

**ANTENNAS: UHF Only**

Green = Spec Sheet

17-Sep-05

Blue = Calc. Average

REVD

holl\_ands

**Manufacturer Model**

**Type-Reflector  
(# elements)**

**Band Boom  
(in)**

**UHF AVERAGES  
dBd BW F/B**

**CM Chan:  
WG Chan:**

GAIN (dBd)			
14	35	52	60
14	32	50	69

BW (-3 dB)			
14	35	52	60
14	32	50	69

Antiference (UK)	DX-8W	Yagi-Corner (17 bows)	UHF	43	12.5	19.0	25.0									
	XG-16	Yagi-Corner (17 bows)	UHF	92	15.0	12.0	27.0									
Antennacraft	U1000	4-Bay Dipole-Triads	UHF		8.1	51.0	20.5									
	7B141	1 Bowtie-Corner	UHF	9	8.0	48.9	17.3									
	CY1470D	Yagi-Corner (21)	UHF	50	7.3	44.6	16.4									
	MXU37	Yagi-Corner (37)	UHF	60	9.2	37.9	14.8									
	MXU47	Yagi-Corner (47)	UHF	80	10.1	33.0	16.1									
	MXU59	Yagi-Corner (59)	UHF	100	10.7	32.4	17.0									
Antennas Direct	DB2	2-Bay Bowtie-Grid	UHF		8.0											
	DB4	4-Bay Bowtie-Grid	UHF		12.0											
	DB8	8-Bay Bowtie-Grid	UHF		14.0											
	SR15	Yagi-Corner (10)	UHF	35	9.5											
	42XG	Yagi-Corner (8 bows)	UHF	39	10.5											
	43XG	Yagi-Corner (17 bows)	UHF	62	11.0			27.0								
	91XG	Yagi-Corner (22 bows)	UHF	93	15.0			28.0								
Blake (UK)	JBX-14WB	Yagi-Corner (14 bows)	UHF	75	13.5	13.0	27.0									
	JBX-21WB	Yagi-Corner (22 bows)	UHF	102	15.8	10.0	29.0	[91XG?]	15.1	15.7	16.3	16.0	11		9	
Blonder Tongue	BTY-UHF-BB LPDA	UHF	24	10.2	62.0	18.0										
Channel Master	CM4194	Dipole-Corner	UHF		7.7	56.0	14.0		5.8	6.9	8.4	9.8	63	58	53	50
	CM4308	Yagi-Corner (14)	UHF	43	7.7	43.0	18.0		5.4	5.9	9.8	9.8	56	48	37	31
	CM4248	Yagi-Corner (28)	UHF	81	11.6	28.8	17.8		10.2	11.4	13.0	11.8	42	30	23	20
	CM4225	4-Bay Bowtie-Screen	UHF		10.7	49.0	16.5		8.0	10.0	12.0	12.9	59	52	44	41
	CM4228	8-Bay Bowtie-Screen	UHF		11.9	24.8	20.5		10.8	12.1	13.0	11.5	37	24	20	18
	CM4251	7 Foot Parabolic	UHF		16.2	15.0	14.3		14.5	16.2	16.4	17.6	20	15	13	12

**ANTENNAS: UHF Only**

Manufacturer	Model	Type-Reflector (# elements)	Band	Boom (in)	UHF AVERAGES			CM Chan: Others:	GAIN (dBd)				BW (-3 dB)							
					dBd	BW	F/B		14	35	52	60	14	35	52	60				
Ceda Ind. (China)	91EL	Yagi-Corner (22 bows)		87	15.0 (est.)			[91XG?]	(15-19 dB in spec is probably dBi)											
Delhi Wade	4BT-1483 CYD-4070 SFA-1483S	4-Bay Bowtie-Grid Yagi-Corner Trip-Yagi-Corner	UHF UHF UHF			8.4 11.8 11.0			7.8 7.9 8.2 9.8 7.0 13.3 14.0 12.9 9.1 11.0 12.0 11.7											
Dipol	A3710 aka ATX-91	Yagi-Corner (22 bows)	UHF		15.0	23.0			13.2 15.0 16.2 15.7											
Fracarro (IT)	PU4A PU4	4-Bay Bowtie-Reflect 4-Bay Zig-Zag-Reflect	UHF UHF		10.5 10.5	18.0 22.0	Preamp Cartridge with 2 dB N.F. Hoverman style antenna													
Funke (NL)	DC.4543 DC.4591	Yagi-Corner (10 bows) Yagi-Corner (22 bows)	UHF UHF	50 87	12.1 13.7	36.0 29.0	27.0 28.0	[43XG?] [91XG?]	9.0 12.5 15.0 12.0 10.2 14.0 16.7 14.0					45.0 36		27.0 22.0				
Kathrein- Scala (GE)	CL-1469B PR-TV	LPDA Paraflector (5.6 Ft)	UHF UHF	29	8.0 16.5		35.0													
Lindsay (Canada)	6PBU-1469	Parabola (6 ft)	UHF		14.3	25.0	23.0		11.8			16.8		30.0		20.0				
Televes (Spain)	DAT-45 DAT-75	Trip-Yagi-Grid Trip-Yagi-Grid	UHF	47 72	12.6 14.1	30.0 27.0	28.0 28.0		10.5 12.0 13.5 14.5 12.0 13.5 15.0 16.0											
Wade- Antenna (Canada)	D-1338-BB PB-61-BB PB-81-BB	Parabolic (4 Ft) Parabolic (6 Ft) Parabolic (8 Ft)	UHF UHF UHF		12.9 15.0 18.8	30.0 20.0 16.0			10.8 13.0 12.8 15.0 11.8 15.0 15.8 17.5 16.8 18.8 19.3 20.2											

**ANTENNAS: UHF Only**

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Blue = Calc. Average

GAIN (dBd)

BW (-3 dB)

Manufacturer	Model	Type-Reflector (# elements)	Band	Boom (in)	UHF AVERAGES			CM Chan:				CM Chan:			
					dBd	BW	F/B	Others:	14	35	52	60	14	35	52
Winegard	PR-4400	4-Bay Dipole-Triads	UHF		10.3	56.3	13.3	9.0	10.0	10.6	11.6	72	60	46	47
	PR-8800	8-Bay Dipole-Triads	UHF		11.6	23.0	11.5	10.7	12.0	11.0	12.5	32	23	20	17
	PR-9012	Yagi-Triad (5)	UHF	17	5.2	65.0	8.4	3.3	5.0	6.4	6.2	71	73	58	58
	PR-9014	Yagi-Triad (8)	UHF	40	7.6	53.0	14.5	8.3	7.2	8.6	6.4	65	62	50	35
	PR-9016	Dipole-Corner (7)	UHF	16	7.3	48.0	9.0	5.8	7.5	8.0	7.7	59	54	47	32
	PR-9018	Yagi-Corner (20)	UHF	50	12.4	45.3	13.3	13.3	14.5	12.6	9.0	60	55	40	26
	PR-9022	Yagi-Corner (26)	UHF	79	13.5	38.5	15.1	14.3	15.2	14.6	9.9	54	43	34	23
	PR-9032	Yagi-Corner (35)	UHF	115	14.6	36.0	15.4	14.9	16.3	15.7	11.5	53	37	28	26
	HD9065P	Yagi-Corner (23)	UHF	50	11.6	44.0	16.0	11.9	12.1	11.6	10.6	52	53	40	31
	HD9085P	Yagi-Corner (31)	UHF	75	13.5	36.0	13.3	11.9	14.6	14.5	12.8	45	44	32	23
	HD9095P	Yagi-Corner (39)	UHF	93	14.5	37.0	11.0	14.2	16.0	15.5	12.2	43	41	30	34

NOTES: Green is from spec sheet. Blue is calculated average. %, %% and %%% are increasingly wide beamwidth. Winegard (WG) and Channel-Master (CM) use slightly different spec point frequencies.

	F/B (dB)			
CM Chan:	14	35	52	60
WG Chan:	14	32	50	69

Antiference DX-8W  
(UK) XG-16

From: [www.antiference.co.uk](http://www.antiference.co.uk)

Antennacraft U1000  
7B141  
CY1470D  
MXU37  
MXU47  
MXU59

From: [www.antennacraft-tdb.com](http://www.antennacraft-tdb.com)

Antennas DB2  
Direct DB4  
DB8  
SR15  
42XG  
43XG  
91XG

From: [www.antennasdirect.com](http://www.antennasdirect.com)

Blake (UK) JBX-14WB  
JBX-21WB 28 30

Blonder BTY-UHF-BB  
Tongue

Channel CM4194 17.0 15.0 12.0 12.0 Q: discontinued?  
Master CM4308 21.0 15.0 20.0 16.0 also 3022  
CM4248 17.0 21.0 18.0 15.0 also 3023  
CM4225 17.0 17.0 17.0 15.0 also 3021 & 4221  
CM4228 22.0 19.0 21.0 20.0  
CM4251 14.0 14.0 15.0 14.0 Q: discontinued?

From: [www.starkelectronic.com](http://www.starkelectronic.com)

From: [www.wade-antenna.com](http://www.wade-antenna.com)

	F/B (dB)			
CM Chan:	14	35	52	60
Others:	14	32	50	69

Ceda Ind.  
(China) 91EL

Delhi  
Wade 4BT-1483  
CYD-4070  
SFA-1483S

Dipol A3710 aka 20.0 26.0  
ATX-91

Fracarro (IT) PU4A  
PU4

Funke (NL) DC.4543

Kathrein-  
Scala (GE) CL-1469B  
PR-TV

Lindsay  
(Canada) 6PBU-1469

Televes  
(Spain) DAT-45  
DAT-75

Wade-  
Antenna  
(Canada) D-1338-BB  
PB-61-BB  
PB-81-BB

From: [www.televes.com](http://www.televes.com) (in Spain)

F/B (dB)
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<b>CM Chan:</b>	<b>14</b>	<b>35</b>	<b>52</b>	<b>60</b>
<b>Others:</b>	<b>14</b>	<b>32</b>	<b>50</b>	<b>69</b>

Winegard	PR-4400	17.0	14.0	13.0	9.0
	PR-8800	9.0	17.0	11.0	9.0
	PR-9012	12.0	9.0	9.0	3.5
	PR-9014	15.0	12.0	17.0	14.0
	PR-9016	6.0	14.0	10.5	5.5 Ch 38 vs 32?
	PR-9018	13.5	14.0	19.5	6.0
	PR-9022	13.5	16.0	18.0	13.0
	PR-9032	14.0	20.0	20.0	7.5
	HD9065P	14.0	19.0	14.0	17.0
	HD9085P	14.0	18.0	12.0	9.0
	HD9095P	11.0	14.0	11.0	8.0

From: [www.winegard.com](http://www.winegard.com)

