# Solucionar problemas de velocidades do 802.11n

# Contents

Introduction Prerequisites Requirements Componentes Utilizados Conventions Informações de Apoio Solucione problemas do controlador para velocidades 11n Como calcular o throughput via iPerf Recursos anunciados em beacons Informações Relacionadas

# **Introduction**

Este documento aborda os problemas comuns a serem considerados ao realizar o troubleshooting de problemas de throughput wireless. Este documento inclui o uso de ferramentas para medir o desempenho e o throughput da rede sem fio, que inclui access points (APs) 802.11n de diferentes fornecedores em comparação com o AP Cisco 1252 em condições de teste semelhantes.

### **Prerequisites**

#### **Requirements**

A Cisco recomenda que você tenha estes requisitos:

- Ferramentas como iPerf e analisadores de rede como OmniPeek e Cisco Spectrum Analysis
- 802.11n suportava APs 1140, 1250, 3500 e 1260 Series

#### **Componentes Utilizados**

As informações neste documento são baseadas nestas versões de software e hardware:

- WS-SVC-WiSM Controller executando a versão de software 6.0.182
- AIR-LAP1142-A-K9 APs

#### **Conventions**

Consulte as <u>Convenções de Dicas Técnicas da Cisco para obter mais informações sobre convenções de documentos.</u>

### Informações de Apoio

O 802.11n nasce devido a várias alterações feitas na agregação de quadros dos APs: A-MPDU e A-MSDU.

- Tamanho da conta de bloqueio
- MCS e conexão de canais
- MIMO
- Uso de 5GHz sobre 2,4 GHz: também mencionar a vinculação de canais de certificados Wi-Fi em 5GHz

### Solucione problemas do controlador para velocidades 11n

Conclua estes passos:

1. Verifique se o suporte para 802.11n está ativado no controlador.

(WISM-Slot3-2) >show 802.lla	
802.11a Network Enabl	.ed
11nSupport Enabl	.eđ
802.11a Low Band Enabled	
802.11a Mid Band Enabled	
802.11a High Band Enabled	
802.11a Operational Rates	
802.11a 6M Rate Mandatory	,
802.11a 9M Rate Supported	ł
802.11a 12M Rate Disabled	
802.11a 18M Rate Supported	ł
802.11a 24M Rate Mandatory	7
802.11a 36M Rate Supported	ł
802.11a 48M Rate Supported	ł
802.11a 54M Rate Supported	ł
802.11n MCS Settings:	
MCS 0 Supported	ł
MCS 1 Supported	ł
MCS 2 Supported	ł
MCS 3 Supported	ł
MCS 4 Supported	ł
MCS 5 Supported	ł

2. As taxas de N são atingidas de duas maneiras. Velocidades até o Esquema de codificação de modulação (MCS) 7 podem ser alcançadas sem o uso de vinculação de canais. Para taxas de MCS acima de 7 e até 15, a vinculação de canais precisa ser habilitada. Você pode verificar se a associação de canais está habilitada usando este comando **show** no controlador:

(WISM-SIOt3-2) > show advanced 802.11a channel	
Automatic Channel Assignment	
Channel Assignment Mode	AUTO
Channel Update Interval	600 seconds [startup]
Anchor time (Hour of the day)	0
Channel Update Contribution	SNI.
Channel Assignment Leader	00:1d:45:f0:d2:c0
Last Run	371 seconds ago
DCA Sensitivity Level	STARTUP (5 dB)

- 3. Você também pode configurar a largura de canal por AP usando estes comandos: (WiSM-slot2-2) >config 802.11a disable AP0022.9090.8e97 (WiSM-slot2-2) >config 802.11a chan\_width AP0022.9090.8e97 40 Set 802.11a channel width to 40 on AP AP0022.9090.8e97
- 4. O intervalo de segurança e as taxas de MCS correspondentes ajudam a determinar as taxas de dados que são vistas nos clientes 802.11n. Estes são os comandos para verificar esta configuração:

(WiSM-slot3-2) > show 802.11a 802.11a Network..... Enabled 11nSupport..... Enabled 802.11a Low Band..... Enabled 802.11a Mid Band..... Enabled 802.11a High Band..... Enabled 802.11a Operational Rates 802.11a 6M Rate..... Mandatory 802.11a 9M Rate..... Supported 802.11a 12M Rate..... Disabled 802.11a 18M Rate..... Supported 802.11a 24M Rate..... Mandatory 802.11a 36M Rate..... Supported 802.11a 48M Rate..... Supported 802.11a 54M Rate..... Supported 802.11n MCS Settings: MCS 0..... Supported MCS 1..... Supported MCS 2..... Supported MCS 3..... Supported MCS 4..... Supported MCS 5..... Supported MCS 6..... Supported MCS 7..... Supported MCS 8..... Supported MCS 9..... Supported MCS 10..... Supported MCS 11..... Supported MCS 12..... Supported MCS 13..... Supported MCS 14..... Supported MCS 15..... Supported 802.11n Status: A-MPDU Tx: Priority 0..... Enabled Priority 1..... Disabled Priority 2..... Disabled Priority 3..... Disabled Priority 4..... Disabled Priority 5..... Disabled

Priority 6..... Disabled Priority 7..... Disabled Beacon Interval..... 100 CF Pollable mandatory..... Disabled CF Poll Request mandatory..... Disabled --More-- or (q)uit CFP Period..... 4 CFP Maximum Duration..... 60 Default Tx Power Level..... 1 DTPC Status..... Enabled Fragmentation Threshold..... 2346 Pico-Cell Status..... Disabled Pico-Cell-V2 Status..... Disabled Traffic Stream Metrics Status..... Disabled Expedited BW Request Status..... Disabled World Mode..... Enabled EDCA profile type..... default-wmm Voice MAC optimization status..... Disabled Call Admission Control (CAC) configuration Voice AC - Admission control (ACM)..... Enabled Voice max RF bandwidth..... 75 Voice reserved roaming bandwidth..... 6 Voice load-based CAC mode..... Enabled Voice tspec inactivity timeout..... Disabled Video AC - Admission control (ACM)..... Disabled Voice Stream-Size..... 84000 Voice Max-Streams..... 2 Video max RF bandwidth..... Infinite Video reserved roaming bandwidth..... 0

Assegure a agregação de pacotes A-MPDU. Para melhor esforço, os níveis de QoS são ativados através destes comandos:**config 802.11a 11nSuporte a uma-mpdu tx priority 0** enableconfig 802.11b 11nSuporte a uma-mpdu tx priority 0 enable

