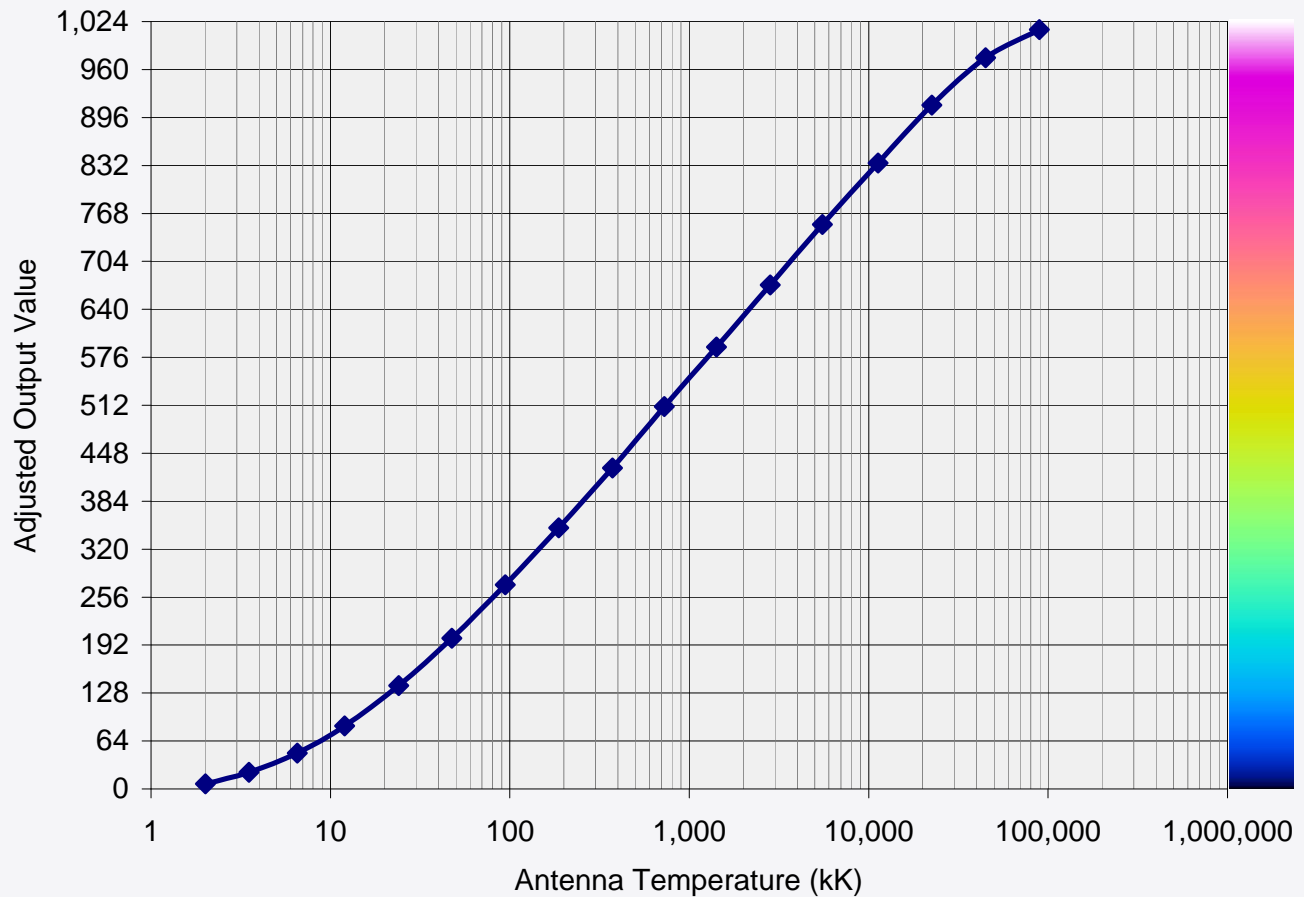


UFRO FS-200 (10-bit) Spectrograph Step Calibration – 26-Jul-2015

Adjusted Output Value & Color vs Antenna Temperature for 4.3 dB Feed Loss

Color Bar Corresponds to RSS Color Offset = 100, Color Gain = 1.17

Adjusted Output Value = (Raw ADC Output Value - Color Offset) * Color Gain



UFRO FS-200 (10-bit) Spectrograph Step Calibration

26-Jul-2015 17:26 UTC

HP461A noise source + Kay 431D step attenuator

Calibration Plane: 90 Deg Hybrid Inputs

T0 (K)	290
Noise source temperature (MK)	34.0
Feed loss, cal plane to antenna (dB)	4.3
Receiver noise figure (dB)	3.4

