

Features

- 3 Documentation Production Units
 - High-performance Document Production Controller
 - Information Visualisation Production Controller (IVP)
 - Technical Editing Master
- Supported by 4 specialised memories
- Professional Development Controller
 - C++, C, Perl
- Embedded Development Interface
 - C and assembly and ASIC driver development
- GNU/Linux Debian Module
 - supported by Unix Since 1989 RAM unit
- Multiple I.T. to documentation interface
- Simple Communication Interface (COMMS)
- On-site operation (TW100-ONSITE-007, TW100TELECM-007)
- Powerful 6 component Core Personality Unit (CPU)
 - Analog Units for complex waveform analyses
 - UNI module featuring 4 university qualifications
- PAY Interface
 - industry standard 50 Euro per Hour inputs
 - Set Fee, Progress Payment, and Other payment lines
- Documentation: all types at short notice
- Zero office floorspace footprint
- Advanced creative features

Technical Writer	Projects	Location	Office	Overheads
TW100REMOTE100	Standard	Remote	-	-
TW100REMOTE100	Small	Remote	-	-
TW100REMOTE100	Minor	Remote	-	-
TW100-ONSITE-007	Standard	Office	office space	many (see 6.1)
TW100TELECM-007	Standard	Remote	telecommute	many (see 6.2)

1 Description

The TW100REMOTE series are a set of technologically advanced Technical Documentation production devices based on an intelligent, creative and dedicated architecture, an architecture derived from extensive I.T., industry and corporate technical writing experience. These documentation systems have been built around a high performance information processing core possessing broad technical skills and the ability to process large amounts of information. In addition, a simple remote activation management module, the COMMS interface, makes available easy, high speed production in most technical documentation domains.

The TW100REMOTE Series features three Documentation Production Units (DPUs) for the construction of documents of arbitrary size and of arbitrary type: system manuals, datasheets, man pages, source code documentation, work instructions and quality system literature. Multiple engineer - technical writer communication channels enable high speed turnaround with only a minimum of management-complexity overhead. Direct access by business functions make the TW100REMOTE series devices ideal for quick updates and for unforeseen documentation requirements. These technical documentation solutions offer an extreme adaptability of configuration, permitting easy inclusion in both novel and standard technical programmes.

The TW100REMOTE Series is a family of powerful technical documentation devices offering flexible and cost-effective solutions applicable to most Reluctant Engineer Documentation (RED) scenarios.

**STEPHEN
MC GREGOR**

TW100REMOTE Remote Technical Writer

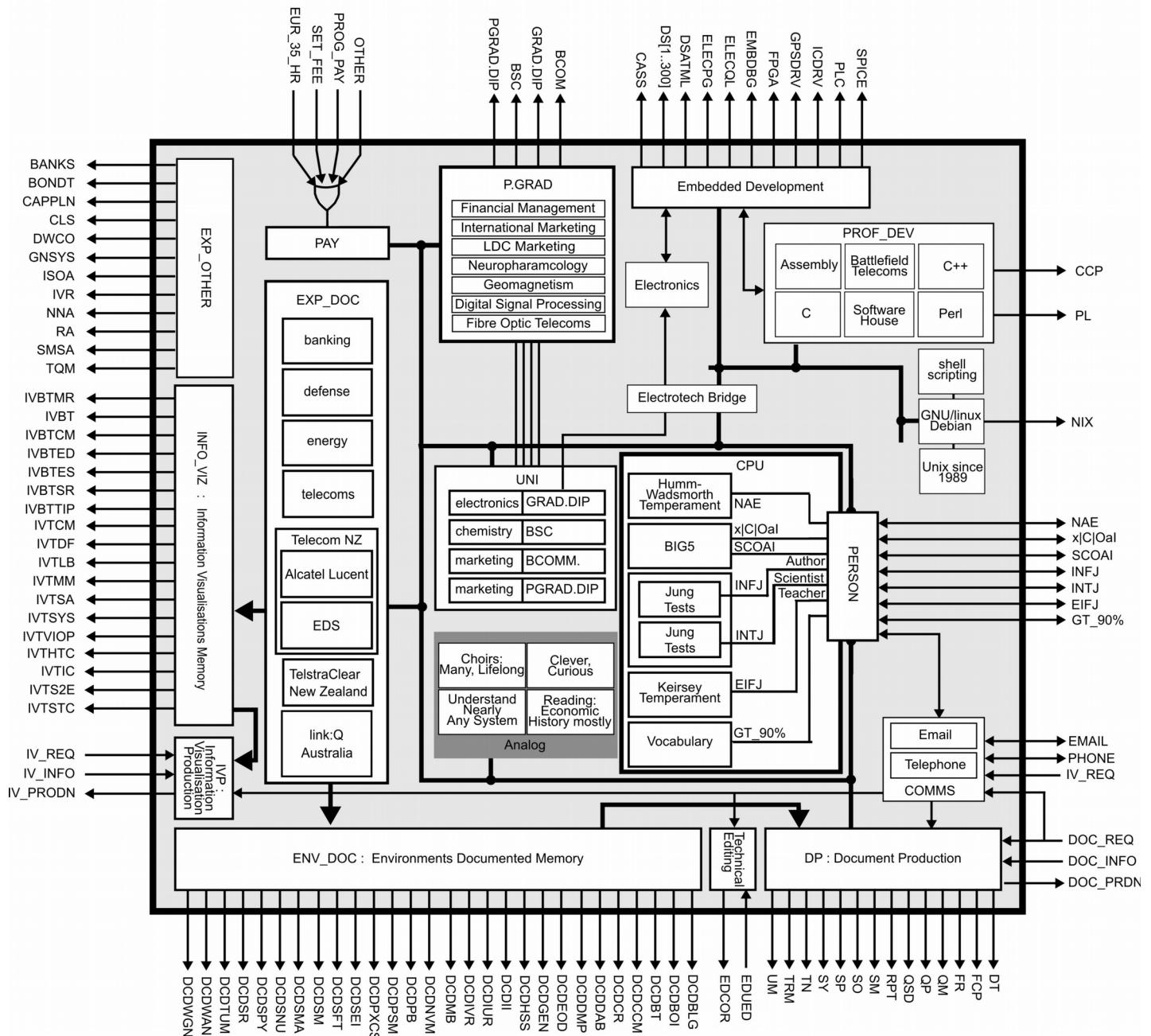
**TW100REMOTE100
TW100REMOTE010
TW100REMOTE001
TW100-ONSITE-007
TW100TELECM-007**

