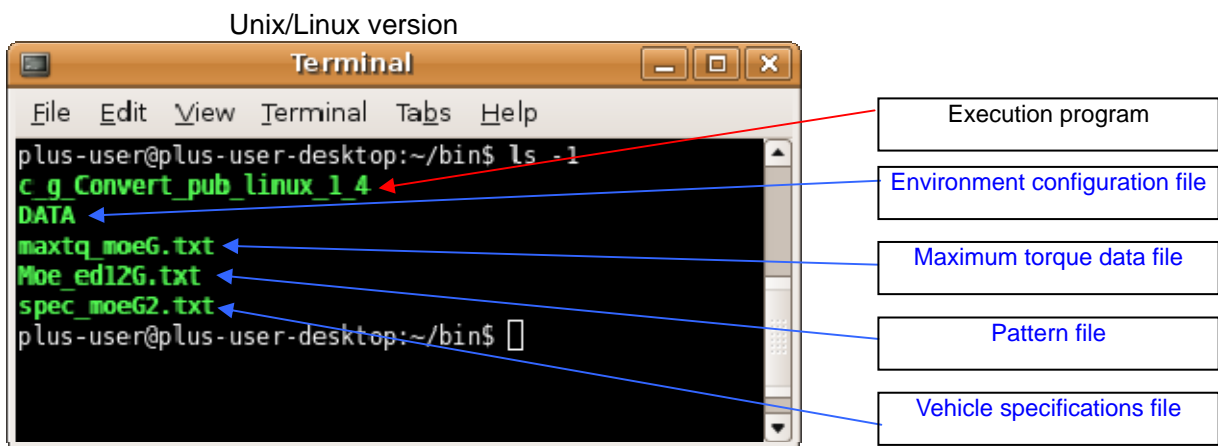
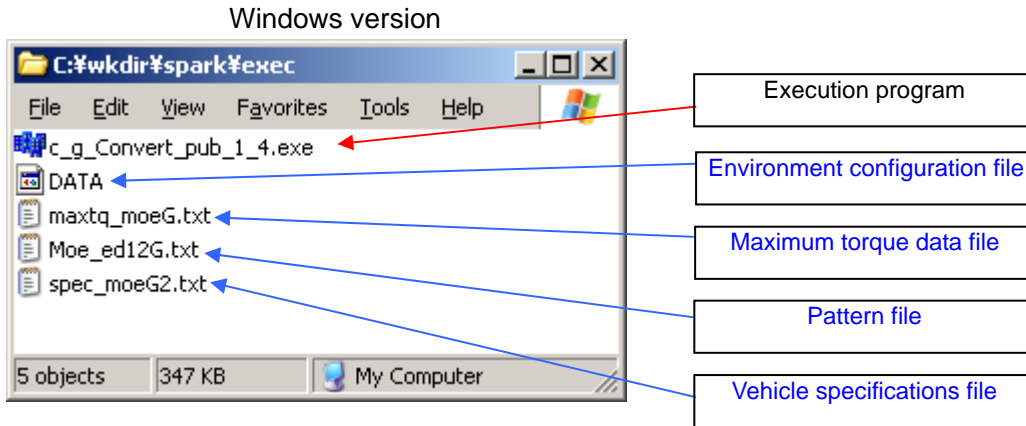


