

Doug Vernier Telecommunications Consultants

K210AF - Move to Channel 219 - Displacement

University Of Wyoming

REFERENCE
42 04 35.0 N.
104 11 28.0 W.

CH# 219D - 91.7 MHz, Pwr= 0.25 kW, HAAT= -1.3 M, COR= 1295 M
Average Protected F(50-50)= 7.09 km
Omni-directional

DISPLAY DATES
DATA 02-19-15
SEARCH 02-19-15

CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*OUT* (Overlap in km)
218D Scottsbluff	K218DL	LIC_C_ NE	131.4 311.7	39.75 BLFT20070322AEA	41 50 21.0 103 49 53.0	0.023 231	16.9 1524	11.6 Educational Media Foundati	15.1
216C Alliance	KTNE-FM	LIC_CY NE	105.3 286.0	97.53 BLED19900515KB	41 50 24.0 103 03 18.0	100.000 404	11.4 1669	78.6 Nebraska Educational Tel ec	17.8
220CO Laramie	KUWR	LIC_CN WY	231.3 50.5	135.14 BLED19941031KW	41 18 36.0 105 27 17.0	100.000 335	108.5 2739	74.5 University Of Wyoming	49.4
06 D Crawford	K06KR-D	LI_D_N NE	44.2 224.7	92.49 BLDTV20081125ANV	42 40 13.0 103 24 09.0	0.028 100	1.6 1179	3.0 Nebraska Educational Tel ec	4.6R 87.9M
06 D Chadron	K06JC-D	LI_D_N NE	49.5 230.3	127.11 BLDTV20081121AKA	42 48 46.8 103 00 22.0	0.066 155	1.6 1153	5.4 Nebraska Educational Tel ec	7.0R 120.1M
06NT Denver	KXDP-LP	LI_D_N CO	201.4 20.7	257.63 BLTVL20100716ABT	39 54 48.0 105 17 33.0	3.000 879	1.6 2536	3.0 Syncom Media Group, Inc.	131.5R 126.1M
06 T Denver	KXDP-LP	CP_D_N CO	201.4 20.7	257.63 BDFCDVL20141003ACE	39 54 48.0 105 17 33.0	3.000 879	1.6 2536	3.0 Syncom Media Group, Inc.	131.5R 126.1M
06 2 Hayes Center	KWNB-DR	APR_HN NE	120.4 302.5	309.25 BPRM20080801BDB	40 37 32.0 101 01 45.0	3.000 221	1.1 1160	22.4 Pappas Telecasting Of Cent	131.5R 177.8M
06 2C Hayes Center	KWNB-TV	LI_HN NE	120.4 302.5	309.25 BLCDT20090604ABL	40 37 32.0 101 01 45.0	11.900 221	1.6 1160	3.0 Pappas Telecasting Of Cent	131.5R 177.8M
06 2C Hayes Center	KWNB-TV	AP_HN NE	120.4 302.5	309.25 BDSTA20121024ABA	40 37 32.0 101 01 45.0	6.300 221	1.6 1160	3.0 Pappas Telecasting Of Cent	131.5R 177.8M
06 2C Hayes Center	KWNB-TV	AP_HN NE	120.4 302.5	309.25 BDSTA20110930BHG	40 37 32.0 101 01 45.0	6.300 221	1.6 1160	3.0 Pappas Telecasting Of Cent	131.5R 177.8M
06 D Broadus	K06AA-D	LI__N MT	346.2 165.4	382.34 BLDTV20101103ACF	45 24 38.0 105 21 28.0	0.088 160	1.6 1078	3.0 Powder River T.v. Board	131.5R 250.8M
06 D Aspen	K06HU-D	LI_D_N CO	216.0 34.3	387.50 BLDTV20130103AEF	39 13 33.0 106 50 08.0	0.006 594	1.6 2855	3.0 Pitkin County Translator D	131.5R 256.0M
06 D New Castle	K06GW-D	LI_D_N CO	226.3 44.1	396.12 BLDTV20101013AAO	39 33 56.0 107 31 57.0	0.005 251	1.6 1940	3.0 Rocky Mountain Public Broa	131.5R 264.6M

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone= West Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
Incoming contour overlap is ignored.
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

HOW TO READ THE FM COMPUTER PRINT-OUT

Translator Reference Station

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. The 60 dBu protected contour is predicted from the Commission's F(50-50) table. Contour distances are in kilometers and are predicted using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90. The column labeled "* OUT *" shows the greatest distance in kilometers of overlap (or smallest distance of clearance) between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing contour overlap. Since translators are able to receive interference there is no "In" or incoming column in this report.

