

Information note

N° 056/21

Dear customer,

With this Infineon Technologies AG information note, we would like to inform you about the following

Early Problem Notification GTM_AI.H004 affecting dedicated TC3xx microcontrollers



On 16 April 2020, Infineon acquired Cypress.
We are now in the process of merging and consolidating our tools and processes for PCN, Information Notes, Errata and Product Discontinuance.
For further details, please visit our website:
<https://www.infineon.com/cms/en/about-infineon/company/cypress-acquisition/>

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Information note

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► **Products affected** Please refer to attached affected product list 1_cip05621

► **Detailed change information**

Subject Early Problem Notification GTM_AI.H004 affecting DPLL operation in dedicated TC3xx microcontrollers

Reason Functional problems, application Hints, documentation updates

Description	Old	New
	<ul style="list-style-type: none"> Not applicable (initial version) 	<ul style="list-style-type: none"> Early Problem Notification GTM_AI_H004_EPN_v1_0_056_21 (first release)

► **Product identification** Not applicable (no change of product)

► **Impact of change** Assessment in application required !

► **Attachments**

1_cip05621	affected product list
3_cip05621	Early problem notification: GTM_AI_H004_EPN_v1_0_056_21

► **Intended start of delivery** Not applicable

If you have any questions, please do not hesitate to contact your local sales office.

Device TC39x..TC36x, TC3Ex
Marking/Step all

No. 056/21

Infineon is providing you with product information not previously addressed in the product data sheets or other documentation for the devices listed above. The enclosed information describes device behavior which may affect your current or prior use of the product. As our customers use these products in a number of different applications, Infineon is not in a position to assess the consequences of this device behavior in your specific application(s). Therefore, you should review the enclosed information and evaluate its effect, if any, on your current or prior use of the product in your application(s), including whether there are any safety concerns requiring further action and/or regulatory reporting.

GTM_AI.H004 DPLL: Wrong calculation of pulse generator frequency for DPLL_CTRL_0.AMT/S=1 and DPLL_CTRL_11.ADT/S=1 when number of pulses (DPLL_CTRL_0.MLT or DPLL_MLS1/2.MLS1/2) is too small - Observation

Note: The final judgement whether an observation will lead to an erratum is subject to further investigation.

When the number of pulses per increment DPLL_CTRL_0.MLT is smaller than 127 or DPLL_MLS1/2.MLS1/2 is smaller than 128 and the correction of physical deviations is used (DPLL_CTRL_0.AMT/AMS=1 and DPLL_CTRL_11.ADT/ADS=1), the calculation of internal values like DT_T/S_actual, RDT_T/S_actual and ADD_IN_CAL1/2 is wrong. The resulting frequency of the generated sub increment pulses of the DPLL is too small.

Scope

DPLL

Effects

Frequency of the generated sub increment pulses of the DPLL is too small. This leads to an unbalanced generation of micro ticks.

Workaround

1. Don't use pulse numbers $DPLL_CTRL_0.MLT < 127$ and/or $DPLL_MLS1/2.MLS1/2 < 128$, when using correction of physical deviation ($DPLL_CTRL_11.ADT/ADS=1$ when $DPLL_CTRL_0.AMT/AMS=1$).
2. When 1.) cannot be applied use configuration $DPLL_CTRL_11.ADT/ADS=0$ when $DPLL_CTRL_0.AMT/AMS=1$ is used.