# Instruction manual (Windows, Unix/Linux version)

## 1. Usage instructions

### 1 Construction of conversion program



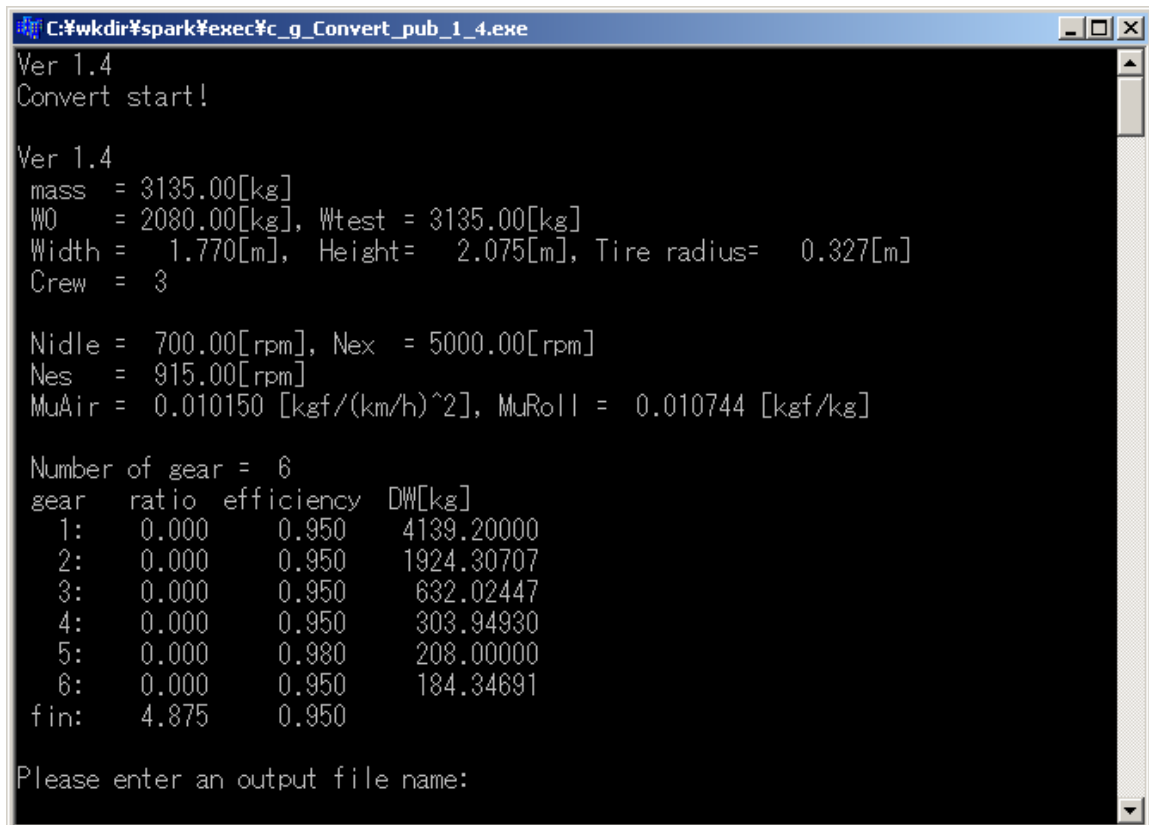
c\_g\_Convert\_pub.cpp : C++ source file  
c\_g\_Convert\_pub.exe : Windows executable file  
c\_g\_convert\_pub : Unix/Linux executable file



#### 4 Conversion program execution

Depending on your OS, launch "c\_g\_Convert\_pub.exe" or "c\_g\_convert\_pub" executable file; this will start the conversion process. Please enter the output file name at the end of the calculation.