Listed antenna heights and power are the specific antenna heights and power from the FCC database.

Under the "AZI" column, the first row of numbers indicate the True North azimuths from the reference station toward the database stations, while the numbers in the second row indicate the reverse bearings from the database stations to the reference station. Bearings are calculated using spherical trigonometry.

The columns labeled "INT" and "PRO" contain the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships the minimum spacings the "IN" and "OUT" columns change their significance. The letter "R" stands for the minimum **required** distance in kilometers, while the letter "M" in the next column follows the **available clear space** separation in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

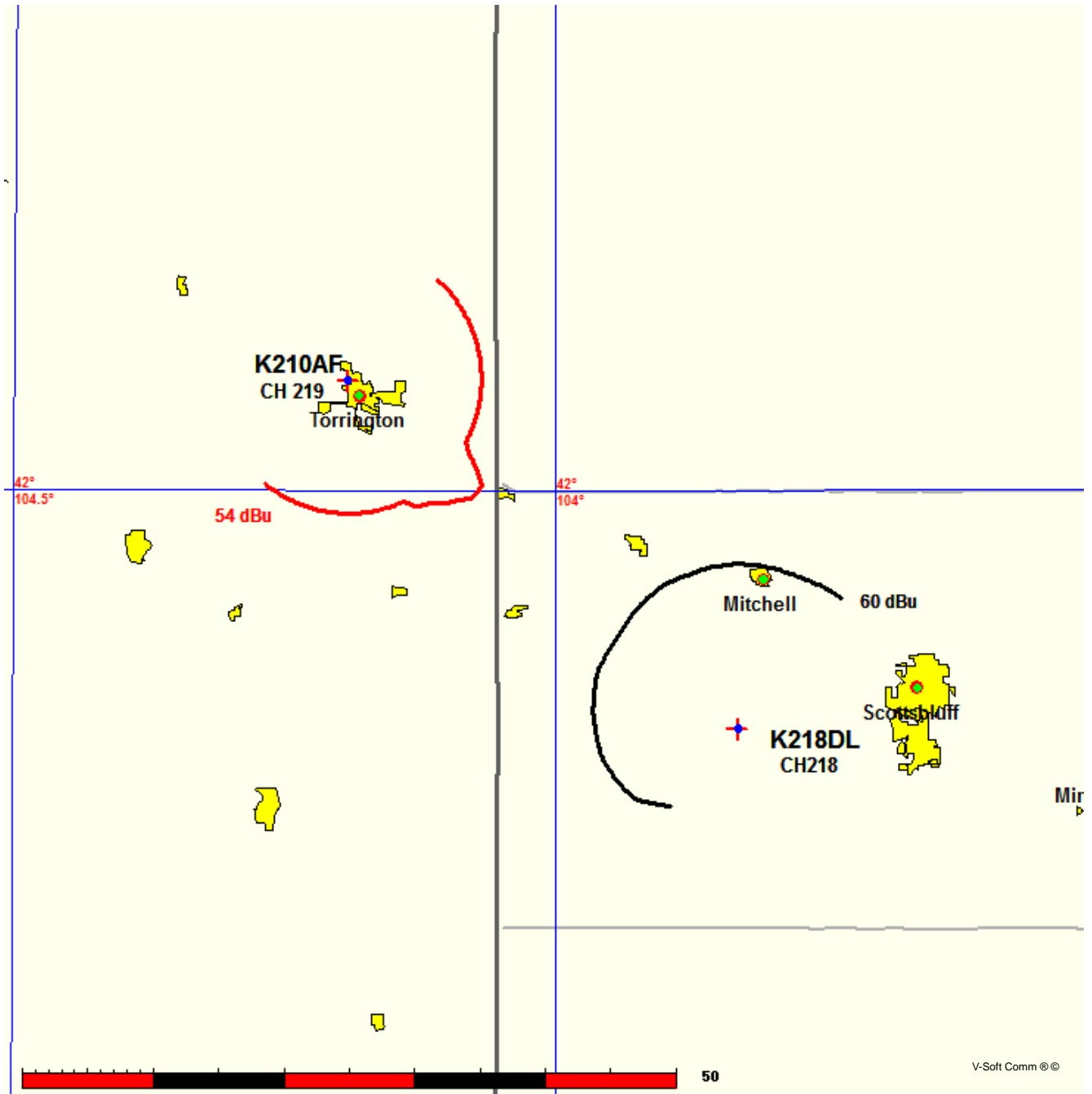
The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. "Z" indicates a 73.215 directional. An "N" indicates it is a 73.215 station that operates with an omni-directional antenna. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a "Y" if the antenna uses beam tilt or an "X" if the commission is not sure, otherwise it will be an "N" or left blank.