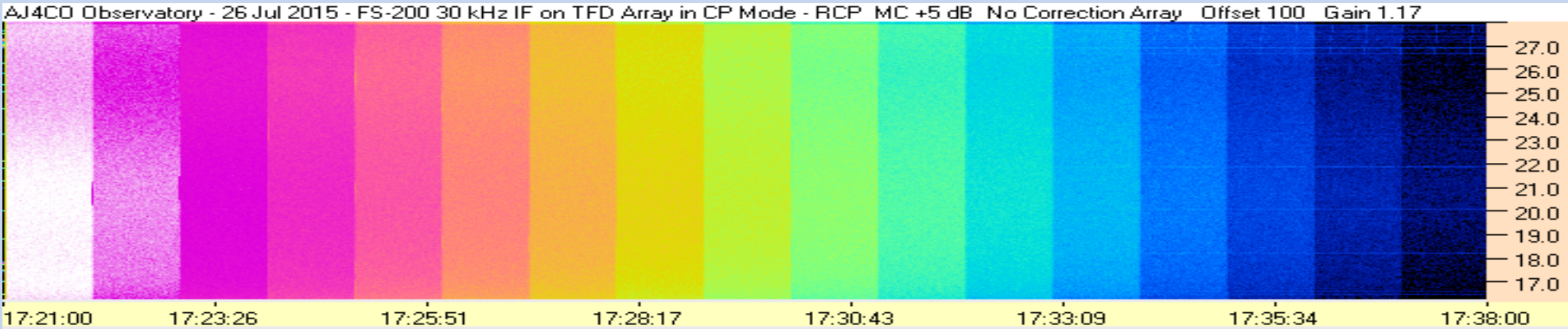
RSS Color Offset:	100	150	0.00	0.00
RSS Color Gain:	1.17	1.50	1.00	1.00

Solar Jupiter Custom 1 Custom 2
 ↓ ↓ ↓ ↓

Att. dB	Source Temp (kK)	Equiv. Ant. Temp. (kK)	50 s Avg. @ Average MHz
0.1	33,226	89,429	966
3.1	16,653	44,821	934
6.1	8,347	22,464	880
9.1	4,184	11,259	814
12.2	2,049	5,515	744
15.1	1,051	2,828	675
18.1	527	1,418	604
21.0	271	727	536
23.9	139	373	466
26.9	70	187	398
29.9	35	94	333
32.9	18	47	272
35.9	9	24	218
39.0	5	12	172
41.8	3	7	141
44.8	2	4	119
47.8	1	2	106

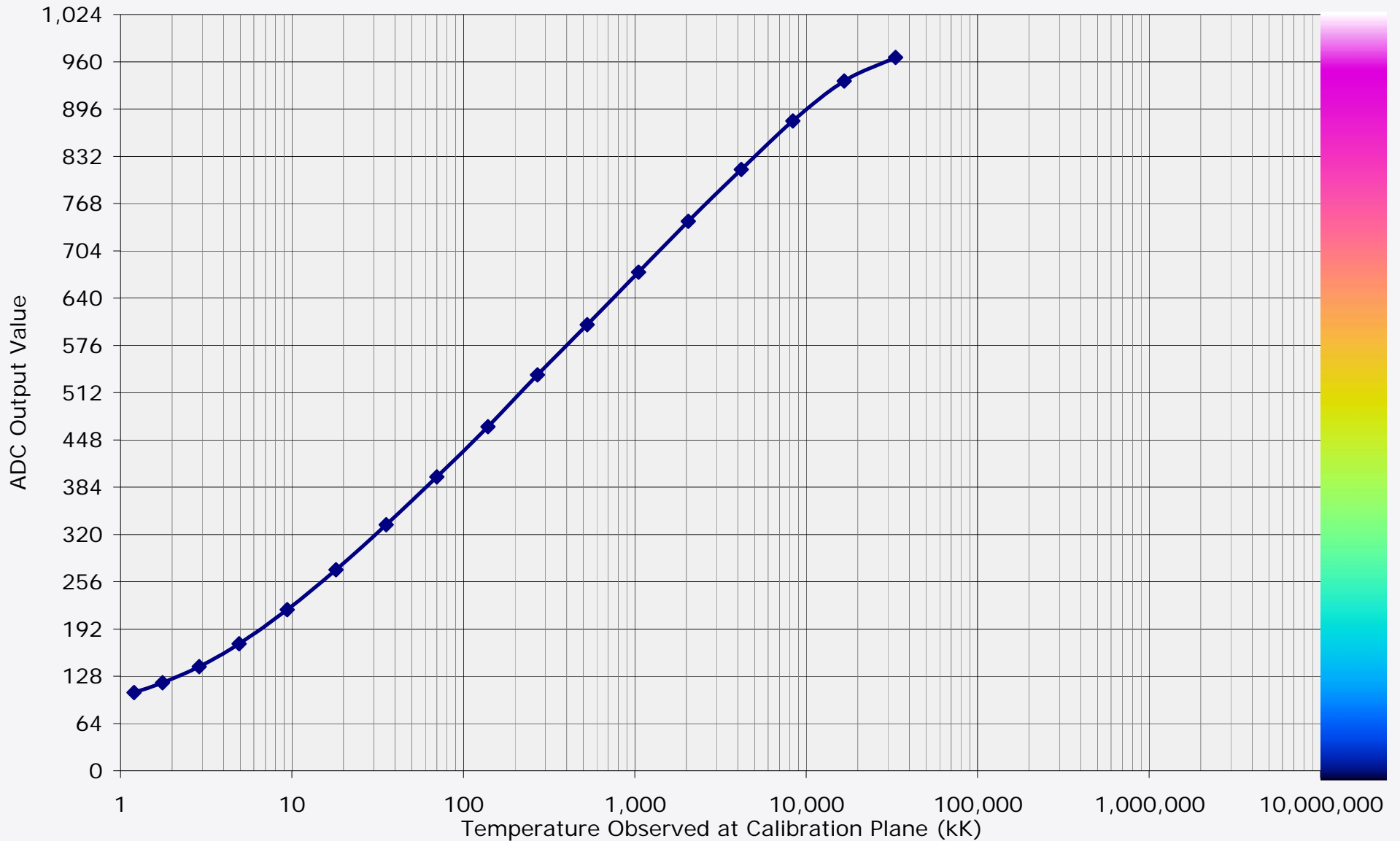
Adjusted Value	Adjusted Value	Adjusted Value	Adjusted Value
1013	1024	966	966
976	1024	934	934
913	1024	880	880
835	996	814	814
753	891	744	744
673	788	675	675
590	681	604	604
510	579	536	536
428	474	466	466
349	372	398	398
273	275	333	333
201	183	272	272
138	102	218	218
84	33	172	172
48	0	141	141
22	0	119	119
7	0	106	106

