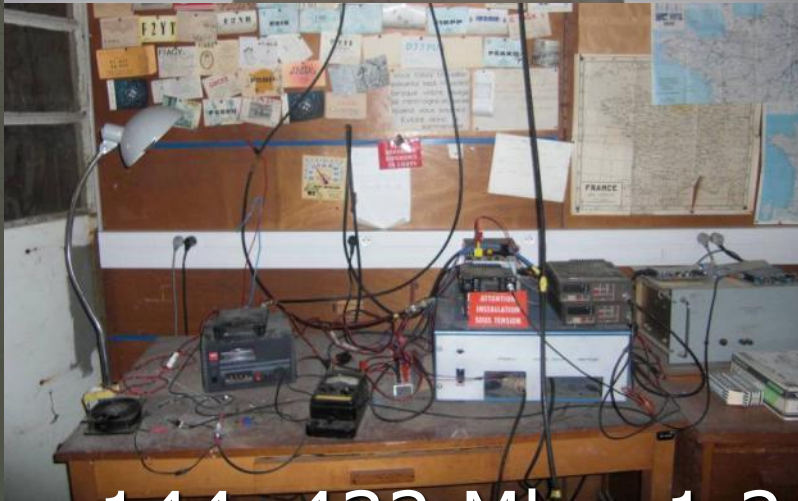


Migration HAMNET 2.0 du nœud F6KBS (CEA Saclay)

Premier retour d'expérience
par

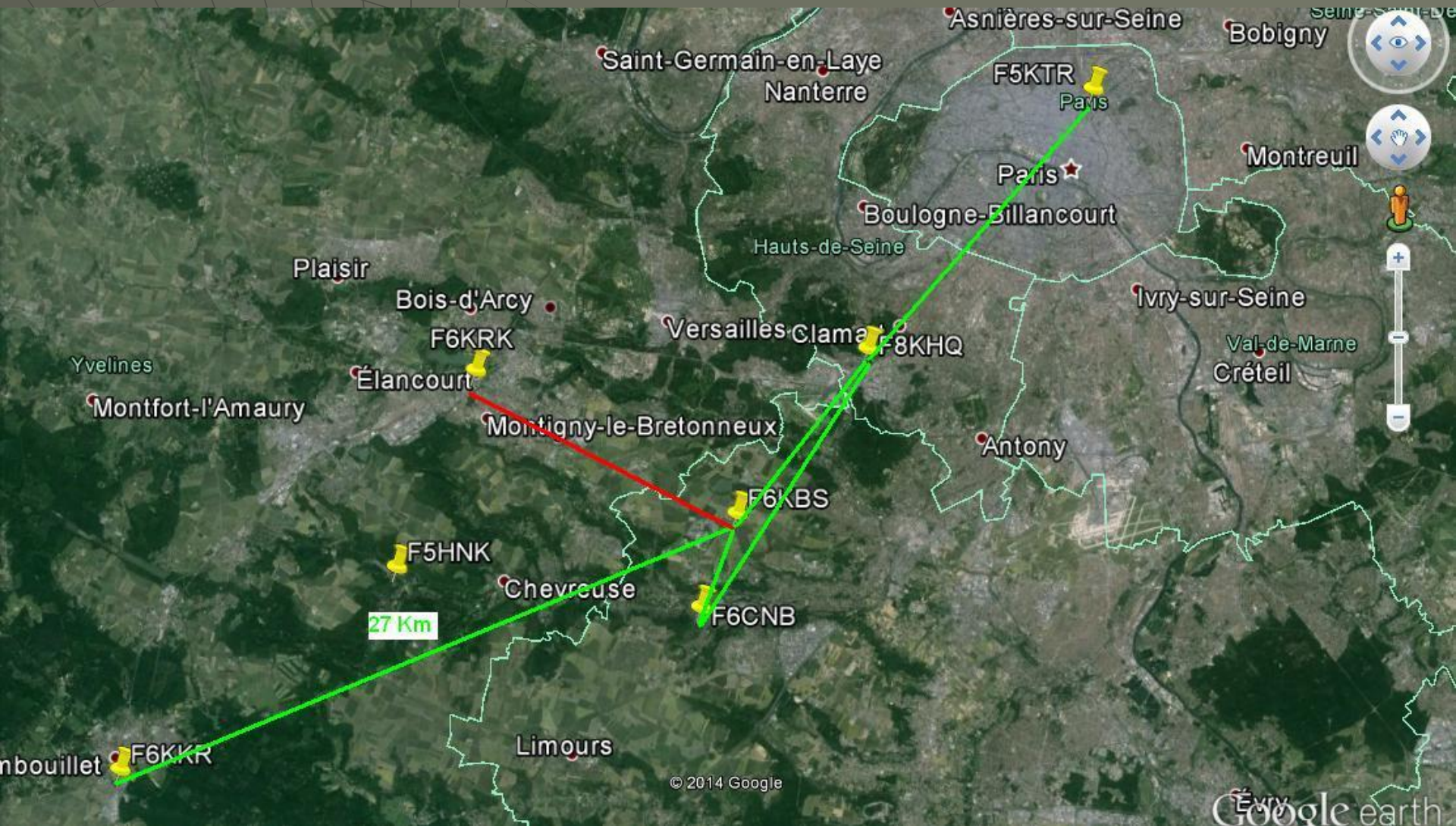
F5H NK, F6I QF, F5I AB, F6C NB

HAMNET 1.0 du RC F6KBS



- ◆ 144, 432 Mhz, 1,2 Ghz depuis 1995...

L'intégration à HAMNET 2.0 IDF



Liaisons *backbone* à 5,7 Ghz

- ◆ Matériel Ubiquiti Ethernet<->RF
 - Très grande diffusion chez les WISP aux USA (sans licence)
 - Mode duplex temporel TDD
 - +27 dBm, et jusqu'à +30 dB de gain avec une parabole de 60 cm
 - Double polarisation vert/horiz
 - Emission OFDM et schéma de codage adaptatif
 - Bande passante réglable
 - Bande amateur en mode « compliance test »
 - Coût très raisonnable



Les travaux de rénovation...