Summary Preliminary

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2 Block Diagram

Figure 2-1. TW100REMOTE Series Block Diagram



3 Pin Descriptions

Table 3.1 TW100REMOTE Series Pin Description

Module	Name	Function	Mode	Type	Comments
Embedded Development	CASS	C and assembly	dev	embed	High level education - work integration around embedded development
	DS[1..300]	read 300 datasheets, maybe 500 (determined estimate)	dev	embed	
	DSATML	dsPIC and Atmel chips	dev	embed	
	ELECPG	postgrad electronics study	train	embed	
	ELECQL	Tertiary qualified : electronics	train	embed	
	EMBDBG	embedded debugging	dev	embed	
	FPGA	Verilog / FPGA programming exposure	train	embed	
	GPSDRV	GPS chip drivers and management	dev	embed	
	ICDRV	IC driver development	dev	embed	
	PLC	PLC controller programming	train	embed	
	SPICE	SPICE system modelling	dev	embed	
ENV_DOC Environments Documented	DCDBLG	telco billing and logging system	tw	telco	
	DCDBOI	National telco's back-office interdependencies	tw	telco	
	DCDBT	bond trading application	tw	bank IT	
	DCDCCM	NICE call centre monitoring	tw	telco	
	DCDCR	telco call routing forest	tw	telco	
	DCDDAB	artillery battalion control system functional reference	tw	defence	
	DCDDMP	mortar platoon control system functional reference	tw	defence	
	DCDEOD	large end-of-day reconciliation system	tw	bank IT	
	DCDGGEN	Genesys Systems	tw	telco	
	DCDHSS	large telco's hardware, software and systems	tw	telco	
	DCDII	international interfaces (SWIFT, Reuters, others)	tw	bank IT	
	DCDIUR	client & organisation information resource application	tw	bank IT	
	DCDIVR	a large telco IVR system	tw	telco	
	DCDMB	internal message system, message bus	tw	bank IT	
	DCDNVM	non-voice message management systems	tw	telco	
	DCDPB	a private banking system	tw	bank IT	
	DCDPSM	300 Page Programming System Manual	tw	telco	
	DCDPXCS	major installation's PABX - Cisco interfaces	tw	telco	
	DCDSEI	security and external interfaces	tw	telco	
	DCDSFT	a swaps & forward trade management system	tw	bank IT	
	DCDSM	telco system monitoring	tw	telco	
	DCDSMA	system maintenance applications	tw	telco	
	DCDSNU	Telco's satellite, national and urban networks	tw	telco	
	DCDSPY	security trade payment system	tw	bank IT	
	DCDSR	TuVox Speech recognition	tw	telco	
	DCDTUM	250 page Technical User Manual	tw	telco	
	DCDWAN	Australia-wide twin WAN architecture	tw	telco	
	DCDWGN	Websphere-Genesys interfaces	tw	telco	
PROF_DEV	CCP	C++, C, fundamental languages	dev	it	Industry-standard development protocols
	PL	Developed touch screen P.O.S. system	dev	it	
GNU/Linux	NIX	GNU/Linux (Debian testing)	dev	it	

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Table 3.1 (continued)