Information note N° 056/21

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Sales name	SP number	OPN	Package
SAK-TC364DP-48F200F AA	SP005351239	TC364DP48F200FAAKXUMA1	PG-TQFP-144-27
SAK-TC364DP-48F300F AA	SP004577254	TC364DP48F300FAAKXUMA1	PG-TQFP-144-27
SAK-TC364DP-64F200F AA	SP005578089	TC364DP64F200FAAKXUMA1	PG-TQFP-144-27
SAK-TC364DP-64F300F AA	SP001713956	TC364DP64F300FAAKXUMA1	PG-TQFP-144-27
SAK-TC364DP-64F300F AA	SP005431323	TC364DP64F300FAAKXUMA1	PG-TQFP-144-27
SAK-TC364DP-64F300W AA	SP001714740	TC364DP64F300WAAKXUMA1	PG-LQFP-144-25
SAK-TC365DP-64F200W AA	SP005351242	TC365DP64F200WAAKXUMA1	PG-LQFP-176-22
SAK-TC365DP-64F300W AA	SP001724126	TC365DP64F300WAAKXUMA1	PG-LQFP-176-22
SAK-TC366DP-64F300S AA	SP002268324	TC366DP64F300SAAKXUMA1	PG-LFBGA-180-1
SAK-TC367DP-48F200S AA	SP005351244	TC367DP48F200SAAKXUMA1	PG-LFBGA-292-11
SAK-TC367DP-48F300S AA	SP004577246	TC367DP48F300SAAKXUMA1	PG-LFBGA-292-11
SAK-TC367DP-64F300S AA	SP001694656	TC367DP64F300SAAKXUMA1	PG-LFBGA-292-11
SAK-TC367V0-64F300S AA	SP005411327	TC367V064F300SAAKXUMA1	PG-LFBGA-292-11
SAK-TC367VB-32F200S AA	SP005411324	TC367VB32F200SAAKXUMA1	PG-LFBGA-292-11
SAK-TC375TI-96F300W AA	SP005428961	TC375TI96F300WAAKXUMA1	PG-LQFP-176-22
SAK-TC375TP-96F300W AA	SP001724106	TC375TP96F300WAAKXUMA1	PG-LQFP-176-22
SAK-TC377DP-96F300S AA	SP004987108	TC377DP96F300SAAKXUMA1	PG-LFBGA-292-11
SAK-TC377TP-96F300S AA	SP001694648	TC377TP96F300SAAKXUMA1	PG-LFBGA-292-11
SAK-TC377TX-64F300S AB	SP005353025	TC377TX64F300SABKXUMA1	PG-LFBGA-292-13
SAK-TC377TX-96F300S AB	SP004950416	TC377TX96F300SABKXUMA1	PG-LFBGA-292-13
SAK-TC377VS-96F300S AA	SP005546304	TC377VS96F300SAAKXUMA1	PG-LFBGA-292-11
SAK-TC387QP-160F300S AD	SP002921224	TC387QP160F300SADKXUMA1	PG-LFBGA-292-11
SAK-TC387QP-160F300S AE	SP005351247	TC387QP160F300SAEKXUMA1	PG-LFBGA-292-11
SAK-TC387TP-128F300S AD	SP002921230	TC387TP128F300SADKXUMA1	PG-LFBGA-292-11
SAK-TC387TP-128F300S AE	SP005351248	TC387TP128F300SAEKXUMA1	PG-LFBGA-292-11
SAK-TC387TP-128F300S AE	SP005425390	TC387TP128F300SAEKXUMA1	PG-LFBGA-292-11
SAK-TC387TP-160F300S AD	SP002921232	TC387TP160F300SADKXUMA1	PG-LFBGA-292-11
SAK-TC387TP-160F300S AE	SP005351249	TC387TP160F300SAEKXUMA1	PG-LFBGA-292-11
SAK-TC389QP-160F300S AD	SP002921222	TC389QP160F300SADKXUMA1	PG-FBGA-516-1
SAK-TC389QP-160F300S AE	SP005351252	TC389QP160F300SAEKXUMA1	PG-FBGA-516-1
SAK-TC397QA-160F300S BC	SP002739588	TC397QA160F300SBCKXUMA1	PG-LFBGA-292-12
SAK-TC397QA-160F300S BD	SP005351257	TC397QA160F300SBDKXUMA1	PG-LFBGA-292-12
SAK-TC397QP-192F300S BC	SP002739602	TC397QP192F300SBCKXUMA1	PG-LFBGA-292-10
SAK-TC397QP-192F300S BD	SP005351258	TC397QP192F300SBDKXUMA1	PG-LFBGA-292-10
SAK-TC397QP-256F300S BC	SP002739604	TC397QP256F300SBCKXUMA1	PG-LFBGA-292-10
SAK-TC397QP-256F300S BD	SP005351259	TC397QP256F300SBDKXUMA1	PG-LFBGA-292-10
SAK-TC397TT-256F300S BC	SP002739608	TC397TT256F300SBCKXUMA1	PG-LFBGA-292-10
SAK-TC397XA-256F300S BC	SP002739594	TC397XA256F300SBCKXUMA1	PG-LFBGA-292-12
SAK-TC397XA-256F300S BD	SP005351382	TC397XA256F300SBDKXUMA1	PG-LFBGA-292-12
SAK-TC397XP-256F300S BC	SP002739600	TC397XP256F300SBCKXUMA1	PG-LFBGA-292-10