- 5. Todas as três antenas no rádio A devem ser usadas. Verifique se as antenas são do mesmo modelo.
- 6. Na WLAN configurada para a conectividade do cliente, a WMM deve ser permitida ou obrigatória e a criptografia AES ou aberta deve ser usada somente. Isso pode ser verificado usando-se este comando de saída:

1
wlab5WISMip22
wlab5WISMip22
Enabled
Disabled
Enabled
Disabled
isabled
0
60 seconds
1800 seconds
Enabled
Disabled
management
unconfigured
Default
Disabled
Silver (best effort)
Allowed

CCX - Aironetle Support..... Enabled CCX - Gratuitous ProbeResponse (GPR)..... Disabled CCX - Diagnostics Channel Capability..... Disabled Dot11-Phone Mode (7920).... Disabled Wired Protocol..... None IPv6 Support..... Disabled Peer-to-Peer Blocking Action..... Disabled Radio Policy..... All DTIM period for 802.11a radio..... 1 DTIM period for 802.11b radio..... 1 Radius Servers Authentication..... Global Servers Accounting..... Disabled Local EAP Authentication..... Disabled Security 802.11 Authentication:..... Open System Static WEP Keys..... Disabled 802.1X..... Disabled Wi-Fi Protected Access (WPA/WPA2)..... Enabled WPA (SSN IE)..... Disabled WPA2 (RSN IE)..... Enabled TKIP Cipher..... Disabled AES Cipher..... Enabled Auth Key Management 802.1x.... Enabled PSK..... Disabled CCKM..... Disabled FT(802.11r)..... Disabled FT-PSK(802.11r).... Disabled FT Reassociation Timeout..... 20 FT Over-The-Air mode..... Enabled FT Over-The-Ds mode..... Enabled CKIP ..... Disabled IP Security..... Disabled IP Security Passthru..... Disabled Web Based Authentication..... Disabled Web-Passthrough..... Disabled Conditional Web Redirect..... Disabled Splash-Page Web Redirect..... Disabled Auto Anchor..... Disabled H-REAP Local Switching..... Enabled H-REAP Learn IP Address..... Enabled Infrastructure MFP protection..... Enabled (Global Infrastructure MFP Disabled) Client MFP..... Optional Tkip MIC Countermeasure Hold-down Timer..... 60 Call Snooping..... Disabled Band Select..... Enabled Load Balancing..... Enabled

 Diversidade de antenas: se estiver usando apenas duas antenas por algum motivo, você precisará usar as antenas A e B para portas do transmissor/receptor.

#### No lado do cliente:

- 1. O requerente usado para controlar a placa sem fio, preferiu combinar o fornecedor do requerente com a placa sem fio.
- 2. Drivers de cliente: verifique se os drivers de cliente mais recentes estão sendo executados nas placas sem fio.
- 3. Entre em contato com o fornecedor do adaptador sem fio.
- 4. Certifique-se de estar usando um adaptador certificado 11n para alcançar as taxas de dados

#### da 11n.

#### Produtos com certificação Wi-Fi:

#### http://www.wi-fi.org/certified\_products.php

#### Como melhorar o desempenho:

- Utilização do canal—Os analisadores de rede relatam a utilização do canal em porcentagem do tempo gasto transmitindo e recebendo quadros. Isso ajuda a medir a possível variação na velocidade devido à distância de um ponto de acesso. Isso ajudará a monitorar e ver, por exemplo, se um canal estiver totalmente ocupado transmitindo a 1 Mbps sob condições ideais, terá um desempenho de 0,94 Mbps sob 100% de utilização.
- 2. O meio físico usado na tecnologia sem fio também determina o desempenho. O uso de 802.11g ou 802.11a sobre 802.11b oferece throughput muito maior, geralmente até 30 mbps sobre 802.11b, onde a capacidade de rádio de 6 mpbs é dividida entre todas as estações associadas.
- 3. Tamanhos de célula—Recomenda-se reduzir os tamanhos de célula para que os clientes estejam o mais próximos possível dos APs. Isso beneficiará as taxas de dados nas quais o cliente pode se conectar ao AP. Isso pode ser feito reduzindo os níveis de energia no AP para o mais baixo.
- 4. A redução do tamanho das células também diminui a interferência entre canais. Se estiver usando o RRM, os APs devem escolher os canais dinamicamente de acordo com a implantação. No entanto, se estiver implementando a atribuição dinâmica de canais, certifique-se de que você não tenha dois APs em níveis de potência altos no mesmo canal bem ao lado um do outro.
- 5. A proteção também causa um acerto na taxa de transferência.

#### Como calcular o throughput via iPerf

#### Dicas De Configuração Do Iperf

Para os clientes ou testadores que não possuem o Chariot, o Iperf pode ser usado. Está disponível em <u>http://www.macalester.edu/crash/software/pc/iperf/kperf\_setup.exe</u>.

#### Medindo a taxa de transferência de TCP

Execute este comando no lado do servidor:

Iperf -s -w 256k Execute este comando no lado do cliente:

Iperf -c -P 6 -w 256k -r -t 60

Server lis TCP window	stening on T / size: 256	CP port 5001 KByte				
Client cor ICP window	necting to size: 256	10.10.10.10, KByte	TCP port 5001			
[1788] loc [1820] loc [1868] loc [1836] loc [1804] loc [1804] loc [1852] loc	cal 10.10.10 cal 10.10.10 cal 10.10.10 cal 10.10.10 cal 10.10.10 cal 10.10.10 cal 10.10.10	.20 port 1155 .20 port 1153 .20 port 1150 .20 port 1152 .20 port 1154 .20 port 1154	connected with connected with connected with connected with connected with connected with	10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10	port port port port port port	5001 5001 5001 5001 5001 5001
[ ID] Inte [1788] Ø. [1868] Ø. [1820] Ø. [1804] Ø. [1852] Ø. [1836] Ø.	erval .0-60.1 sec .0-60.1 sec .0-60.2 sec .0-60.1 sec .0-60.1 sec .0-60.1 sec	Iransfer 124 MBytes 123 MBytes 110 MBytes 84.6 MBytes 89.2 MBytes 86.3 MBytes	Bandwidth 17.3 Mbits/sec 17.1 Mbits/sec 15.4 Mbits/sec 11.8 Mbits/sec 12.4 Mbits/sec 12.0 Mhits/sec			
[SUM] 0.0 [1952] loc [1832] loc [1748] loc [1732] loc [1800] loc [1812] loc	0-60.2 sec cal 10.10.10 cal 10.10.10 cal 10.10.10 cal 10.10.10 cal 10.10.10 cal 10.10.10 cal 10.10.10	617 MBytes 20 port 5001 20 port 5001 20 port 5001 20 port 5001 20 port 5001 20 port 5001	86.0 Mbits/sec connected with connected with connected with connected with connected with connected with	10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10	port port port port port port	2663 2664 2665 2666 2667 2668
[ ID] Inte [1800] 0. [1812] 0. [1952] 0. [1952] 0. [1748] 0. [1732] 0. [1832] 0. [SUM] 0.0	erval .0-60.0 sec .0-60.1 sec .0-60.1 sec .0-60.1 sec .0-60.1 sec .0-60.1 sec .0-60.1 sec	Iransfer 114 MBytes 117 MBytes 89.6 MBytes 129 MBytes 111 MBytes 112 MBytes 672 MBytes	Bandwidth 15.9 Mbits/sec 16.3 Mbits/sec 12.5 Mbits/sec 18.1 Mbits/sec 15.5 Mbits/sec 15.6 Mbits/sec 93.8 Mbits/sec			

