Vol. 44 No. 18   **29th– 05th May 2017**

Temperature Monitoring with Fridge-tag - Part 2

This is the final of series of two articles on Fridge-tag. Parts and the some functions of the Fridge-tag were discussed in the first article.

Reading lowest temperature with violated preset alarm levels

Two different screens will be displayed once the user moving the blinking arrowhead to the preset alarm levels violated day after repeatedly pressing the READ button.
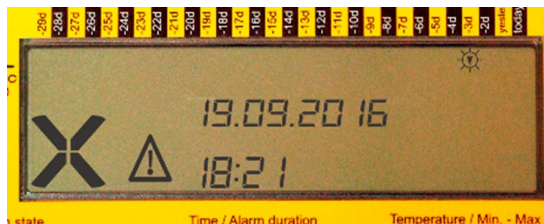

Figure 6 Visualizing the history of a Fridge-tag with preset alarm level violations – First display

The 1st screen will be displayed the following

- blinking arrowhead
- Corresponding date (19.09.2016)
- The starting time of the temperature violation
- The alarm (X) symbol
- Warning sign (⚠)

After pressing the READ button again, 2nd display will be appear. It will indicate the following

- Lowest or highest temperature reading for the corresponding day
- The time duration out of the preset low temperature limit
- Warning symbol (⚠)

- "min." sign (When showing the minimum temperature duration "min." sign will appear while displaying highest temperature "max." will appear)

Figure 7 Visualizing the history of a Fridge-tag with preset alarm level violations – Second display

Once the reader visualizes the two displays the warning symbol will disappear. Until such time the warning sign will be appear in the display.

■ Visualizing the temperature records with PDF reader

Although we can visualize the highest and the lowest temperature for the day and preset alarm violations only for last 30 days, details for last 60 days can be visualized, after connecting to a computer. Please note that the Fridge Tag is equipped with the in build USB connector which is inserted over the side of the Fridge-tag (refer figure 1 in previous article)

Requirements

- A computer (desktop computer / laptop) with an installed PDF reader (such as Adobe PDF reader)

Contents | Page

- Adobe PDF reader can be downloaded from Adobe website

- A functioning Fridge-tag

Connect the Fridge-tag into the computer via USB connector.

Based on the windows version in the computer select (Double click) the My Computer/ Computer/ This PC on the desktop or in start menu.

Windows explorer will appear in the screen. Double click and open the FRIDGE-TAG2.

Automatically generated "pdf" file will be appear and by double clicking on the file reader can visualize the recording as a table. If the reader wants to get a printout, follow the same procedure to print the pdf document.

After visualizing and taking the printout, To ensure smooth

- Display the highest and lowest temperatures reached with their duration

- A user friendly device

Monitor Temperature with Fridge-tag

Fridge-tag in the refrigerator should be checked at least once a day. When checking the morning temperature, inside the refrigerator check whether the temperature is being maintained between +2°C and +8°C after obtaining the last temperature reading (previous day afternoon).

If the Fridge-tag indicates a warning signal, record as "Alarm" in the cold chain record and inform IMMEDIATELY to the MOH.

PDF document of the Fridge-tag® 2

Identification number:	PCAA69583
Activation date:	09.06.2016
Date and time of report creation:	31.05.2017 11:39h
Upper alarm limit:	Above +8.0°C for 10h
Lower alarm limit:	Below -0.5°C for 1h

No.	Date (dd.MM.yyyy)	Events*	Average temp.	Lower alarm limit				Upper alarm limit				Signature / notes Action taken
				Status	Min. temp.	Duration out of range	Alarm trigger time	Status	Max. temp.	Duration out of range	Alarm trigger time	
1	Today		+5.7°C	In progress	+5.1°C	0min		In progress	+6.3°C	0min		
2	30.05.2017		+5.7°C	ok	+5.2°C	0min		ok	+6.4°C	0min		
3	29.05.2017		+5.7°C	ok	+4.4°C	0min		ok	+6.4°C	0min		
4	28.05.2017		+5.7°C	ok	+5.5°C	0min		ok	+6.1°C	0min		

functioning of the Fridge-tag, proper USB-port disconnection of the device is recommended. Therefore always use the "safely remove hardware" function on your computer before removing the Fridge-tag manually from the computer.

Advantages of the Fridge-tag

- Fridge-tag have a inbuilt USB connector

- No need of a special software to read the recordings

- Once connected to a computer, an automatically generated PDF document will display the information

- Can visualize recordings of 30 days on Fridge-tag display and 60 days recording after connecting to a computer

- Preset alarms for high/low (above +8°C continuously for 10 hours and low (-0.5°C continuously for 1 hour) temperature exposures

References

Berlinger & Co. AG, Fridge-tag® 2 with internal sensor, viewed 12 December 2017, pamphlet, Berlinger & Co. AG, Switzerland

Berlinger & Co. AG, Fridge- tag® 2 storage temperature monitoring with USB port, viewed 12 December 2017, pamphlet, Berlinger & Co. AG, Switzerland

World Health Organization, Introduction of Fridge-tag®, viewed 12 December 2017, pamphlet, WHO, Geneva

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Table 1: Selected notifiable diseases reported by Medical Officers of Health   22nd – 28th April 2017 (17th Week)