Image Below
 Offset: 100
 Gain: 1.17



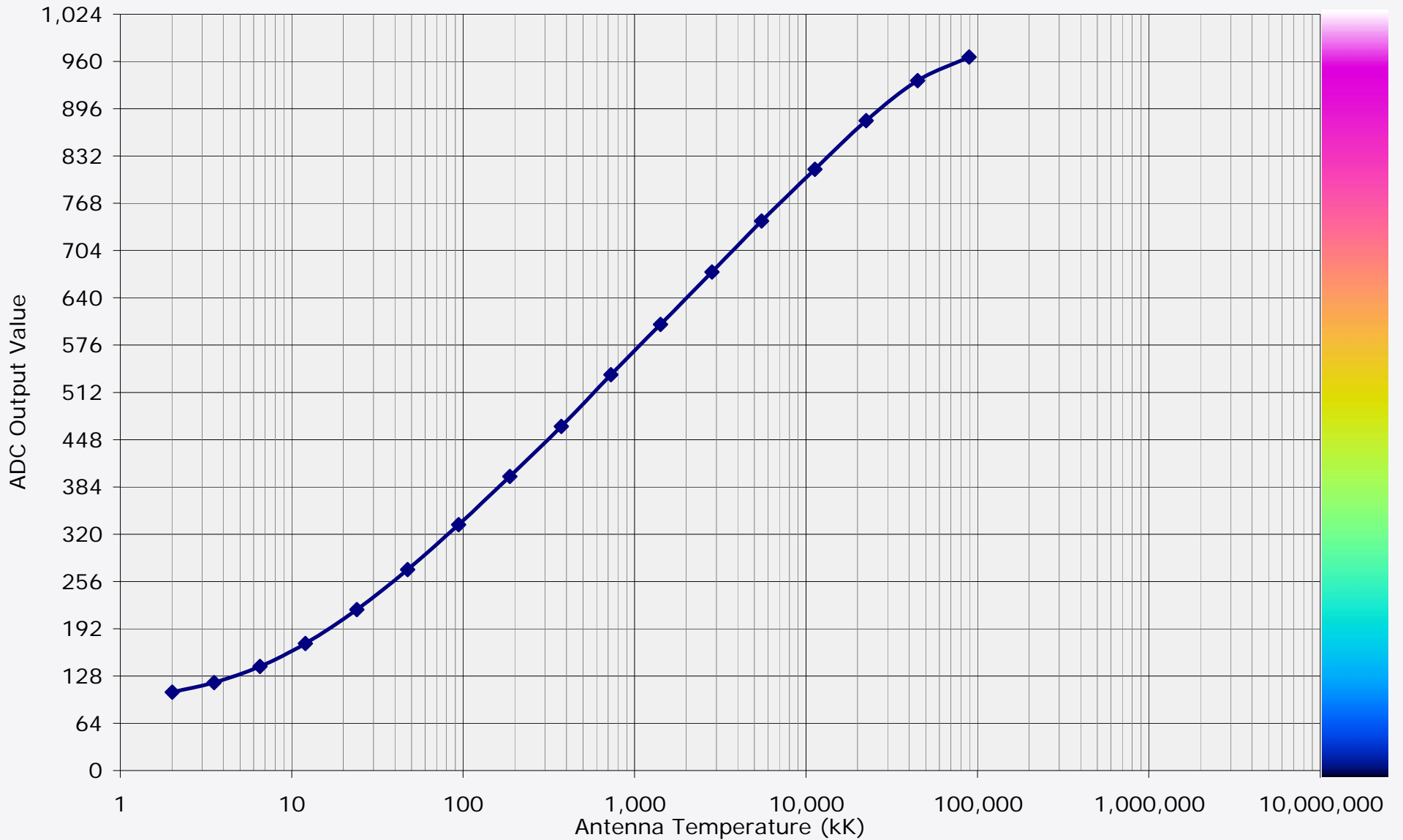
Raw ADC Output Value & Color vs Temperature Observed at 90 Deg Hybrid Inputs