##### Windows version



```
C:\wkdir\spark\exec\c_g_Convert_pub_1_4.exe
Ver 1.4
Convert start!

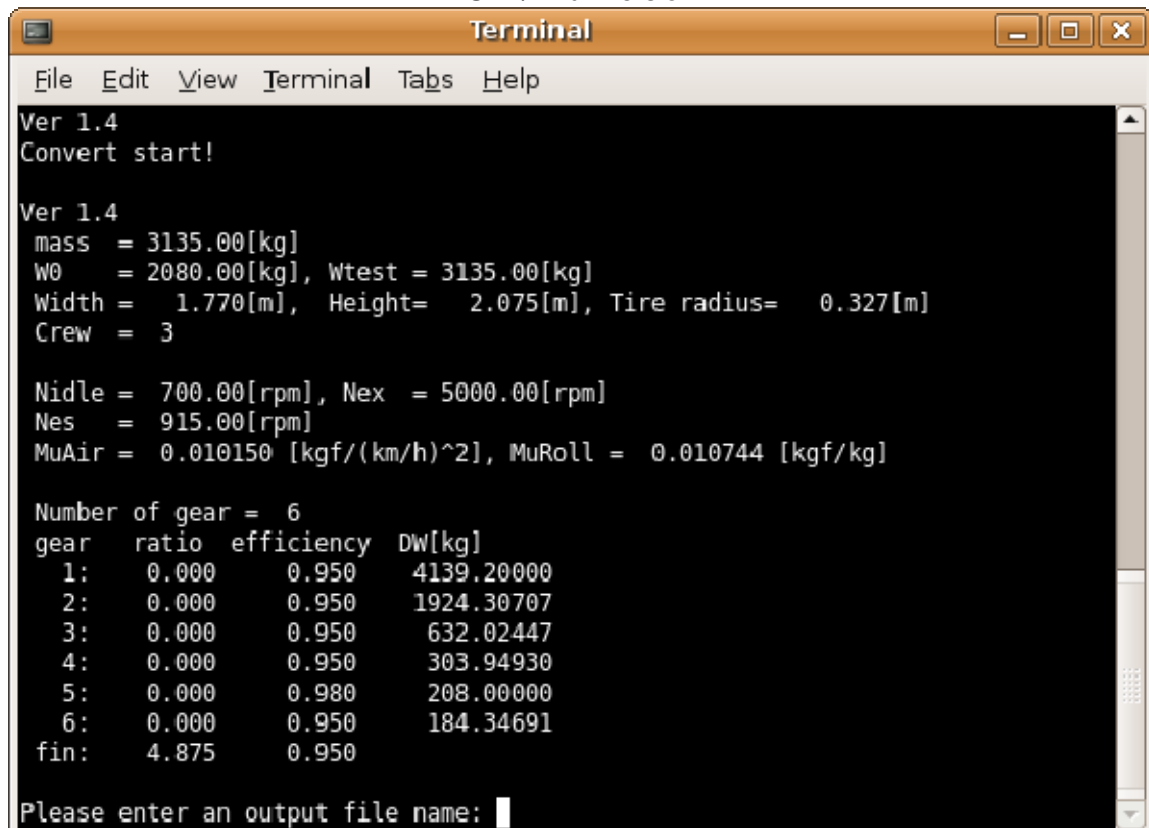
Ver 1.4
mass = 3135.00[kg]
W0 = 2080.00[kg], Wtest = 3135.00[kg]
Width = 1.770[m], Height= 2.075[m], Tire radius= 0.327[m]
Crew = 3

Nidle = 700.00[rpm], Nex = 5000.00[rpm]
Nes = 915.00[rpm]
MuAir = 0.010150 [kgf/(km/h)^2], MuRoll = 0.010744 [kgf/kg]

Number of gear = 6
gear  ratio  efficiency  DW[kg]
  1:   0.000   0.950   4139.20000
  2:   0.000   0.950   1924.30707
  3:   0.000   0.950   632.02447
  4:   0.000   0.950   303.94930
  5:   0.000   0.980   208.00000
  6:   0.000   0.950   184.34691
fin:   4.875   0.950

Please enter an output file name:
```

##### Unix/Linux version



```
Terminal
File Edit View Terminal Tabs Help
Ver 1.4
Convert start!

Ver 1.4
mass = 3135.00[kg]
W0 = 2080.00[kg], Wtest = 3135.00[kg]
Width = 1.770[m], Height= 2.075[m], Tire radius= 0.327[m]
Crew = 3

Nidle = 700.00[rpm], Nex = 5000.00[rpm]
Nes = 915.00[rpm]
MuAir = 0.010150 [kgf/(km/h)^2], MuRoll = 0.010744 [kgf/kg]

Number of gear = 6
gear  ratio  efficiency  DW[kg]
  1:   0.000   0.950   4139.20000
  2:   0.000   0.950   1924.30707
  3:   0.000   0.950   632.02447
  4:   0.000   0.950   303.94930
  5:   0.000   0.980   208.00000
  6:   0.000   0.950   184.34691
fin:   4.875   0.950

Please enter an output file name: |
```

Please refer to paragraph 5. for data output format details.