O primeiro número circulado nesta imagem representa o throughput upstream, o segundo número circulado representa o throughput downstream (AP para cliente).

#### Medição do rendimento de UDP

Feche os aplicativos Iperf anteriores no lado do servidor e do cliente. Ambos precisam ser configurados novamente, mas desta vez para o teste de desempenho UDP.

Execute este comando no lado do servidor:

Iperf -s -u -l 56k Execute este comando no lado do cliente:

Iperf -c -u -b 50M -l 56k -P

Este é um exemplo de capturas do Omnipeek para analisar a **unidade de dados de serviço MAC agregado**:

O rastreamento A-MSDU mostra um pacote

CaniPeek - [AH9	DUPacket	ato]										
💒 Eler Est New	<u>C</u> acture Se	ng ⊻onior Icale Window .	Help									그 문 프
🔄 - 🚳 - 🖬 🌫	2 2 1	🛛 🛋 🏨 🕸 🔄 T	20001100	106								
<b>*</b>												۵
□ Captore ▲	÷⇒ ]	🗄 🏝 🔛 🛸 🐄	16 3 18 🛛 🖉 🖉 🖉									
10000	Rendet :	Source	Destination	86310	Flage	Charcel	E gruei	Deta Pate	3276	Relative Time	Protocol	Success
E Parent	1	0 10:14:5E:87:7E:AL	FP 01:12:E8:36:19:37	FF 00:16:01:6F:01:5Z	A	4	1008	144.5	4350	0.000000	502.11 A-2500	FD F
Hero-chy	z	0:28:29:8:15:77	100191590196F9U395E			1	1008	24.0	14	0.000005	502.11 Ack	PU=
	4											
											Packet/ 2	Division DODD11
Done												ag hors

- Somente o primeiro subquadro é mostrado.
- Énecessário inspecionar o despejo hexadecimal para ver os subquadros adicionais.

#### A-MSDU próximo subquadro mostrado

🔆 OmriPeek - [AM5DUPesket.apo - Pesket.#1]	
[3] File Ent Yow Cacase Send Zonko Taak Westaw Help	그 문 프
1.60.13 2.62.13 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.62.14 2.6	
· · · · · · · · · · · · · · · · · · ·	
Packet 1 DI 0 - 7	
_ 0 Xo TTV Options	
HT for Level Level	1
-@ Data Zova: (1:00 hytes)	
Zutra Lytes (Zadding): (2008 bytes)     Heat Subframe Header	
B-T PSame Check Sequence	
	-
1410 BOOK OF AN OF AN OF AN OF AN OF AN ON TO THE THE SECTION OF AN OF	
142351 WE 39 75 39 15 1F 55 05 D5 55 56 KE 50 F0 52 FE 40 32 24 72 41 D1 61 FE 55 35 66 64 4E 10 10 F6 47 10 59 24 03 58 24 73 40 04 05 58 1 5011. T	Y-80
15001 MA 18: 40 49 49 52 84 12 86 45 10 48 10 10 10 47 47 99 50 87 69 10 15 47 99 50 87 69 10 15 47 99 50 12 27 20 17 10 10 10 10 10 10 10 10 10 10 10 10 10	37
1545: 102 47 6F 68 44 00 12 25 35 10 17 10 14 55 57 YE AL 04 24 44 44 00 00 00 00 05 10 14 20 AF 57 48 00 80 06 75 48 44 65 10 45 46 44 65 67 48 44 65 10 14 10 14 10 14 10 14 10 14 10 14 14 14 14 14 14 14 14 14 14 14 14 14	2b
1193: AA TO 11 GA OA OF JF 64 DD 67 F4 20 DD 54 50 18 FT A6 TO 96 00 01 EA 15 30 22 D4 CE 1E 50 76 2A 27 65 55 CL 30 CE 30 72 DF A6 97 30 LD .p.j4F)	.<ē. 👳
Failely, proc F1 39 Kora	(

- A-MPDU é uma estrutura que contém várias MPDUs, transportadas como uma única PSDU pelo PHY.
- Indicação de que o pacote é a A-MPDU de dados no procedimento de convergência da camada física (PLCP).



Este é um exemplo de capturas do Omnipeek para analisar a **unidade de dados do protocolo MAC agregado**:

#### Configuração A-MPDU

_		-												
22	🖉 Own/Pack - (AMPDUS etup, apr.)													
4	型 Ele Est York Sociale Song Yorke Inde Weiler													
	- 🕼 - 🔛 🤅	2	2 2 1	🛾 🛋 🏨 🎗 🗄 T	20000000	106								
-	15*													
Ŀ	Laptore 2	4	≥ ⇒	🗄 🏝 🔤 🖳 🦠 😵	898 ×8 2									
	100.0005		Receit	Course	Destination	0000	Dag:	Charcel	- Cgnal	Deta Rate	226	Relative Time	Protocol	Success
	Parat I		1	10:17:17:A6:40:90	F0 00:12:28:10:MD:55	12 00: 17: DF: A5: 40: 91	7A	1	1008	130.0	37	0.000000	502.11 Action	PD=
1.1	destrate		2	00:28:20:28:20:38:368	OLSINGPRASS40530			5	100%	36.0	19	0.000004	500,11 A08	PD=constants
	Teh		3	📑 10: 10: TO: 10: FO: 55	B01:13:0F:A6:40:30	📑 00: 17: DF: A6: 40: 91	*	¢ .	1004	26.0	.17	0.000003	302.11 April m	FD,28026
L .	Apploation #	4	4	📑 05:37:DF:36:40:99	B01:12:20:10:F0:55		1	s.,	1008	36.0	14	0.000010	102.11 Adk	FD+
1		1.	1				120	120.12	1.48	1 M M	1	120.120.1		- 101 - 101 - 101 - 21
													Packetz 4	Duration [H10101
Dor	ĸ													ay hora

- ADDBA Confirmação de adição de bloco
- Solicitação ADDBA contém identificador, política de bloqueio de confirmação, tamanho do

buffer, etc.

