink)	72 %							
Ethernet Status	1000 Mbps / Full							

Wireless Link Capacity

Downlink

266.302 Mbps

Uplink

320.293 Mbps

Registered Subscriber Modules

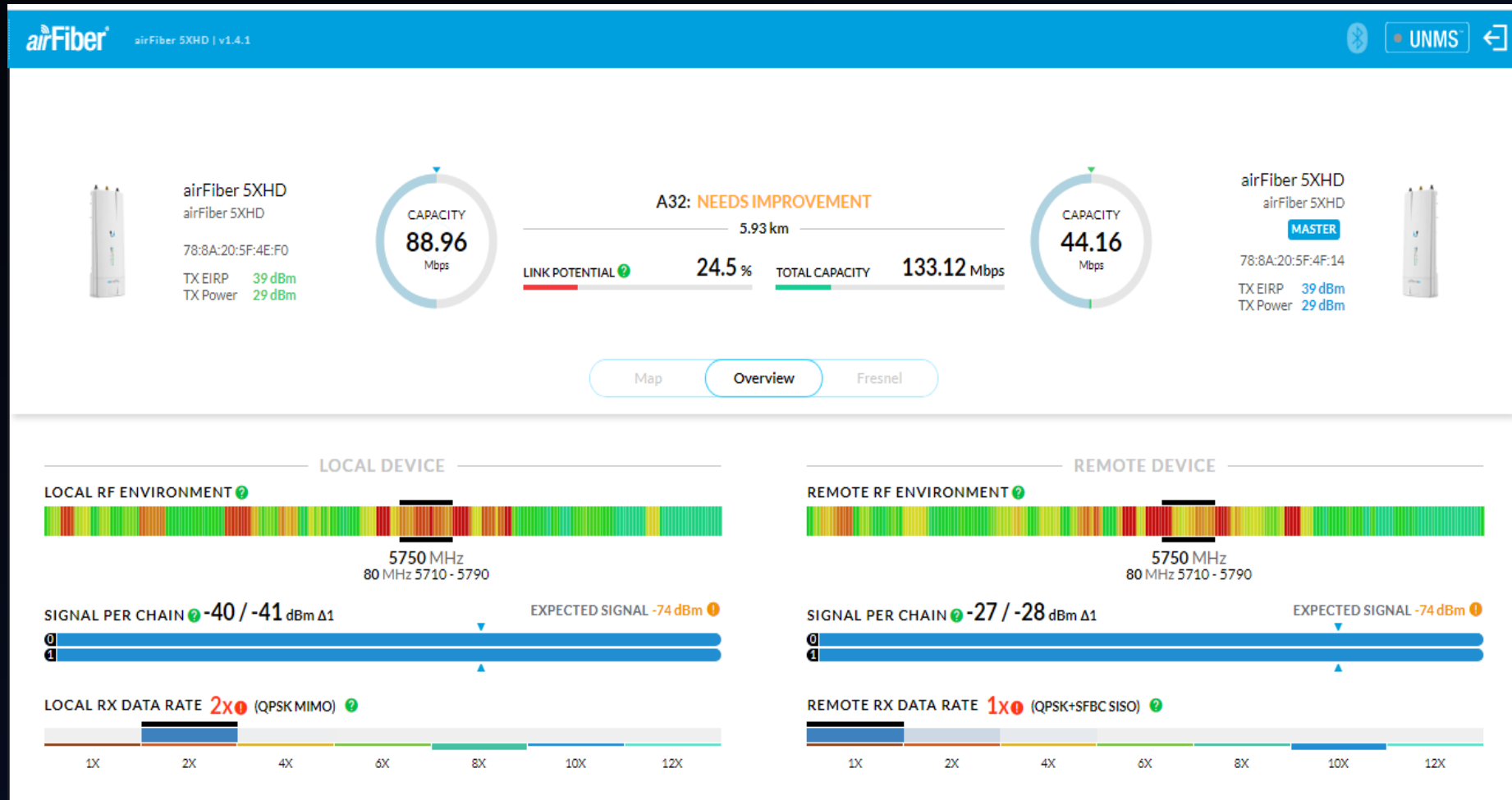
Show Details

ne	SM Distance (km)	Session Time (hh:mm:ss)	RSSI (dBm) Downlink / Uplink	SNR (dB) Downlink / Uplink	MCS Downlink / Uplink	Downlink Quality	Downlink Capacity	Model Name
3f6	5.696	00:07:35	-50/-49	44/47	DS 6/DS 9	100 %	54 %	5 GHz Force 400 CSM Ra

UBNT Air Fiber 5XHD Signals Strength With Link Capacity (80Mhz Channel Width – ISM)



Dashboard / Wireless Link Capacity



Cambium ePMP Force 400C and AF-5XHD Comparison Summary (NON-ISM BAND)



S. No.	Description	Cambium ePMP Force 400C	UBNT AF-5XHD	Cambium ePMP Force 400C	UBNT AF-5XHD	Cambium ePMP Force 400C	UBNT AF-5XHD
1	Operating Frequency	5400Mhz	5400Mhz	5400Mhz	5400Mhz	5400Mhz	5400Mhz
2	Channel Width	20Mhz	20Mhz	40Mhz	40Mhz	80Mhz	80Mhz
3	Modulation	UL DS11-1024-QAM5/6 DL DS11-1024-QAM 5/6	UL 10X-1024-QAM DL 10X -1024-QAM	UL DS11-1024-QAM 5/6 DL DS11-1024-QAM 5/6	UL 10X-1024-QAM DL 10X -1024-QAM	UL DS11-1024-QAM 5/6 DL DS11-1024-QAM 5/6	UL 10X-1024-QAM DL 10X -1024-QAM