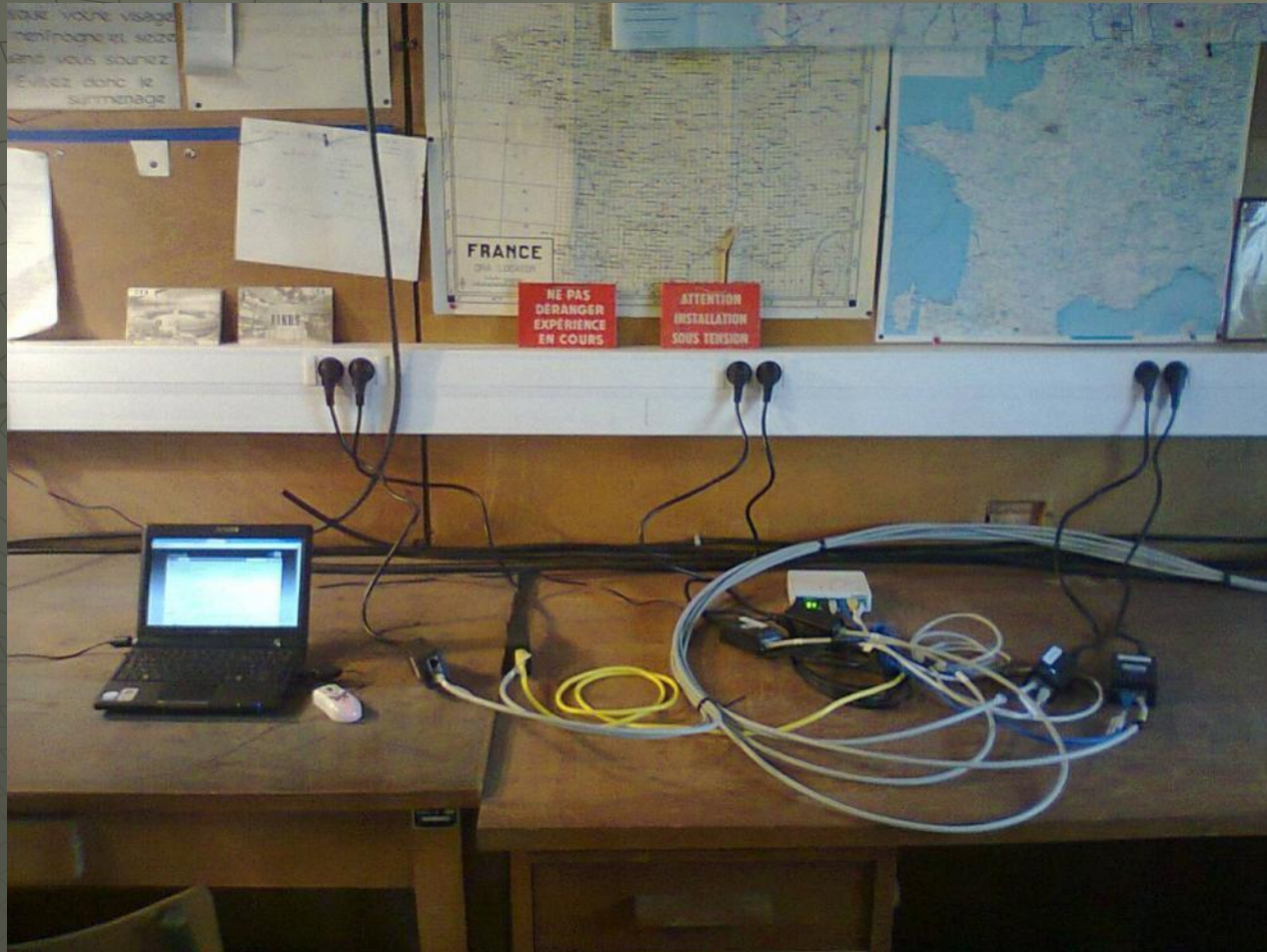


Les antennes aujourd'hui...



- ◆ 1 accès 2,4 Ghz, 4 liaisons 5 Ghz

Le local « radio » aujourd'hui...



- ◆ 1 routeur IP, 5 alimentations POE, 1 HamCam

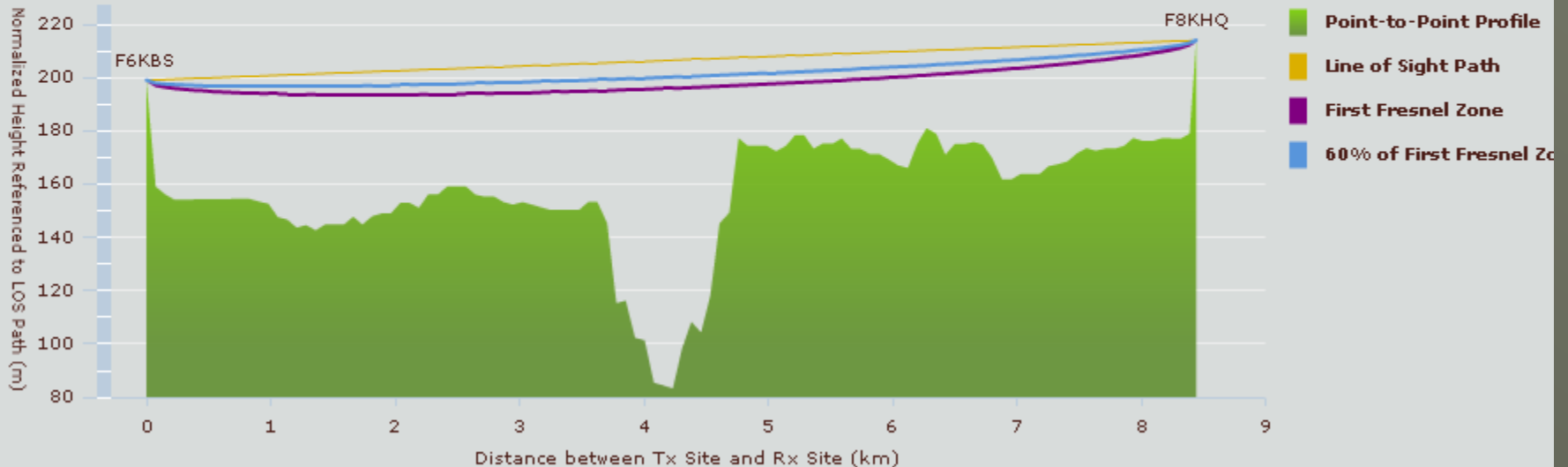
Le challenge des liaisons 5 Ghz...

◆ Liaison F6KBS – F8KHQ, 9 Km à vue

LINK ANALYSIS

Total path loss	126.09 dBm	Thermal fade margin	13.91 dBm	Create Report (PDF)
Signal level at the RX site	-71.09 dBm	Distance between Sites	8.44 km	Save to your account
EIRP	41.00 dBm	Link availability due to rain	N/A %	Share this Link (?)

PATH PROFILE BETWEEN TX AND RX SITE



DISCLAIMER: Ligowave provides this link calculator as a courtesy. Results are provided as is with no warranty or guarantee.

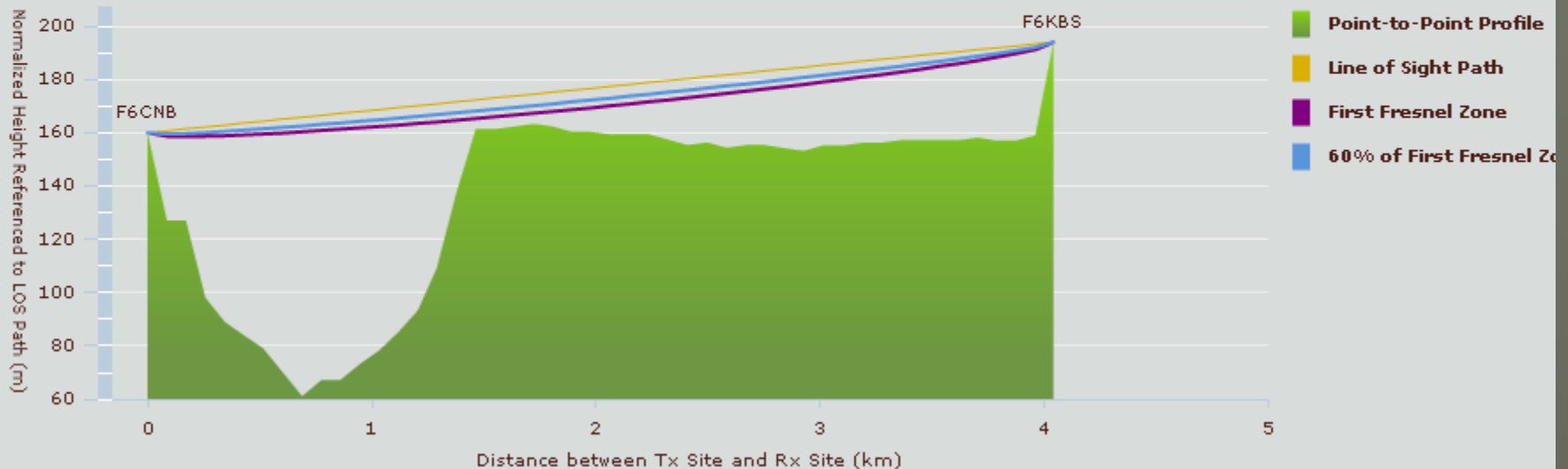
Le challenge des liaisons 5 Ghz...

- ◆ Liaison F6KBS – F6CNB, 4 Km à vue ?