TW100REMOTE Series Pin Description

Module	Name	Function	Mode	Type	Comments
EXP_OTHER other experience	BANKS	Banking Systems	misc	bank IT	
	BOND'T	Bond Trading	misc	bank IT	
	CAPPLN	Capacity Planning	misc	-	
	CLS	University : Computer Lab Supervisor	misc	-	
	DWCO	Data Warehouse : computer operator	misc	-	
	GNSYS	Genesys : major telecoms call management systems	misc	telco	
	ISOA	ISO: trained ISO auditor	misc	-	
	IVR	IVR : Interactive Voice Response, telephone systems	tw	telco	
	NNA	Utility: National Network Analyst	misc	energy	
	RA	University : Research Assistant	misc	-	
UNI university	SMSA	Steel Mill : Shift analyst	misc	-	
	TQM	Telarc quality manager : major utility	misc	-	
	BCOMM	Market Research / International marketing	train	misc	accessible through the PGRAD interface
	BSC	Chem engineering / organic, biotech, pharmacology.	train	misc	
DP Document Production	GRAD.DIP	Electronic design systems, microcontrollers, physics.	train	embed	
	PGRAD.DIP	Advanced marketing, third-world marketing.	train	misc	
	DOC_REQ	Documentation Request	tw	business	all Documentation Production functions must be coordinated with the COMMS module
	DOC_INFO	Reads the information required for the Documentation	tw	business	
	DOC_PRDN	Make the completed Documentation available	tw	business	
	DT	document template	tw	telco	
	FCP	forecasts and capacity plan	tw	telco	
	FR	functional reference	tw	defence	
	QM	quality manual	tw	telco	
	QP	quality plan	tw	telco	
	QSD	quality system documentation	tw	telco	
	RPT	report	tw	telco	
	SM	system manual	tw	telco	
	SO	system overview	tw	telco	
Technical Editing	SP	specification	tw	telco	All important documentation types can be output by TW100REMOTE series devices.
	SY	study	tw	telco	
Information Visualisation Production	TN	technical note	tw	telco	
	TRM	technical reference manual	tw	telco	
	UM	users' manual	tw	telco	
	EDUED	Unedited technical documents	tedit	business	
	EDCOR	Edited and corrected technical documents	tedit	business	
	IV_REQ	Information Visualisation Request	tw	business	all Information Visualisation Production functions must be coordinated with the COMMS module.
	IV_INFO	Reads the information required for the Documentation	tw	business	
	IV_PRDN	Make the completed visualisation available	tw	business	

Table 3.1 (continued)

TW100REMOTE Series Pin Description

Module	Name	Function	Mode	Type	Comments
COMMS	EMAIL	technicalDocumentation@stephen-mcgregor.com	tw, dev	business	
	PHONE	Please Email for a 10 digit PHONE operation code	tw, dev	business	
	IV_REQ	Equivalent : Information Visualisation Production line	tw, dev	business	
	DOC_REQ	Equivalent : Document Production line	tw, dev	business	
PAY	EUR_50_HR	50 Euro per hour minimum	tw, dev	business	One or more PAY lines must be tied to VCC for TWREMOTE operation
	SET_FEE	Set Cost, or quote	tw, dev	business	
	PROG_PAY	Progress payments	tw, dev	business	
	OTHER	On-site overheads, technical editing.	tw, dev	business	
PERSON Personality Interface	EIFJ	Keirsey Temperament Sorter : "Teacher"	misc	-	
	GT_90%	Vocabulary (English) at 90% population quartile.	misc	-	
	INFJ	Jung Explorer : "Author" : rarest, 0.5% of male popn.	misc	-	
	INTJ	Jung : "Scientist"	misc	-	
	NAE	original, creative, self organised, documentation > talk	misc	-	
	SCOAI	Social, Calm, Organised, Accommodating, Inquisitive	misc	-	"Big 5", a widely accepted and utilised personality model.
	x C OaI	Calm (mainly), Organised, Inquisitive	misc	-	
INFO_VIZ Information Visualisations	IVBTMR	Bond trading market risk evaluations	iv	bank IT	the most efficient data transfer method available on the TE100REMOTE
	IVBT	Bond trading overall system	iv	bank IT	
	IVBCTM	Bond trading client & orgn management	iv	bank IT	
	IVBTED	Bond trading end-of-day processes	iv	bank IT	
	IVBTES	Bond trading to external systems	iv	bank IT	
	IVBTSR	Bond trading server relationships	iv	bank IT	
	IVBTTIP	Bond trading to international payment	iv	bank IT	
	IVTCM	Telco's connection management	iv	telco	
	IVTDF	Telco's data flow patterns	iv	telco	
	IVTHTC	Telco's hardware : trans-continental	iv	telco	
	IVTIC	Telco's internet connectivity interfaces	iv	telco	
	IVTLB	Telco's logging & billing systems	iv	telco	
	IVTMM	Telco's monitoring & maintenance	iv	telco	
	IVTS2E	Telco's 2-way SMS to email system	iv	telco	
	IVTSA	Telco's Security architecture	iv	telco	
	IVTSTC	Telco's systems : trans-continental	iv	telco	
	IVTSYS	Telco's primary systems' structure	iv	telco	
	IVVOIP	Telco's VoIP architecture & implementation	iv	telco	

4 ARCHITECTURAL OVERVIEW

TW100REMOTE series devices integrate three Documentation Production Units (DPUs), a Professional Development Controller, an Embedded Development Interface and four memory devices. The TW100REMOTE is built around a powerful Core Personality Unit (CPU) processor, accessible through the seven personality registers or via the Core Bus. A simple Communications Interface, the COMMS interface, provides access to both the production units and to the Core Bus.