ANTENNAS: VHF/UHF		17-Sep-05		REVD		holl_and		GAIN (dBd)				BW (-3 dB)				
Manufacturer	Model	Type (# elements)	Band	Boom (in)	UHF AVERAGES			CM Chan: WG Chan:	14	35	52	60	14	35	52	60
					dBd	BW	F/B		14	32	50	69	14	32	50	69
Antennacraft	AC9	Yagi (12)	V/U	30	3.0	52.1	6.9									
Blonder Tongue	BTY-LP-BB BTY-UHF-BB	LPDA LPDA	VHF UHF	96 24												
Channel Master	CM3000A MS2000	Omni Smartenna Omni MetroStar	V/U V/U		0.0	360.0		omni omni								
Create (DK)	DLPS130-1 DLPS130-2	LPDA (21) LPDA (17)	U/V U/V	79 55	11.0 12.0		15.0 15.0	50 ohm 50 ohm								
DX Antenna Funai/Sylvania (Japan)	DTA-5000	2 Criss-crossed Dipoles (VHF) + 2-el Yagis (UHF)	U/V		0.0 (est.)			First CEA/EIA-909 Smart Antenna								
Funke (NL)	LP-1716	LPDA (16)	U/V	43	14.0	35.0	25.0		14.0	14.0	14.0	14.0				
Winegard	SS-1000 SS-2000 SS-3000 PR-7000 HD7078P	SquareShooter SS-1000 + pamp SharpShooter Yagi (5+5) Yagi (12+17)	V/U V/U V/U V/U V/U		4.5 4.5 0.0 5.2 10.6	61.8 61.8 36.0 53.0 48.8	15.1 15.1 7.5 10.6 18.3						68 68 75 61	67 67 54 54	58 58 40 46	54 54 43 34

NOTES: Green is from spec sheet. Blue is calculated average. %, %% and %%% are increasingly wide beamwidth.

**Wineguard (WG) and Channel-Master (CM) use slightly different spec point frequencies.**



CM Chan:  
WG Chan:

F/B (dB)			
14	35	52	60
14	32	50	69

Antennacraft AC9

From: [www.antennacraft-tdp.com](http://www.antennacraft-tdp.com)

Blonder  
Tongue

BTY-LP-BB  
BTY-UHF-BB

From: [www.tonercable.com](http://www.tonercable.com)

Channel  
Master

CM3000A  
MS2000

From: [www.starkelectronic.com](http://www.starkelectronic.com)

Create (DK)

DLPS130-1  
DLPS130-2

DX Antenna  
Funai/Sylvania  
(Japan)

DTA-5000

Funke (NL)

LP-1716

Winegard	SS-1000	20.0	16.0	12.5	12.0	Ch 56 vs 50
	SS-2000	20.0	16.0	12.5	12.0	Ch 56 vs 50
	SS-3000					
	PR-7000	7.0	10.5	14.0	11.0	
	HD7078P	16.0	20.0	19.0	18.0	

From: [www.winegard.com](http://www.winegard.com)



ANT: Sim & Measured

21-Jun-05

Manufacturer	Model	Type-Reflector (# elements)	Band	Boom (in)	UHF AVERAGES			GAIN (dBd)				BW (-3 dB)			
					dBd	BW	F/B	14	32	50	69	14	32	50	69
<b>Measured from Various Sources:</b>															
Chan Mstr	CM4228	8-Bay Bowtie-Screen	UHF			14.6				12.4	14.7	15.7	15.6		
RCA	ANT3023 ?	VHF/UHF Yagi	VHF	??		5.8				4.0	6.8	5.7	6.6		
RCA	Loop	UHF Loop - Max	UHF			2.2				1.5	1.3	2.5	3.5		
RCA	Loop	UHF Loop - Min	UHF			-5.0				1.0	-8.4	-5.2	-7.2		
Terk	HDTVi	Log Periodic	UHF			2.6				2.5	2.4	2.5	3.0		
Winegard	PR8800	8-Bay Dipole-Triads	UHF			13.2				12.0	12.8	13.9	13.9		
Zenith	SilverSens	Silver Sensor	UHF			3.2				3.5	3.0	3.3	2.8		
AntEngHnbk	by Jasik	Bowtie-Corner	UHF			10.1	68.8			8.0	9.5	11.0	12.0	75	80

NEC Simulations from [www.hdtvprimer.com/ANTENNAS/comparing.html](http://www.hdtvprimer.com/ANTENNAS/comparing.html) and [/types.html](http://www.hdtvprimer.com/ANTENNAS/types.html):

Channel	CM4221	4-Bay Bowtie-Screen	UHF			9.0	54.5	%%		1.8	10.5	11.6	12.0	60	56
Master	CM4228	8-Bay Bowtie-Screen	UHF			10.2				3.2	13.2	13.0	11.3		
	CM4248	Yagi-Corner (28)	UHF	81		11.4				9.5	11.0	12.6	12.4		
	No Dir'tr's	Dipole-Corner	UHF			9.2				9.9	9.7	8.9	8.1		
Televes	DAT-75	Triple-Yagi-Corner	UHF			11.6				8.3	11.1	13.5	13.5		
Winegard	PR4400	4-Bay Dipole-Triads	UHF			9.7				6.7	9.7	10.7	11.8		
	PR8800	8-Bay Dipole-Triads	UHF			10.7				7.6	13.2	11.8	10.0		

F/B (dB)			
14	32	50	69

Kerry Cozad (Dielectric)  
 used antenna range to  
 measure VHF/UHF gain  
 H/V patterns and VSWR.  
 See 2005 PBS Conf.  
 Paper dtg 15Apr05.

**measured**

AntEngHnbk by Jasik

**measured**

Channel      CM4221  
 Master      CM4228  
                  CM4248  
                  No Dir'tr's

**NEC sim'l'n**

Televes      DAT-75

PR4400  
 PR8800

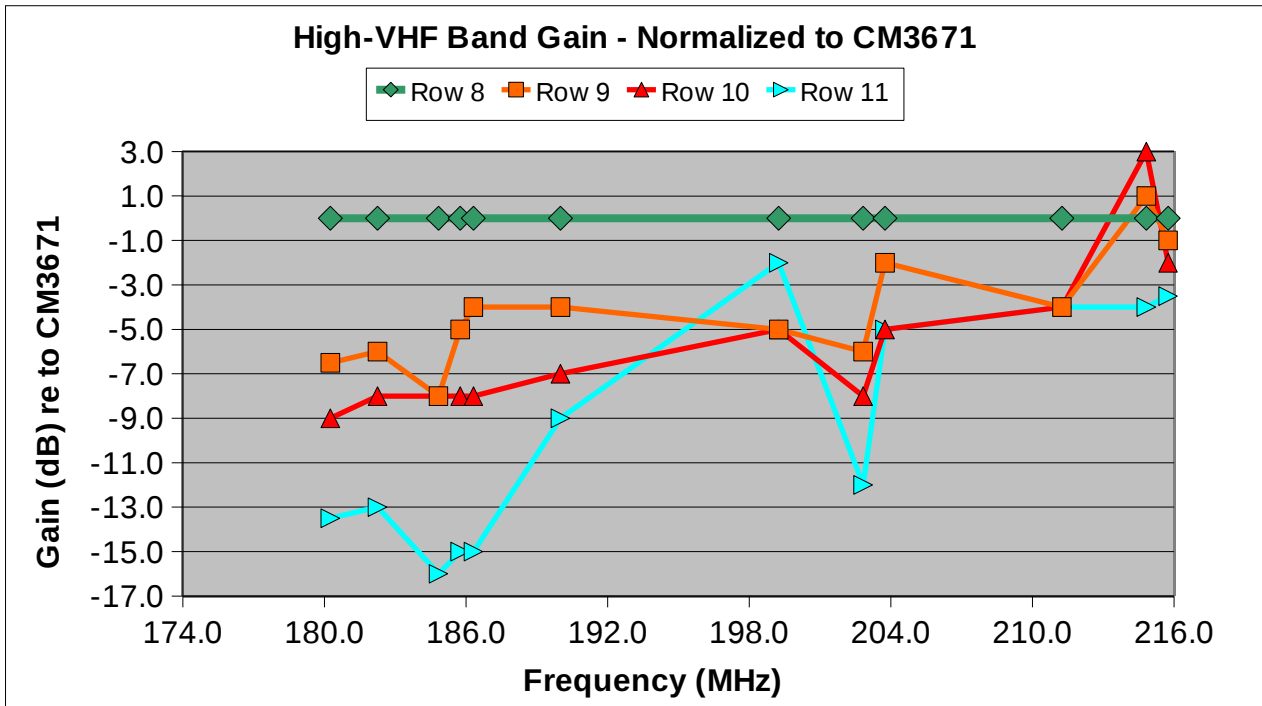
**GAIN COMPARISONS: High-VHF Band**

18-May-07

From Bob Chase's On-Air RX Levels posted to avsforum Antenna thread on 24Sep2005

**ALL GAINS RELATIVE TO CM3671**

Data	N08	N08	N08	D09	D09	N11	N11	N11	N13	N13	N13	MHz	Freq
Cast	Video	Chrma	Audio	Pilot	Mid	Video	Chrma	Audio	Video	Chrma	Audio		
	180.3	182.3	184.8	185.8	186.3	190.0	199.3	202.8	203.8	211.3	214.8	215.8	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 dB	<b>CM3671</b>
	-6.5	-6.0	-8.0	-5.0	-4.0	-4.0	-5.0	-6.0	-2.0	-4.0	1.0	-1.0 dB	<b>CM5646</b>
	-9.0	-8.0	-8.0	-8.0	-8.0	-7.0	-5.0	-8.0	-5.0	-4.0	3.0	-2.0 dB	<b>HD7210</b>
	-13.5	-13.0	-16.0	-15.0	-15.0	-9.0	-2.0	-12.0	-5.0	-4.0	-4.0	-3.5 dB	<b>CM4228</b>