RDHS Division	Dengue Fever A	Dengue Fever B	Dysentery A	Dysentery B	Encephalitis A	Encephalitis B	Enteric Fever A	Enteric Fever B	Food Poisoning A	Food Poisoning B	Leptospirosis A	Leptospirosis B	Typhus Fever A	Typhus Fever B	Viral Hepatitis A	Viral Hepatitis B	Human Rabies A	Human Rabies B	Chickenpox A	Chickenpox B	Meningitis A	Meningitis B	Leishmaniasis A	Leishmaniasis B	WRCD T*	WRCD C**
Colombo	751	9671	0	35	0	1	2	16	0	6	2	35	0	1	0	6	0	0	9	145	0	12	0	1	63	100
Gampaha	637	6664	0	15	0	11	0	12	0	8	0	26	0	8	0	7	0	1	0	125	0	15	0	4	13	60
Kalutara	188	2604	0	21	0	3	0	4	0	18	3	106	0	3	0	1	0	0	4	229	1	53	0	0	50	93
Kandy	130	1270	1	34	0	4	0	4	0	0	1	19	3	60	1	8	0	1	6	123	1	16	0	4	91	100
Matale	34	497	0	8	0	0	0	0	0	0	0	20	0	1	0	4	0	0	1	18	0	24	0	2	46	92
NuwaraEliya	7	161	2	11	0	2	0	10	0	0	3	17	11	81	0	7	0	0	0	91	0	19	0	0	85	92
Galle	108	2128	0	19	0	5	0	5	0	9	6	81	1	21	0	0	0	1	5	138	3	23	0	0	55	80
Hambantota	91	1198	0	14	0	5	0	7	0	15	0	19	0	23	0	6	0	1	4	96	0	10	15	143	83	100
Matara	102	1504	0	16	0	6	0	0	0	2	6	39	0	12	0	3	0	1	4	81	1	4	2	48	94	94
Jaffna	120	2465	2	101	0	8	2	19	7	36	1	22	0	341	0	4	0	0	8	140	0	20	0	0	86	93
Kilinochchi	10	220	0	6	0	0	0	3	0	0	0	2	0	9	0	2	0	0	0	0	0	2	0	3	25	50
Mannar	14	393	0	4	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	6	0	0	0	0	80	100
Vavuniya	9	360	0	7	0	0	0	12	0	2	1	15	1	5	0	1	0	0	0	17	0	0	0	7	50	75
Mullaitivu	2	106	1	5	0	6	0	3	0	1	0	8	0	3	0	1	0	1	1	4	0	5	0	2	40	80
Batticaloa	332	2692	2	53	0	8	1	10	0	6	1	10	0	0	0	4	0	0	0	84	0	15	0	1	36	64
Ampara	28	233	0	9	0	1	0	1	0	0	0	7	0	1	0	2	0	0	1	71	0	12	0	2	43	100
Trincomalee	143	4098	3	8	0	1	0	3	0	3	0	8	0	7	1	13	0	0	2	58	1	15	0	1	85	92
Kurunegala	192	1918	1	25	2	2	0	0	0	2	0	35	0	20	3	10	0	1	7	258	2	19	2	49	62	83
Puttalam	138	858	0	18	1	2	0	2	0	0	0	6	0	10	0	1	0	0	3	85	1	15	0	2	36	71
Anuradhapur	54	761	0	14	0	1	0	1	0	5	0	28	0	10	0	7	0	0	2	166	0	21	0	114	26	58
Polonnaruwa	54	1443	0	18	0	4	0	5	0	0	2	19	0	3	1	2	0	0	3	101	1	7	0	49	56	100
Badulla	71	388	2	38	0	5	0	6	0	1	0	31	9	29	2	20	0	1	9	125	1	66	0	9	47	82
Monaragala	55	662	1	22	0	3	0	0	0	2	0	47	2	60	0	11	0	0	1	38	0	20	0	4	91	100
Rathnapura	31	432	3	77	1	50	0	4	0	4	10	187	0	16	0	28	0	0	4	148	7	85	0	0	61	78
Kegalle	161	1825	0	23	0	4	0	3	0	14	0	20	0	37	1	7	0	0	1	105	2	34	0	4	45	91
Kalmune	107	1149	0	20	0	4	0	1	0	259	0	4	0	0	0	0	0	0	0	94	0	7	0	0	23	62
SRILANKA	**3586**	**45700**	**18**	**611**	**4**	**130**	**5**	**132**	**7**	**393**	**36**	**811**	**27**	**763**	**9**	**155**	**0**	**8**	**75**	**2546**	**21**	**519**	**19**	**449**	**58**	**84**

Source: Weekly Returns of Communicable Diseases (WRCD).

Table 2: Vaccine-Preventable Diseases & AFP   **22nd – 28th April 2017 (17th Week)**

Disease	No. of Cases by Province									Number of cases during current week in 2017	Number of cases during same week in 2016	Total number of cases to date in 2017	Total number of cases to date in 2016	Difference between the number of cases to date in 2017 & 2016
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	01	00	01	00	00	00	00	00	00	02	00	29	17	70.6%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	02	00	00	00	00	00	00	02	05	106	134	- 20.8%
Measles	00	01	00	00	00	00	00	00	01	02	06	105	234	- 55.1%
Rubella	00	00	00	00	00	00	01	00	00	01	00	06	06	0%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Tetanus	00	01	00	00	00	00	00	00	00	01	00	08	02	75%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	21	00	0%
Whooping Cough	00	00	00	00	00	00	00	00	00	00	02	05	25	- 80 %
Tuberculosis	51	08	14	05	31	20	00	07	01	137	162	2615	2971	- 12%

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.
RDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna,
KN: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam,
AP: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.
Data Sources:
Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,
Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis
CRS =**Congenital Rubella Syndrome

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them

ON STATE SERVICE

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