LINK ANALYSIS

Total path loss	119.36 dBm	Thermal fade margin	38.64 dBm	Create Report (PDF)
Signal level at the RX site	-46.36 dBm	Distance between Sites	4.04 km	Save to your account
EIRP	48.00 dBm	Link availability due to rain	N/A %	Share this Link (?)

PATH PROFILE BETWEEN TX AND RX SITE




DISCLAIMER: Ligowave provides this link calculator as a courtesy. Results are provided as is with no warranty or guarantee.

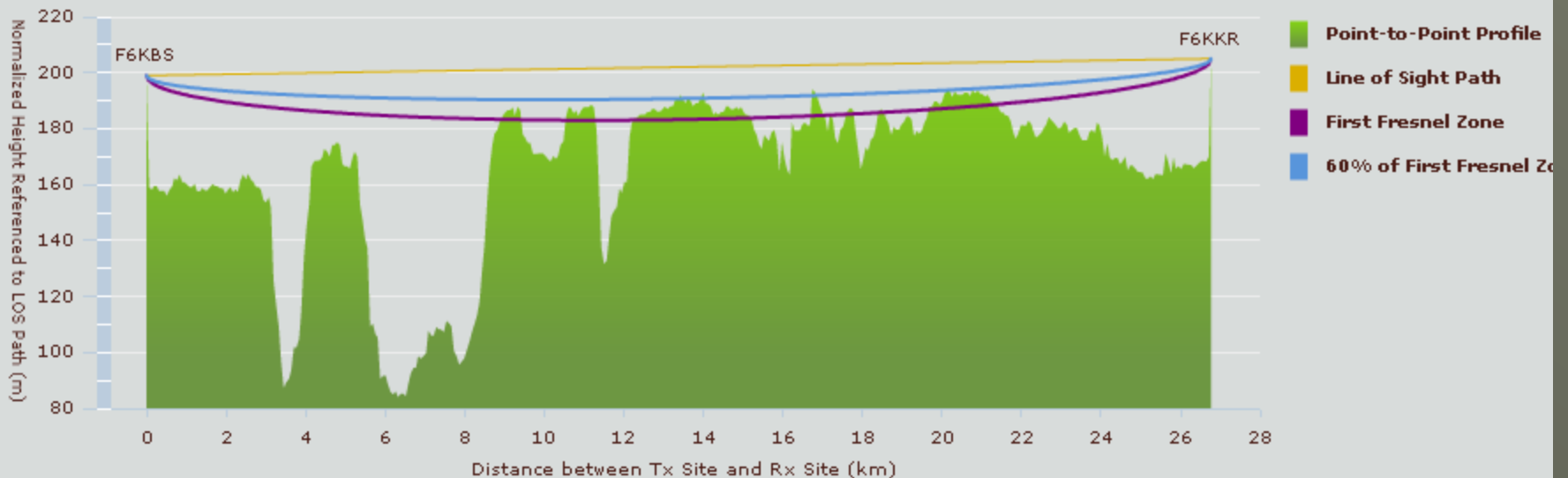
Le challenge des liaisons 5 Ghz...

- ◆ Liaison F6KBS – F6KKR, 27 Km à vue ?

LINK ANALYSIS

Total path loss	141.05 dBm	Thermal fade margin	20.95 dBm	Create Report (PDF)
Signal level at the RX site	-64.05 dBm	Distance between Sites	26.77 km	Save to your account
EIRP	52.00 dBm	Link availability due to rain	N/A % 	Share this Link (?)

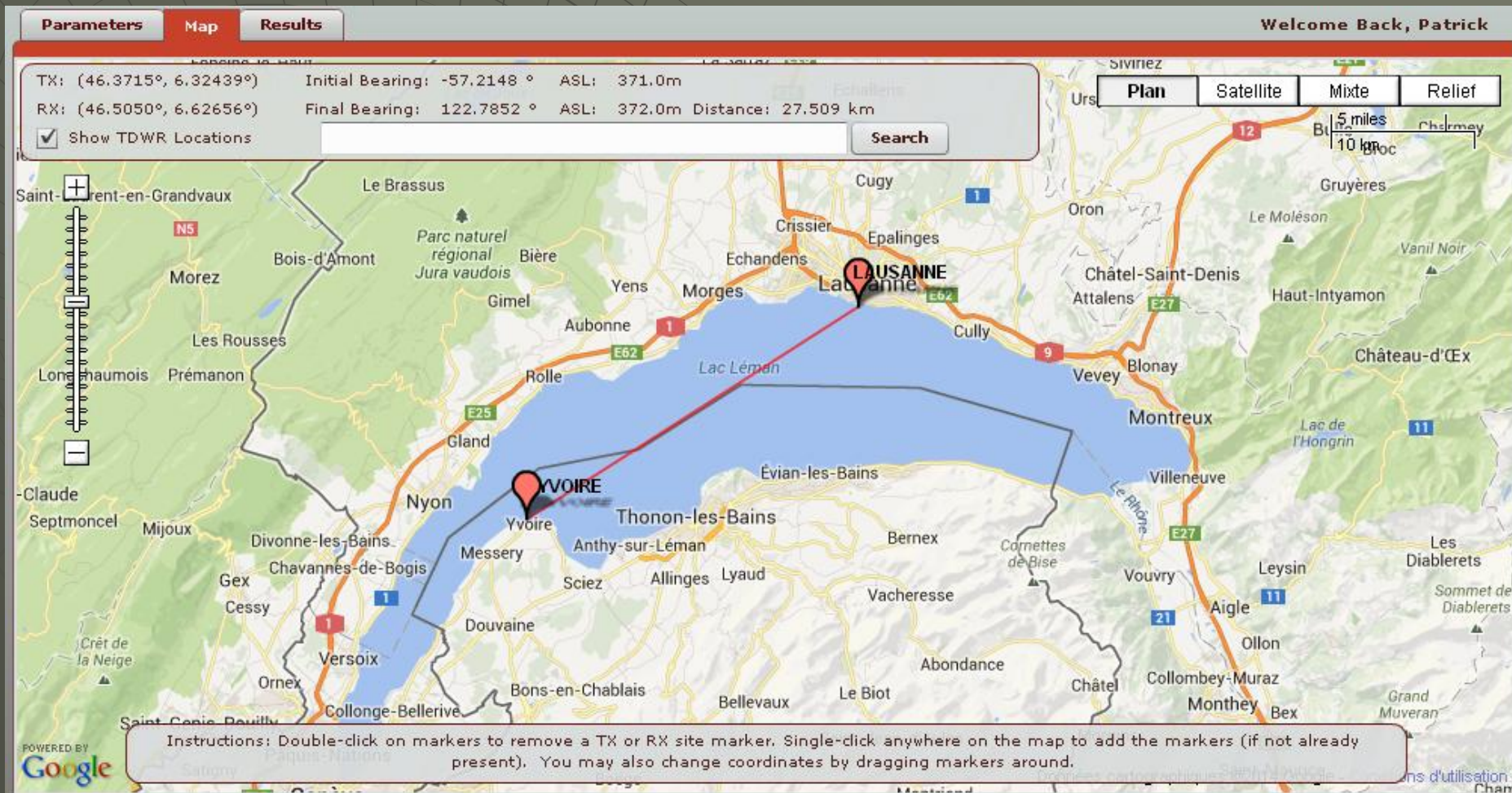
PATH PROFILE BETWEEN TX AND RX SITE



DISCLAIMER: Ligowave provides this link calculator as a courtesy. Results are provided as is with no warranty or guarantee.

Le challenge des liaisons 5 Ghz...