• Resposta ADDBA—Pode alterar o tamanho da política e do buffer.

#### Configuração A-MPDU

- Solicitação ADDBA
- O AP1250 usa um timeout de zero para indicar que não há timeout.



- Resposta ADDBA
- O receptor precisa indicar que o contrato de bloqueio foi estabelecido com êxito.



#### Transferência de dados A-MPDU

- Block Ack contém bitmap compactado para indicar que MPDUs foram recebidos.
- Consulte a seção 9.10.7 do IEEE 802.11n "Extensões de bloqueio HT-imediato" para obter informações sobre como enviar o Block Ack.

👯 OmniPask - (AMI	PDUD.etsAndBlockAck.epc										- 0 ×
😩 Eile Edit Mew	$\underline{\underline{C}} aptuse  \underline{S} and  \underline{\underline{M}} onitor  \underline{\underline{L}} ook  \underline{\underline{M}} indow$	Hep									린×
🔄 - 🐸 - 🖬 🌫	🛛 🕑 🕑 🖪 🗿 🚳 🏷 😏 🕫	* 🕹 🛆 🖻 m 🕴 🗧	1 🖓 🔂								
÷**											i>
🗉 Capture 🔺	··· · · · · · · · · · · · · · · · · ·	898 28 2									
Padkets	Padat Source	Deeb nation	85510	Heat	Channel	Signal	Data Rate	Siz e	Relative Time	Protocol	
C Entert	1 00:13:E8:36:19:77	00:14:5E:67:7E:A1	FP 00: 16: 01: 67: 03: 52		1	100%	130.0	78	0.000000	TCP	
Hearth	2 📳 00: 13: K6: 36: 19: 77	100:14:5K:57:7E:A1	100:16:01:5F:03:5E	*	1	100%	130.0	75	0.000003	TEP	
Ba	8 <b>BD</b> 00:13:E8:36:19:77	■\$00:14:5E:67:7E:A1	00:16:01:6F:03:5E	A.	1	100%	130.0	78	0.000008	TCP	
Application	4 📰 00:13:K0:36:19:72	₩900:14:5K:67:7K:A1	P00:16:01:5F:03:5E	. A.	1	100%	130.0	75	0.000011	TOP	
I-I Visuals	5 <b>BU</b> 00:13:E8:36:19:77	B) 00:14:5E:67:7E:A1	B) 00:16:01:6F:03:5E	à -	1	100%	130.0	78	0.000014	TCP	
Beer Map	6 B00:13:80:36:19:72	₩900:14:5K:07:7E:A1	<b>#\$00:16:01:0F:00:5E</b>	A	1	1008	130.0	70	0.000017	TOP	
Graphs	7 B) 00:13:E8:36:19:77	<b>B</b> 00:14:5E:87:7E:A1	B) 00:16:01:6F:03:5E	à.	1	100%	130.0	78	0.000020	TCP	
Statistics	0 <b>10</b> 00:15:01:07:03:5E	B00:13:E0:36:19:77		1 C	1	100%	20.0	32	0.000023	002.11 88	
Alabar J											
	4								A. A. A.	R. R. R. R.	
									Packetz 8	Duration 0.00	100
Done										📑 None	1

### Recursos anunciados em beacons

E ↓ HI Capability Info	
😌 Element ID:	45 HT Capability Info
🎯 Length:	26
🚍 🐺 HT Capability Info:	\$0001100001101110
5 🜍	0 L-SIG TXOP Protection Support: Not Supported
🕤	.0 AP allows use of 40MHz Transmissions In Neighboring BSSs
	1
	0 Does Not Support HT-Delayed Blocklick Operation
	00 No Pr STRC Support in Decayed Diccasca operation
	0 Transmitter does Not Summert Ty STRC
	1 Chent CT for 40 MMr. Compared
	1 Short GI for 40 Mir: Supported
	A Derrice is Not this to Parsive Diplie with CE Describe
	Device is not able to keterve Prods with Gr Preamble
A-MPDU Parameters:	\$00011011
· 🕥	xxx Reserved
🚱	110 Minimum MPDU Start Spacing: 8 usec
🗊	11 Maximum Rx A-MPDU Size: 64K
Supported MCS Set	
🚊 👕 One Spatial Strea	m: %1111111
MCS Index 0 Su	pported - BPSK. Coding Rate: 1/2
	pported - QPSK. Coding Rate: 1/2
MCS Index 2 Su	pported - QPSK. Coding Rate: 3/4
	pported - 16 QAM. Coding Rate: 1/2
	pported - 16 QAM. Coding Rate: 3/4
- 😙 MCS Index 5 Su	pported - 64 QAM. Coding Rate: 2/3
	pported - 64 QAM. Coding Rate: 3/4
🕜 MCS Index 7 Su	pported - 64 QAM. Coding Rate: 5/6
Two Spatial Strea	<b>ms:</b> \$0111111
MCS Index 8 Su	pported - BPSK. Coding Rate: 1/2
MCS Index 9 Su	pported - QPSK, Coding Rate: 1/2
MCS Index 10 S	upported - OPSK. Coding Rate: 3/4
MCS Index 11 S	upported = 16 02M. Coding Rate: 1/2
MCS Index 12 S	upported = 16 0RM, Coding Rate: 3/4
MTS Index 13 S	upported = 64 02M. Coding Rate: 2/3
M"S Index 14 S	upported - 64 02M Coding Rate: 2/4
MCS Index 14 S	apported - 64 ONM Coding Rate: 5/6
Dy Bitmack h16-h2	se soooooo
Dy Ditmak b24 b2	3. 10000000
By Bitmack b24-b3	1. \$0000000
RX BIUMASK B32-D3	9: \$00000000
TRX BILMASK D40-D4	r: \$0000000
	D: ≷00000000