## 2. Vehicle specification sample file

2080	! curb vehicle mass (kg)
2000	! payload (kg)
3	! crew (persons))
2.075	! overall height (m)
1.77	! overall width (m)
0.327	! tire rolling radius (m)
5	! number of gear
5.339	! 1st gear ratio
2.792	! 2nd gear ratio
1.593	! 3rd gear ratio
1.000	! 4th gear ratio
0.788	! 5th gear ratio
4.875	! final gear ratio
700	! idling engine speed (rpm)
5000	! maximum engine speed (rpm)

### 3. Maximum engine torque sample file

rev(rpm)	torque(Nm)
800	164
1200	172
1600	190
1800	200
2000	199
2400	191
2800	190
3200	193
3600	189
4000	183
4400	174
4800	163
5200	147

※ Number of data should be more than 5 points

#### 4. Pattern sample file

time	vel	Shift
0	0	0
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	4.19	1
26	8.32	1
27	12.33	1
28	16.05	2
29	18.74	2
30	20.28	2

## 5. Output data format

time(s)	Vtarget(km/h)	Vreal(km/h)	Ne(rpm)	Te(N-m)	N_norm(%)	T_norm(%)	Shift
0	0.00	0.00	700.0	0.0	0.00	0.00	0
1	0.00	0.00	700.0	0.0	0.00	0.00	0
2	0.00	0.00	700.0	0.0	0.00	0.00	0
3	0.00	0.00	700.0	0.0	0.00	0.00	0
4	0.00	0.00	700.0	0.0	0.00	0.00	0
5	0.00	0.00	700.0	0.0	0.00	0.00	0
6	0.00	0.00	700.0	0.0	0.00	0.00	0
7	0.00	0.00	700.0	0.0	0.00	0.00	0
8	0.00	0.00	700.0	0.0	0.00	0.00	0
9	0.00	0.00	700.0	0.0	0.00	0.00	0
10	0.00	0.00	700.0	0.0	0.00	0.00	0
11	0.00	0.00	700.0	0.0	0.00	0.00	0
12	0.00	0.00	700.0	0.0	0.00	0.00	0
13	0.00	0.00	700.0	0.0	0.00	0.00	0
14	0.00	0.00	700.0	0.0	0.00	0.00	0
15	0.00	0.00	700.0	0.0	0.00	0.00	0
16	0.00	0.00	700.0	0.0	0.00	0.00	0
17	0.00	0.00	700.0	0.0	0.00	0.00	0
18	0.00	0.00	700.0	0.0	0.00	0.00	0
19	0.00	0.00	700.0	0.0	0.00	0.00	0
20	0.00	0.00	700.0	0.0	0.00	0.00	0
21	0.00	0.00	700.0	0.0	0.00	0.00	0
22	0.00	0.00	700.0	0.0	0.00	0.00	0
23	0.00	0.00	700.0	0.0	0.00	0.00	0
24	0.00	0.00	700.0	0.0	0.00	0.00	0
25	4.19	4.19	915.0	86.6	5.00	52.07	2
26	8.32	8.32	1757.5	85.5	24.59	43.20	2
27	12.33	12.33	2604.6	83.3	44.29	43.71	2
28	16.05	16.05	1773.0	113.1	24.95	56.93	3
29	18.74	18.74	2070.1	84.6	31.86	42.84	3
30	20.28	20.28	2240.3	52.8	35.82	27.18	3

note) Vtarget : target speed  
Vreal : real speed  
Ne : engine speed  
Te : engine torque  
N\_norm : normalized engine speed =(engine speed – idling engine speed)/( maximum engine speed – idling engine speed)  
T\_norm : normalized engine torque = engine torque / maximum engine torque)  
Shift : real shift position