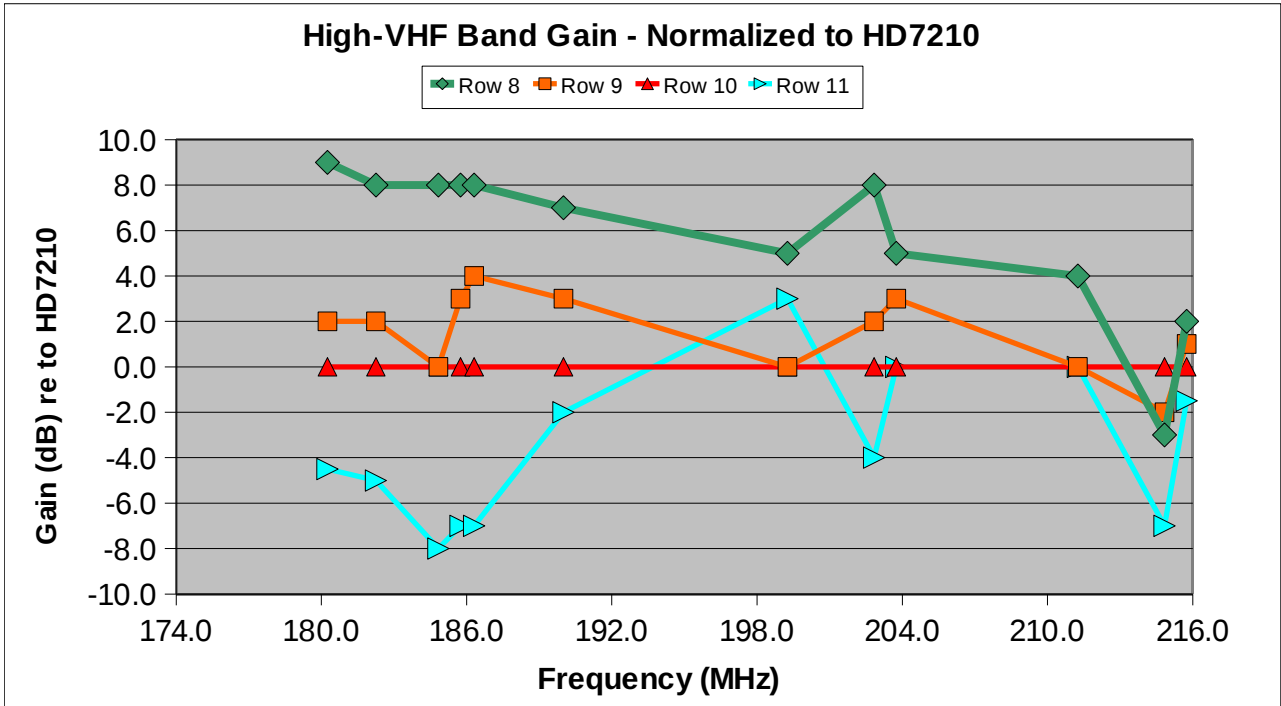
**GAIN COMPARISONS: High-VHF Band**

18-May-07

From Bob Chase's On-Air RX Levels posted to avsforum Antenna thread on 24Sep2005

**ALL GAINS RELATIVE TO HD7210**

Data	N08	N08	N08	D09	D09	N11	N11	N11	N13	N13	N13	MHz	Freq.
Cast	Video	Chrma	Audio	Pilot	Mid	Video	Chrma	Audio	Video	Chrma	Audio		
180.3	182.3	184.8	185.8	186.3	190.0	199.3	202.8	203.8	211.3	214.8	215.8		
	9.0	8.0	8.0	8.0	8.0	7.0	5.0	8.0	5.0	4.0	-3.0	2.0 dB	<b>CM3671</b>
	2.0	2.0	0.0	3.0	4.0	3.0	0.0	2.0	3.0	0.0	-2.0	1.0 dB	<b>CM5646</b>
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 dB	<b>HD7210</b>
	-4.5	-5.0	-8.0	-7.0	-7.0	-2.0	3.0	-4.0	0.0	0.0	-7.0	-1.5 dB	<b>CM4228</b>



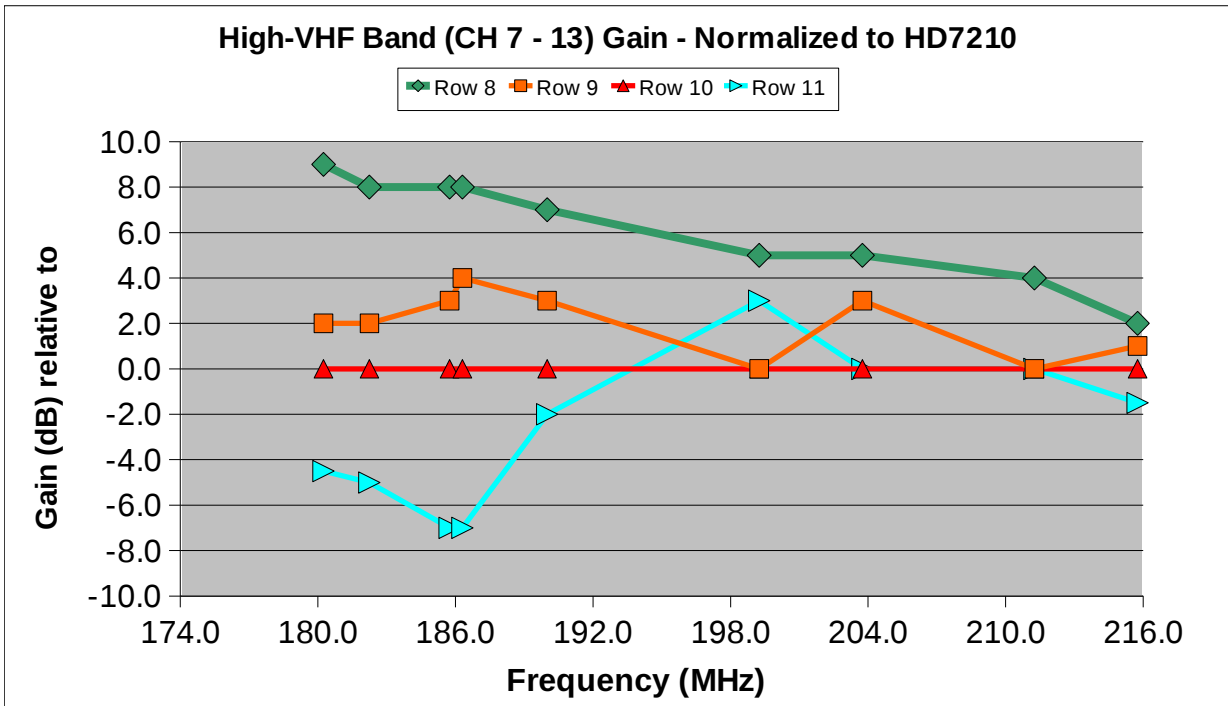
**GAIN COMPARISONS: High-VHF Band**

18-May-07

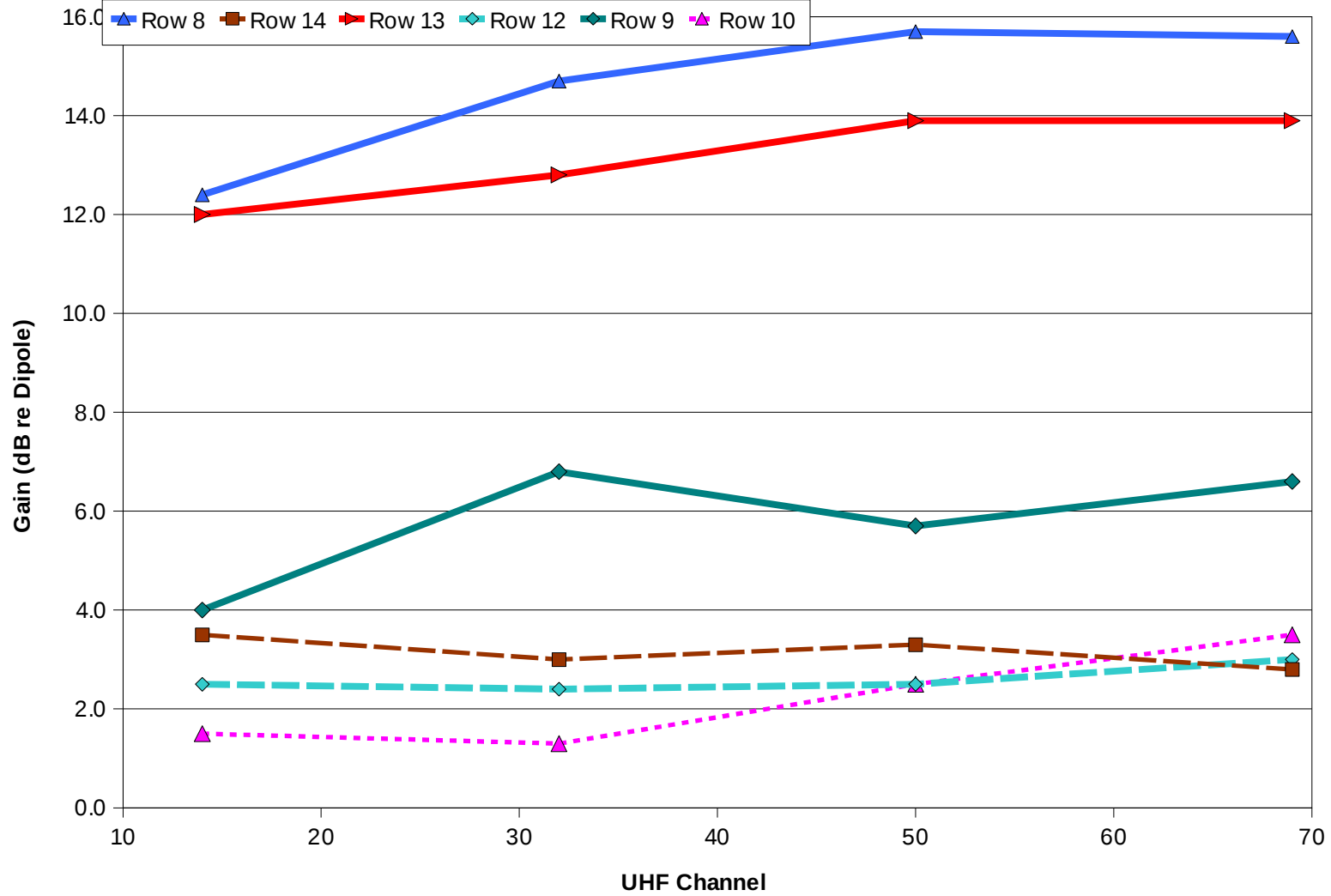
From Bob Chase's On-Air RX Levels posted to avsforum Antenna thread on 24Sep2005

**ALL GAINS RELATIVE TO HD7210**

Data	N08	N08	D09	D09	N11	N11	N13	N13		
Cast	Video	Audio	Pilot	Mid	Video	Audio	Video	Audio	MHz	Freq.
180.3	182.3	185.8	186.3	190.0	199.3	203.8	211.3	215.8	MHz	Freq.
9.0	8.0	8.0	8.0	7.0	5.0	5.0	4.0	2.0	dB	<b>CM3671 Crossfire</b>
2.0	2.0	3.0	4.0	3.0	0.0	3.0	0.0	1.0	dB	<b>CM5646 (CM3016 &amp; VU-90XR)</b>
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	dB	<b>HD7210 Ghost Killer</b>
-4.5	-5.0	-7.0	-7.0	-2.0	3.0	0.0	0.0	-1.5	dB	<b>CM4228 8-Bay Panel</b>