The TW100REMOTE architecture consists of two buses, the Core Bus and the Development Bus. The Electrotech Bridge provides and interface between the Core Bus and the Development Bus.

The Documentation Production Units are designed for remote technical documentation and information visualisation production. The DPUs are simply controlled through the COMMS interface and are supported by high-speed connections to each of the Documentation Production memories and to the CPU. The DPUs are designed to be programmed with a minimum number of instructions, requiring only initialisation, information input, and the activation of one or more PAY lines.

By combining three DPUs, an Embedded Development Interface, a Professional Development Controller and four internal memories in one technical documentation unit, the TW100REMOTE series present a powerful, flexible, cost-effective solution to the documentation problems encountered by 21st century technical corporations.

4.1. Documentation Production Units (DPU)

The three Documentation Production Units (DPUs) implement the TW100REMOTE's Documentation Production, Information Visualisation Production, and Technical Editing protocols. The DP, INFO_VIZ, and Technical Editing units are each activated through the Communication Interface. After activation, the DPUs supply completed documents and information visualisations in response to information and PAY module inputs.

Client devices can program and control the three Documentation Production Units. The TW100REMOTE produces integrated documentation outputs of arbitrary size and complexity in response to external, client device, control.

4.2. Development Modules

The TW100REMOTE integrates several advanced development modules including an Embedded Development Interface. Other, non-Embedded, processors are encapsulated in the Professional Development (PROF_DEV) modules, or are accessible through the NIX line.

A dedicated bus links the development modules, transferring data between modules and, via the Electrotech Bridge, to the TW100REMOTE's core bus, CPU, and to its peripheral interfaces. Via this pathway the development modules can be controlled by any external device that addresses the the TW100REMOTE's Communication Interface.

4.3. Memories

The TW100REMOTE embeds four primary memory devices: a 28 pin Environments Documented memory, the 16 pin Information Visualisations memory, the internal Documentation Experience Master (EXP_DOC), and the Other Experience Memory (EXP_OTHER). Each of these memories are directly connected to the internal bus for single cycle access. This broad range of memory devices maximises system performance, minimising both internal and client power consumption while improving documentation production output conformance.

The Documentation Experience Master (EXP_DOC) is connected, via two dedicated channels, to the Information Visualisation memory and the Environments Documented Memory. The Documentation Experience Master and the Information Visualisation Memory support the Information Visualisation Production controller and the Documentation Production Controller, respectively.

4.4. Core Personality Units (CPU)

At the centre of the TW100REMOTES processing core are the five Core Personality Units (CPU). These units decode messages appearing on the Personality Interface via either the internal Core bus, or read through the seven PERSON personality registers. The four separately addressable Analog units can measure, interpret or generate a broad range of waveforms and are available for high frequency and harmonic analyses. The CPU encapsulates a UNI module, organised as four separate qualifications, accessible via the Core Bus or through the PGRAD PostGrad Uni interface.

4.5. Input / Output Considerations

Input, via the COMMS lines, of existing documentation, engineer contact codes, style guide or samples and, optionally, relevant source code are each required for successful operation of the TW100REMOTE's Document Production Controllers.

Document preparation cycles are required before activating document production. If document preparation is performed by an external unit, then an initialisation overhead is necessary before any Document Production Controller input line is driven high.

The TW100REMOTE can operate on payment levels down to 50 Euro per hour for documentation and information visualisation work. One of the four Pay Interface (PAY) lines must be fully clocked every 40 hours of TW100REMOTE operation. When the PAY cycle is not completed before the subsequent 40 hour cycle, the TW100REMOTE enters its low-power sleep mode. Only the COMMS module remains active during this sleep mode. One or more PAY lines must be fully clocked to reactive the TW100REMOTE.

To utilise the SET_FEE or PROG_PAY (Progress Payment) inputs, the EMAIL or PHONE lines of the COMMS Interface should be activated for additional cycles before addressing the Document Production Controller. In most designs the SET_FEE and PROG_PAY lines will need to be activated one or more times *before* Documentation or Information Visualisation outputs are read from their respective DPUs.

If 8 Yen per word is applied to the OTHER line, the Technical Editing unit can be activated.

The TW100REMOTE operates in complete 40-hour clock cycles; its sub-cycle timing does not include any burst mode.

The high frequency COMMS Interface runs independently of all other modules incorporated into the TW100REMOTE series devices.

5 PRODUCT OVERVIEW

5.1. Environments Documented Memory(ENV_DOC)

The ENV_DOC is a Documentation Experience memory device. The ENV_DOC supports the Document Production Controller(DP) over a dedicated high bandwidth connection. The Environments Documented Memory embeds documentation experience from twenty eight environments, featuring maximum performance in the Telecommunications, financial IT and defence application domains. This experience is directly available for client task applications, maximizing depth of insight and appreciation of technical protocols.