- ◆ Simulation Yvoire–Lausanne, 27 Km à vue



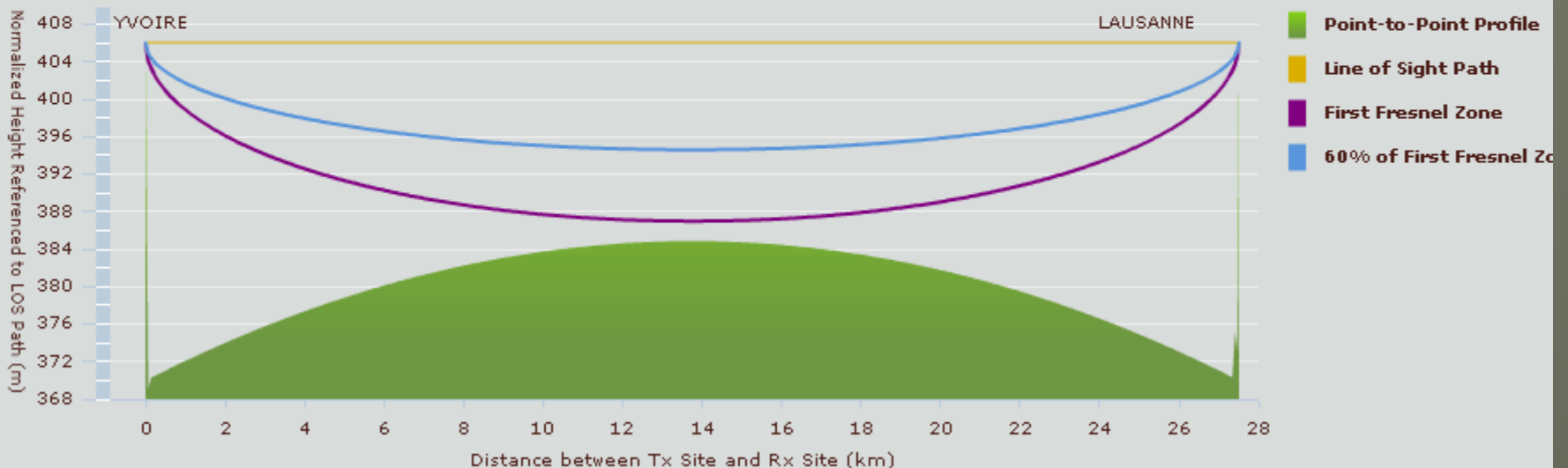
Le challenge des liaisons 5 Ghz...

◆ Simulation Yvoire–Lausanne, 27 Km à vue

LINK ANALYSIS

Total path loss	137.88 dBm	Thermal fade margin	24.12 dBm	Create Report (PDF)
Signal level at the RX site	-60.88 dBm	Distance between Sites	27.51 km	Save to your account
EIRP	52.00 dBm	Link availability due to rain	N/A % 🔍	Share this Link (?)

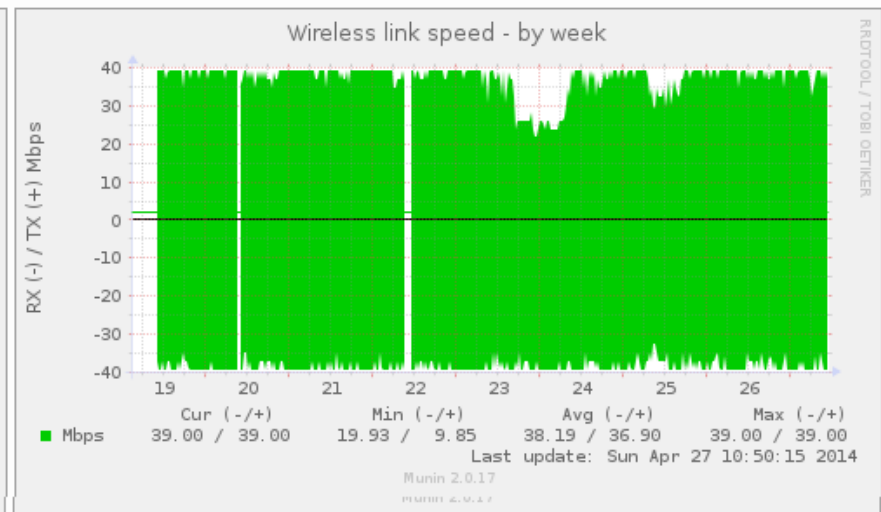
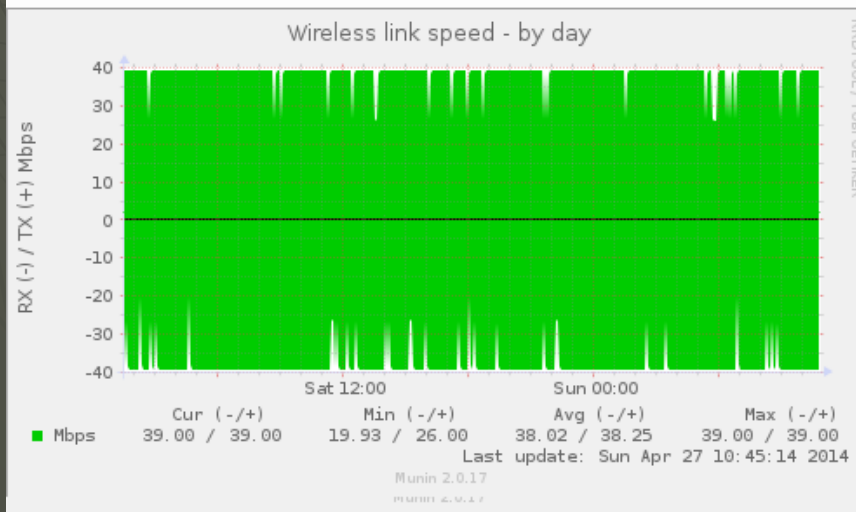
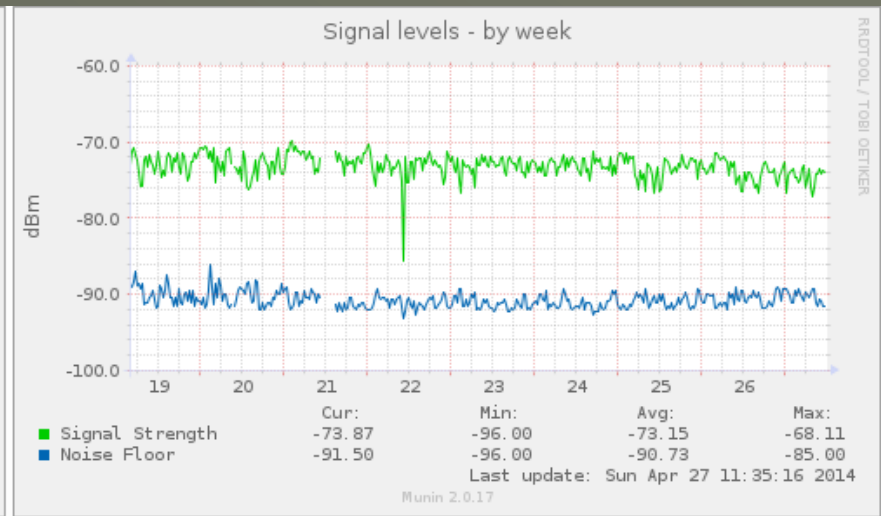
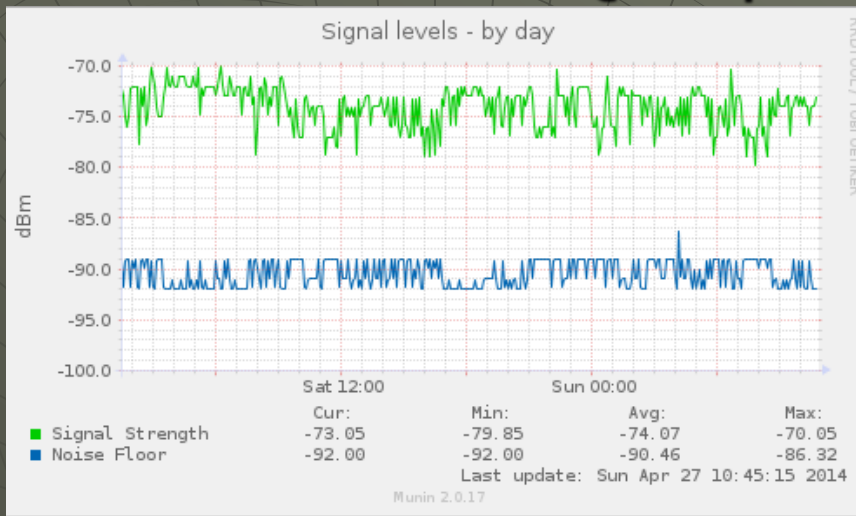
PATH PROFILE BETWEEN TX AND RX SITE



DISCLAIMER: Ligowave provides this link calculator as a courtesy. Results are provided as is with no warranty or guarantee.