#### Recursos anunciados em Beacons:

	Rx Bitnask b64-b76:	400000000000
	Reserved:	\$000
	Highest Supported Bate	*:0 2000a
	Reserved:	\$00000
	Ty Supported MCS Set:	20 Not Defined
	Ty and By MCS Set	20 Tental
	Ty Navirum Humber Stat	To Agend
	Tx Haxmal Kedulation	10 Vic Sumerica
	Deserved.	
	Reserved.	
1	Excended capabilities	
		AXXX Keservea
		NUU NUS Feedback: SIA DOES NOT Provide NUS Feedback
		XXXX X Reserved
i 👹		
1 13	t Beam Forming Capabili	(TXEP): ====================================
		xxx A Grand The Street S
		0 0 Space Time Stream Channel Estimation Capability: 1 Space Time Stream
🕲		CS1 Max Muzber of Kows: 2 Kow of CS1
🕼		0 0
0		
🕲		O 0 CSI Number of BF Antennas: 2 TX Antenna Sounding
🕲		Minimal Grouping: SIA Supports Groups of 1 (No Grouping)
🞯		O 0 Compressed BF Feedback Katrix: Not Supported
🕲		Uncompressed BF Feedback Matrix: Not Supported
🕲		TxBF CSI Feedback: Not Supported
🎯		
🎯		Uncompressed BF Feedback Matrix: Not Supported
		Explicit CSI TxBF Capable: Not Supported
🞯		Not Supported
🎯		Implicit TxBF Capable: Not Supported
🎯		Tx NDP Capable: Not Supported
🎯		Not Supported
🎯		0 Ix Staggered Sounding Capable: Not Supported
🕲		
· 🕲		0 Implicit TxBF Receiving Capable: Not Supported
J. yr	tenna Selection Capabi	lity (RSEL):\$0000000
🕲		z Reserved
🕲		.0 Tx Sounding PEDUs Capable: Not Supported
3		Rx ASEL Capable: Not Supported
🕲		0 Antenna Indices Feedback Capable: Not Supported
🎯		0 Explicit CSI Feedback: Tx AS Capable: Not Supported
🕲		0 Antenna Indices Feedback Based Tx ASEL Capable: Not Supported
🕲		0. Re-Explicit CSI Feedback Tx ASEL Capable: Not Supported
		a teterine deletion developer With Commented

Recursos anunciados em Beacons:

```
61 Additional HT Information
 😥 Element ID:
 🗑 Length:
                     22
 Primary Channel:
                     6
- 🌍 Srvc Int Granularity: 4000 - 5ms
 BY SNP STAS Only: 30 Association Requests are Accepted Regardless of PSNP Capability
 🗑 RIFS Mode:
                     41 Use of RIFS Permitted
 🗑 STA Channel Width:
                     %1 Use Any Channel Width Enabled Under Supported Channel Width Set
 2nd Channel Offset: 401 Above the Primary Channel
. 🗑
                       XXXXXXXX XXX.... Reserved
   . 💮
                        .
                        .....0... Transmit Burst Limit: No Limit
  -- 🕲
                        .....1.. Non-Greenfield STAs: One or more HT STAs are Not Greenfield Capable
   . 🐨
                        HT Info Element 3:
                     $00000000000000000
   . 📦
                        xxxx.... Reserved
                        ....0.... PCO Phase: Switch To/Continue Use 20MHz Phase
  --- 🗑
                        .....0.. ....... PCO Active: Not Active in the BSS
   - 🗑
   ... 🍘
                        .....0. ...... L-SIG TXOP Protection: Not Full Support
  -- 😥
                        .....0 ...... Secondary Beacon: Primary Beacon
                        ..... 0..... Duel CTS Protection: Not Required
   . 🕤
                        0
   . 📦
                        - Basic MCS Set
 📩 🐨 One Spatial Stream: 👘 %00000000
     ... 🜒 MCS Index 0 Not Supported - BPSK. Coding Rate: 1/2
     -- 😙 MCS Index 1 Not Supported - QPSK. Coding Rate: 1/2
     ... 📵 MCS Index 2 Not Supported - QPSK. Coding Rate: 3/4
     ... 🕲 MCS Index 3 Not Supported - 16 QAM. Coding Rate: 1/2
      📵 MCS Index 4 Not Supported - 16 QAM. Coding Rate: 3/4
      🌒 MCS Index 5 Not Supported - 64 QAM. Coding Rate: 2/3
      👩 MCS Index 6 Not Supported - 64 QAM. Coding Rate: 3/4
     ... 🗑 MCS Index 7 Not Supported - 64 QAM. Coding Rate: 5/6
 🗄 🍸 Two Spatial Streams: 300000000
     -- 🎯 MCS Index 8 Not Supported - BPSK. Coding Rate: 1/2
     ... 🗑 MCS Index 9 Not Supported - QPSK. Coding Rate: 1/2
     . 🜒 MCS Index 10 Not Supported - QPSK. Coding Rate: 3/4
      😋 MCS Index 11 Not Supported - 16 QAM. Coding Rate: 1/2
      🜒 MCS Index 12 Not Supported - 16 QAM. Coding Rate: 3/4
    - 😚 MCS Index 13 Not Supported - 64 QAM. Coding Rate: 2/3
     ... 📵 MCS Index 14 Not Supported - 64 QAM. Coding Rate: 3/4
    📖 🎯 MCS Index 15 Not Supported - 64 GAM. Coding Rate: 5/6
   🞯 Rx Bitnask b16-b23: 🛛 %00000000
   🕲 Rx Bitnask b24-b31: 👘 \00000000
    📵 Rx Bitnask b32-b39:
                        $00000000
   🍘 Rx Bitnask b40-b47:
                        $00000000
```

Associação semelhante à adição de configuração de bloqueio de A-MPDU:

194	🕎 00:13:E8:1D:F0:55	BO:17:DF:A6:4C:90	802.11 Ack			100%	6.0	14
195	EE 00:17:DF:A6:4C:90	FgEthernet Broadcast	802.11 Beacon	m 00:17:DF:A6:4C:90	*	100%	6.0	204
196	E 00:13:28:1D:F0:55	FP Ethernet Broadcast	802.11 Probe Reg	Ethernet Broadcast	*	100%	1.0	81
197	FE 00:17:DF:A6:4C:90	P2 00:13:E8:1D:F0:55	802.11 Probe Rsp	10:17:DF:A6:4C:90	*+	100%	6.0	204
198	📰 00:13:E8:1D:F0:55	00:17:DF:A6:4C:90	802.11 Ack		¥	100%	6.0	14
199	00:13:CE:89:DC:A2	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast		100%	1.0	87
200	N:13:E8:36:19:77	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast	*	100%	1.0	81
201	00:17:DF:A6:4C:90	00:13:E8:36:19:77	802.11 Probe Rsp	B) 00:17:DF:A6:4C:90	*+	100%	6.0	204
202	Image: 00:13:E8:36:19:77	00:17:DF:A6:4C:90	802.11 Ack		¥	100%	6.0	14
203	BO:13:E8:36:19:77	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast	*	100%	1.0	74
204	00:13:E8:36:19:77	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast	*	100%	1.0	81
205	B 00:17:DF:A6:4C:90	00:13:E8:36:19:77	802.11 Probe Rsp	B00:17:DF:A6:4C:90	*+	100%	6.0	204
206	00:13:E8:36:19:77	B) 00:17:DF: A6:4C:90	802.11 Ack		#	100%	6.0	14
207	00:13:CE:89:DC:A2	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast	*	52%	1.0	55
208	00:13:CE:89:DC:A2	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast	*	97\$	1.0	55
209	B) 00:13:CE:89:DC:A2	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast	*	100%	1.0	87
210	D0:13:CE:89:DC:A2	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast		100%	1.0	55
211	00:17:DF:A6:4C:90	Ethernet Broadcast	802.11 Beacon	00:17:DF:A6:4C:90	*	100%	6.0	204
212	00:13:CE:89:DC:A2	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast	*	95%	1.0	55
213	00:13:CE:89:DC:A2	Ethernet Broadcast	802.11 Probe Req	Ethernet Broadcast	*	100%	1.0	87
214	00:13:CE:89:DC:A2	Ethernet Broadcast	802.11 Probe Reg	Ethernet Broadcast	*	100%	1.0	55
215	E 00:13:E8:1D:F0:55	F 00:17:DF:A6:4C:90	802.11 Auth	FE 00:17:DF:A6:4C:90	*	100%	36.0	34
216	E2 00:17:DF:A6:4C:90	F 00:13:E8:1D:F0:55	802.11 Ack		<i>i</i> i	100%	36.0	14
217	E 00:17:DF:A6:4C:90	E 00:13:E8:1D:F0:55	802.11 Auth	E 00:17:DF:A6:4C:90	×	100%	36.0	34
218	🕎 00:13:E8:1D:F0:55	F2 00:17:DF:A6:4C:90	802.11 Ack		ÿ	100%	36.0	14
219	FE 00:13:E8:1D:F0:55	FE 00:17:DF:A6:4C:90	802.11 Assoc Req	FE 00:17:DF:A6:4C:90	*	100\$	36.0	134
220	E 00:17:DF:A6:4C:90	E 00:13:E8:1D:F0:55	802.11 Ack		ÿ	100%	36.0	14
221	FE 00:17:DF:A6:4C:90	FP 00:13:E8:1D:F0:55	802.11 Assoc Rsp	FP 00:17:DF:A6:4C:90		100%	130.0	180
222	📰 00:13:E8:1D:F0:55	B 00:17:DF:A6:4C:90	802.11 Ack		¥.	100%	36.0	14
223	3 192.168.170.89	3224.0.0.1	IGNP	B00:17:DF:A6:4C:90		100%	130.0	84
224	🕎 00:13:E8:1D:F0:55	00:17:DF:A6:4C:90	802.11 Ack		#	100%	36.0	14
225	2 192.168.170.89	3224.0.0.1	IGNP	B) 00:17:DF:A6:4C:90	+	100%	130.0	84
226	00:13:E8:1D:F0:55	00:17:DF:A6:4C:90	802.11 Ack		9	100%	36.0	14
227	00:17:DF:A6:4C:90	00:13:E8:1D:F0:55	WLCCP	E) 00:17:DF:A6:4C:90		100\$	130.0	92
228	00:13:E8:1D:F0:55	00:17:DF:A6:4C:90	802.11 Ack		¥.	100%	36.0	14
229	E 00:17:DF:A6:40:90	F 00:13:E8:1D:F0:55	802.11 Action	Per 00:17:DF:A6:40:90		100%	130.0	37
230	00:13:E8:1D:F0:55	B 00:17:DF:16:4C:90	802.11 Ack		¥	100%	36.0	14
231	EE 00:13:28:1D:F0:55	00:17:DF:A6:4C:90	802.11 Action	00:17:DF:A6:4C:90	×	100%	36.0	37
232	00:17:DF: 16:4C:90	B00:13:E8:1D:F0:55	802.11 Ack		ý.	100%	36.0	14

# Verifying A-MPDU is enabled on the controller

in the second second second		
a a strongenerity mes	AL AND AN AND A MARK AND A MARK	
Element ID:	45 HT Capability Date (81)	
- Unigth:	26 (04)	
T HT Capability Info:	4000110000110110 (05-06)	
- 9	0 Supported	
	.0 30 allows use of 4000x Transmissions In Meighboring SDDs	
- •	Device/855 does Not Support use of 25MP	
	d Transmitter does Not Support Ty SIDC	
	1. Both 1984s and 4985s foresting is forested	
	A 1997 radius analyticity for Personal	
100 0 0000		A-MPDU enabled and seen in the
- T A-RPDU Facameters	V00011011 [177]	+ here
	REF Beserved [07 Bank Octo]	beacon
	210 Miniana MNDV Flart Specing: # same [87 Bask DolC]	
	11 Mexianm Rx 3-0000 Sine: 64K [07 Back 0x00]	
T Supported BCS Set		