The ENV_DOC implements a minimisation of management and real time overhead when incorporated into complex messaging-type applications and high data transfer rate environments. The TW100REMOTE's previous documentation of Financial IT and battlefield communications electronics permits operation in a wide range of application environments, from Very Large Scale Integrated systems down to small embedded devices.

This memory module can be configured to utilise features of the Embedded Development Interface and the PROV_DEV Controller, either though the client's application environment, or via the TW100REMOTE Core Bus, the Electrotech Bridge and the Development Bus.

5.2. Information Visualisations Memory(INFO_VIZ)

The TW100REMOTE embeds an Information Visualisations Memory (INFO_VIZ) unit encapsulating nineteen representative Information Visualisation works. The Information Visualisations Memory is directly connected to both the Documentation Experience Master and to the Information Visualisation Production (IVP) Controller.

The INFO_VIZ integrates a collection of Bond Trading IT Visualisations (available as IVBTMT, IVBT...IVBTTIP) along with eleven Telecommunications Visualisations. The Information Visualisations collected through the INFO_VIZ unit are a subset of the information Visualisations produced by the TW100REMOTE. Several of the INFO_VIZ pins implement multiplexed collections of related information visualisations.

5.3. Information Visualisation Production Controller (IVP)

The Information Visualisation Production Controller (IVP) embeds access to the TW100REMOTE's Information Visualisation production functions. Writing to the IV_REQ line is equivalent to setting the Information Visualisation bit, asserting an interrupt on the COMMS Interface interrupt, before writing data to the EMAIL line.

Data required for an Information Visualisation can be written to the IV_INFO line, triggering operation of the IVP. Following this activation, on the appropriate subsequent clock cycle, an Information Visualisation can be read from the IV_PRDN pin.

The IVP supplies the densest form of data output available from the TW100REMOTE. Designs utilising the IVP are a significant improvement over Documentation Only (DO) and Code Only (CO) systems. Information Visualisation applications also minimise inter-client information processing attention-cycle overheads.

The IVP features a dedicated high bandwidth link to the Informations Visualisations Memory. This feature substantially reduces the clock cycle and communication overhead required for Information Visualisation production.

———— Note ————

Stephen McGregor strongly recommends that the TW100REMOTE series devices' IVP lines are utilised for all high-level system summarisation processes.

5.4. Documentation Experience Master(EXP_DOC)

The Documentation Experience Master (EXP_DOC) embeds a wide range of corporate and industrial documentation experience. This internal memory is connected to the Core Bus, to the INFO_VIZ, and to the Environments Documented (ENV_DOC) memories. These connections provide maximum document production performance while adding bandwidth to memory access protocols.

The Documentation Experience Memory encapsulates four major telecommunications corporates: Alcatel Lucent, Link:Q (Australia), EDS and TelstraClear New Zealand. The EDS and Alcatel Lucent application environments were entirely implemented for the benefit of New Zealand's major telecommunication company, Telecom New Zealand. In addition, the EXP_DOC Master features banking, defence, and energy documentation memories.

5.5. Document Production Controller (DP)

The TW100REMOTE, with the inclusion of the Document Production Controller (DP), features fourteen Documentation Production registers and three control lines. Each document type can be individually programmed to deliver a wide range of document sizes and complexities. After activation of COMMS module, all fourteen Document Types are accessible from the Document Production Controller

The DP Controller encapsulates all important, industry standard, document production modes. After initialisation through its DOC_REQ pin, the Document Production Controller reads the data required for the documentation through the DOC_INFO. On the appropriate subsequent clock cycle the client device can read the SM (System Manual), TM (Technical Reference Manual) and UM (User Manual) lines for major system documentation. Alternatively the FR, SY, TN, RPT pin can be interrogated for Functional References, Studies, Technical Notes, or Reports. For quality system documentation QSD, QM, QP are available.

Note that in any document production mode the TW100REMOTE's development modules are disabled.

5.6. Technical Editing Master

The Technical Editing Master generates correction and improvement masks to be applied to technical documentation. Correction masks take the form of repaired technical English. Improvement masks are micro and macro level operations to be applied to the technical document data stream.

The Technical Editing Master may continue to be initialised and operated even if the TW100REMOTE enters a low power mode, as operation requires only an 8 Yen per word signal to be applied to the OTHER pin of the PAY module.

5.7. Other Experience Memory (EXP_OTHER)

The 12 channel Other Experience Memory (EXP_OTHER) is a collection of a high-density Successive, Evaluative and Technological Improvement (SETI) memories. The general purpose Telarc Quality Manger (TQM) and ISO Auditor lines implemented easy-to-use industrial quality control methods. The Bond Trading, Banking System, Capacity Planning, National Network Analyst, Steel Mill Analyst and Research Assistant pins enable a wide range of analytical routines that are applicable in many designs.

It is recommended that, in any telecommunication-based application, the Interactive Voice Response system (IVR) pin and the Genesys (GNSYS) pin be read as outputs or, if unused, held at valid logic levels.