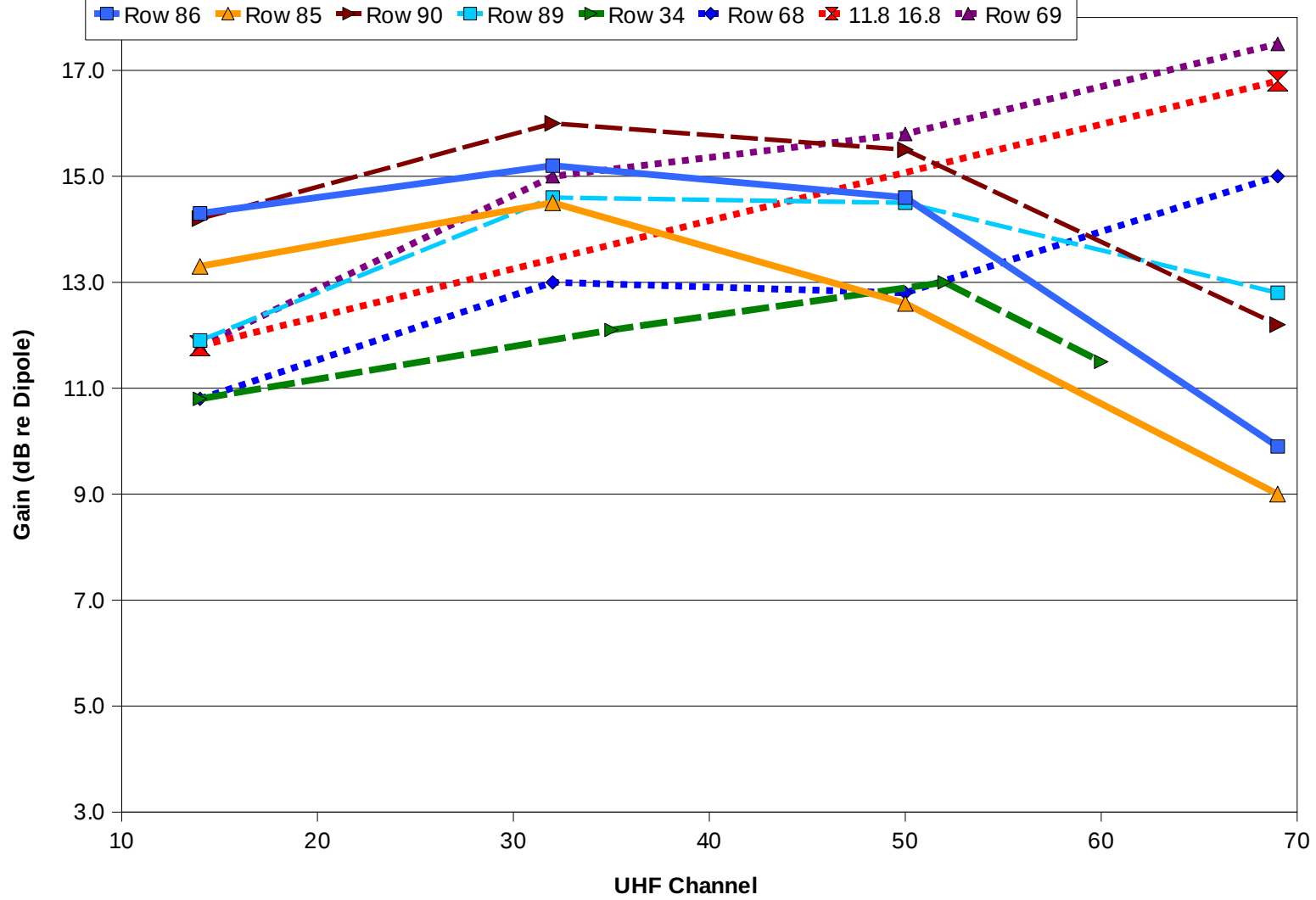


Kerry Cozad's Measured Gain for Several UHF Antennas

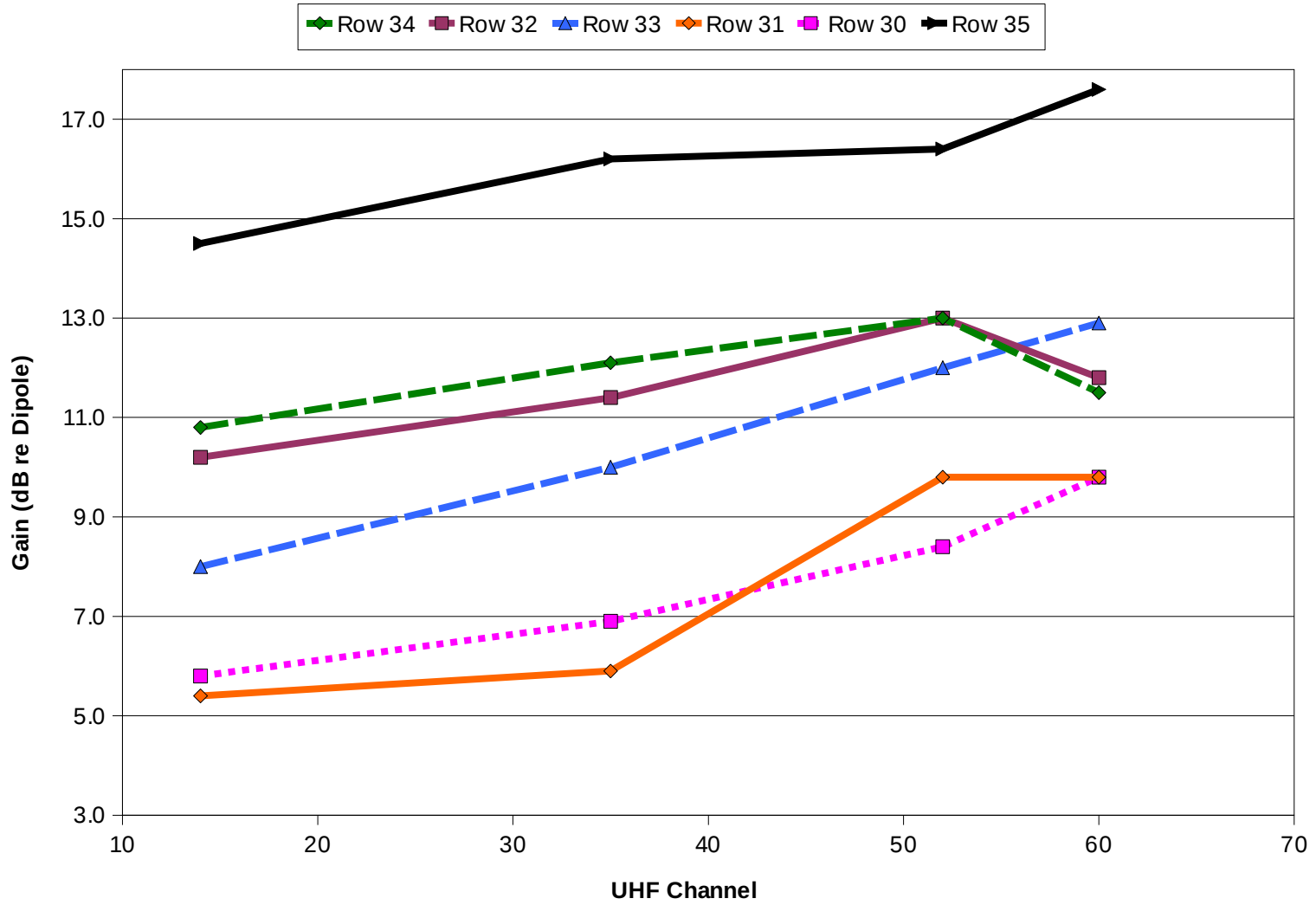




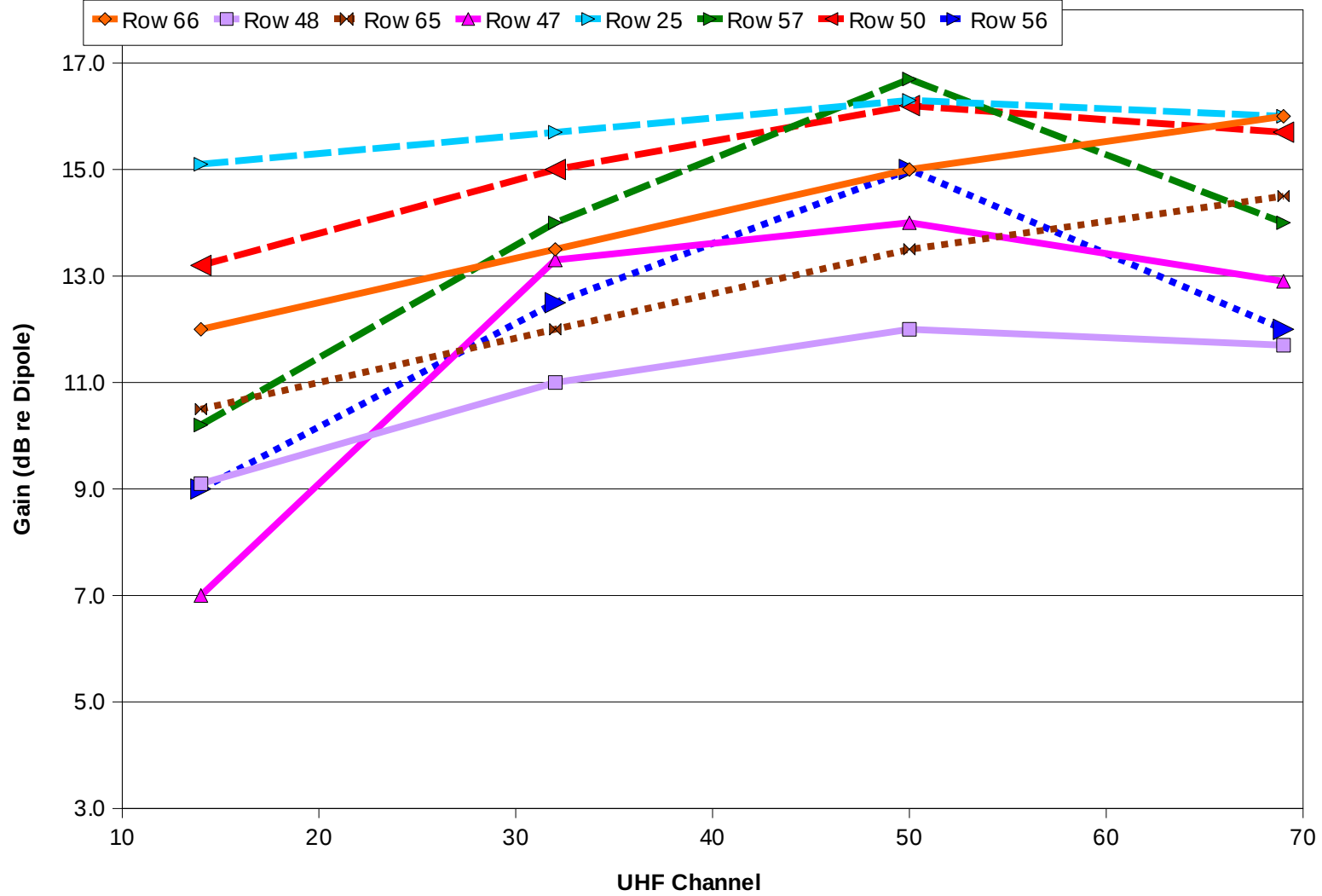
Gain for Selected High Gain UHF Antennas



