



SIPLUS S7-300 CPU 315F-2DP -25 ... +60 DEGREES C  
WITH CONFORMAL COATING BASED ON 6ES7315-6FF04  
-0AB0 . FAILSAFE CPU WITH MPI INTERFACE  
INTEGRATED 24V DC POWER SUPPLY,  
384 KB WORKING MEMORY, 40MM WIDE,  
2. INTERFACE DP-MASTER/SLAVE MICRO MEMORY  
CARD REQUIRED

| General information                                         |                                                                                             |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Hardware product version                                    | 01                                                                                          |
| Firmware version                                            | V3.3                                                                                        |
| Engineering with                                            |                                                                                             |
| Programming package                                         | STEP 7 V5.5 + SP1 or higher or STEP7 V5.2 + SP1 or higher with HSP 218 + Distributed Safety |
| Supply voltage                                              |                                                                                             |
| 24 V DC                                                     | Yes                                                                                         |
| permissible range, lower limit (DC)                         | 19.2 V                                                                                      |
| permissible range, upper limit (DC)                         | 28.8 V                                                                                      |
| external protection for power supply lines (recommendation) | 2 A min.                                                                                    |
| Mains buffering                                             |                                                                                             |
| Mains/voltage failure buffering time                        | 5 ms                                                                                        |
| Repeat rate, min.                                           | 1 s                                                                                         |
| Input current                                               |                                                                                             |
| Current consumption (rated value)                           | 850 mA                                                                                      |
| Current consumption (in no-load operation), typ.            | 150 mA                                                                                      |
| Inrush current, typ.                                        | 3.5 A                                                                                       |
| I <sup>2</sup> t                                            | 1 A <sup>2</sup> ·s                                                                         |

|                                                       |                                                                                               |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Power loss</b>                                     |                                                                                               |
| Power loss, typ.                                      | 4.5 W                                                                                         |
| <b>Memory</b>                                         |                                                                                               |
| Type of memory                                        | other                                                                                         |
| <b>Work memory</b>                                    |                                                                                               |
| integrated                                            | 384 kbyte                                                                                     |
| expandable                                            | No                                                                                            |
| Size of retentive memory for retentive data blocks    | 128 kbyte                                                                                     |
| <b>Load memory</b>                                    |                                                                                               |
| Plug-in (MMC)                                         | Yes                                                                                           |
| Plug-in (MMC), max.                                   | 8 Mbyte                                                                                       |
| Data management on MMC (after last programming), min. | 10 a                                                                                          |
| <b>Backup</b>                                         |                                                                                               |
| present                                               | Yes ; Guaranteed by MMC (maintenance-free)                                                    |
| without battery                                       | Yes ; Program and data                                                                        |
| <b>CPU processing times</b>                           |                                                                                               |
| for bit operations, typ.                              | 0.05 µs                                                                                       |
| for word operations, typ.                             | 0.09 µs                                                                                       |
| for fixed point arithmetic, typ.                      | 0.12 µs                                                                                       |
| for floating point arithmetic, typ.                   | 0.45 µs                                                                                       |
| <b>CPU-blocks</b>                                     |                                                                                               |
| Number of blocks (total)                              | 1024 ; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used. |
| <b>DB</b>                                             |                                                                                               |
| Number, max.                                          | 1024 ; Number range: 1 to 16000                                                               |
| Size, max.                                            | 64 kbyte                                                                                      |
| <b>FB</b>                                             |                                                                                               |
| Number, max.                                          | 1024 ; Number range: 0 to 7999                                                                |
| Size, max.                                            | 64 kbyte                                                                                      |
| <b>FC</b>                                             |                                                                                               |
| Number, max.                                          | 1024 ; Number range: 0 to 7999                                                                |
| Size, max.                                            | 64 kbyte                                                                                      |
| <b>OB</b>                                             |                                                                                               |
| Description                                           | see instruction list                                                                          |
| Size, max.                                            | 64 kbyte                                                                                      |
| Number of free cycle OBs                              | 1 ; OB 1                                                                                      |
| Number of time alarm OBs                              | 1 ; OB 10                                                                                     |
| Number of delay alarm OBs                             | 2 ; OB 20, 21                                                                                 |
| Number of time interrupt OBs                          | 4 ; OB 32, 33, 34, 35                                                                         |