5.8. Pay Interface (PAY)

The TW100REMOTE series PAY module exposes four external payment lines, at least one of which must be connected to VCC for correct device operation. The standard EURO_50_HR line transfers payments under normal working conditions. The SET_FEE and PROG_PAY lines have been added to, both, ease of integration of the TW100REMOTE into constrained environments, and to minimise management overhead power consumption. In designs utilising the SET_FEE and PROG_PAY lines, these pins will need to be set one or more times *before* Documentation or Information Visualisation outputs are read from their respective Documentation Production Units.

One or more the COMMS module's lines should be activated before the utilisation of the PAY module's OTHER line. As a special case, an input of 8 Yen per word on the OTHER line activates the Technical Editing module.

One of the four PAY Payment Interface lines must be fully clocked at least once for every 40 hours of TW100REMOTE operation. When no payment line is set before the subsequent 40 hour cycle, the TW100REMOTE enters its low-power sleep mode, leaving only the COMMS module active. One or more PAY lines must be fully clocked to reactive the TW100REMOTE.

5.9. UNI Module (UNI)

In the core of the TW100REMOTE are 4 university qualifications. One qualification is connected, via the Electronics Module, to the Embedded Development Interface. The three qualifications not connected to the Embedded Development Interface support general business and technical use.

The TW100REMOTE's UNI module removes application uncertainty from client devices interacting in real time with the TW100REMOTE. The UNI and PGRAD modules assist the COMMS Communication Interface maintain high data-throughput rates.

5.10. PostGrad Uni Interface (PGRAD)

The TW100REMOTE features a PGRAD Interface. The PGRAD activates communication and protocol enhancements when the TW100REMOTE is connected to external technical and business systems via one or more of the UNI Module lines. The PGRAD, like the UNI Module, is accessible across the TW100REMOTE's internal communication bus, enabling this module's functionality to be accessed by any other of the TW100REMOTE's subsystems.

5.11. Core Personality Unit (CPU) and Personality Interface (PERSON)

The TW100REMOTE's processing core features the five component Core Personality Unit (CPU). The CPU is accessible via the PERSON interface. The PERSON interface is connected to the Core bus and can be assessed directly by a connected client device through its seven personality interface registers. The CPU provides interface management control routines conforming to expected, industry standard, Technical Writer input/response communication protocols.

At the initiation and completion of important system events, the Core Personality Unit supplies output messages on the PERSON registers and on the Core Bus. Important system events include: the completion of I/O cycles, the initiation and completion of any DPU documentation production cycles, and the initiation and completion of Development Cycles. The PERSON interface remains active during all COMMS modules protocols.

The CPU provides seven interfaces to the five Core Personality Unit components.

Personality Component	Signal
Humm-Wadsworth Temperament	NAE

The NAE signal from the Humm-Wadsworth Temperament component specifies :

- originality, creativity, self organisation, with a preference for documentation over talk

Personality Component	Signal
BIG5	SCOAI
BIG5	x C Oal

The SCOAI signal from the BIG5 evaluation component specifies :

- Social, Calm, Organised, Accommodating, Inquisitive

The more detailed x|C|Oal signal specifies :

- Calm (central quality), Organised, Inquisitive

The BIG5 is a collection of five orthogonal personality vectors that have been claimed to underlie all other observed traits¹.

Personality Component	Signal
Jung Test (Explorer)	INFJ
Jung Test	INTJ

The INFJ signal from the Explorer Jung Test component specifies :

- “Author”. This is the rarest Jung quality, being present in only 0.5% of the male population.

A separate Jung Test component supplies the “scientist” interface.

Personality Component	Signal
Kerisey Temperament Sorter	EIFJ

The EIFJ signal from the industry standard Keirsey Temperament Sorter specifies :

- “teacher”

Personality Component	Signal
Vocabulary	GT_90%

The GT_90% signal from the vocabulary component specifies a vocabulary exceeding that of 90% of the English speaking population.

5.12. Analog Units

The four separately addressable Analog units measure and generate a range of waveforms. These units are available for Very Long Wavelength analysis and generation, for High Frequency Processing, and for Harmonic Analysis.

The Choirs Lifelong controller handles dense harmonic analyses, the Reading: Mostly Economic History driver processes external signals in the Very Long Wavelength: Infra-Read (VLWIR) range. The Understand Nearly Any System Interface and the Clever Curious Interface are both access points to core MCU functions. These two interfaces are designed to be used in combination with other TW100REMOTE modules and will not be independently accessed in most standard application environments.

5.13. Electronics Module (EM)

The Electronics Module is an externally updateable flash memory device based on a one-time programmed Set Of Maxwell's Equations (SOME). The purpose of the Electronics Module is to support applications implemented in Microcontroller Orientated Real-world Environments (MORE) by the device's encapsulation of a Collection of Application Knowledge about Electronics (CAKE). This device functions as the Primary Link between Electronics And other System Experience (PLEASE) components which, in combination, function as a Multiple Microcontroller Manipulation Method Memory (MMMMMM). In some designs the Electronics Module may operate as a Theoretical Hardware And Nanotechnology Knowledge System (THANKS).

1 Digman, J.M. (1990). Personality structure: Emergence of the five-factor model. Annual Review of Psychology, 41, 417-440.