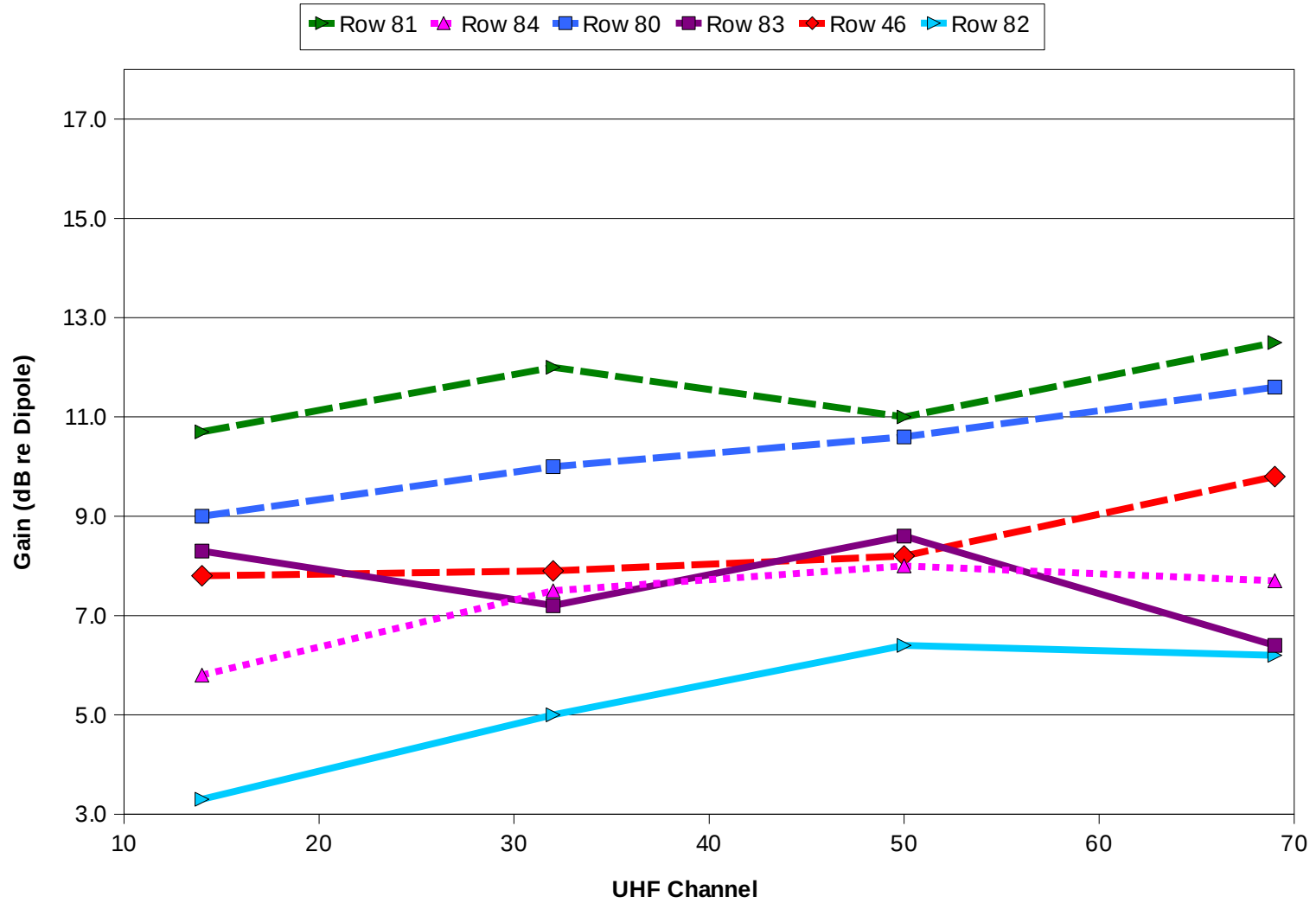
Gain for C-M UHF Antennas



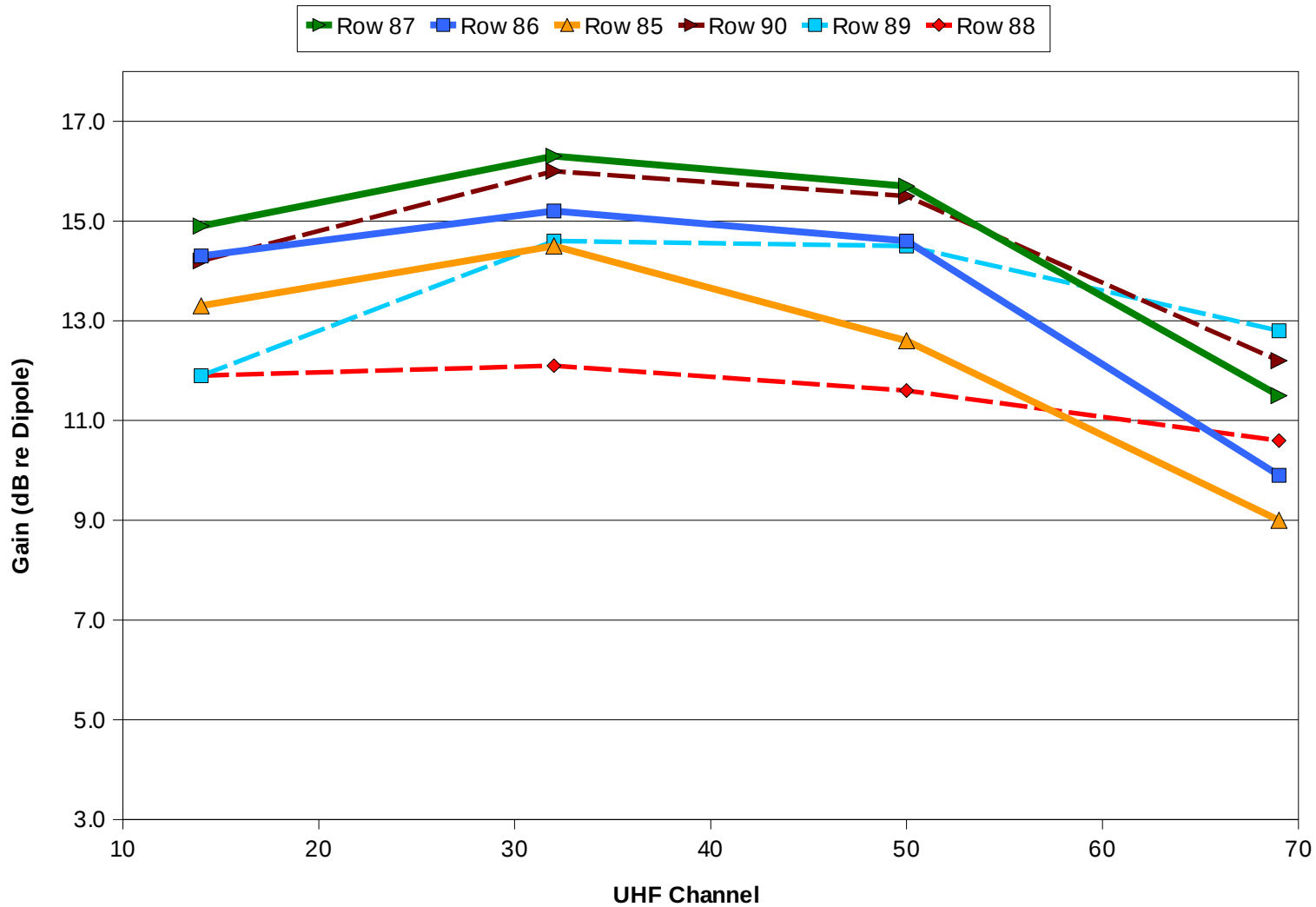
Gain for Blake, Funke/A-D/Dipol 91XG, Wade-Delhi and Televes UHF Antennas



