

BT KINSMAN or Mitel SX 20



Telephones
Switchboards
How to Convert Old
Telephones and
conversion kits
Reproduction
telephone cords
All Other

PXML No. 68

APPROVAL No. S/1412/23/C/020691 (SX20) & S/1000/23/C/020691 (KINSMAN)

[Click here to see information on BT's withdrawal of Subscribers Private Metering \(SPM\)](#)

Kinsman Sales Brochure - [MER3](#)

The SX20 was made by [Mitel](#) and marketed by many companies as the SX20, except BT who called it the Kinsman.

The console is the same one used by the Mitel [SX10E](#) and although similar looking to that of the SX200 it is incompatible. The system will support LD and MF telephones with either earth or timed break recall. The Kinsman was withdrawn from BT's portfolio in 1988.

CAPACITY

The SX20 has a maximum configuration of 12 exchange lines and 72 extensions. These cannot be achieved at the same time due to the structure of the system and the real configuration could be described as either a maximum of 8+72 or 12+48 (this is described fully in the next chapter). The [Superset 4](#) featurephone and 60 store repertory dial is only supported on software generic 543. A visually handicapped operator console is also available.



A Remote Display Unit (pictured to the left) which allows a standard POT telephone to be used instead of the Console.

The Mitel SX20 is an analogue, stored Programme Control (SPC) PABX employing Solid state space-division switching. Much of the equipment incorporated in the SX20 system is common with other Mitel products. The system consists of a metal Chassis and an impact-resistant plastic cover.

Simultaneous use of MF4, Rotary Dial and SuperSet 4 Featurephones is possible. with the use of MF4 or Rotary Dial phones being possible on any of the lines, Supersets, however can only be used on selected lines.

Automatic Diagnostics execute self checks of the system. Detected faults raise audio and visual alarms.

240V 50hz Mains voltage is converted in the power supply unit to the voltages required by the system.

After a mains failure and exhaustion of the battery back-up power three extensions are connected to the public network, two automatically the third manually (See section on Equipment Provision Rules), under these conditions only Rotary Dial Telephones will function, unless the local exchange is capable of receiving MF4 digits, when MF4 telephones may be used. SuperSets will NOT function during total power fail conditions.

A 27v dc feed is supplied to extension telephone instruments.

The PABX can be used as a host or subsidiary system in accordance with DTI specification 84/011. Where used as a subsidiary, there may be a limited number of facilities available between the two systems.

CAPACITIES

The basic SX-20/KINSMAN system consists of a single cabinet containing:-
one off Central Processing Unit (CPU)
one off Universal Console Connector
Extension Card, equipped for 8 or 24 standard DP or DTMF telephones.
Miscellaneous Card, carrying:-

- Tone Generators and Receivers
- Up to 4 Trunk Modules (8 Trunks)

The system may be extended with one or two more cards from the following:-

1 or 2 Additional Extension cards POTS

1	Featurephone card	equipped for 16 SS4 (Merlin TX14) featurephones (or standard telephones) See Note 3.
1	Trunk Expander	carrying up to 2 Trunk Modules (4 Trunks) and 2 MF4 receivers. This card also provides the Music-On-Hold input.
1	RMATS Module	carrying a CCITT Modem that permits Remote access

The trunk modules contain two circuits each and these may be Local Exchange Trunks (switchable for Earth or Loop Calling Protocols). SSAC15A or SSD5E Trunks.

The SX20/KINSMAN can handle a maximum of twelve simultaneous calls.

The system may also include an operators console.

Various combinations of cards allow the system capacity to be varied up to the following limits:-

8 Trunks and 72 ordinary telephones.

8 Trunks and 48 ordinary telephones plus 16 SS4 (TX14) Featurephones.

12 Trunks and 48 ordinary extensions.

12 Trunks and 24 ordinary telephones plus 16 SS4 (TX14) Featurephones.

NOTES:

1. Any Individual Featurephone may be replaced by an ordinary telephone.
2. Supersets are available on Generic 543 Systems only.

The above was taken from the PXML

[Click here for information on the RAM batteries](#)

[Click here for the Parts List](#)

Cabinet key = FS880



SX20 Console

INSTALLATION

Before use, the SX20 system must be loaded with default data. This operation clears out the RAM and loads default data, ensuring that the database is free from corruption.

