Microhard Systems Inc.

Application Note

Frequency Restriction using IP 921

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Rev. 1

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Configuration

Note: This configuration will only work for a link rate of 1.1 Mbps. Where there are 16 channels available. Link rate of 345 Kbps has 64 channels available, and unit must hop exactly on 50 channels. There is no option to change this amount.

1st Network – Point to Point
Master on the first network should be configured as follows

Network Search Mode:	⦿ Disable ◯ Enable
Operation Mode:	Master
Network Name:	Network_1
Link Rate:	1.1 Mbps
RF Output Power:	30 dBm
Retransmissions:	1
Network Type:	Point to Point
Destination Unit:	2
Repeater:	⦿ No ◯ Yes
Optimization:	Balanced
Zone Restriction:	None
Channel Number:	3
Frequency Restriction...	
Restriction 0:	1:5-16
Restriction 1:	0

Remote on this network should be configured as follows

Network Search Mode:	⦿ Disable ◯ Enable
Operation Mode:	Remote
Network Name:	Network_1
Link Rate:	1.1 Mbps
Unit Address:	2
RF Output Power:	30 dBm
Retransmissions:	1
Network Type:	Point to Point
Roaming Address:	1
Tx Control:	⦿ On ◯ Off
Zone Restriction:	None
Channel Number:	3
Sleep Mode:	No Sleep
Awake Time(s):	3
Sleep Time(s):	3
Frequency Restriction...	
Restriction 0:	1:5-16
Restriction 1:	0

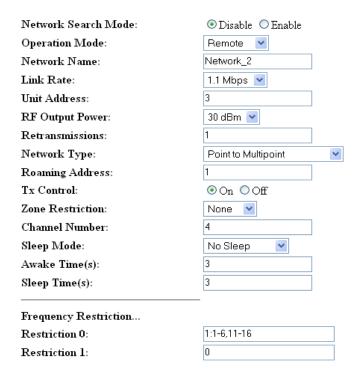In this configuration 1st network will operate only on first four channels; 1, 2, 3, and 4.

2nd Network – Point to Multipoint

On the second network master should be configured as follows.

Network Search Mode:	⊙ Disable ○ Enable
Operation Mode:	Master ▾
Network Name:	Network_2
Link Rate:	1.1 Mbps ▾
RF Output Power:	30 dBm ▾
Retransmissions:	1
Network Type:	Point to Multipoint ▾
Repeater:	⊙ No ○ Yes
Optimization:	Balanced ▾
Zone Restriction:	None ▾
Channel Number:	4
Frequency Restriction...	
Restriction 0:	1:1-6,11-16
Restriction 1:	0

We will have two remotes in this Point to Multipoint network; remote with unit address of 2 and second remote with unit address of 3.

Network Search Mode:	⊙ Disable ○ Enable
Operation Mode:	Remote ▾
Network Name:	Network_2
Link Rate:	1.1 Mbps ▾
Unit Address:	2
RF Output Power:	30 dBm ▾
Retransmissions:	1
Network Type:	Point to Multipoint ▾
Roaming Address:	1
Tx Control:	⊙ On ○ Off
Zone Restriction:	None ▾
Channel Number:	4
Sleep Mode:	No Sleep ▾
Awake Time(s):	3
Sleep Time(s):	3
Frequency Restriction...	
Restriction 0:	1:1-6,11-16
Restriction 1:	0

Network Search Mode:	⦿ Disable ○ Enable
Operation Mode:	Remote ▾
Network Name:	Network_2
Link Rate:	1.1 Mbps ▾
Unit Address:	3
RF Output Power:	30 dBm ▾
Retransmissions:	1
Network Type:	Point to Multipoint ▾
Roaming Address:	1
Tx Control:	⦿ On ○ Off
Zone Restriction:	None ▾
Channel Number:	4
Sleep Mode:	No Sleep ▾
Awake Time(s):	3
Sleep Time(s):	3
Frequency Restriction...	
Restriction 0:	1:1-6,11-16
Restriction 1:	0

In this configuration 2nd network will only operate on four channels; 7, 8, 9, and 10.

3rd Network – Point to Multipoint

On the third network master should be configured as follows.

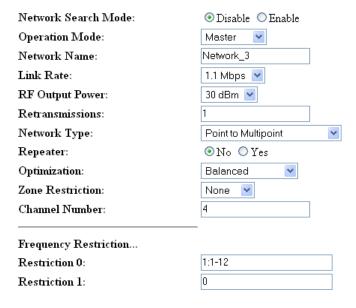|	
Network Search Mode:	⦿ Disable ○ Enable
Operation Mode:	Master ▾
Network Name:	Network_3
Link Rate:	1.1 Mbps ▾
RF Output Power:	30 dBm ▾
Retransmissions:	1
Network Type:	Point to Multipoint ▾
Repeater:	⦿ No ○ Yes
Optimization:	Balanced ▾
Zone Restriction:	None ▾
Channel Number:	4
Frequency Restriction...	
Restriction 0:	1:1-12
Restriction 1:	0

We will also have two remotes in this Point to Multipoint network; remote with unit address of 2 and second remote with unit address of 3. Since these remotes have different *Network Name, Network_3* they will not interfere with remotes in Network_2.

Network Search Mode:	⦿ Disable ◯ Enable
Operation Mode:	Remote ▾
Network Name:	Network_3
Link Rate:	1.1 Mbps ▾
Unit Address:	2
RF Output Power:	30 dBm ▾
Retransmissions:	1
Network Type:	Point to Multipoint ▾
Roaming Address:	1
Tx Control:	⦿ On ◯ Off
Zone Restriction:	None ▾
Channel Number:	4
Sleep Mode:	No Sleep ▾
Awake Time(s):	3
Sleep Time(s):	3

Frequency Restriction...

Restriction 0:	1:1-12
Restriction 1:	0

Network Search Mode:	⦿ Disable ◯ Enable
Operation Mode:	Remote ▾
Network Name:	Network_3
Link Rate:	1.1 Mbps ▾
Unit Address:	3
RF Output Power:	30 dBm ▾
Retransmissions:	1
Network Type:	Point to Multipoint ▾
Roaming Address:	1
Tx Control:	⦿ On ◯ Off
Zone Restriction:	None ▾
Channel Number:	4
Sleep Mode:	No Sleep ▾
Awake Time(s):	3
Sleep Time(s):	3

Frequency Restriction...

Restriction 0:	1:1-12
Restriction 1:	0

In this configuration 3ⁿᵈ network will only operate on four channels; 13, 14, 15, 16.

Conclusion
In this configuration all three networks will operate on their own channels without interfering between each other. Also there is 2 channel dead band between them to minimize crosstalk.