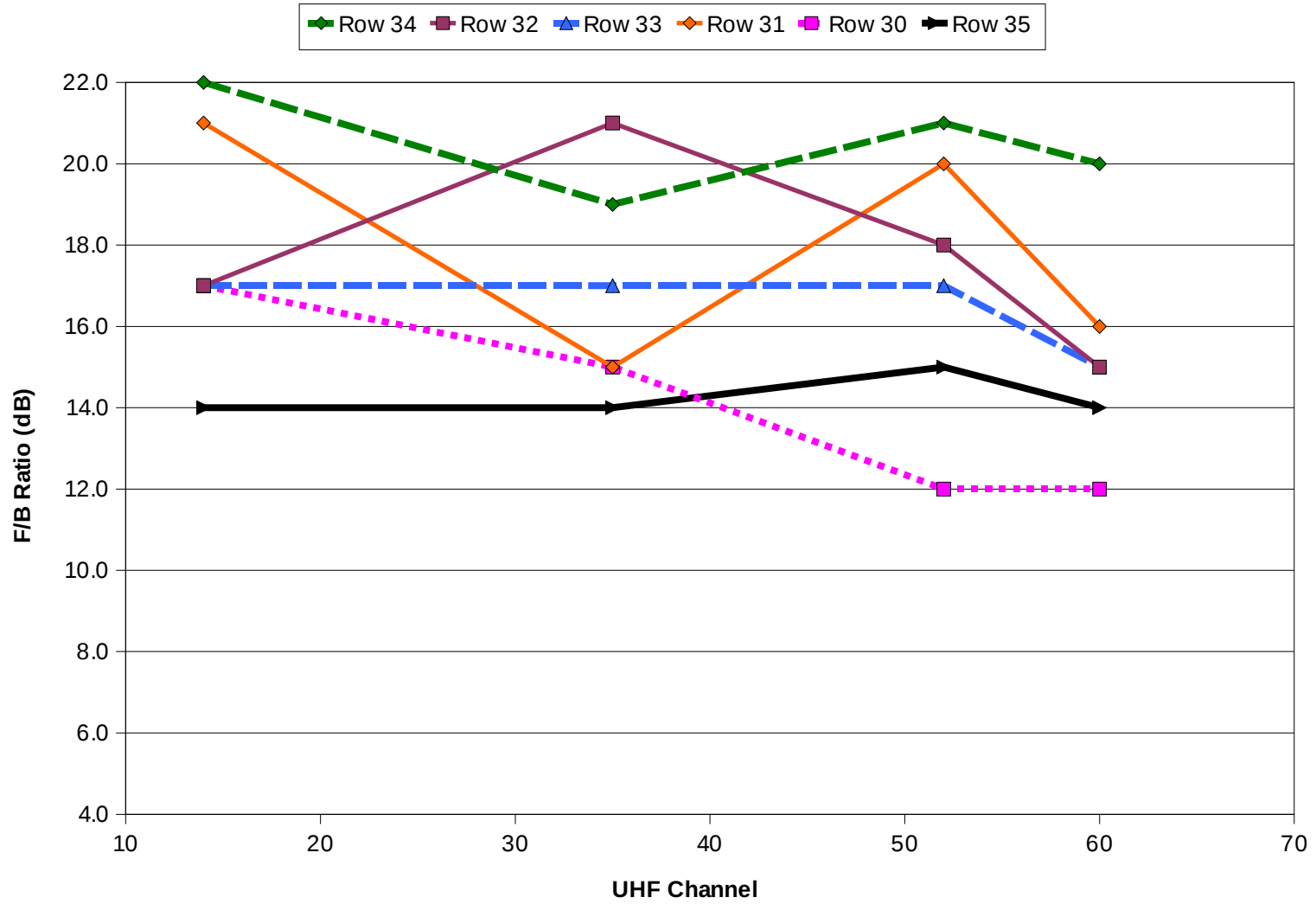
Gain for W-G and A-D UHF Antennas



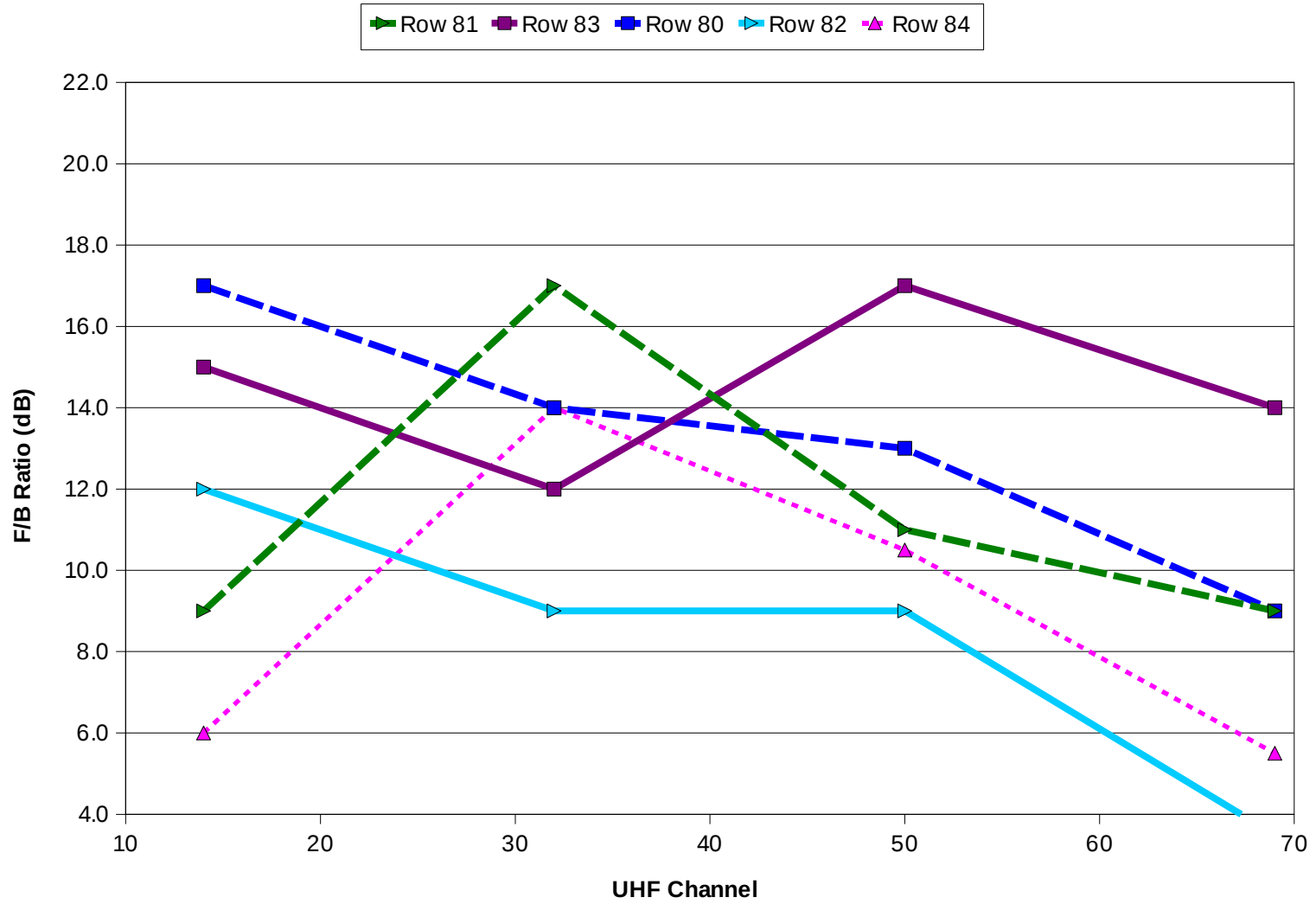
Gain for W-G UHF Yagis with Corner Reflectors



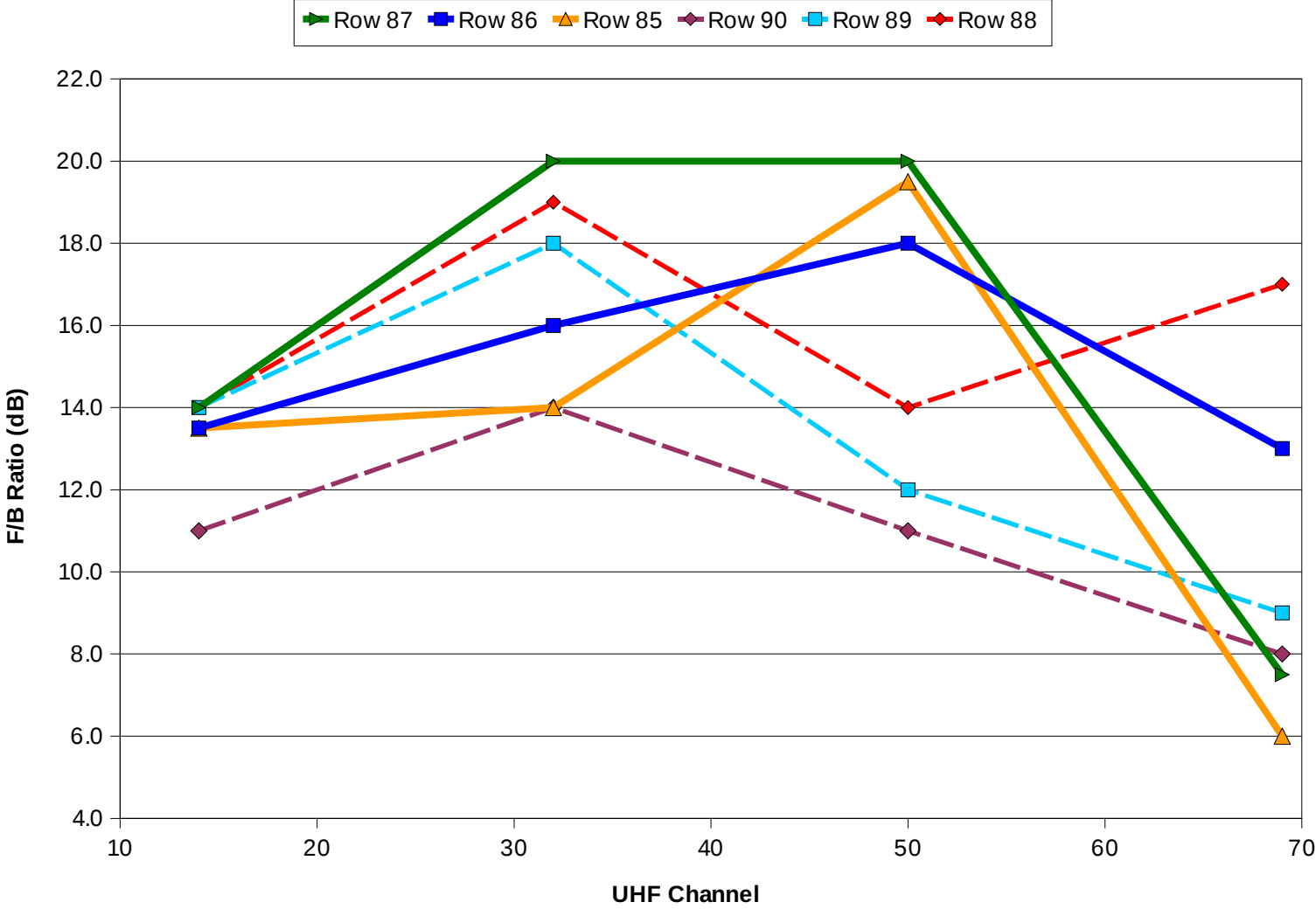
Front-To-Back Ratios for C-M UHF Antennas