|                                               |                                          |
|-----------------------------------------------|------------------------------------------|
| Number of process alarm OBs                   | 1 ; OB 40                                |
| Number of DPV1 alarm OBs                      | 3 ; OB 55, 56, 57                        |
| Number of isochronous mode OBs                | 1 ; OB 61                                |
| Number of startup OBs                         | 1 ; OB 100                               |
| Number of asynchronous error OBs              | 5 ; OB 80, 82, 85, 86, 87                |
| Number of synchronous error OBs               | 2 ; OB 121, 122                          |
| <b>Nesting depth</b>                          |                                          |
| per priority class                            | 16                                       |
| additional within an error OB                 | 4                                        |
| <b>Counters, timers and their retentivity</b> |                                          |
| <b>S7 counter</b>                             |                                          |
| Number                                        | 256                                      |
| <b>Retentivity</b>                            |                                          |
| adjustable                                    | Yes                                      |
| lower limit                                   | 0                                        |
| upper limit                                   | 255                                      |
| preset                                        | Z 0 to Z 7                               |
| <b>Counting range</b>                         |                                          |
| lower limit                                   | 0                                        |
| upper limit                                   | 999                                      |
| <b>IEC counter</b>                            |                                          |
| present                                       | Yes                                      |
| Type                                          | SFB                                      |
| Number                                        | Unlimited (limited only by RAM capacity) |
| <b>S7 times</b>                               |                                          |
| Number                                        | 256                                      |
| <b>Retentivity</b>                            |                                          |
| adjustable                                    | Yes                                      |
| lower limit                                   | 0                                        |
| upper limit                                   | 255                                      |
| preset                                        | No retentivity                           |
| <b>Time range</b>                             |                                          |
| lower limit                                   | 10 ms                                    |
| upper limit                                   | 9990 s                                   |
| <b>IEC timer</b>                              |                                          |
| present                                       | Yes                                      |
| Type                                          | SFB                                      |
| Number                                        | Unlimited (limited only by RAM capacity) |

|                                          |                                     |
|------------------------------------------|-------------------------------------|
| <b>Data areas and their retentivity</b>  |                                     |
| <b>retentive data area, total</b>        | All, 128 KB max.                    |
| <b>Flag</b>                              |                                     |
| <b>Number, max.</b>                      | 2048 byte                           |
| <b>Retentivity available</b>             | Yes ; MB 0 to MB 2047               |
| <b>Retentivity preset</b>                | MB 0 to MB 15                       |
| <b>Number of clock memories</b>          | 8 ; 1 memory byte                   |
| <b>Data blocks</b>                       |                                     |
| <b>Number, max.</b>                      | 1024 ; Number range: 1 to 16000     |
| <b>Size, max.</b>                        | 64 kbyte                            |
| <b>Retentivity adjustable</b>            | Yes ; via non-retain property on DB |
| <b>Retentivity preset</b>                | Yes                                 |
| <b>Local data</b>                        |                                     |
| <b>per priority class, max.</b>          | 32 kbyte ; Max. 2 KB per block      |
| <b>Address area</b>                      |                                     |
| <b>I/O address area</b>                  |                                     |
| <b>Inputs</b>                            | 2048 byte                           |
| <b>Outputs</b>                           | 2048 byte                           |
| <b>of which distributed</b>              |                                     |
| <b>Inputs</b>                            | 2048 byte                           |
| <b>Outputs</b>                           | 2048 byte                           |
| <b>Process image</b>                     |                                     |
| <b>Inputs</b>                            | 2048 byte                           |
| <b>Outputs</b>                           | 2048 byte                           |
| <b>Inputs, adjustable</b>                | 2048 byte                           |
| <b>Outputs, adjustable</b>               | 2048 byte                           |
| <b>Inputs, default</b>                   | 384 byte                            |
| <b>Outputs, default</b>                  | 384 byte                            |
| <b>Subprocess images</b>                 |                                     |
| <b>Number of subprocess images, max.</b> | 1                                   |
| <b>Digital channels</b>                  |                                     |
| <b>Inputs</b>                            | 16384                               |
| <b>Outputs</b>                           | 16384                               |
| <b>Inputs, of which central</b>          | 1024                                |
| <b>Outputs, of which central</b>         | 1024                                |
| <b>Analog channels</b>                   |                                     |
| <b>Inputs</b>                            | 1024                                |
| <b>Outputs</b>                           | 1024                                |