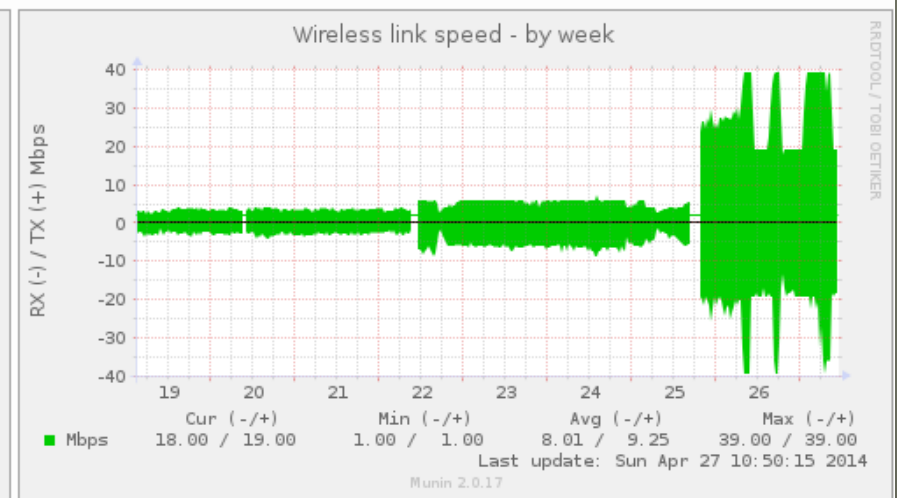
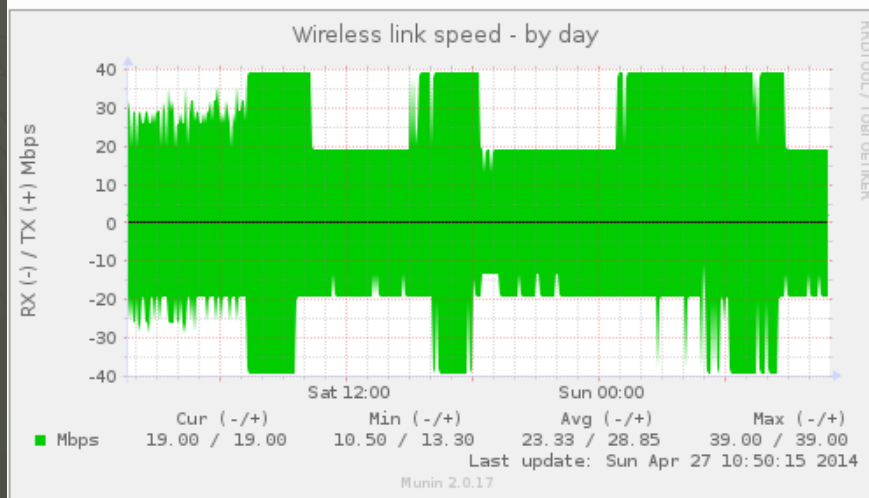
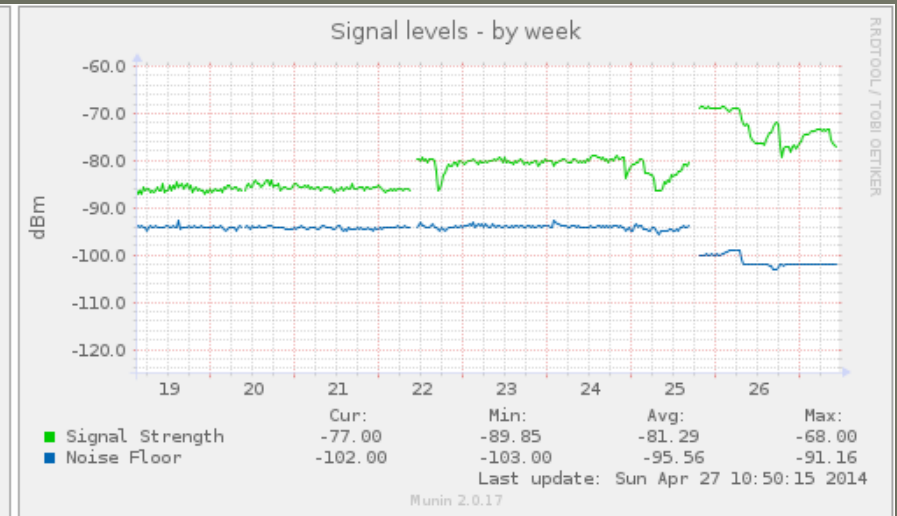
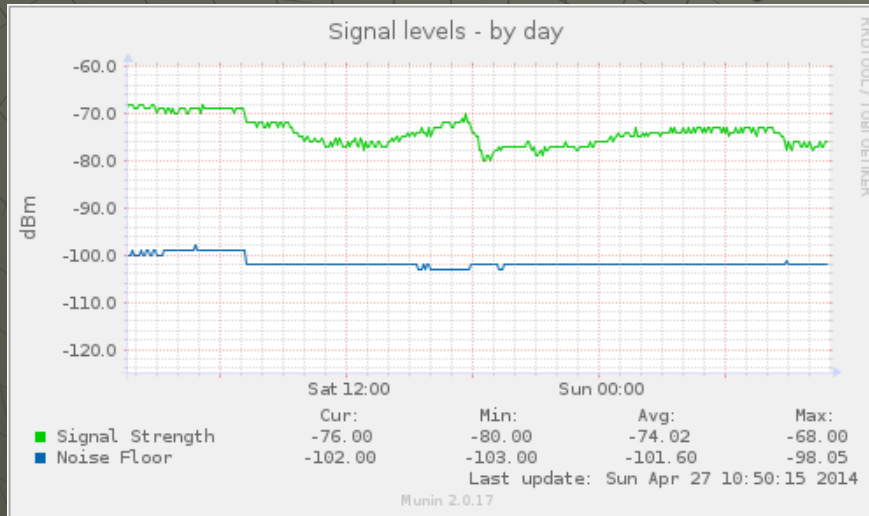
Le suivi des liaisons

◆ F6KBS-F8KHQ la première semaine...



Le suivi des liaisons

◆ F6KBS-F6CNB la première semaine...