Front-To-Back Ratios for W-G UHF Antennas

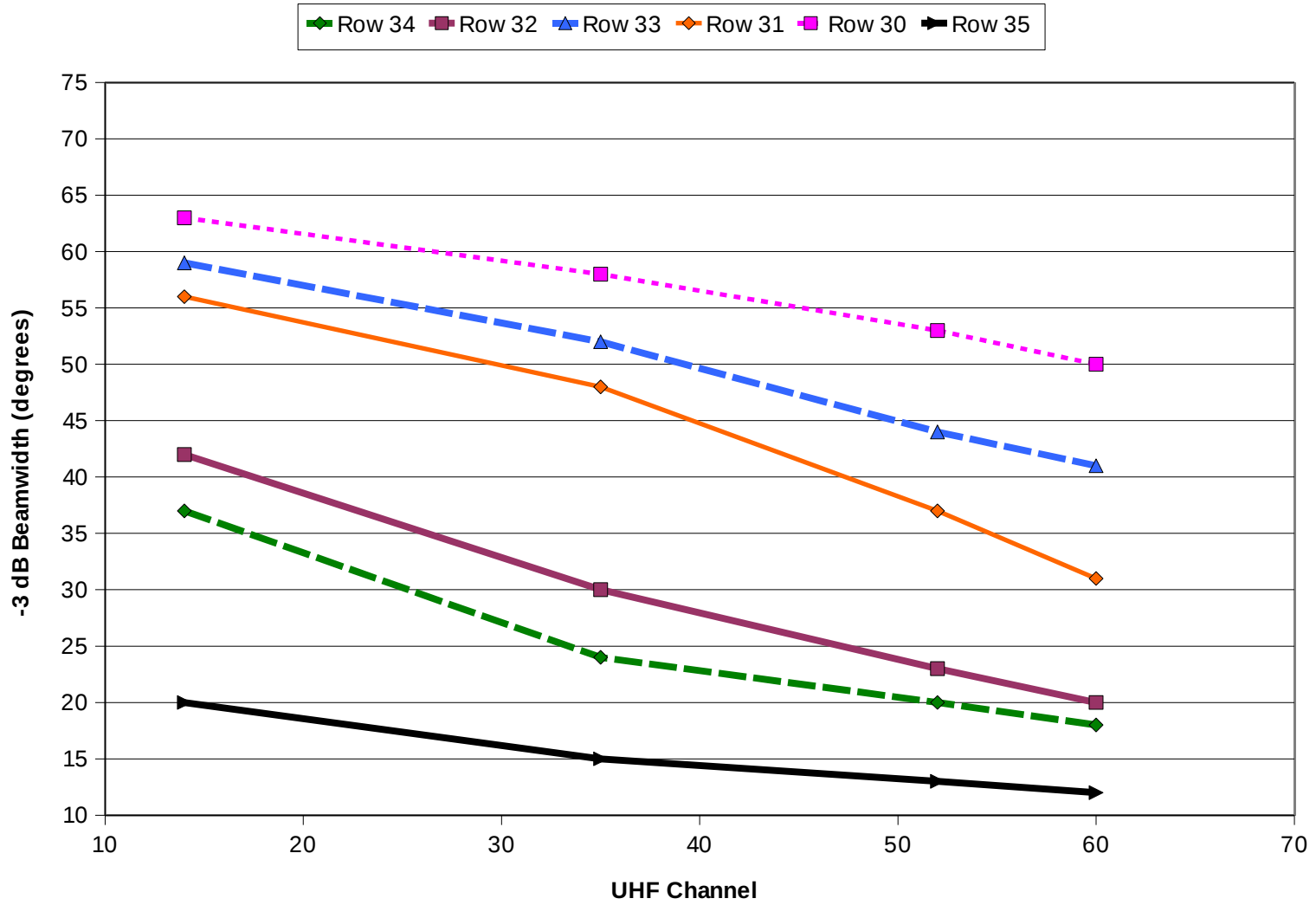


Front-To-Back Ratios for W-G UHF Yagis with Corner Reflectors

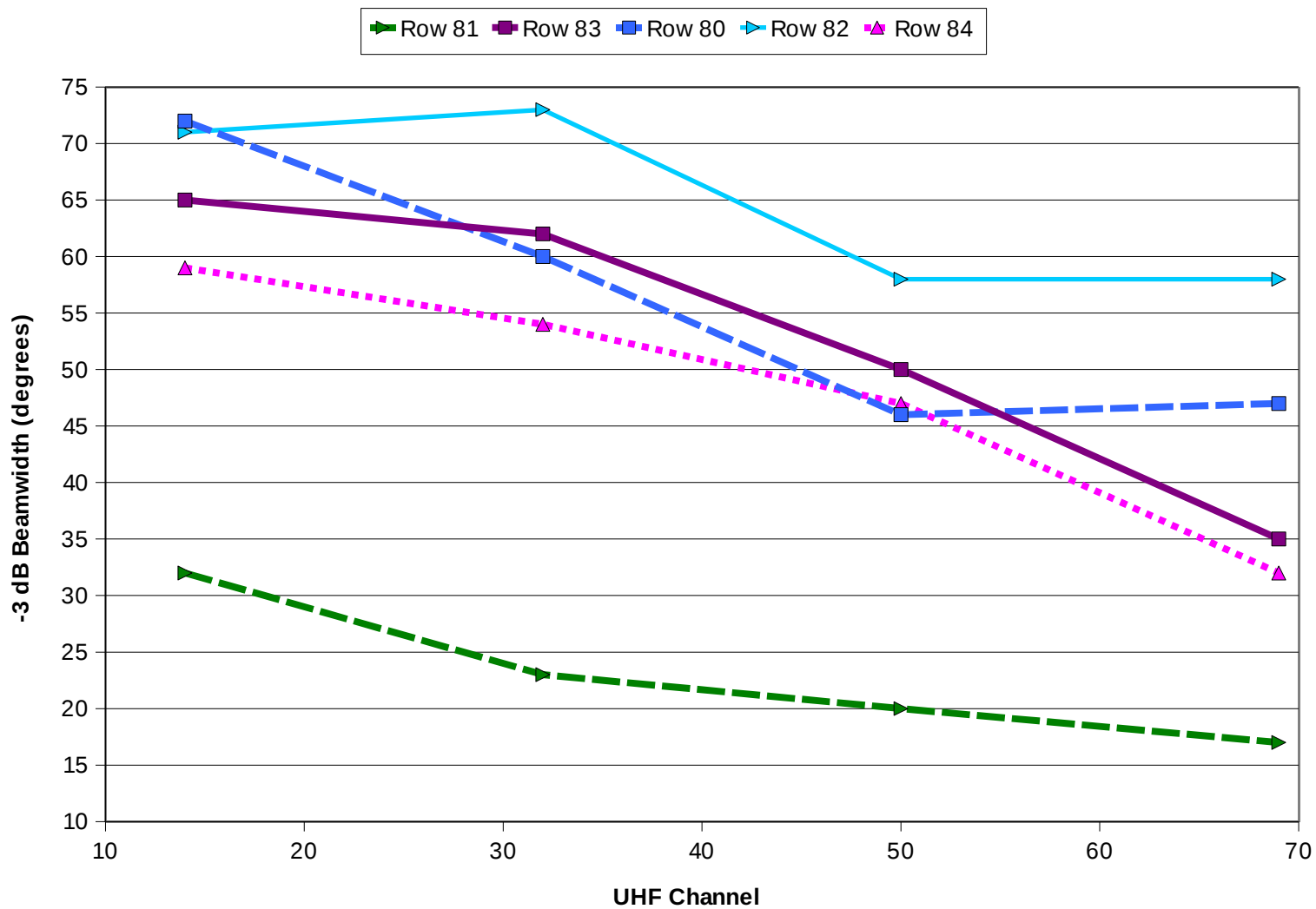




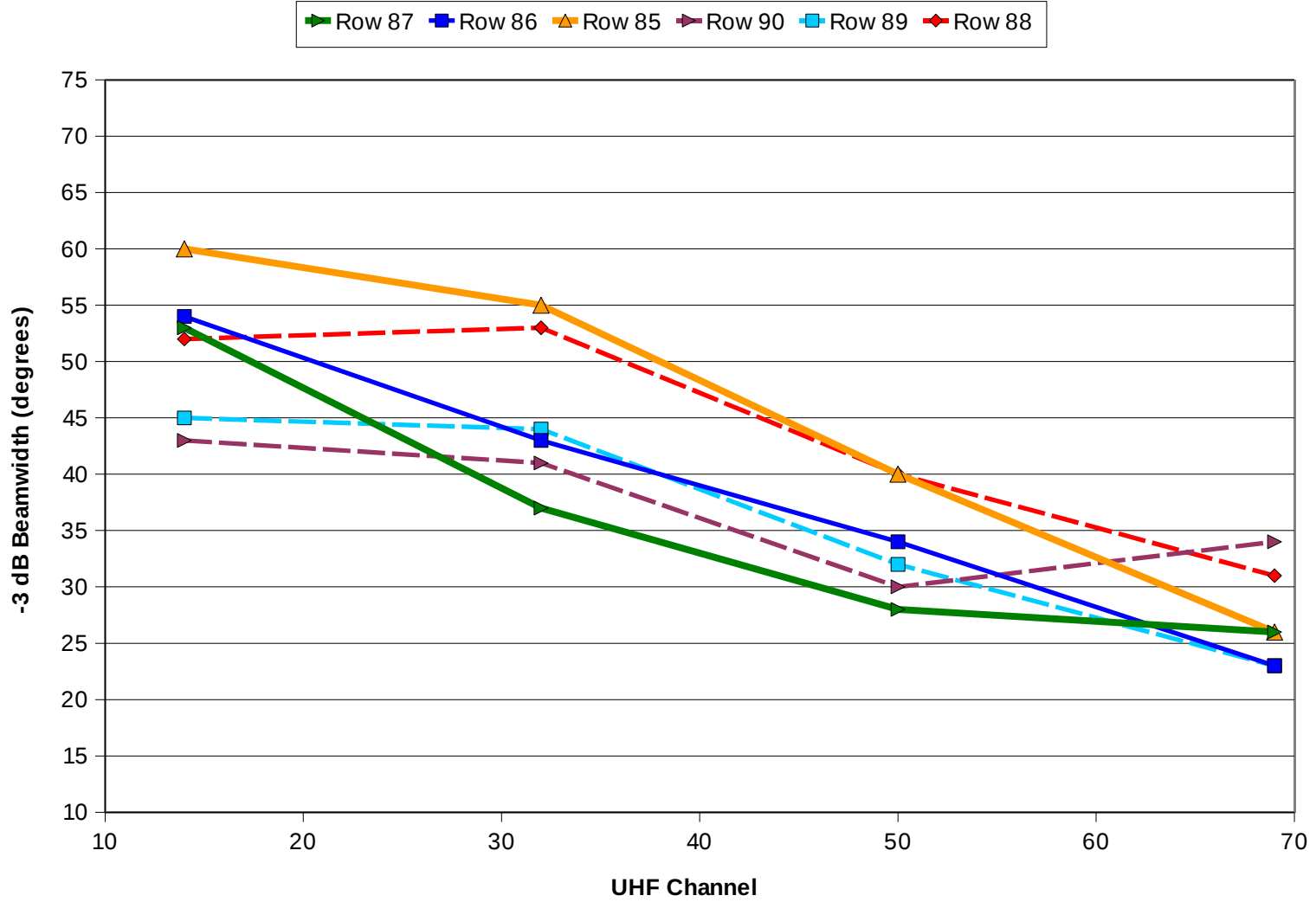
Beamwidth (-3 dB) for C-M UHF Antennas



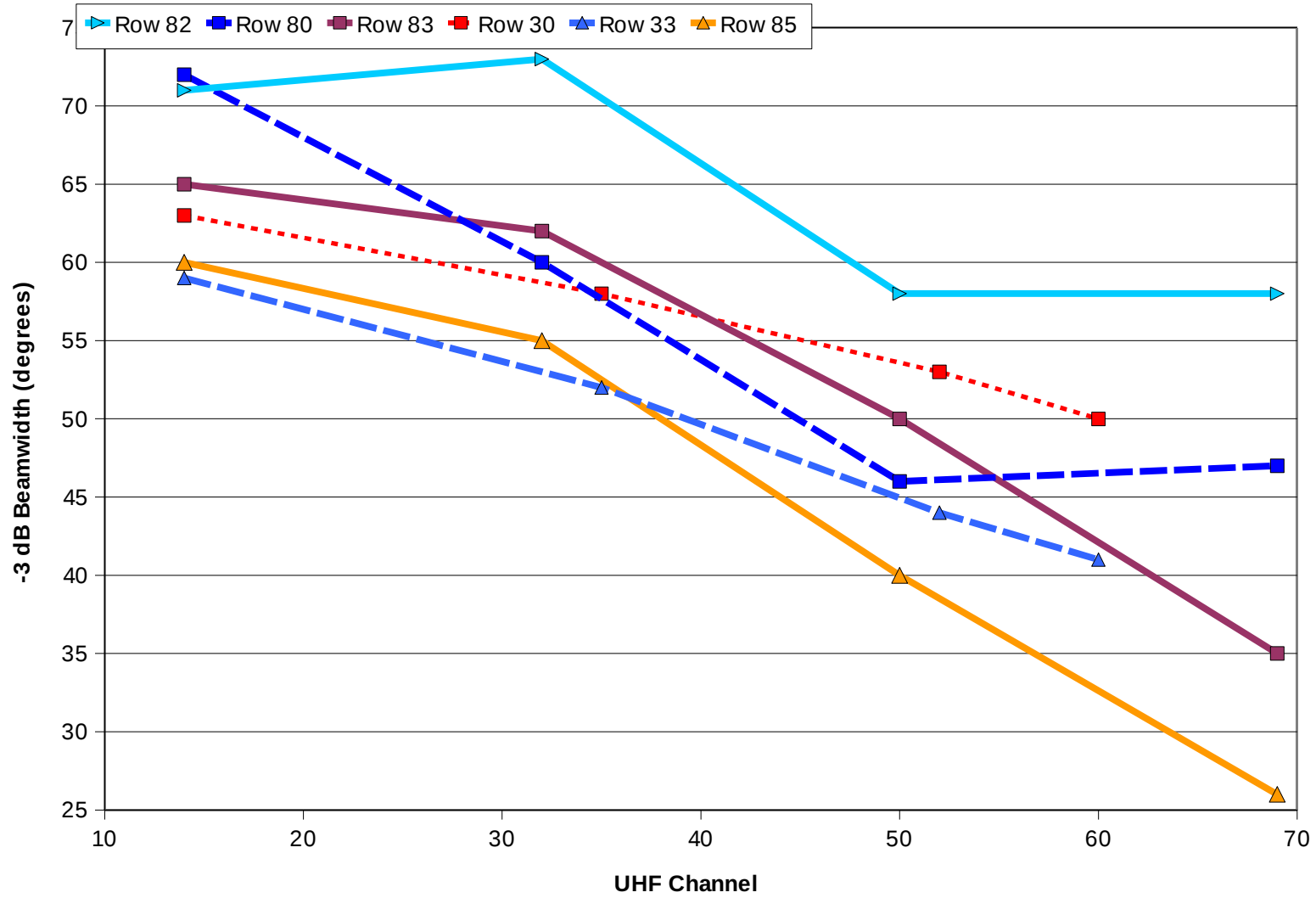
Beamwidth (-3 dB) for W-G UHF Antennas