|                                                         |                                                                          |
|---------------------------------------------------------|--------------------------------------------------------------------------|
| Inputs, of which central                                | 256                                                                      |
| Outputs, of which central                               | 256                                                                      |
| <b>Hardware configuration</b>                           |                                                                          |
| Expansion devices, max.                                 | 3                                                                        |
| <b>Number of DP masters</b>                             |                                                                          |
| integrated                                              | 1                                                                        |
| via CP                                                  | 4                                                                        |
| <b>Number of operable FMs and CPs (recommended)</b>     |                                                                          |
| FM                                                      | 8                                                                        |
| CP, point-to-point                                      | 8                                                                        |
| CP, LAN                                                 | 10                                                                       |
| <b>Rack</b>                                             |                                                                          |
| Racks, max.                                             | 4                                                                        |
| Modules per rack, max.                                  | 8                                                                        |
| <b>Time of day</b>                                      |                                                                          |
| <b>Clock</b>                                            |                                                                          |
| Hardware clock (real-time clock)                        | Yes                                                                      |
| battery-backed and synchronizable                       | Yes                                                                      |
| Deviation per day, max.                                 | 10 s ; Typ.: 2 s                                                         |
| Backup time                                             | 6 wk ; At 40 °C ambient temperature                                      |
| Behavior of the clock following POWER-ON                | Clock continues running after POWER OFF                                  |
| Behavior of the clock following expiry of backup period | Clock continues to run with the time at which the power failure occurred |
| <b>Operating hours counter</b>                          |                                                                          |
| Number                                                  | 1                                                                        |
| Number/Number range                                     | 0                                                                        |
| Range of values                                         | 0 to 2 <sup>31</sup> hours (when using SFC 101)                          |
| Granularity                                             | 1 hour                                                                   |
| retentive                                               | Yes ; Must be restarted at each restart                                  |
| <b>Clock synchronization</b>                            |                                                                          |
| supported                                               | Yes                                                                      |
| to MPI, master                                          | Yes                                                                      |
| to MPI, slave                                           | Yes                                                                      |
| to DP, master                                           | Yes ; With DP slave only slave clock                                     |
| to DP, slave                                            | Yes                                                                      |
| in AS, master                                           | Yes                                                                      |
| in AS, slave                                            | No                                                                       |
| <b>1. Interface</b>                                     |                                                                          |
| Interface type                                          | Integrated RS 485 interface                                              |