K210AF (219) vs. K218DL
University Of Wyoming

FMCommander Single Allocation Study - 02-19-2015 - FCC NGDC 30 Sec
K210AF's Overlaps (In= 13.57 km, Out= 15.06 km)

K210AF CH 219 D
Lat= 42 04 35.0, Lng= 104 11 28.0
0.25 kW -1.3 M HAAT, 1295 M COR
Prot.= 60 dBu, Intef.= 54 dBu

K218DL CH 218 D BLFT20070322AEA
Lat= 41 50 21.0, Lng= 103 49 53.0
0.023 kW 230.6 M HAAT, 1524 M COR
Prot.= 60 dBu, Intef.= 54 dBu



02-19-2015

Terrain Data: FCC NGDC 30 Sec

FMOver Analysis

K218DL BLFT20070322AEA

K210AF

Channel = 218D

Max ERP = 0.023 kW

RCAMSL = 1524 M

N. Lat. 41 50 21.0

W. Lng. 103 49 53.0

Protected

60 dBu

Channel = 219D

Max ERP = 0.25 kW

RCAMSL = 1295 M

N. Lat. 42 04 35.0

W. Lng. 104 11 28.0

Interfering

54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
252.0	000.0230	0204.4	010.3	145.9	000.2500	0038.4	035.7	35.73	
253.0	000.0230	0206.6	010.4	145.9	000.2500	0038.4	035.5	35.80	
254.0	000.0230	0209.0	010.4	145.9	000.2500	0038.4	035.3	35.87	
255.0	000.0230	0211.5	010.5	145.9	000.2500	0038.4	035.1	35.95	
256.0	000.0230	0214.0	010.5	145.9	000.2500	0038.4	034.9	36.02	
257.0	000.0230	0215.7	010.6	145.8	000.2500	0038.4	034.7	36.10	
258.0	000.0230	0216.9	010.6	145.8	000.2500	0038.4	034.5	36.18	
259.0	000.0230	0217.8	010.6	145.7	000.2500	0038.5	034.4	36.26	
260.0	000.0230	0218.7	010.7	145.6	000.2500	0038.6	034.2	36.35	
261.0	000.0230	0219.6	010.7	145.5	000.2500	0038.7	034.0	36.44	
262.0	000.0230	0220.3	010.7	145.4	000.2500	0038.8	033.8	36.53	
263.0	000.0230	0221.0	010.7	145.3	000.2500	0038.9	033.7	36.62	
264.0	000.0230	0221.9	010.7	145.2	000.2500	0039.0	033.5	36.71	
265.0	000.0230	0223.2	010.8	145.0	000.2500	0039.1	033.3	36.81	
266.0	000.0230	0224.7	010.8	144.9	000.2500	0039.2	033.1	36.90	
267.0	000.0230	0226.1	010.8	144.8	000.2500	0039.3	032.9	37.00	
268.0	000.0230	0227.4	010.9	144.7	000.2500	0039.5	032.8	37.09	
269.0	000.0230	0228.5	010.9	144.5	000.2500	0039.6	032.6	37.19	
270.0	000.0230	0229.6	010.9	144.4	000.2500	0039.8	032.4	37.30	
271.0	000.0230	0230.7	010.9	144.2	000.2500	0039.9	032.3	37.40	
272.0	000.0230	0232.4	011.0	144.1	000.2500	0040.1	032.1	37.50	
273.0	000.0230	0234.1	011.0	143.9	000.2500	0040.3	031.9	37.61	
274.0	000.0230	0235.7	011.0	143.7	000.2500	0040.4	031.7	37.72	
275.0	000.0230	0237.4	011.1	143.6	000.2500	0040.6	031.6	37.83	
276.0	000.0230	0238.5	011.1	143.4	000.2500	0040.8	031.4	37.95	
277.0	000.0230	0239.6	011.1	143.1	000.2500	0041.1	031.2	38.06	
278.0	000.0230	0240.6	011.2	142.9	000.2500	0041.3	031.1	38.18	
279.0	000.0230	0241.4	011.2	142.7	000.2500	0041.5	030.9	38.30	
280.0	000.0230	0242.1	011.2	142.5	000.2500	0041.8	030.8	38.42	
281.0	000.0230	0242.8	011.2	142.2	000.2500	0042.1	030.7	38.54	
282.0	000.0230	0243.8	011.2	141.9	000.2500	0042.3	030.5	38.66	
283.0	000.0230	0245.1	011.3	141.7	000.2500	0042.5	030.4	38.78	
284.0	000.0230	0246.4	011.3	141.4	000.2500	0042.8	030.2	38.90	
285.0	000.0230	0247.9	011.3	141.2	000.2500	0043.0	030.1	39.02	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
286.0	000.0230	0249.3	011.3	140.9	000.2500	0043.2	029.9	39.14
287.0	000.0230	0250.8	011.4	140.6	000.2500	0043.4	029.8	39.25