Color Bar Corresponds to RSS Color Offset = 0, Color Gain = 1



Raw ADC Output Value & Color vs Antenna Temperature for 4.3 dB Feed Loss

Color Bar Corresponds to RSS Color Offset = 0, Color Gain = 1



UFRO FS-200 (10-bit) Spectrograph Step Calibration

26-Jul-2015 17:26 UTC

Radio-Sky Spectrograph Configuration:

Offset: 100

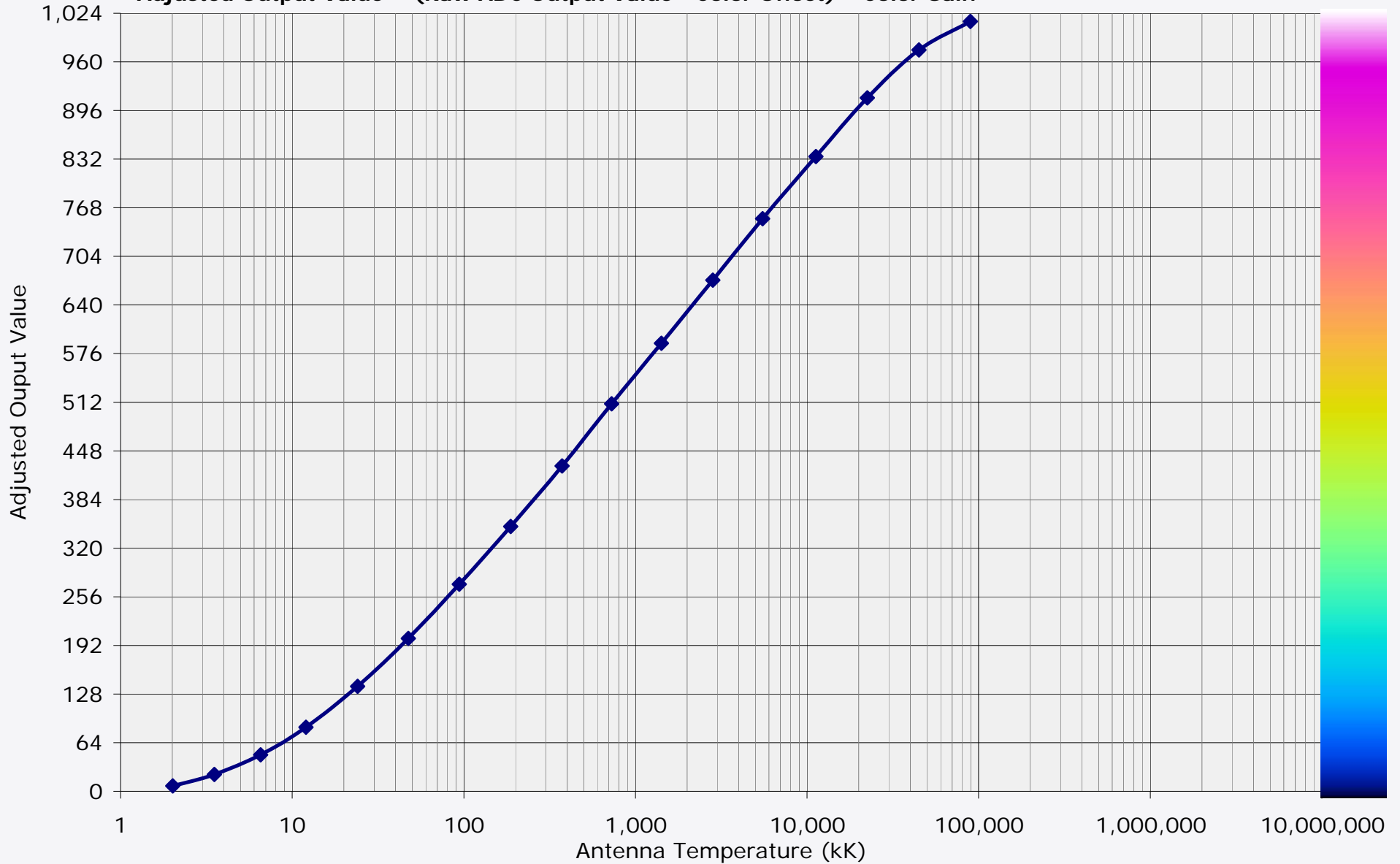
Gain: 1.17

