Article Written by CEO of Cablant GmbH - Sebastian Pyka

When installing antennas for data transmission, it is always of great importance to determine the correct antenna location. But how can the theory be put into practice? The implementation should still be efficient and cost-saving.

Of course, almost all of us now have a smartphone in our pocket that supposedly shows the signal quality reliably on the screen. But does everyone only know how to interpret the information using small bars? This will be relatively difficult, especially since the manufacturers of the individual transmission devices have different requirements.

The plumber, planner, end customer is often confronted with a topic that is not part of his everyday work. But the use of communication devices is becoming more and more important in today's world of IoT (Internet of Things) and Industry 4.0.

To offer the customer, the best possible service and to score with high quality work, it is advisable to use such high-quality equipment. Because which points should be considered at all.

With communication via the cellular network, we as a user or customer are bound to a cellular provider in our country or to a roaming partner of our cellular provider abroad. Here we face the first challenge with our smartphone. The majority of smartphone users only use one wireless service provider. So, if my dialing device etc. is working with another cell phone provider, the signal strength of the cell phone provider cannot be determined with the smartphone.

The manufacturer now gives me in his manual or the installation instructions exactly what signal strength must be achieved so that the device can transfer the necessary data without problems. Often the requirements are not shown in bars like on the smartphone, but in dBm values. I won't find dbm values on my smartphone either.

For the protocol to the customer, I cannot simply take a screenshot of my smartphone monitor and then give it to the customer. That is anything but professional.

So here we come to the topic of high-quality work equipment which is simply indispensable for high quality service.

Here, as an example, we refer to the Siretta family of handheld measuring devices.
SNYPER-LTE+ / SNYPER-LTE+ Spectrum / SNYPER-LTE Graphyte

Why do we see these devices as exactly the right ones for these requirements?

• All mobile network providers to be received can be measured with one device

Siretta
Enabling Industrial IoT

How do I find the right location?

LTE (4G) Network Cell Sites - 100 Survey Cycles

Cell	Index	Seen	EARFCN	dBm	%	RSSI	MCC	MNC	CellID	TAC	Band
1	54	33 (33%)	6300	-62	51	39	234	15	1126430	24735	20 (800)
2	64	1 (1%)	6300	-64	48	36	234	15	1126420	24735	20 (800)
3	47	53 (53%)	6300	-65	47	36	234	15	240148	24735	20 (800)
4	30	84 (84%)	6400	-68	43	33	234	10	26726530	17040	20 (800)
5	48	56 (56%)	6400	-70	40	30	234	10	25840248	17040	20 (800)
6	31	96 (96%)	347	-77	31	24	234	15	1126434	24735	1 (2100)
7	32	89 (89%)	347	-79	28	21	234	15	240152	24735	1 (2100)
8	33	100 (100%)	1667	-81	25	19	234	30	8812801	11341	3 (1800)
9	34	100 (100%)	1667	-81	25	19	234	32	8812801	11341	3 (1800)
10	39	64 (64%)	1667	-85	20	15	234	30	3929602	11343	3 (1800)
11	40	64 (64%)	1667	-85	20	15	234	32	3929602	11343	3 (1800)
12	35	23 (23%)	6225	-87	17	13	234	30	7917325	11340	20 (800)
13	36	23 (23%)	6225	-87	17	13	234	32	7917325	11340	20 (800)
14	56	20 (20%)	6225	-88	16	12	234	30	8739854	11340	20 (800)
15	57	20 (20%)	6225	-88	16	12	234	32	8739854	11340	20 (800)
16	45	17 (17%)	1392	-88	16	12	234	20	288258	1523	3 (1800)
17	71	1 (1%)	1392	-90	13	10	234	20	423681	1523	3 (1800)
18	37	83 (83%)	1811	-90	13	10	234	30	3929605	11343	3 (1800)
19	38	83 (83%)	1811	-90	13	10	234	32	3929605	11343	3 (1800)
20	66	1 (1%)	3350	-94	8	6	234	32	3864839	11343	7 (2600)
21	65	1 (1%)	3350	-94	8	6	234	30	3864839	11343	7 (2600)