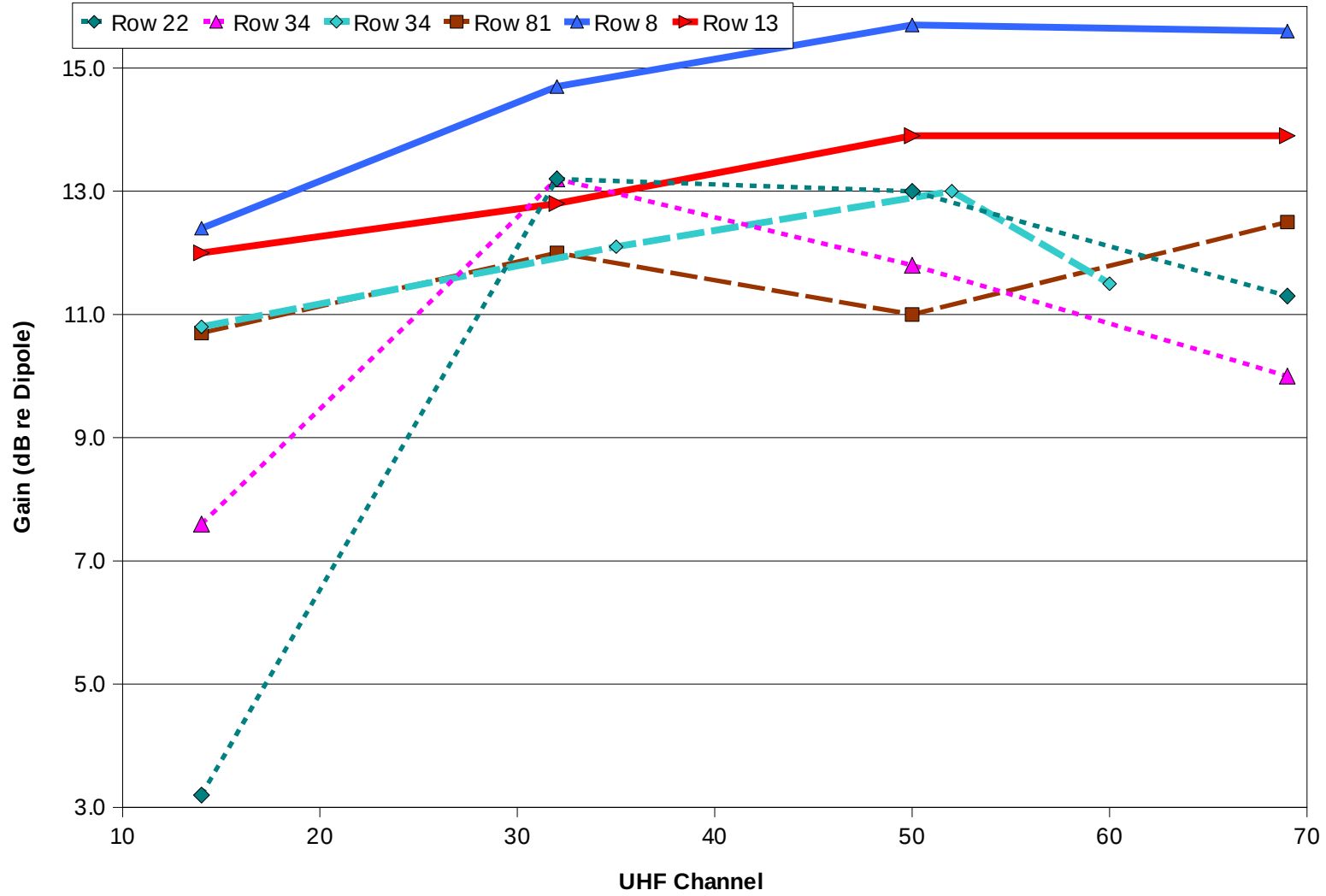
Beamwidth (-3 dB) for W-G UHF Yagis with Corner Reflectors



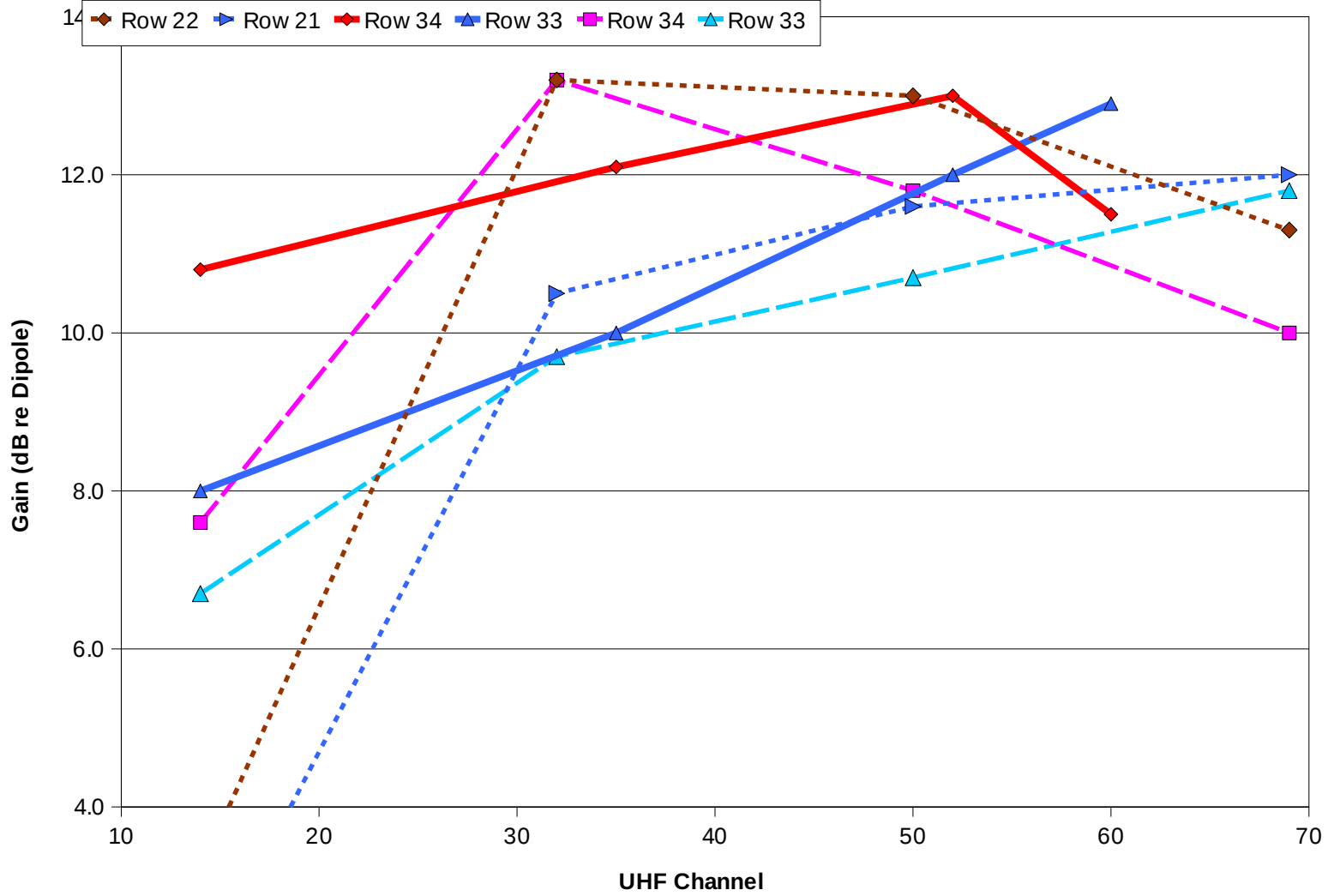
Wide Beamwidth UHF Antennas



NEC vs Spec vs Measured Gain for 8-Bay UHF Antennas



NEC vs Spec Gain for Multi-Bay UHF Antennas



NEC vs Spec Gain for Corner Yagi UHF Antennas