Adjusted Output Value & Color vs Antenna Temperature for 4.3 dB Feed Loss

Color Bar Corresponds to RSS Color Offset = 100, Color Gain = 1.17

Adjusted Output Value = (Raw ADC Output Value - Color Offset) * Color Gain

SOLAR



UFRO FS-200 (10-bit) Spectrograph Step Calibration

26-Jul-2015 17:26 UTC

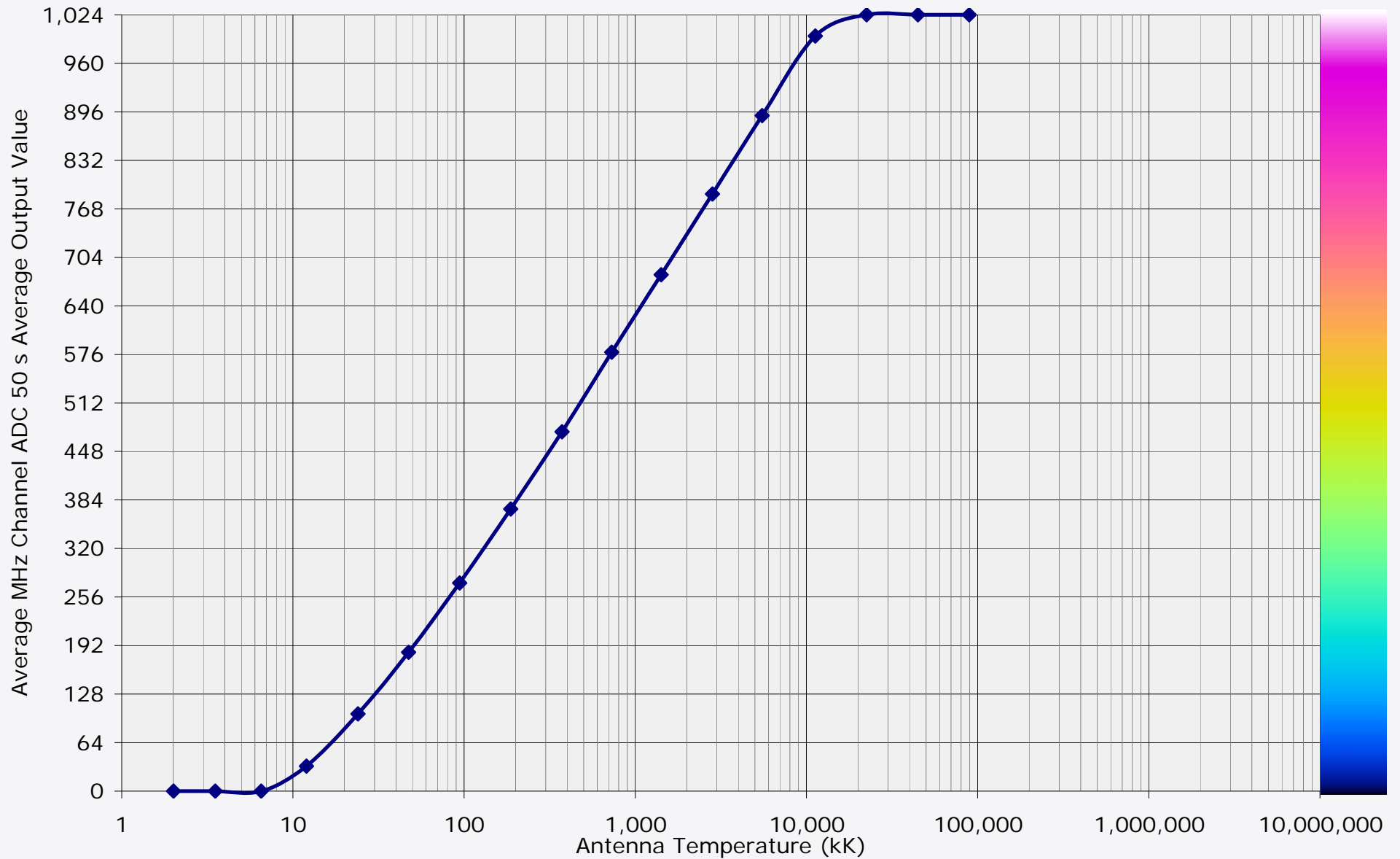
Radio-Sky Spectrograph Configuration:

Offset: 150

Gain: 1.50

UFRO FS-200 (10-bit) Spectrograph Step Calibration – 26-Jul-2015
Adjusted Output Value & Color vs Antenna Temperature for 4.3 dB Feed Loss

JUPITER



UFRO FS-200 (10-bit) Spectrograph Step Calibration

26-Jul-2015 17:26 UTC

Radio-Sky Spectrograph Configuration:

Offset: 0

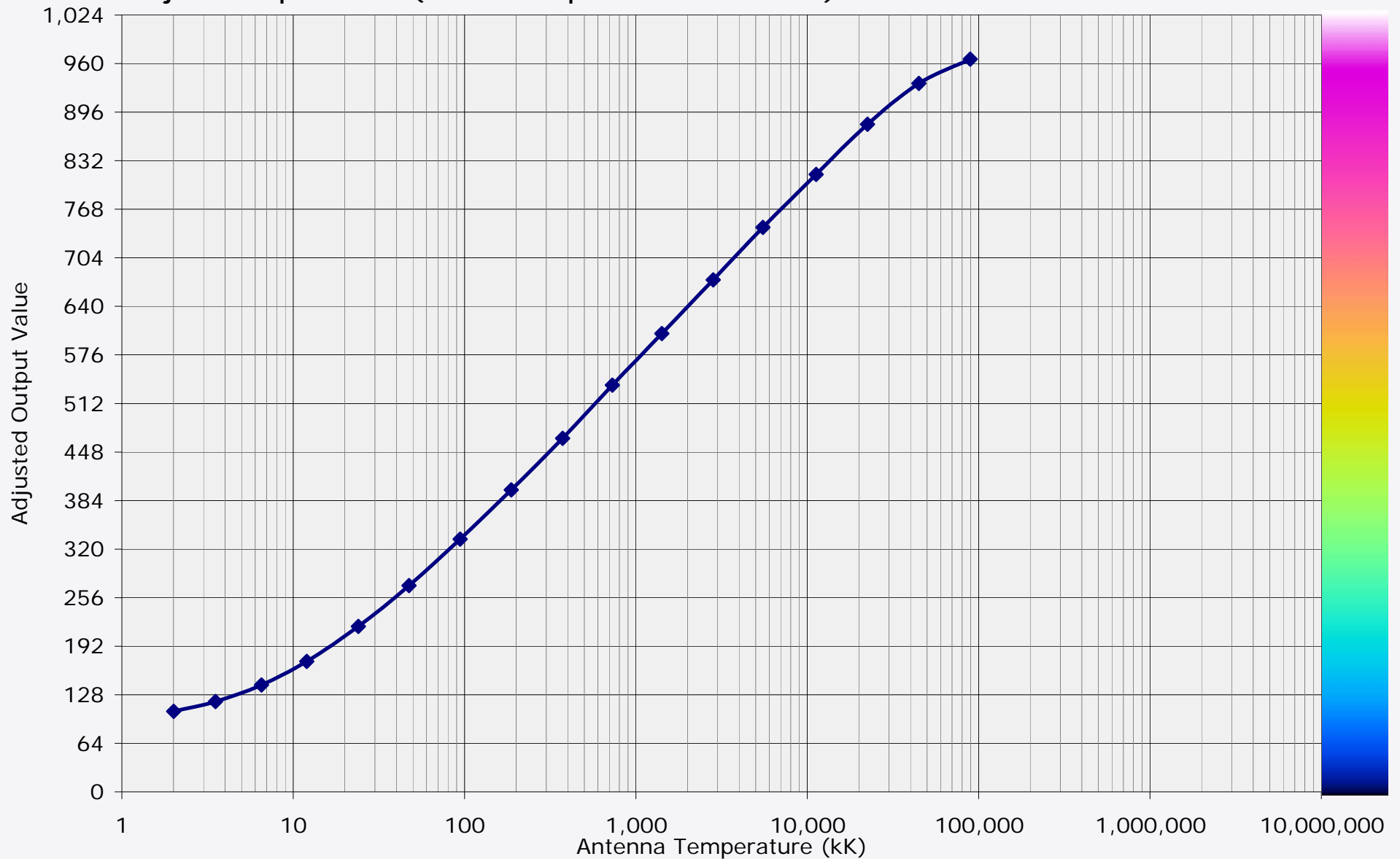
Gain: 1.00

Adjusted Output Value & Color vs Antenna Temperature for 4.3 dB Feed Loss

Color Bar Corresponds to RSS Color Offset = 0, Color Gain = 1.00

Adjusted Output Value = (Raw ADC Output Value - Color Offset) * Color Gain

CUSTOM 1



UFRO FS-200 (10-bit) Spectrograph Step Calibration

26-Jul-2015 17:26 UTC

Radio-Sky Spectrograph Configuration:

Offset: 0

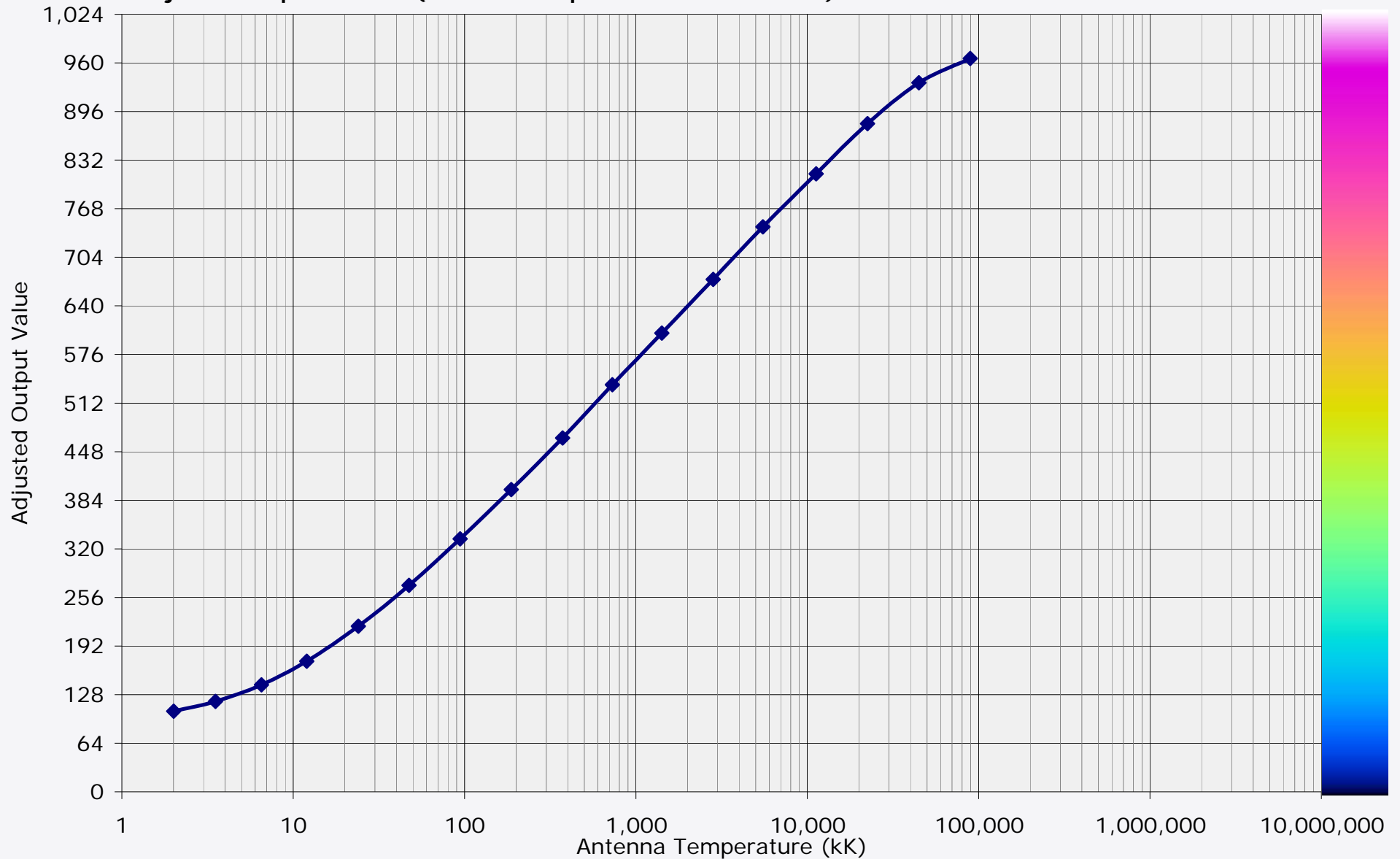
Gain: 1.00

Adjusted Output Value & Color vs Antenna Temperature for 4.3 dB Feed Loss

Color Bar Corresponds to RSS Color Offset = 0, Color Gain = 1.00

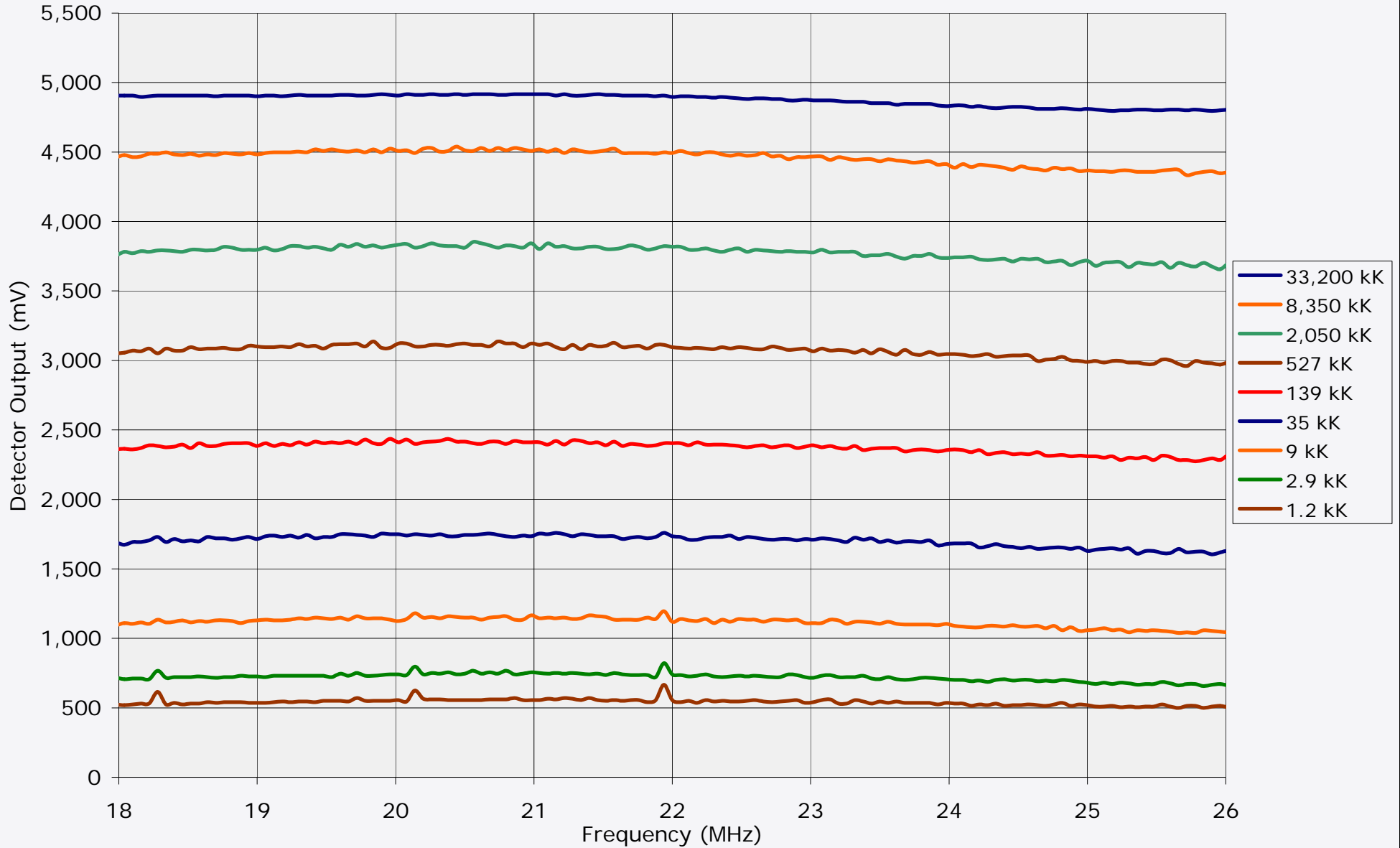
Adjusted Output Value = (Raw ADC Output Value - Color Offset) * Color Gain

CUSTOM 2



Detector Output vs Frequency vs Temperature Observed at 90 Deg Hybrid Inputs

ADC Voltage Reference = 5.164 V Receiver Noise Figure = 3.4 dB



Detector Response Averaged Over Adjacent 3 dB Calibration Steps