|                                                        |                                           |
|--------------------------------------------------------|-------------------------------------------|
| <b>Physics</b>                                         | RS 485                                    |
| <b>isolated</b>                                        | No                                        |
| <b>Power supply to interface (15 to 30 V DC), max.</b> | 200 mA                                    |
| <b>Functionality</b>                                   |                                           |
| <b>MPI</b>                                             | Yes                                       |
| <b>DP master</b>                                       | No                                        |
| <b>DP slave</b>                                        | No                                        |
| <b>Point-to-point connection</b>                       | No                                        |
| <b>MPI</b>                                             |                                           |
| <b>Transmission rate, max.</b>                         | 187.5 kbit/s                              |
| <b>Services</b>                                        |                                           |
| <b>PG/OP communication</b>                             | Yes                                       |
| <b>Routing</b>                                         | Yes                                       |
| <b>Global data communication</b>                       | Yes                                       |
| <b>S7 basic communication</b>                          | Yes                                       |
| <b>S7 communication</b>                                | Yes ; Only server, configured on one side |
| <b>S7 communication, as client</b>                     | No                                        |
| <b>S7 communication, as server</b>                     | Yes                                       |
| <b>2. Interface</b>                                    |                                           |
| <b>Interface type</b>                                  | Integrated RS 485 interface               |
| <b>Physics</b>                                         | RS 485                                    |
| <b>isolated</b>                                        | Yes                                       |
| <b>Power supply to interface (15 to 30 V DC), max.</b> | 200 mA                                    |
| <b>Functionality</b>                                   |                                           |
| <b>MPI</b>                                             | No                                        |
| <b>DP master</b>                                       | Yes                                       |
| <b>DP slave</b>                                        | Yes                                       |
| <b>Point-to-point connection</b>                       | No                                        |
| <b>DP master</b>                                       |                                           |
| <b>Transmission rate, max.</b>                         | 12 Mbit/s                                 |
| <b>Number of DP slaves, max.</b>                       | 124 ; Per station                         |
| <b>Services</b>                                        |                                           |
| <b>PG/OP communication</b>                             | Yes                                       |
| <b>Routing</b>                                         | Yes                                       |
| <b>Global data communication</b>                       | No                                        |
| <b>S7 basic communication</b>                          | Yes ; I blocks only                       |
| <b>S7 communication</b>                                | Yes ; Only server, configured on one side |
| <b>S7 communication, as client</b>                     | No                                        |

|                                                                                   |                                                                                                                            |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>S7 communication, as server</b>                                                | Yes                                                                                                                        |
| <b>Equidistance mode support</b>                                                  | Yes                                                                                                                        |
| <b>Isochronous mode</b>                                                           | Yes ; OB 61                                                                                                                |
| <b>SYNC/FREEZE</b>                                                                | Yes                                                                                                                        |
| <b>Activation/deactivation of DP slaves</b>                                       | Yes                                                                                                                        |
| <b>Number of DP slaves that can be simultaneously activated/deactivated, max.</b> | 8                                                                                                                          |
| <b>DPV1</b>                                                                       | Yes                                                                                                                        |
| <b>Address area</b>                                                               |                                                                                                                            |
| <b>Inputs, max.</b>                                                               | 2048 byte                                                                                                                  |
| <b>Outputs, max.</b>                                                              | 2048 byte                                                                                                                  |
| <b>User data per DP slave</b>                                                     |                                                                                                                            |
| <b>Inputs, max.</b>                                                               | 244 byte                                                                                                                   |
| <b>Outputs, max.</b>                                                              | 244 byte                                                                                                                   |
| <b>DP slave</b>                                                                   |                                                                                                                            |
| <b>GSD file</b>                                                                   | The latest GSD file is available at: <a href="http://www.siemens.com/profibus-gsd">http://www.siemens.com/profibus-gsd</a> |
| <b>Transmission rate, max.</b>                                                    | 12 Mbit/s                                                                                                                  |
| <b>automatic baud rate search</b>                                                 | Yes ; only with passive interface                                                                                          |
| <b>Address area, max.</b>                                                         | 32                                                                                                                         |
| <b>User data per address area, max.</b>                                           | 32 byte                                                                                                                    |
| <b>Services</b>                                                                   |                                                                                                                            |
| <b>PG/OP communication</b>                                                        | Yes                                                                                                                        |
| <b>Routing</b>                                                                    | Yes ; Only with active interface                                                                                           |
| <b>Global data communication</b>                                                  | No                                                                                                                         |
| <b>S7 basic communication</b>                                                     | No                                                                                                                         |
| <b>S7 communication</b>                                                           | Yes ; Only server, configured on one side                                                                                  |
| <b>S7 communication, as client</b>                                                | No                                                                                                                         |
| <b>S7 communication, as server</b>                                                | Yes                                                                                                                        |
| <b>Direct data exchange (slave-to-slave communication)</b>                        | Yes                                                                                                                        |
| <b>DPV1</b>                                                                       | No                                                                                                                         |
| <b>Transfer memory</b>                                                            |                                                                                                                            |
| <b>Inputs</b>                                                                     | 244 byte                                                                                                                   |
| <b>Outputs</b>                                                                    | 244 byte                                                                                                                   |
| <b>Isochronous mode</b>                                                           |                                                                                                                            |
| <b>Isochronous mode (application synchronized up to terminal)</b>                 | Yes                                                                                                                        |
| <b>Communication functions</b>                                                    |                                                                                                                            |
| <b>PG/OP communication</b>                                                        | Yes                                                                                                                        |
| <b>Data record routing</b>                                                        | Yes                                                                                                                        |