288.0	000.0230	0252.3	011.4	140.3	000.2500	0043.6	029.7	39.36
289.0	000.0230	0253.8	011.4	140.0	000.2500	0043.8	029.5	39.47
290.0	000.0230	0255.0	011.5	139.7	000.2500	0044.0	029.4	39.58
291.0	000.0230	0256.1	011.5	139.4	000.2500	0044.2	029.3	39.68
292.0	000.0230	0256.9	011.5	139.1	000.2500	0044.4	029.2	39.79
293.0	000.0230	0257.3	011.5	138.7	000.2500	0044.7	029.1	39.88
294.0	000.0230	0257.4	011.5	138.4	000.2500	0044.9	029.0	39.99
295.0	000.0230	0257.3	011.5	138.0	000.2500	0045.2	028.9	40.09
296.0	000.0230	0257.0	011.5	137.6	000.2500	0045.5	028.8	40.19
297.0	000.0230	0256.3	011.5	137.3	000.2500	0045.9	028.8	40.30
298.0	000.0230	0255.6	011.5	136.9	000.2500	0046.4	028.7	40.42
299.0	000.0230	0255.0	011.5	136.5	000.2500	0046.9	028.7	40.54
300.0	000.0230	0254.6	011.5	136.1	000.2500	0047.4	028.6	40.66
301.0	000.0230	0254.5	011.5	135.7	000.2500	0047.9	028.6	40.79
302.0	000.0230	0254.6	011.5	135.3	000.2500	0048.4	028.5	40.91
303.0	000.0230	0254.9	011.5	134.9	000.2500	0048.9	028.5	41.03
304.0	000.0230	0255.5	011.5	134.5	000.2500	0049.3	028.4	41.14
305.0	000.0230	0256.1	011.5	134.2	000.2500	0049.7	028.4	41.23
306.0	000.0230	0256.6	011.5	133.8	000.2500	0050.0	028.3	41.31
307.0	000.0230	0256.9	011.5	133.4	000.2500	0050.2	028.3	41.37
308.0	000.0230	0257.2	011.5	132.9	000.2500	0050.3	028.3	41.41
309.0	000.0230	0257.8	011.5	132.5	000.2500	0050.4	028.2	41.44
310.0	000.0230	0258.6	011.6	132.1	000.2500	0050.4	028.2	41.46
311.0	000.0230	0259.5	011.6	131.7	000.2500	0050.5	028.2	41.48
312.0	000.0230	0260.5	011.6	131.3	000.2500	0050.5	028.2	41.50
313.0	000.0230	0261.5	011.6	130.9	000.2500	0050.5	028.1	41.51
314.0	000.0230	0262.9	011.7	130.5	000.2500	0050.5	028.1	41.53
315.0	000.0230	0264.5	011.7	130.1	000.2500	0050.5	028.1	41.55
316.0	000.0230	0266.0	011.7	129.6	000.2500	0050.5	028.1	41.55
317.0	000.0230	0267.5	011.8	129.2	000.2500	0050.4	028.1	41.53
318.0	000.0230	0268.8	011.8	128.8	000.2500	0050.2	028.1	41.50
319.0	000.0230	0270.3	011.8	128.4	000.2500	0049.9	028.1	41.44
320.0	000.0230	0271.8	011.8	127.9	000.2500	0049.4	028.1	41.36
321.0	000.0230	0273.6	011.9	127.5	000.2500	0048.8	028.1	41.24
322.0	000.0230	0275.3	011.9	127.1	000.2500	0048.1	028.1	41.10
323.0	000.0230	0276.8	012.0	126.7	000.2500	0047.3	028.1	40.93
324.0	000.0230	0278.1	012.0	126.2	000.2500	0046.3	028.2	40.73
325.0	000.0230	0279.1	012.0	125.8	000.2500	0045.3	028.2	40.51
326.0	000.0230	0279.9	012.0	125.4	000.2500	0044.3	028.3	40.29
327.0	000.0230	0280.6	012.0	125.0	000.2500	0043.3	028.3	40.04
328.0	000.0230	0281.3	012.1	124.6	000.2500	0042.2	028.4	39.79
329.0	000.0230	0282.3	012.1	124.2	000.2500	0041.2	028.4	39.53
330.0	000.0230	0283.4	012.1	123.8	000.2500	0040.2	028.5	39.28
331.0	000.0230	0284.5	012.1	123.4	000.2500	0039.2	028.6	39.02
332.0	000.0230	0285.6	012.1	123.0	000.2500	0038.2	028.7	38.77
333.0	000.0230	0286.4	012.2	122.6	000.2500	0037.3	028.8	38.52
334.0	000.0230	0286.9	012.2	122.2	000.2500	0036.4	028.9	38.27
335.0	000.0230	0287.3	012.2	121.9	000.2500	0035.6	029.0	38.04
336.0	000.0230	0287.8	012.2	121.5	000.2500	0034.9	029.1	37.82