5.14. Embedded Development Interface (EDI)

The TW100REMOTE has an 11-component, integrated, Embedded Development Interface (EDI) which implements an experienced and practical understanding of Embedded Development, ASIC driver coding, Embedded Debugging, timing and inter-device communication.

This EDI is connected by the Development Bus to the on-board Professional Development Controller and to the GNU/Linux Debian module and its related units. The EDI features a direct connection to the Electronics Modules and is also connected, across the Electrotech Bridge, to the TW100REMOTE's documentation, core, and communication modules.

dsPIC and Atmel based designs should ensure to drive the DSATML line high before manipulating any of the CASS (C and Assembly), EMBDBG (Embedded Debugging), GPSDRV (GPS Chip Driver) or ICDRV (general IC Driver development) pins. To implement any of a wide range of other embedded development tasks the user should connect client modules to the appropriate pins of the EDI.

The Embedded Development, like the Professional Development Controller, is exclusively multiplexed with the three Document Production Units.

5.15. Professional Development Controller (PROF_DEV)

The TW100REMOTE embeds a Professional Development Controller encapsulating a number of industry-standard I.T. development components. The PROF_DEV is accessed by over the Electrotech bridge, via the Embedded Development module, or through connection to the CPP, PL, or NIX lines.

The PROF_DEV encapsulates standard development capabilities which can be incorporated in client designs after driving one or more of the COMMS lines high. The C++ Unit and C Unit presents the expected conforming commercial C and C++ development protocols. The Perl module makes available Perl programming interfaces. The six components of the Professional Development Controller have each been thoroughly tested and evaluated within commercial environments.

In documentation environments, the PROF_DEV enables high speed and complex data transfers to the Document Production modules. In high-density development and technological environments the TW100REMOTE supplies documentation solutions without the need for costly Introduce-Train-Engineer Annoyance (ITEA) cycles. The Professional Development Controller helps prevent system lock-up in cases of technologically complex data transfer loads.

In documentation orientated designs, note that the Professional Development Controller, like the Embedded Development Interface, is exclusively multiplexed with the three Document Production Units.

5.16. GNU/Linux Debian module

The GNU/Linux Debian Module provides industrial UNIX functionality. This module is standardised across all models of the TW100REMOTE series and features both a Shell Scripting co-processor and a Unix Since 1989 ROM unit.

The GNU/Linux Debian Module communicates with the Embedded Development and PROV_DEV devices over the high speed Development Bus and can be externally interrogated via the NIX line. The NIX line also provides indirect access to Shell Scripting and Unix Since 1989 ROM units.

5.17. Communication Interface (COMMS)

The TW100REMOTE features a dedicated Communications Interface for access to the PERSON interface of the CPU and to each of the three Documentation Production Units (DPUs).

EMAIL, the primary COMMS channel, is used to activate and control the TW100REMOTE. All of the TW100REMOTE's sub-modules can be directly or indirectly read or written to via EMAIL line. The PHONE line may be utilised following interrogation of the EMAIL unit for a localised twelve digit phone code and, after activation, becomes a fully functional communication interface. The COMMS Interface mirrors the Documentation Request (DOC_REQ) and Information Visualisation Request (IV_REQ) lines of the Document Production and Information Visualisation Production DPUs respectively.

The COMMS communication interface efficiently supports multi-mode, remote, real-time control with a high level of client security and assurance. The COMMS module remains active in the TW100REMOTE's low-power states.

6 ON-SITE OPERATION

The TW100REMOTE series includes two models featuring enhanced on-site operating modes: the TW100-ONSITE-007 for on-site environments, and the TW100TELECM-007 for telecommuting implementations.

6.1. TW100-ONSITE-007 Considerations

The TW100REMOTE series is designed for remote Technical Documentation and Information Visualisation production. If an on-site implementation is desired then the TW100-ONSITE-007 model must be used. The TW100-ONSITE-007, in comparison to standard TW100REMOTE models, requires additional inputs: office space, daily expenses, accommodation and two-way airline transport.

For more details, please refer to *The TW100REMOTE Series: On-site Implementation Application note 007*, available from Stephen McGregor.

6.2. TW100TELECM-007 Considerations

Partial on-site environments require the telecommute model, the TW100TELECM-007. This is a multi-mode device capable of both standard, remote, operating modes and of periodic on-site processing.

The TW100TELECM-007 requires the same inputs as the TW100-ONSITE-007 during the cycles during which it is being utilised in an on-site capacity. The requirements are office space, daily expenses, accommodation and two-way airline transport.

For more details, please refer to *The TW100REMOTE Series: On-site Implementation Application note 007*, available from Stephen McGregor.