Loading Default data

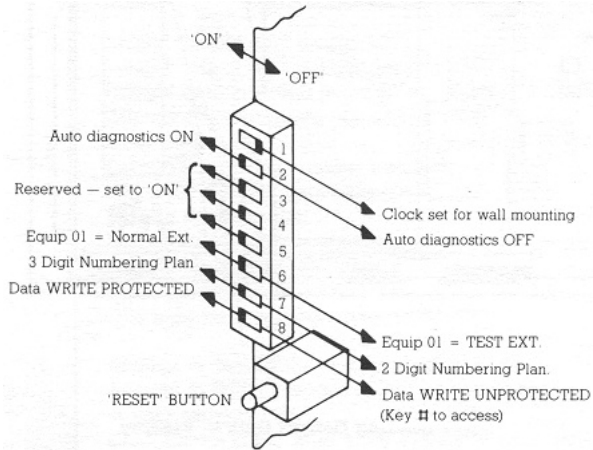
1. Open cover
2. Set CPU switches 1 - 8 to required positions
3. Set battery switch on PROM board to ON (PROM board is fitted to CPU card)
4. Turn power on
5. Set CPU switch 8 on CPU card to closed

6. press RESET button (below DIP switches on CPU card)
7. Console display shows 88888888
8. Console display shows ????????
9. Within 6 seconds set CPU switch 8 to open
10. Console display shows -----
11. Set CPU switch 8 to closed
12. Console display shows 00-00
13. Default Data has been loaded

CPU DIP switch settings

OFF	ON
	1 Wall mounted
	2 Diagnostic inhibit
Always closed	3
Always closed	4
Always closed	5
Port 1 normal extn	6 Port 1 test extn
3 digit extn range	7 2 digit extn range
review only customer data	8 data access allowed

CPU switch settings



Programming Mode

To enter programming:

1. Check that system DIP switch 8 is set to CLOSED
2. Press the status button until 542 or 543 appears and hold button down
3. Dial 7772
4. Release STATUS button
5. Dial 58 or #

[Click here for advice on trouble shooting the SX20](#)

REMOTE DISPLAY UNIT

The Remote Display Unit is supplied as a kit that comprises of two American style jacks and two connection cords. A two pair cable is run between the two jack sockets. On cord plugs into the Remote Display Unit and the other end plugs into the CCU motherboard. The Display Unit is shown to the right and the table below advises on how to wire the unit.

Socket for Cord to CCU	2 Pair cable	Socket for Cord to Display Unit
Yellow	White/Blue	Black
Black	Blue/White	Yellow
Red	White/Orange	Green
Green	Orange/White	Red

Printer Lead Wiring

RS232 socket	Printer plug
2	2
3	3
7	7

6 wired to 20

542 ALARMS

01 Power up diagnostics test.
 02 Power up or auto diagnostics test.
 04 Automatic diagnostics test.
 05 Automatic diagnostics test.
 10 TK condition. (No loop curr. detected on TKxx).
 11 TK condition. (No seize ACK. when TKxx seized).
 12 TK condition. (No Release ACK. when TKxx Rlsd).
 20 Sp/path stuck at 0 and busied out.
 21 Sp/path stuck at high and busied out.
 22 Sp/path xx 5/cct. to Sp/path yy both busied.
 23 Sp/path xx failure due to DT detector test.
 30 Unable to connect Sp/path to Extension xx.
 31 Unable to connect Sp/path to TK xx.
 40 DT detector x failure and busied out.
 4I MF4 gen. x failure and busied out.
 42 MF4 rec. x failure and busied.
 50 P/fail & reset caused by internal working.
 60-69 Software alarms.
 63 Defective battery ram.
 64 Corrupted non-volatile ram.
 80 Trunk held up busy.

543 ALARMS

01 Power up diagnostics test.
 02 Power up or auto diagnostics test.
 03 Volatile RAM read/write test error.
 04 Automatic diagnostics test.
 05 Automatic diagnostics test.
 10 TK condition. (No loop curr. detected on TKxx).
 11 TK condition. (No seize ACK. when TKxx seized).
 12 TK condition. (No Release ACK. when TKxx Rlsd).
 15 Extension equipment XX B wire permanent earth.
 20 Sp/path stuck at 0 and busied out.
 21 Sp/path stuck at high and busied out.
 22 Sp/path xx 5/cct. to Sp/path yy both busied.
 23 Sp/path xx failure due to DT detector test.
 30 Unable to connect Sp/path to Extension xx.
 31 Unable to connect Sp/path to TK xx.
 40 DT detector x failure and busied out.
 4I MF4 gen. x failure and busied out.
 42 MF4 rec. x failure and busied.
 50 P/fail & reset caused by internal working.
 60-69 Software alarms.
 63 Defective battery ram.
 64 Corrupted non-volatile ram.
 72 Console dead due to hardware failure or switching to console-less operation
 80 Trunk held up busy & will not release.
 90 Reader error (data dump and load).
 91 Printer dead.
 92 Auto wake-up queue full/CIL queue full.

Default Feature Access Codes

1	Abbreviated Dialing
20 - 29	Extension Numbers
30 - 35	Extension Numbers
441	Hunt Group 1
442	Hunt Group 2
443	Hunt Group 3
444	Hunt Group 4
445	Hunt Group 5
446	Hunt Group 6
451	Call Retrieval - Operator
452	Call Retrieval - Operator
453	Call Retrieval - Operator
58	Programming and Special Functions
59	Operator Functions
61	Divert All Calls
62	Divert on No Reply
63	Divert on Busy
65	Extension Features Reset
66	Pickup
67	Hold
68	Paging Access

690	Hold Retrieve - Local
691	Hold Retrieve - Remote
7	Private Wire access
8	NSDA Answer
9	Outside line access
0	Operator

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