Above is a beacon frame from an SSID enabled for n rates

#### 

- interface Dot11Radio1
- Radio AIR-RM1252A, Base Address 00119ea6.8520, BBlock version 0.00, Software version 2.10.20
- Serial number: FOC1212405A
- Number of supported simultaneous BSSID on Dot11Radio1: 16
- Carrier Set: Americas (OFDM) (US) (-A)
- Uniform Spreading Required: Yes
- Configured Frequency: 5180 MHz Channel 36 40MHz, extended above
- Compared Prequency: 5159 MHz Channel 36 40MHz, extended above Allowed Frequencies: 5180(36) 5200(40) 5220(44) 5240(48) \*5260(52) \*5280(56) \*5300(60) \*5320(64) \*5500(100) \*5520(104) \*5540(108) \*5560(112) \*5590(116) \*5660(132) \*5680(136) \*5700(140) 5745(148) 5765(153) 5785(157) 5805(161) 5825(165) \* = May only be selected by Dynamic Frequency Selection (DFS) Listen Frequencies: 5180(36) 5200(40) 5220(44) 5240(48) 5260(52) 5280(56) 5300(60) 5320(64) 5500(100) 5520(104) 5540(108) 5560 (112) 5580(116) 5660(132) 5680(136) 5700(140) 5745(149) 5765(153) 5785(157) 5805(161) 5825(165) Beacon Flags: 0, Interface Flags 20105; Beacons are enabled; Probes are enabled Compared Brance Methods Methods and the second Brance Methods and Brance Methods Methods

- Configured Power: 14 dBm (level 1)
- Active power levels by rate
- 6.0 to 54.0 , 14 dBm
- 6.0-bf to 54.0-b, 8 dBm, changed due to regulatory maximum m0. to m15.-4, 11 dBm, changed due to regulatory maximum
- OffChnl Power: 14, Rate 6.0
- Allowed Power Levels: -1 2 5 8 11 14 --More--
- --More--Allowed Client Power Levels: 2 5 8 11 14
- Receive Antennas : right-a left-b middle-c
- Transmit Antennas : right-a left-b, ofdm single
- Antenna: external, Gain: Allowed 11, Reported 0, Configured 0, In Use 11
- Active Rates: basic-6.0 9.0 basic-12.0 18.0 basic-24.0 36.0 48.0 54.0
- Current Rates: basic-6.0 9.0 basic-12.0 18.0 basic-24.0 36.0 48.0 54.0
- Allowed Rates: 6.0 9.0 12.0 18.0 24.0 36.0 48.0 54.0
- All Rates: 6.0 9.0 12.0 18.0 24.0 36.0 48.0 54.0 m0. m1. m2. m3. m4. m5. m6. m7. m8. m9. m10. m11. m12. m13. m14. m15.
- Default Rates: basic-6.0 9.0 basic-12.0 18.0 basic-24.0 36.0 48.0 54.0 m0. m1. m2. m3. m4. m5. m6. m7. m8. m9. m10. m11. m12. m13. m14. m15.
- Best Range Rates: basic-6.0 9.0 12.0 18.0 24.0 36.0 48.0 54.0 m0. m1. m2. m3. m4. m5. m6. m7. m8. m9. m10. m11. m12. m13. m14. m15.
- Best Throughput Rates: basic-6.0 basic-9.0 basic-12.0 basic-18.0 basic-24.0 basic-36.0 basic-48.0 basic-54.0 m0. m1. m2. m3. m4. m5. m6. m7. m8. m9. m10. m11. m12. m13. m14. m15.

# MCS Rates on 802.11n beacon

In a state for each other and the state of t					
a T Capacitod MIX Set.					
(a) T the Spectral Property Sections (10)					
- With Dames & Damparted - ANDL, Contag Bater 1/3					
- · · · · · · · · · · · · · · · · · · ·					
- BIT Dates ( Deposited - USE, Colleg Beter Ave					
- 🖷 MCI Dathe J Bagestint - 14 200. Colling Bains 1/2					
Wit index a furgerand - as just coming factor dive					
- But Dates i Dagestied - of UBR, Colling Relet 2/7					
. · With Dasher & Degenerated - of GBK, Conting Rates 2.14					
BCS (balas 7 Suggesting - of UBM, Colour Balas 1/4					
The lastic Barrier Allinger Allinger					
- Bill Bader & Segmented - 2018. Contag Bater 2/0					
- WH Dates > Departed - QUIL, Colling Beter 2/0					
With Dasher 24 Suggestived + GREE, Colling Bater A.M.					
- The second sec					
- · · · · · · · · · · · · · · · · · · ·					
- · · · · · · · · · · · · · · · · · · ·					
Self Dates 10 Supervised - 68 100. College Select 1/6					
- * Ba Stimus \$15.671 \$0000000 [70]					
• The Bit Registry BOR - 10 E2: 400000000 [11]					
Be Bulland Std of 1 Stormond (11)					
Be Bullegash 242-072- 400000000 [14]					
- * He Street 254-641: 10000000 [11]					
Bu Bu Bu hand bee to be Bootstooooss (100-17) Back (0.0779)					
- Budent Supported Balant Rev (10-51 Bark def703)					
<ul> <li>Beautient: +000000 (20 Nucl. In/P)</li> </ul>					
- · · · · · · · · · · · · · · · · · · ·					
The and the MCS Select No. Speed 1200 Starth doubt					
. In Francisco Particle Design Descent Section 1997 A Social Diverse 1997 Bull Avenue					

# Supported MCS rates

_		
	OmniPeek _ =	ж
6 B	Idt Verw Capture Send Monitor Tools Window Help Wild Packada Capture Send Monitor Tools Window Help	ek.
-	Rat Page 002.11a.pkt 000.130,4094.pkt 000.11a.pkt - Packet #57 000.11m_40994.pkt - Packet #100 ×	х.
-		
8.7	SSD Bird Afen State SSD-Vi	-
* 7	andrean 19-1: Satasa Lemand Rate-5.0 Maps Rate-5.0 Maps Rate-52.0 Maps Rate-10.0 Maps Rate-54.0 Maps Rate-54.0 Maps Rate-56.0 Maps	г
* T	The DeS Tit: Least FTH Counted FTH Fertude; Sting Control+1000000 Part Virt Bag-0000	
13	Constry Dev Country Level & Country Country Country Country (Developed and Section Country Cou	٩.
14	With Brill (Diff Level Muttin Grant & Changel Millington (0) 1 Prola Menories Capacity (2007	h
11	Convert Di 40 27 Canability 2ndo 1821	
	• Length: 26 (04)	
1.4		
	- 1 * 1. 2000 Parameters-100012011	
	T Supported MIS Set	
	G The Spatial Stream + 1111111 (***)	
	We cannot a supported - state. Contry where 1/2	
	Ref Dates 2 Supporter - 0027, Colling Barty 3/4	
	Will Index 3 Supported - 16 GMM, Coding Rate: 1/1	
	- Will Index 4 Supported - 14 GMK, Coding Reter 1/4	
	- 🗣 MCF Index 6 Supported - 66 QBM. Coding Ante: 2/9	
	- • MCF Index 6 Supported - 46 QMK, Coding Actor 3/4	
	La ACE Jonda 7 Supported - 42 QMA, Coding Arter 5/4	
	We special intervent transmission (17)	
	REL Dates 9 Supported - OVE. Collar lates 1/2	
	WET Index 10 Supported - OFER, Colling Rate: 3/4	
	- 🖉 MCF Index 12 Supported - 14 GAM. Collar Aste: 1/2	
	With Index 12 Supported - 14 GAM. Coding Bates 3/4	
	- REF Index 13 Deported - 64 UAR. Colling Jates 2/7	
	<ul> <li>We assure as appointed = or gave concept parts of a</li></ul>	
	Bit Bitmark bit should be separate to be a second bit	۳
	- R Bitmack b19-0101 V00000000 [11]	
	- Bx Eltrank b17-b19 40000000 2103	
	- 9 Rx 811yuark 548 5431 90000000 (103	
	- Sx Eltman b48 6151 V000000 (14)	
	- The Billmank bill bill 19 00000000 (2012)	
	- • • • • • • • • • • • • • • • • • • •	
	• Nuclear Transition Robert Rose (201701)	
	9 Reserved) 940000 (17 Ball 0217)	
	The Supported MCS Set: VB. Dot Decision 2100 Basis (2001)	*

