Wind profiler MeteoSwiss

Specifications
Pulsed Doppler Radar
Frequency: 1290 MHz
Pulse repetition frequency: typ. 400 kHz
Pulse length: 0.7 or 2.8 ms
Duty cycle: typ. 5 %
Power measured in main feedline:

Peak rf envelope   500 W

Average rf envelope   0.1 – 100 W
Beam angles: 90 degrees (vertical) and 75 degrees (oblique)
Antenna size: 2.70 m x 2.70 m x 0.7 m, without clutter fences
Antenna size: 5 m x 5 m x 2.2 m, with clutter fences
Trailer: 5 m x 2.5 m x 2.5 m, less than 20 m away from antenna
Power: 3 x 400/230 V, 16 A
Communication: either 2 analog or 1 ISDN phone line(s)
A picture of the system can be found at:
http://www.met-office.gov.uk/sec5/CWINDED/cwinde99/cwindemape.html
(click on Payerne)

Site requirements
The ideal site is a 10 m x 10 m flat place with stable soil (concrete or grass surface). The
Place should be away from electromagnetic emissions, with open sky inside an about 80
to 90 degree cone (a narrow street canyon with high buildings will not be a good location).
Trees or mobile targets "viewed" by the radar at distances which are more than 100 m
away can contaminate the signal at corresponding gates.

The antenna itself needs to be protected with a fence (rectangle of about 7 m x 7 m) in
case it is accessible to the public.

Operating modes
Lowest mode: first gate 83 m, vertical resolution 45 m
Highest mode: first gate 165 m, vertical resolution 400 m
Maximal vertical coverage: 4300 m agl, depending of the state of the atmosphere

Measured parameters
u, v, and w-wind component (from Doppler shift)
Signal power
Spectral width
Noise level
Signal-to-noise ratio (SNR)
A 30-min averaging of the wind and SNR will be operationally performed. For specified
periods and under special weather conditions (good quality returned signal), a
reprocessing of the raw data is possible (with various averaging times starting at 10 min).

Raw data (spectra) will be stored on site and consensus data will be transferred in real
time through the modem line to Payerne and then to Internet via the GTS.

12.00 DR/HR