|                                                             |                                                                                     |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Global data communication</b>                            |                                                                                     |
| <b>supported</b>                                            | Yes                                                                                 |
| <b>Number of GD loops, max.</b>                             | 8                                                                                   |
| <b>Number of GD packets, max.</b>                           | 8                                                                                   |
| <b>Number of GD packets, transmitter, max.</b>              | 8                                                                                   |
| <b>Number of GD packets, receiver, max.</b>                 | 8                                                                                   |
| <b>Size of GD packets, max.</b>                             | 22 byte                                                                             |
| <b>Size of GD packet (of which consistent), max.</b>        | 22 byte                                                                             |
| <b>S7 basic communication</b>                               |                                                                                     |
| <b>supported</b>                                            | Yes                                                                                 |
| <b>User data per job, max.</b>                              | 76 byte                                                                             |
| <b>User data per job (of which consistent), max.</b>        | 76 byte ; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) |
| <b>S7 communication</b>                                     |                                                                                     |
| <b>supported</b>                                            | Yes                                                                                 |
| <b>as server</b>                                            | Yes                                                                                 |
| <b>as client</b>                                            | Yes ; Via CP and loadable FB                                                        |
| <b>User data per job, max.</b>                              | 180 byte ; With PUT/GET                                                             |
| <b>User data per job (of which consistent), max.</b>        | 240 byte ; as server                                                                |
| <b>S5 compatible communication</b>                          |                                                                                     |
| <b>supported</b>                                            | Yes ; via CP and loadable FC                                                        |
| <b>Number of connections</b>                                |                                                                                     |
| <b>overall</b>                                              | 16                                                                                  |
| <b>usable for PG communication</b>                          | 15                                                                                  |
| <b>reserved for PG communication</b>                        | 1                                                                                   |
| <b>adjustable for PG communication, min.</b>                | 1                                                                                   |
| <b>adjustable for PG communication, max.</b>                | 15                                                                                  |
| <b>usable for OP communication</b>                          | 15                                                                                  |
| <b>reserved for OP communication</b>                        | 1                                                                                   |
| <b>adjustable for OP communication, min.</b>                | 1                                                                                   |
| <b>adjustable for OP communication, max.</b>                | 15                                                                                  |
| <b>usable for S7 basic communication</b>                    | 12                                                                                  |
| <b>reserved for S7 basic communication</b>                  | 0                                                                                   |
| <b>adjustable for S7 basic communication, min.</b>          | 0                                                                                   |
| <b>adjustable for S7 basic communication, max.</b>          | 12                                                                                  |
| <b>S7 message functions</b>                                 |                                                                                     |
| <b>Number of login stations for message functions, max.</b> | 16 ; Depending on the configured connections for PG/OP and S7 basic communication   |
| <b>Process diagnostic messages</b>                          | Yes                                                                                 |

