# .INTRODUCTION

The KS16116-02 and KS16117-02 are synchronous, half-duplex modems capable of speeds up to 9600 bps (KS16116-02) or up to 14400 bps (KS16117-02). These modem devices can operate over the public switched telephone network (PSTN) with the addition of the appropriate data access arrangement (DAA).

These modems satisfy the requirements specified in ITU-T recommendations V.17 (KS16117-02), V.29, V.27 ter, V.21 Channel 2 and T.4, and meet the binary signaling requirements of T.30. These products are intended to be used in Group 3 facsimile machines or fax processing boards and can operate at 14400 (KS16117-02), 12000 (KS16117-02), 9600, 7200, 4800, 2400 or 300 bps depending on the selected configuration. These devices also feature V.17 short train (KS16117-02) and V.27 ter short train and three programmable tone detectors as well as a programmable DTMF receiver. Additionally, HDLC framing (according to T.30) at 14400 (KS16117-02), 12000 (KS16117-02), 9600, 7200, 4800, 2400 or 300 bps is also featured. General purpose input/output and general purpose input (GPI) pins are available for host assignment.

KS16116-02
KS16117-02

ORDERING INFORMATION
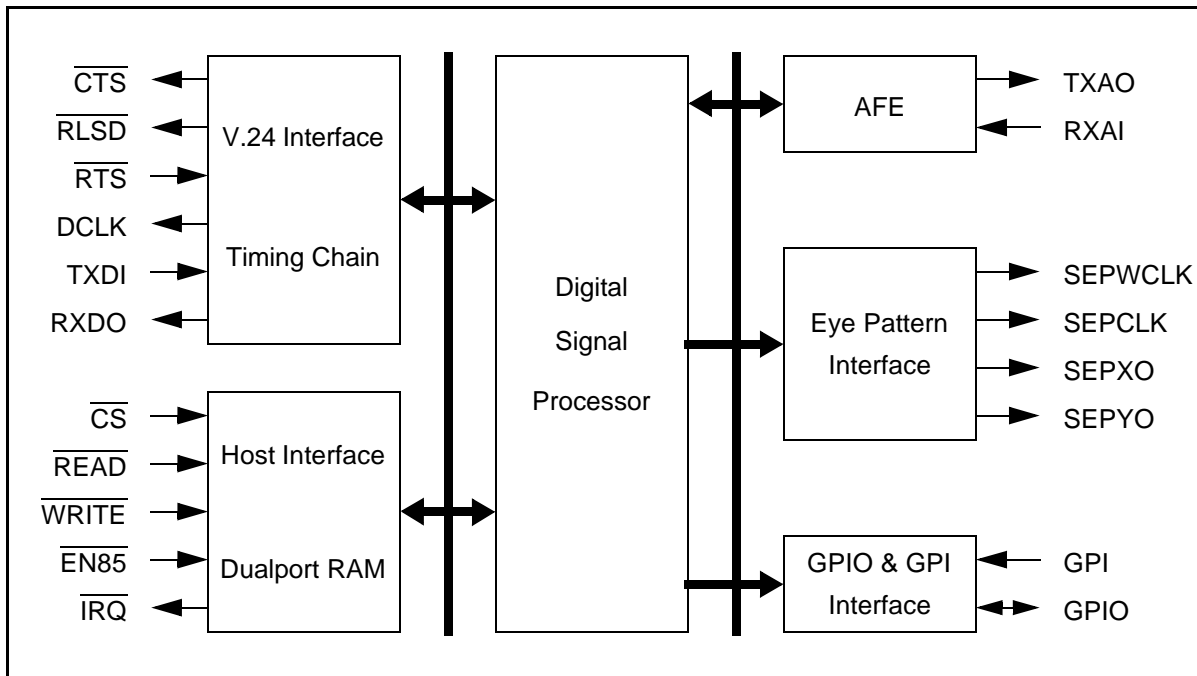KS16116-02 100-PQFP
KS16117-02 100-PQFP
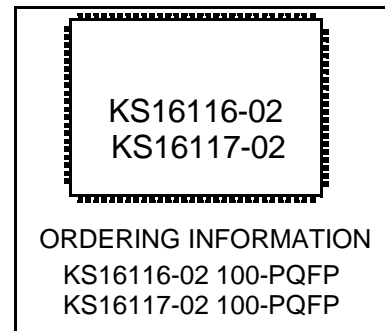
Features

- Group 3 facsimile transmission/reception according to:

   - ITU-T V.17 short and long train (KS16117-02)
   - ITU-T V.29, V.27 ter short and long train, V.21 Ch.2, T.30, and T.4

- Caller ID reception and detection

- Half-duplex operation

- Receiver dynamic range: 0 dBm to - 43 dBm

- Programmable transmit level: 0 dBm to - 15 dBm

- Programmable transmit attenuation: 0 dB to 14 dB in 2 dB steps

- Programmable dual tone generation

- Programmable tone detection

- Programmable interface memory interrupt

- Programmable turn on and turn off thresholds

- Automatic T/2 adaptive equalizer

- HDLC capability at all speeds

- Diagnostic capability allowing telephone line quality monitoring

- ITU-T V.24 compatible interface

- TTL and CMOS compatible

- Low power consumption, KS16116-02: 250mW (typical), KS16117-02: 400mW (typical)

- Single +5V power supply

- Software compatible with KS16116-02 (KS16112) and KS16117-02 (KS16114)

- Programmable compromise filter for high speed RX modes

Block Diagram

The KS16116-02 and KS16117-02 consists of Digital Signal Processor, Analog Front End, and some peripheral logics. Figure 1.1 shows a block diagram of the KS16116-02 and KS16117-02.

Pin Configuration

Top pins (100–81): GP02, SWGAINO, RCVO, GNDD, RLSD, RXDO, GP19, GP20, GNDD, GP21, SEPYO, GNDD, DAOUT, ADIN, SEPXO, SEPCLK, SEPCLKX, SEPWCLK, DCLK, GNDD

Left pins (1–30):
1 GP03
2 GP04
3 GP05
4 GP06
5 GP07
6 GNDD
7 GNDD
8 D7
9 D6
10 D5
11 D4
12 D3
13 D2
14 D1
15 D0
16 GNDD
17 GNDA
18 RXAMPI
19 NC
20 NC
21 GNDA
22 V_DD
23 GNDD
24 SWGAINI
25 ECLKIN1
26 SYNCIN1
27 NC
28 NC
29 NC
30 GNDA

Center: KS16116-02 / KS16117-02

Right pins (80–51):
80 GNDD
79 TXDI
78 CTS
77 GNDD
76 GP17
75 GP16
74 SYNCIN2
73 DCLKI
72 DVDD
71 YCLKO
70 XCLKO
69 XTALO
68 XTALI
67 PORI
66 GNDD
65 EN85
64 RTS
63 GP11
62 NC
61 GP13
60 RS0
59 RS1
58 RS2
57 RS3
56 RS4
55 READ-φ2
54 CS
53 WRITE-R/W
52 IRQ
51 NC

Bottom pins (31–50): NC, NC, NC, DAIN, ADOUT, BYPASS, RCVI, TXATT3, TXATT2, TXATT1, NC, VREFN, VSSG, TXAO, RXAI, V_CC, GNDA, V_C, AOUT, GNDD

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