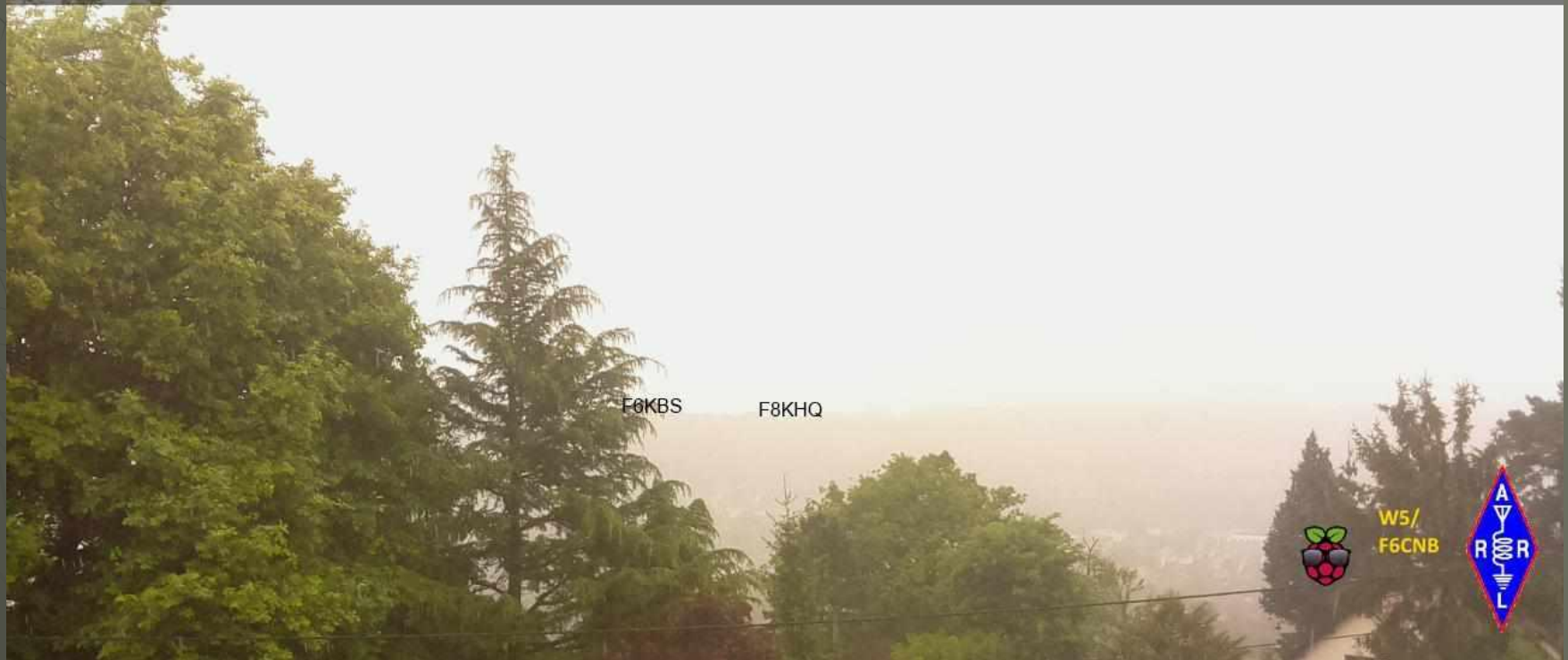


Le suivi des liaisons

- ◆ Vue vers le N-E depuis le QRA F6CNB...

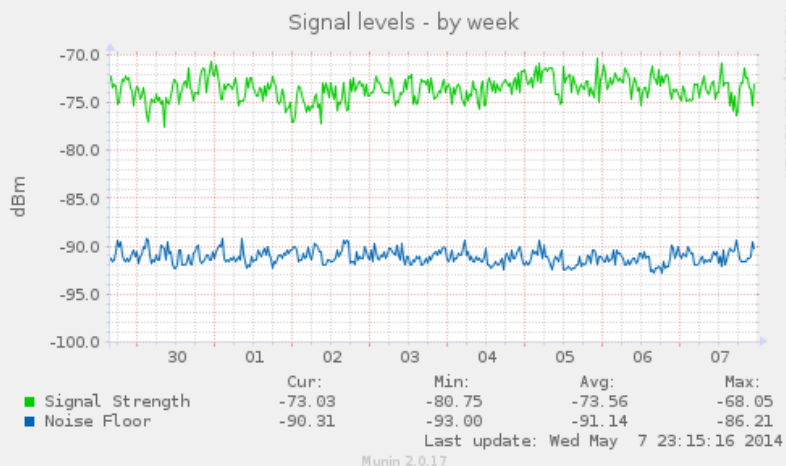
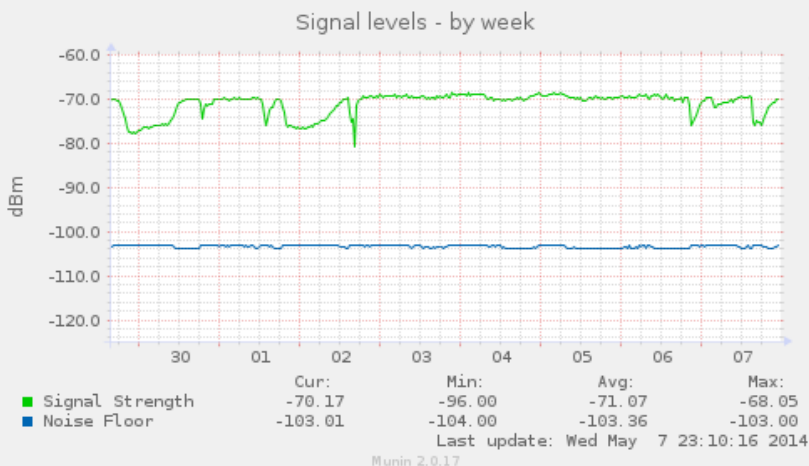
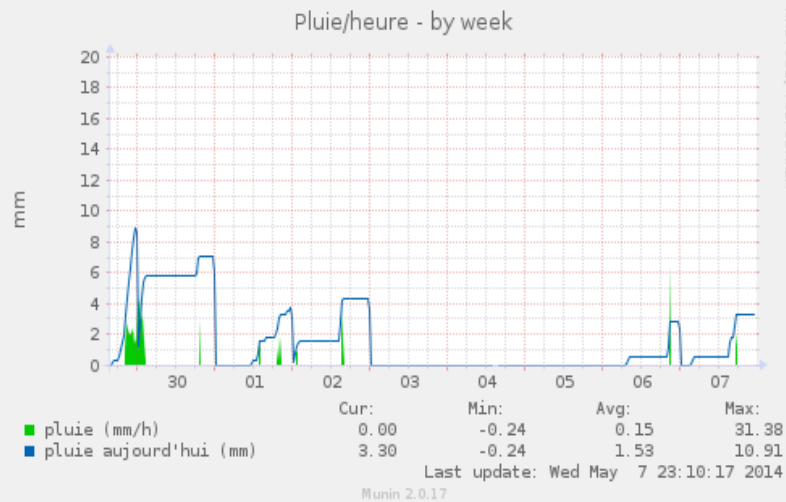
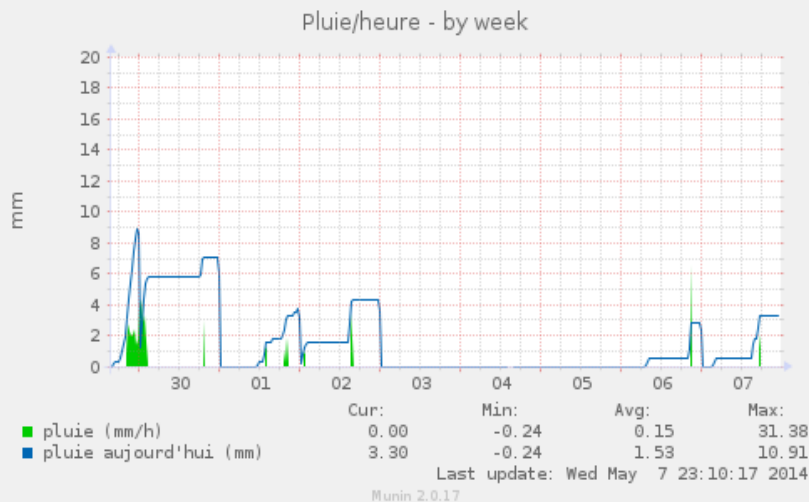
<http://44.168.12.11>
F6CNB @ Bures-sur-Yvette - Essonne - France