7 PACKAGING INFORMATION

Figure 7.1 TW100REMOTE Physical Reference

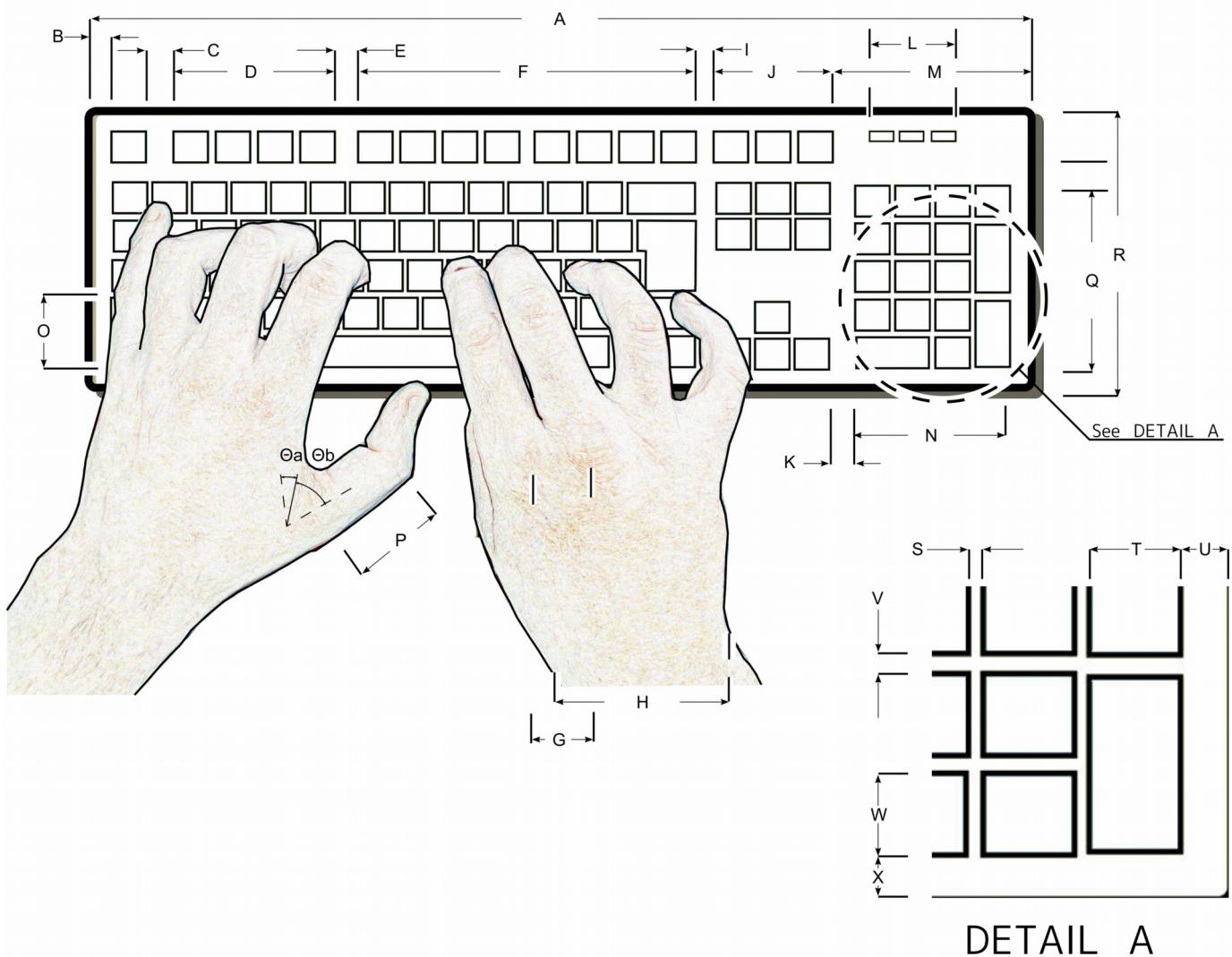


Table 7.1 Package Dimensions in mm

Symbol	Min	Norm	Max	Symbol	Min	Norm	Max
A	574.6	580.5	586.5	N	84.2	85.2	86.2
B	12.7	13.0	13.2	O	45.4	46.0	46.6
C	15.5	15.8	16.0	P	45.4	46.0	46.6
D	98.1	99.2	100.4	Q	110.4	111.6	112.8
E	13.8	14.1	14.3	R	173.2	175.1	176.9
F	206.1	208.3	210.5	S	2.4	2.6	2.7
G	37.8	38.3	38.8	T	21.0	21.3	21.6
H	106.1	107.3	108.5	Y	12.7	13.0	13.2
I	9.6	9.8	10.0	V	3.9	4.0	4.2
J	73.2	74.1	75.0	W	18.8	19.2	19.5
K	43.7	44.3	44.9	X	11.9	12.1	12.4
L	53.0	53.7	54.3	Θ_a	5.92°		
M	121.3	122.7	124.0	Θ_b	49.4°		

8 ORDERING INFORMATION**Table 8.1 Ordering Information**

Ordering Code	Package	Package Type	Operating Environments
Tw-Remote	TW100REMOTE100	Technical Documentation	All
Tw-Remote-Med	TW100REMOTE010	Technical Documentation	All
Tw-Remote-Small	TW100REMOTE001	Technical Documentation	All
Tw-Telecommute	TW100TELECM-007	Technical Documentation	some commercial
Tw-Onsite	TW100-ONSITE-007	Technical Documentation	some commercial

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