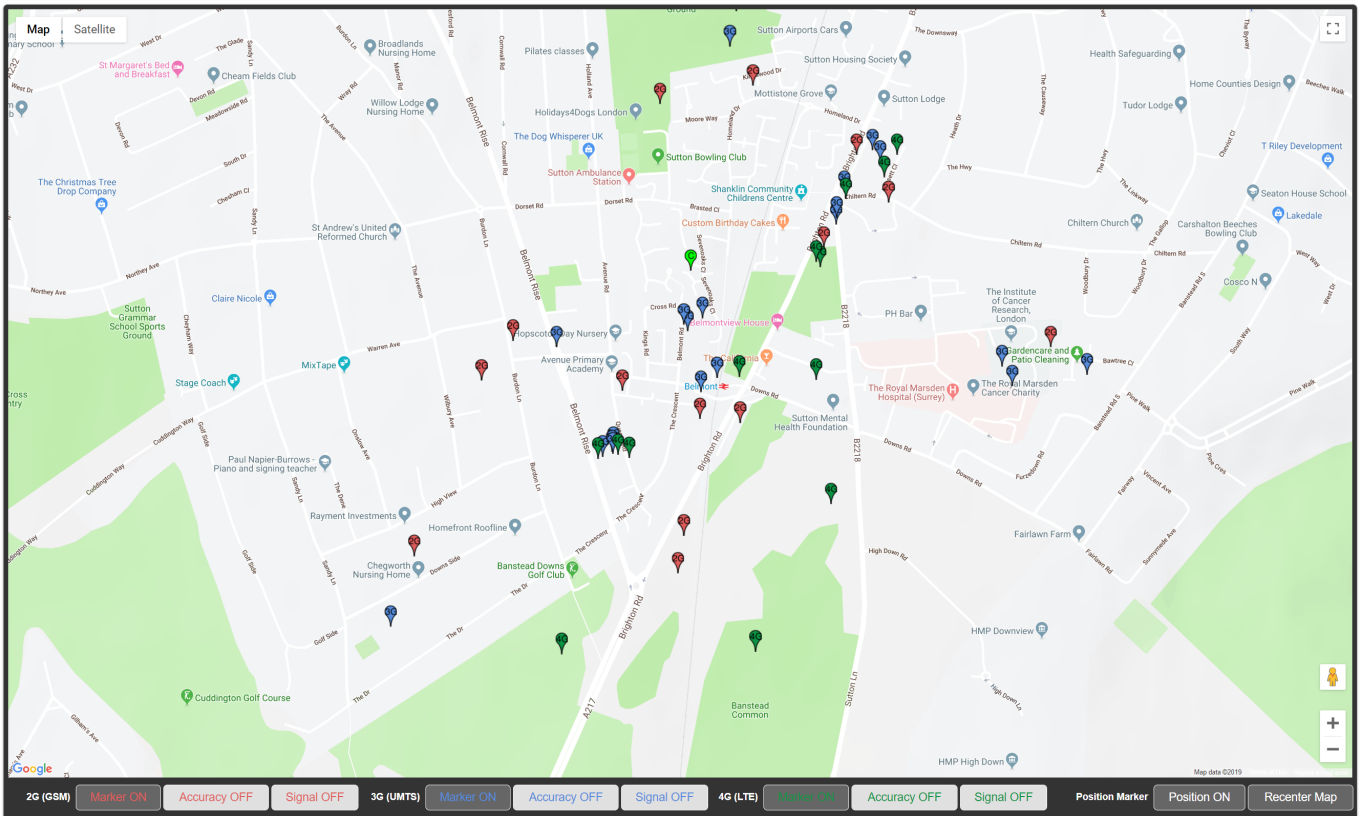
Signal Strength

- Vodafone (-62 dBm) Min: 45% Avg: 51% Max: 53% Var: 8%
- Vodafone (-64 dBm) Avg: 48%
- Vodafone (-65 dBm) Min: 37% Avg: 47% Max: 53% Var: 16%
- O2 UK (-68 dBm) Min: 36% Avg: 43% Max: 48% Var: 12%
- O2 UK (-70 dBm) Min: 33% Avg: 40% Max: 48% Var: 15%
- Vodafone (-77 dBm) Min: 23% Avg: 31% Max: 41% Var: 18%
- Vodafone (-79 dBm) Min: 20% Avg: 28% Max: 40% Var: 20%
- EE UK (-81 dBm) Min: 21% Avg: 25% Max: 31% Var: 10%
- EE UK (-81 dBm) Min: 21% Avg: 25% Max: 31% Var: 10%
- EE UK (-85 dBm) Min: 13% Avg: 20% Max: 29% Var: 16%
- EE UK (-85 dBm) Min: 13% Avg: 20% Max: 29% Var: 16%
- EE UK (-87 dBm) Min: 13% Avg: 17% Max: 19% Var: 6%
- EE UK (-87 dBm) Min: 13% Avg: 17% Max: 19% Var: 6%
- EE UK (-88 dBm) Min: 12% Avg: 16% Max: 19% Var: 7%
- EE UK (-88 dBm) Min: 12% Avg: 16% Max: 19% Var: 7%
- 3 UK (-88 dBm) Min: 12% Avg: 16% Max: 20% Var: 8%
- 3 UK (-90 dBm) Avg: 13%
- EE UK (-90 dBm) Min: 8% Avg: 13% Max: 17% Var: 9%
- EE UK (-90 dBm) Min: 8% Avg: 13% Max: 17% Var: 9%
- EE UK (-94 dBm) Avg: 8%
- EE UK (-94 dBm) Avg: 8%

LTE (4G) Network Summary

Network	85%	70%	55%	40%	25%	10%
Vodafone	0	0 (0)	0 (0)	3 (3)	5 (2)	5 (0)
O2 UK	0	0 (0)	0 (0)	2 (2)	2 (0)	2 (0)
EE UK	0	0 (0)	0 (0)	0 (0)	2 (2)	10 (8)
3 UK	0	0 (0)	0 (0)	0 (0)	0 (0)	2 (2)

- The installer / installer / user has a single hand-held measuring device for measuring the location.