# 802.11a with N rates Enabled

p OmniPeek	. * ×		
F His Edit. View Cupture Send Monitor Tools Hindow Help	WildPachels OmniPeek		
· 24 · 14 · 14 · 14 · 14 · 14 · 14 · 14			
File Fige 002.11a.jkt 002.124_00444.jkt. 002.11a.jktParket #17 002.11a.jkt-Parket #110 ×			
** N N N N N N N N N N N N N N N N N N			
Fachet Inde Fachet Raderräll Fingerörkönnnen (1997)	6 -7 Align Chairelds \$210 Mile		
T (2-1) 48.11 KK: Node: Textion-0 Type-500 Anappend Subtype-51000 Joscon Parallan-0 Kicknessonic Parallan-FFIFFIFFIFFIFFIFFIFFIFFIFFIFFIFFIFFIFFI	E-ROINED BE WANTE-OOUUPINEIRON		
In a second seco			
- Brauss Internal ( MA (N-10)			
* T Capability Tain-1000000000000000000000000000000000000			
* T SID Det 1120 Land SID-N			
T Sales Del Inter Level Raised, 0 Kpc Ralest, 0 Kpc Rales21, 0 Kpc Rales24, 0 Kpc Rales24, 0 Kpc Rales34, 0 Kpc Rales34, 0 Kpc Rales34, 0 Kpc			
B T THE D-1 ID Las-4 MIR Coul-0 MIR Actual-1 Sting Control-4000000 Part Virt New-Scill			
2 Control with the second s	The first the proper considering a proper-		
T II Canadity Infe	earon frame including		
Compatible 45 AT Capability Date [80]	MODUL and MCS rates		
- • Length: 86 (14)	WP DU and MGa rales		
a T M (apphiling Tabe-600110000131100	pported		
a T & STOR Terrent Converting - VOCUMENT The The State of the State	A DATE AND ADDRESS OF A DATE OF		
THE Except Control of the State Stat			
The Beam Forming Capability (TallF)			
* T Astemas Selection Capability (BEE)-40000000			
- T his of Index Book Add of Index General Primary Channel-40			
T B-10 Let March 000000000			
a T the second set is the second with the second of the second set is a sec			
T Works Specific Thefit Venter Specific Land Mitch 45-16 Venters) Of Venters			
a " Vender Spreiffe 20-021 Vender Specific Leard 600-00-06 Balar(2 Spins)			
w W wenter spectate ID-011 Ventor System (D-00-40-66 Deta-(1 bytes)			
T FIS - Frame Check Segment			
- CEI CEIDERE CLIMETER			

# 802.11A Beacon frame

p	OmniPeek			
File Edit New Capture Send Monitor Tools Window Help	WildPackets OmniPeek			
2-0-HA RERE 44 9720001* 8	0.3			
Start Page 802.11apkt 802.110_4004b.pkt 802.11apkt - Packet #57 1	802.13h_400Hz.pit - Packet #110			
##INELS(?)\$\$\$!?*				
# T Nacket Indo Nacket Baber-57 Fiege-Be00000000 Status-Be0000000	0 Packet Length-150 Timestmap-17:29:22.565699000 82/25/2010 Data Rate-12 6 .0 Mbps Chan-56 5100 MBz (			
# T (0-21) #02.11 Kik Realer Section-0 Type=400 Xatepeard: Subtype=41000 Se	anna Dunation-D Winnerscools Destination-Ph/Ph/Ph/Ph/Ph/Ph/Ph/Doube-Dirble/SkiPh/Barks IX BOSD-Dirble/			
S 4 007.11 Kanaperent - Reacon				
Braces Talered: 300 CI2-311				
a T Canadellity Inde-4000000000000000000000000000000000000				
8 7 SID D-1 SID Let-2 SID-92				
T Rates- ID-1 Jutter: Lea-4 Rate-6.0 Kpc Rate-9.0 Kpc Rate-12.0 Kpc Rate-1	8.0 Kyr Rate-24.0 Kyr Rate-96.0 Kyr Rate-48.0 Kyr Rate-54.0 Kyr			
* T III- D-5 720: Los-4 MID Genet-0 MID Feriod-1 Bitsp Control-4000000 Fact Virt Bag-Sci0				
# T Country ID-7 Country Les-LB Country Code-US Starting Channel-36 Busher of	Channels-4 Rax Tx Power (dbs)-20 Starting Channel-52 Humber of Channels-4 Rax Tx Power (dbs)-20 Start			
F The line of the second se	ARCANING CARACITY-CONT			
<ul> <li>The Table March State Control of State and State and</li></ul>	une Terretunal			
a T Weather Speciation (D=22) Vendor Speciation Learned 000-00-40-96 Outlan(3 Sector)				
* T Vendor Specific ID-021 Vendor Specific LaneS 000-00-40-96 Vention-0 00X W	retion-5			
a T Vender Specific ID-221 Vender Specific Len-d 000-00-40-96 Data-(2 bytes)				
B T Sendor Specific ID-221 Vendor Specific Lea-5 000-00-40-96 Buta-(2 bytes)				
I TCS - Trane Cleck Separate				
- • PCS: 0x5142032 Calculated				

# Informações Relacionadas

Suporte Técnico e Documentação - Cisco Systems