|                                            |                                                   |
|--------------------------------------------|---------------------------------------------------|
| simultaneously active Alarm-S blocks, max. | 300                                               |
| <b>Test commissioning functions</b>        |                                                   |
| Status block                               | Yes ; Up to 2 simultaneously                      |
| Single step                                | Yes                                               |
| Number of breakpoints                      | 4                                                 |
| <b>Status/control</b>                      |                                                   |
| Status/control variable                    | Yes                                               |
| Variables                                  | Inputs, outputs, memory bits, DB, times, counters |
| Number of variables, max.                  | 30                                                |
| of which status variables, max.            | 30                                                |
| of which control variables, max.           | 14                                                |
| <b>Forcing</b>                             |                                                   |
| Forcing                                    | Yes                                               |
| Forcing, variables                         | Inputs, outputs                                   |
| Number of variables, max.                  | 10                                                |
| <b>Diagnostic buffer</b>                   |                                                   |
| present                                    | Yes                                               |
| Number of entries, max.                    | 500                                               |
| adjustable                                 | No                                                |
| of which powerfail-proof                   | 100 ; Only the last 100 entries are retained      |
| Number of entries readable in RUN, max.    |                                                   |
| adjustable                                 | Yes ; From 10 to 499                              |
| preset                                     | 10                                                |
| <b>Service data</b>                        |                                                   |
| can be read out                            | Yes                                               |
| <b>Standards, approvals, certificates</b>  |                                                   |
| CE mark                                    | Yes                                               |
| KC approval                                | Yes                                               |
| UL approval                                | Yes ; File E239877                                |
| RCM (former C-TICK)                        | Yes                                               |
| FM approval                                | Yes ; CofC 3028431                                |
| EAC (former Gost-R)                        | Yes                                               |
| EN 50155                                   | No                                                |
| <b>Ambient conditions</b>                  |                                                   |
| <b>Operating temperature</b>               |                                                   |
| min.                                       | -25 °C                                            |
| max.                                       | 60 °C                                             |
| <b>Extended ambient conditions</b>         |                                                   |

|                                                                                   |                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>relative to ambient temperature-atmospheric pressure-installation altitude</b> | Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m)                                                                                                                         |
| <b>Relative humidity</b>                                                          |                                                                                                                                                                                     |
| <b>with condensation, tested in accordance with IEC 60068-2-38, maximum</b>       | 100 % ; RH incl. condensation/frost (no commissioning under condensation conditions)                                                                                                |
| <b>Resistance</b>                                                                 |                                                                                                                                                                                     |
| <b>to biologically active substances/conformity with EN 60721-3-3</b>             | Yes ; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!                 |
| <b>to chemically active substances/conformity with EN 60721-3-3</b>               | Yes ; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation! |
| <b>to mechanically active substances/conformity with EN 60721-3-3</b>             | Yes ; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!                                                              |
| <b>Configuration</b>                                                              |                                                                                                                                                                                     |
| <b>Configuration software</b>                                                     |                                                                                                                                                                                     |
| <b>STEP 7</b>                                                                     | Yes ; V5.2 SP1 or higher with HW update                                                                                                                                             |
| <b>Programming</b>                                                                |                                                                                                                                                                                     |
| <b>Command set</b>                                                                | see instruction list                                                                                                                                                                |
| <b>Nesting levels</b>                                                             | 8                                                                                                                                                                                   |
| <b>System functions (SFC)</b>                                                     | see instruction list                                                                                                                                                                |
| <b>System function blocks (SFB)</b>                                               | see instruction list                                                                                                                                                                |
| <b>Programming language</b>                                                       |                                                                                                                                                                                     |
| <b>LAD</b>                                                                        | Yes                                                                                                                                                                                 |
| <b>FBD</b>                                                                        | Yes                                                                                                                                                                                 |
| <b>STL</b>                                                                        | Yes                                                                                                                                                                                 |
| <b>SCL</b>                                                                        | Yes                                                                                                                                                                                 |
| <b>CFC</b>                                                                        | Yes                                                                                                                                                                                 |
| <b>GRAPH</b>                                                                      | Yes                                                                                                                                                                                 |
| <b>HiGraph®</b>                                                                   | Yes                                                                                                                                                                                 |
| <b>Know-how protection</b>                                                        |                                                                                                                                                                                     |
| <b>User program protection/password protection</b>                                | Yes                                                                                                                                                                                 |
| <b>Block encryption</b>                                                           | Yes ; With S7 block Privacy                                                                                                                                                         |
| <b>Dimensions</b>                                                                 |                                                                                                                                                                                     |
| <b>Width</b>                                                                      | 40 mm                                                                                                                                                                               |
| <b>Height</b>                                                                     | 125 mm                                                                                                                                                                              |
| <b>Depth</b>                                                                      | 130 mm                                                                                                                                                                              |
| <b>Weights</b>                                                                    |                                                                                                                                                                                     |
| <b>Weight, approx.</b>                                                            | 290 g                                                                                                                                                                               |
| Status                                                                            | Jul 21, 2014                                                                                                                                                                        |