- Up to 50 measurements can be recorded and evaluated at a later point in time
- HTML and CSV files are available for easy and clearly understandable logging of the measurement results
- A localization of the determined base station is possible without problems with the help of the cloud surveys

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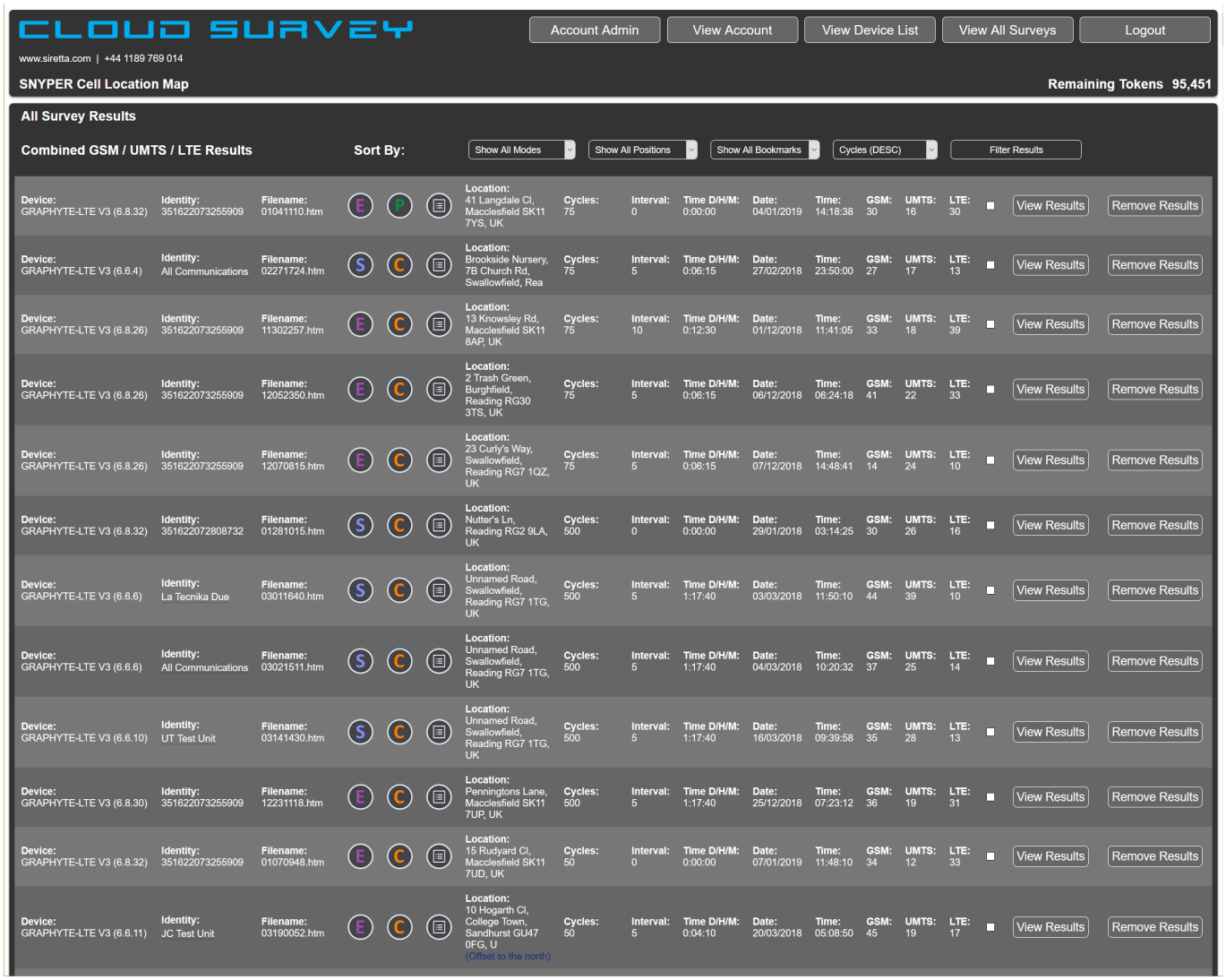
Siretta Ltd
Basingstoke Road
Spencers Wood
Reading
Berkshire RG7 1PW

sales
email
web

+44(0)118 976 9000
sales@siretta.com
www.siretta.com

How do I find the right location?



Only here should be clear to you as a reader and as a user of transmission devices for the cellular network, of whatever kind, in order to be able to offer my customers the best service and impeccable services, the hardware used is important.

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