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
337.0	000.0230	0288.1	012.2	121.1	000.2500	0034.2	029.2	37.61
338.0	000.0230	0288.2	012.2	120.8	000.2500	0033.7	029.3	37.41
339.0	000.0230	0288.1	012.2	120.5	000.2500	0033.1	029.4	37.23
340.0	000.0230	0288.0	012.2	120.2	000.2500	0032.7	029.6	37.05
341.0	000.0230	0287.9	012.2	119.9	000.2500	0032.3	029.7	36.89
342.0	000.0230	0287.9	012.2	119.5	000.2500	0031.9	029.9	36.73
343.0	000.0230	0288.2	012.2	119.2	000.2500	0031.5	030.0	36.58
344.0	000.0230	0288.7	012.2	118.9	000.2500	0031.2	030.1	36.43
345.0	000.0230	0289.2	012.2	118.6	000.2500	0030.8	030.3	36.28
346.0	000.0230	0289.9	012.2	118.3	000.2500	0030.5	030.4	36.13
347.0	000.0230	0290.8	012.3	118.0	000.2500	0030.1	030.6	35.98
348.0	000.0230	0291.8	012.3	117.8	000.2500	0029.7	030.7	35.89
349.0	000.0230	0292.9	012.3	117.5	000.2500	0029.3	030.9	35.82
350.0	000.0230	0293.7	012.3	117.2	000.2500	0029.0	031.0	35.75
351.0	000.0230	0294.4	012.3	116.9	000.2500	0028.7	031.2	35.67
352.0	000.0230	0294.7	012.3	116.7	000.2500	0028.4	031.4	35.60
353.0	000.0230	0294.8	012.3	116.5	000.2500	0028.1	031.6	35.53
354.0	000.0230	0295.0	012.3	116.3	000.2500	0027.8	031.7	35.45
355.0	000.0230	0295.4	012.4	116.0	000.2500	0027.5	031.9	35.38
356.0	000.0230	0295.8	012.4	115.8	000.2500	0027.3	032.1	35.31
357.0	000.0230	0296.3	012.4	115.6	000.2500	0027.0	032.3	35.24
358.0	000.0230	0297.0	012.4	115.4	000.2500	0026.8	032.5	35.17
359.0	000.0230	0297.7	012.4	115.2	000.2500	0026.6	032.6	35.10
000.0	000.0230	0297.9	012.4	115.1	000.2500	0026.4	032.8	35.02
001.0	000.0230	0297.8	012.4	114.9	000.2500	0026.2	033.0	34.95
002.0	000.0230	0297.8	012.4	114.8	000.2500	0026.1	033.2	34.87
003.0	000.0230	0297.6	012.4	114.6	000.2500	0025.9	033.4	34.79
004.0	000.0230	0297.3	012.4	114.5	000.2500	0025.8	033.6	34.72
005.0	000.0230	0297.1	012.4	114.4	000.2500	0025.7	033.8	34.64
006.0	000.0230	0296.8	012.4	114.3	000.2500	0025.6	034.0	34.56
007.0	000.0230	0296.7	012.4	114.2	000.2500	0025.5	034.3	34.49
008.0	000.0230	0296.3	012.4	114.1	000.2500	0025.4	034.5	34.41
009.0	000.0230	0295.9	012.4	114.0	000.2500	0025.3	034.7	34.33
010.0	000.0230	0295.4	012.4	113.9	000.2500	0025.3	034.9	34.26
011.0	000.0230	0295.6	012.4	113.8	000.2500	0025.2	035.1	34.18