4	RSSI	-48dBm	-44dBm	-49dBm	-47dBm	-47dBm	-47dBm
5	SNR	51dB	51dB	48dB	47dB	50dB	50dB
6	Capacity	DL 214.9Mbps UL 215Mbps	DL 118.9Mbps UL 115Mbps	DL 431.4 Mbps UL 432.4 Mbps	DL 236.8 Mbps UL 236.8Mbps	DL 641.4 Mbps UL 696.8 Mbps	DL 335.8 Mbps UL 441.6 Mbps

Cambium ePMP Force 400C and AF-5XHD Comparison Summary (ISM BAND)



S. No.	Description	Cambium ePMP Force 400C	UBNT AF-5XHD	Cambium ePMP Force 400C	UBNT AF-5XHD	Cambium ePMP Force 400C	UBNT AF-5XHD
1	Operating Frequency	5825Mhz	5825Mhz	5750Mhz	5750Mhz	5750Mhz	5750Mhz
2	Channel Width	20Mhz	20Mhz	40Mhz	40Mhz	80Mhz	80Mhz
3	Modulation	UL DS9-256-QAM 5/6 DL DS10-1024-QAM 3/4	UL 6X-64-QAM DL 6X-64-QAM	UL DS8-256-QAM 3/4 DL DS9-256-QAM 5/6	UL 2X QPSK DL 2X QPSK	UL DS8-256-QAM 3/4 DL DS10-1024-QAM 3/4	UL 1X QPSK-SFBC-SISO DL 2X QPSK
4	RSSI	-49dBm	-40dBm	-50dBm	-47dBm	-51dBm	-38dBm
5	SNR	41dB	41dB	45dB	45dB	44dB	44dB
6	Capacity	DL 149.6 Mbps UL 128.4 Mbps	DL 71.0 Mbps UL 69.1 Mbps	DL 215.6 Mbps UL 228.8 Mbps	DL 47.36 Mbps UL 47.36 Mbps	DL 266.3 Mbps UL 320.3 Mbps	DL 88.96 Mbps UL 44.16 Mbps

THANK YOU