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Sales name	SP number	OPN	Package
SAK-TC397XP-256F300S BD	SP005351385	TC397XP256F300SBDKXUMA1	PG-LFBGA-292-10
SAK-TC397XP-256F300S BD	SP005433583	TC397XP256F300SBDKXQMA1	PG-LFBGA-292-10
SAK-TC397XX-256F300S BC	SP002725526	TC397XX256F300SBCKXUMA1	PG-LFBGA-292-10
SAK-TC397XX-256F300S BD	SP005351387	TC397XX256F300SBDKXUMA1	PG-LFBGA-292-10
SAK-TC397XZ-256F300S BC	SP002739606	TC397XZ256F300SBCKXUMA1	PG-LFBGA-292-10
SAK-TC397XZ-256F300S BD	SP005351388	TC397XZ256F300SBDKXUMA1	PG-LFBGA-292-10
SAK-TC399XP-256F300S BC	SP002725524	TC399XP256F300SBCKXUMA1	PG-LFBGA-516-10
SAK-TC399XP-256F300S BD	SP005351394	TC399XP256F300SBDKXUMA1	PG-LFBGA-516-10
SAK-TC399XX-256F300S BC	SP002725518	TC399XX256F300SBCKXUMA1	PG-LFBGA-516-10
SAK-TC399XX-256F300S BD	SP005351395	TC399XX256F300SBDKXUMA1	PG-LFBGA-516-10
SAK-TC3E7QF-192F300S AA	SP005345769	TC3E7QF192F300SAAKXUMA1	PG-LFBGA-292-11
SAK-TC3E7QG-160F300S AA	SP005345771	TC3E7QG160F300SAAKXUMA1	PG-LFBGA-292-11
SAL-TC364DP-64F300F AA	SP001724134	TC364DP64F300FAALXUMA1	PG-TQFP-144-27
SAL-TC365DP-64F300W AA	SP001724130	TC365DP64F300WAALXUMA1	PG-LQFP-176-22
SAL-TC366DP-64F300S AA	SP003185510	TC366DP64F300SAALXUMA1	PG-LFBGA-180-1
SAL-TC367DP-64F300S AA	SP001724120	TC367DP64F300SAALXUMA1	PG-LFBGA-292-11
SAL-TC375TI-96F300W AA	SP005428963	TC375TI96F300WAALXUMA1	PG-LQFP-176-22
SAL-TC375TI-96F300W AA	SP005572121	TC375TI96F300WAALXUMA2	PG-LQFP-176-22
SAL-TC375TP-96F300W AA	SP001724110	TC375TP96F300WAALXUMA1	PG-LQFP-176-22
SAL-TC375TP-96F300W AA	SP005566219	TC375TP96F300WAALXUMA2	PG-LQFP-176-22
SAL-TC377DP-96F300S AA	SP004987116	TC377DP96F300SAALXUMA1	PG-LFBGA-292-11
SAL-TC377TP-96F300S AA	SP001724092	TC377TP96F300SAALXUMA1	PG-LFBGA-292-11
SAL-TC377TP-96F300S AA	SP005566210	TC377TP96F300SAALXUMA2	PG-LFBGA-292-11
SAL-TC377TX-96F300S AB	SP004950414	TC377TX96F300SABLXUMA1	PG-LFBGA-292-13
SAL-TC387QP-160F300S AD	SP002921220	TC387QP160F300SADLXUMA1	PG-LFBGA-292-11
SAL-TC387QP-160F300S AE	SP005351250	TC387QP160F300SAELXUMA1	PG-LFBGA-292-11
SAL-TC387TP-128F300S AD	SP003021930	TC387TP128F300SADLXUMA1	PG-LFBGA-292-11
SAL-TC387TP-128F300S AE	SP005398494	TC387TP128F300SAELXUMA1	PG-LFBGA-292-11
SAL-TC387TP-160F300S AD	SP002921234	TC387TP160F300SADLXUMA1	PG-LFBGA-292-11
SAL-TC387TP-160F300S AE	SP005411061	TC387TP160F300SAELXUMA1	PG-LFBGA-292-11
SAL-TC389QP-160F300S AD	SP002921216	TC389QP160F300SADLXUMA1	PG-FBGA-516-1
SAL-TC389QP-160F300S AE	SP005351253	TC389QP160F300SAELXUMA1	PG-FBGA-516-1
SAL-TC397XP-256F300S BC	SP002725522	TC397XP256F300SBCLXUMA1	PG-LFBGA-292-10
SAL-TC397XP-256F300S BD	SP005351392	TC397XP256F300SBDLXUMA1	PG-LFBGA-292-10
SAL-TC399XP-256F300S BC	SP002725520	TC399XP256F300SBCLXUMA1	PG-LFBGA-516-10
SAL-TC399XP-256F300S BD	SP005351397	TC399XP256F300SBDLXUMA1	PG-LFBGA-516-10
SAL-TC399XX-256F300S BC	SP002725508	TC399XX256F300SBCLXUMA1	PG-LFBGA-516-10
SAL-TC399XX-256F300S BD	SP005351398	TC399XX256F300SBDLXUMA1	PG-LFBGA-516-10
SAL-TC3E7QG-160F300S AA	SP005578069	TC3E7QG160F300SAALXUMA1	PG-LFBGA-292-11
SAL-TC3E7QX-192F300S AA	SP005351150	TC3E7QX192F300SAALXUMA1	PG-LFBGA-292-11