08/05/2014 CEST 15:00:00 | 12 °C | 1015 hPa
Proudly Powered by Raspberry Pi



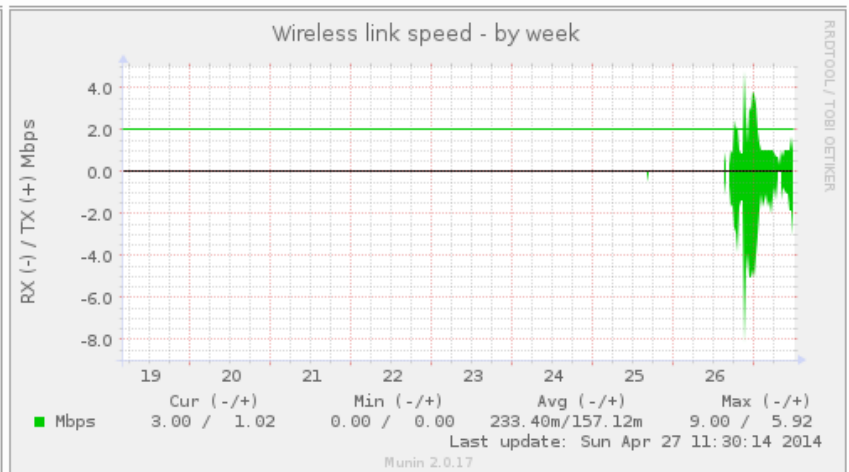
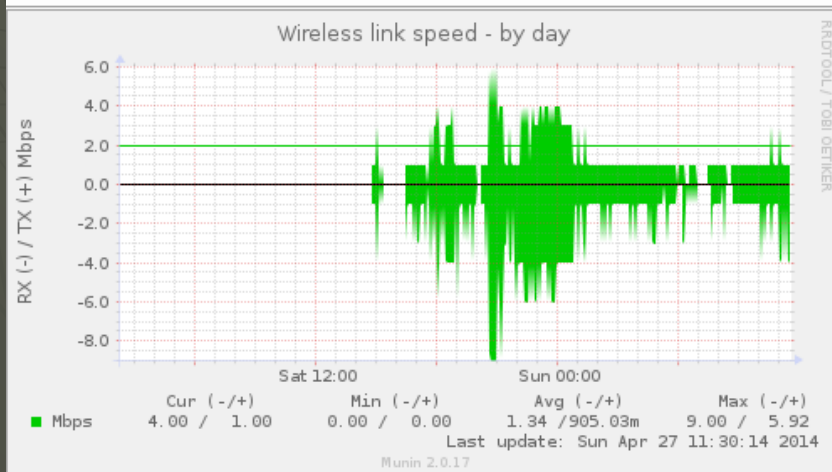
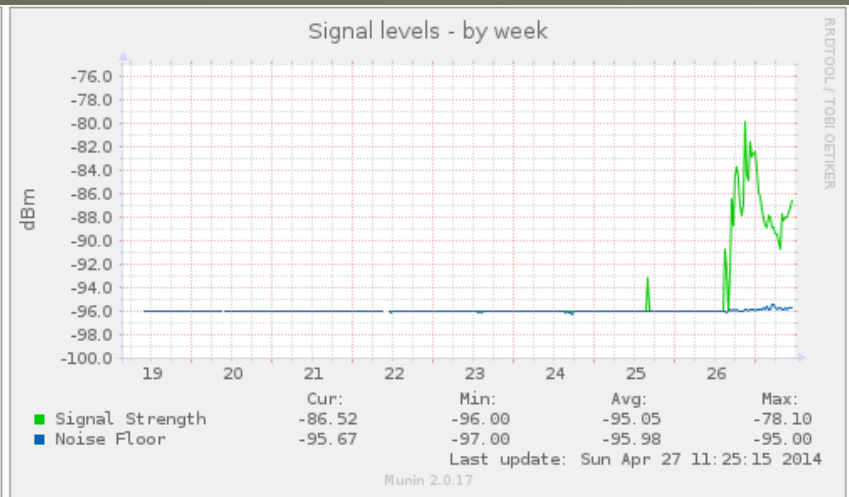
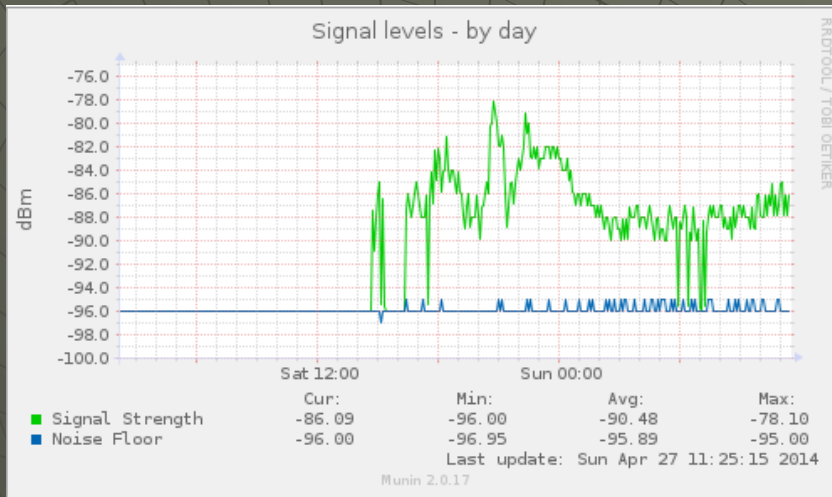
Le suivi des liaisons

◆ Influence de la pluie sur le feuillage...



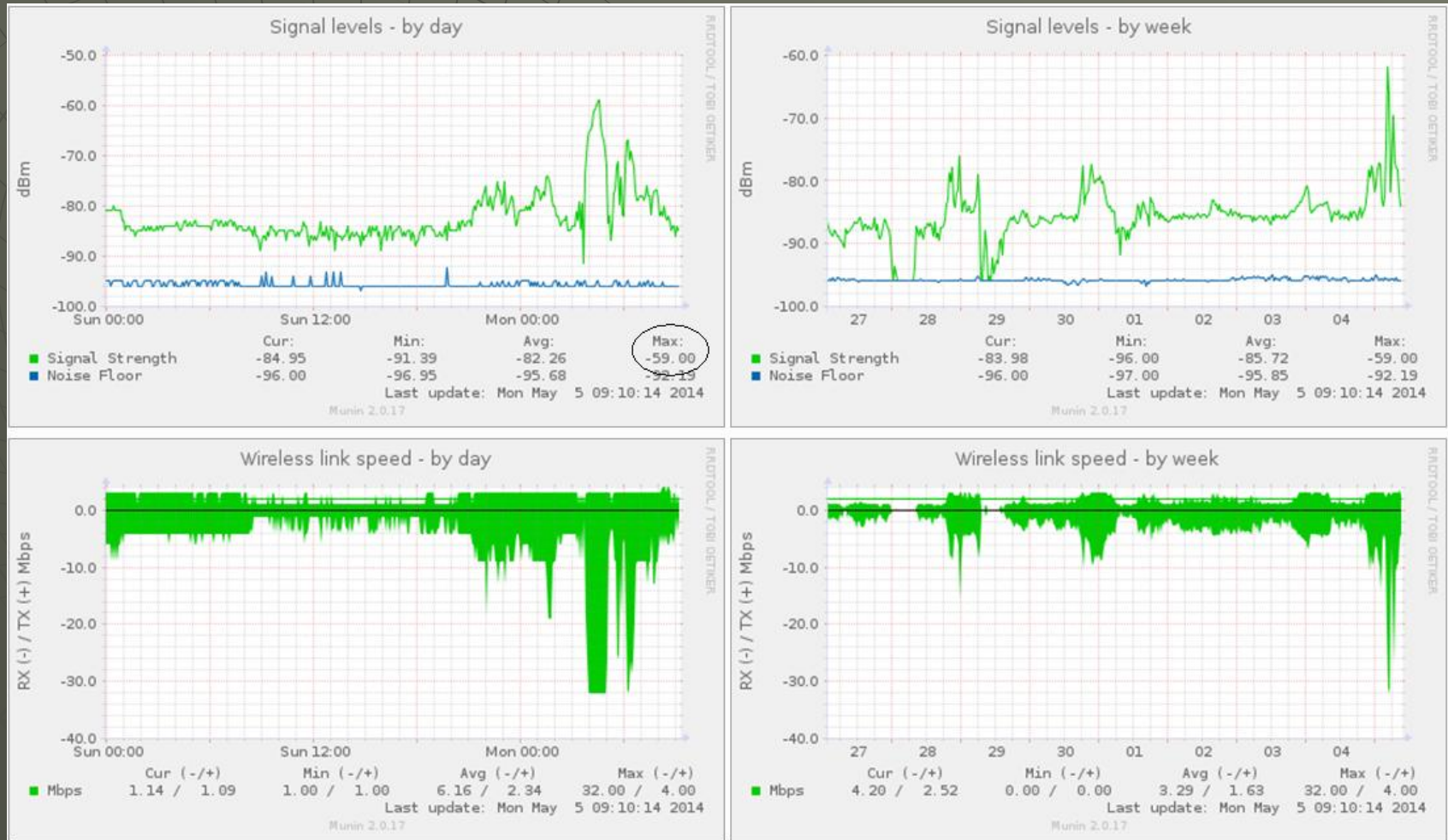
Le suivi des liaisons

◆ F6KBS-F6KKR la première semaine...



Le suivi des liaisons

◆ F6KBS-F6KKR la deuxième semaine !



Le radio-club F6KKR

Pour Hamnet, on a commencé comme ça



Le radio-club F6KKR

L'antenne HAMNET

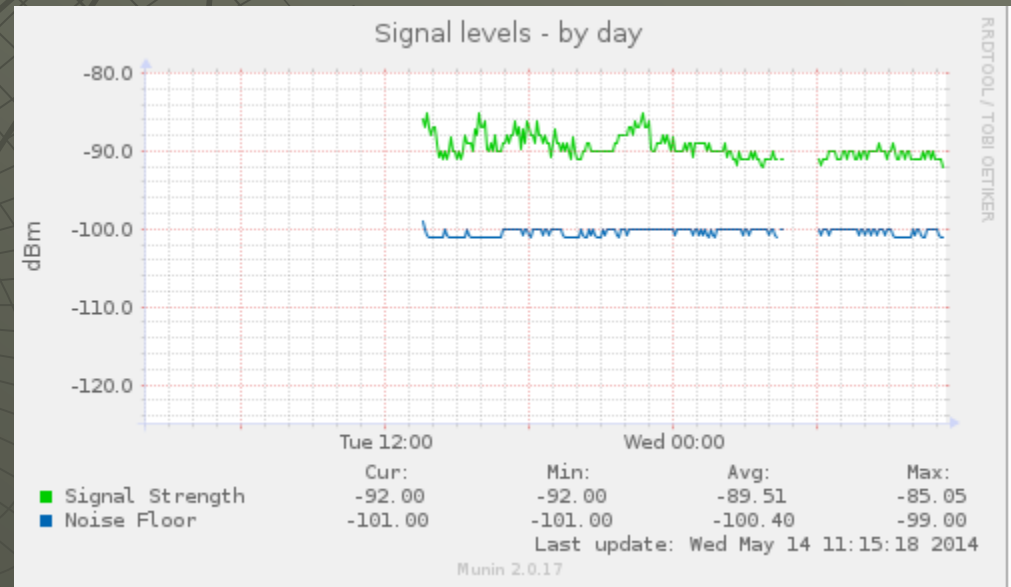


Le radio-club F6KKR

Hamnet

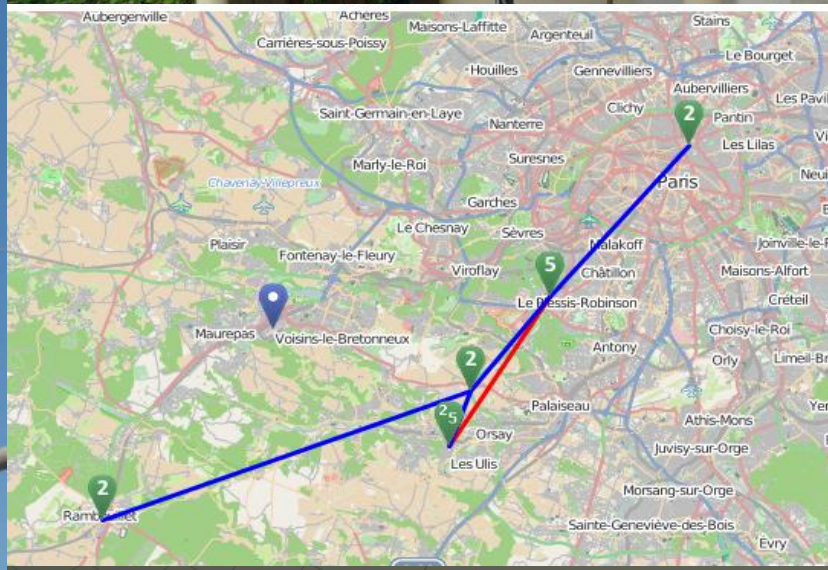
Aujourd'hui le lien avec F6KBS est dans la phase d'évolution pour gagner quelques dB

(actuellement l'antenne est une parabole de 40 cm +25 dBi)



<http://www.ubnt.com/airmax>

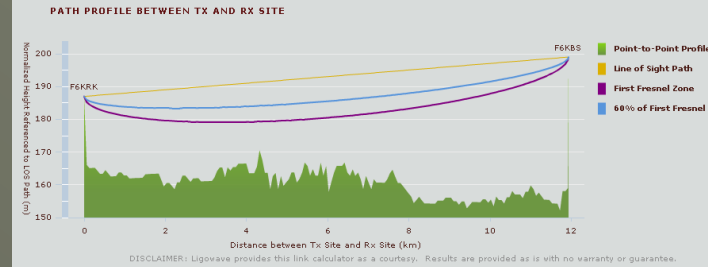
Et l'esprit OM ?



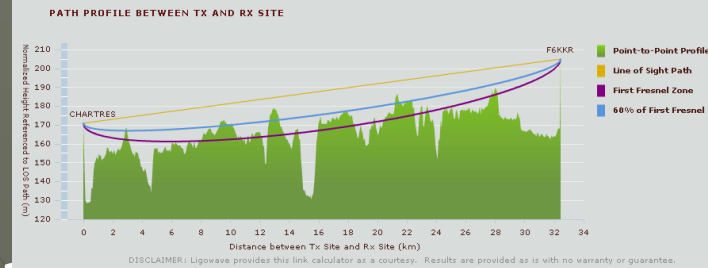
Et la suite ?

- ◆ Liaison avec F6KRK ?
- ◆ Nœud APRS ?
- ◆ Liaison avec Chartres ?
- ◆ Accès aux points hauts ?
- ◆ Antennes à fort gain ?
- ◆ Point d'accès à 432 Mhz ?
- ◆ ...

LINK ANALYSIS			
Total path loss	129.41 dBm	Thermal fade margin	32.59 dBm
Signal level at the RX site	-52.41 dBm	Distance between Sites	11.93 km
EIRP	52.00 dBm	Link availability due to rain	N/A %
		Create Report (PDF)	Save to your account
		Share this Link	



LINK ANALYSIS			
Total path loss	151.75 dBm	Thermal fade margin	10.25 dBm
Signal level at the RX site	-74.75 dBm	Distance between Sites	32.44 km
EIRP	52.00 dBm	Link availability due to rain	N/A %
		Create Report (PDF)	Save to your account
		Share this Link	



DEMONSTRATION

Contact HAMNET IDF :
<http://f6cnb.hutin.org/>

